BELLSOUTH

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August 7, 1998

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Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street. NW, Room 222
Washington, D.C. 20554

ORIGINAL

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

RE: CC Docket Nos. 96-45 & 97-160

Dear Ms. Salas:

Today, John Jackson, Daonne Caldwell and the undersigned, all representing BellSouth, met with Craig Brown, Katie King, Jeff Prisbrey, Bob Loube, Bryan Clopton, Abdel Eqab, Michael Cichello, Adrian Wright, Betti Richetts of the Common Carrier Bureau's (CCB's) Accounting Policy Division, Jim Eisner and Jim Zolnierek of the CCB's Industry Analysis Division, Whitey Thayer of the CCB's Accounting Safeguards Division , Craig Brown and Dick Kwaitkowski of the CCB's Competitive Pricing Division in connection with the above referenced proceedings. During this meeting, BellSouth used the attached material to respond to questions from the Common Carrier Bureau staff regarding inputs to the universal service proxy cost model.

Please call me if you have any questions.

Yours truly,

WW Jordan

William W. Jordan
Vice-President – Federal Regulatory

Attachments

CC: Craig Brown, Katie King, Jeff Prisbrey, Bob Loube, Bryan Clopton, Abdel Eqab, Michael Cichello, Adrian Wright, Betti Richards, Jim Eisner, Jim Zolnierek, Whitey Thayer, Dick Kwaitkowski

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Request: What level of detail associated with placing items of plant is maintained by BellSouth? Is the information available by cable type, size, allocation area, or density zone?

Response: BellSouth only maintains placing information at the Field Reporting Code (FRC) or plant account level. BellSouth used this plant account level data to develop in-plant loadings for items of plant. The data that the Georgetown Consulting Group (GCG) used in developing their June 12, 1998 response to the FCC corresponds to the in-plant loadings used by BellSouth in both the Unbundled Network Element (UNE) and Universal Service Fund (USF) studies filed with the various state commissions.

As GCG explains on page Ex 5-2, the cost per foot of cable not only includes the material price but also BST labor and engineering, vendor engineering and installation, exempt materials, and sales tax. The in-plant loadings were developed to account for these additional costs. (The in-plant loading converts the material price to an installed investment.) The data sources used in determining the in-plant loadings were the 1995 state and local sales taxes, Resource Tracking Analysis and Planning (RTAP) System, and Special Report/File 542 – 1995 Investments.

The HAI model requires input of installed investment that includes the in-plant loadings. The BCPM Loop Cost Input Table, segments the installed investment into the following components:

Material Cost – this is the actual cost of the cable itself, as reflected by the contracts, i.e. the non-exempt material cost. Non-exempt means that the item of plant is specifically identified in BellSouth's plant records and remains there until retired.

Supply Cost – this reflects the costs of exempt material. Exempt material is material that is not uniquely identified in BellSouth's plant records. These items of plant take on the accounting characteristics of the plant account to which they are coded. For example, loop-related exempt material includes items such as: connectors, closures, sleeves, strand, attenuators, interface units, jumpers, pigtails, cable guards, pedestals, anchors, terminating connector blocks, station protectors, converters, ground wire, cross-connect wire, terminals -100 pair and less, fusion splicers, and splice cases.

Tax – this component reflects the sales tax rate applicable to the jurisdiction.

Placing – these costs account for BellSouth's costs incurred in the installation of the cable. In the case of aerial plant, placing costs include running cable lengths between poles. For underground installation, placing costs are incurred in pulling cable in conduit systems. Even though BCPM allows buried installation costs to be entered in the Loop Cost Input Table, BellSouth has included these contractor costs in the BCPM Structure Inputs Table since this allows further detail by percent activity, by density zone, and by type of placement.

Splicing – these costs account for the labor required to join two sections of cable, whether it be by fusion (fiber), mechanical devices, or by soldering. Additional activities included in splicing are the time required to locate and open a cable, pumping a manhole, etc.

Engineering – these costs reflect the labor required in designing a cable run.

Switching equipment and digital loop equipment have additional costs that are not predominate in cable costs, i.e. vendor engineering and vendor installation. The BCPM has incorporated these costs into the regression equations used to determine switching investments. Thus, the TELCO factor entered in the BCPM SW State Defaults Inputs Table only reflects BellSouth labor and engineering and sales tax. (There is no exempt material associated with these accounts.)

Attached to this response are the spreadsheets that develop the in-plant factors for Georgia. The same methodology was used in each BellSouth State.

Utilizing data provided to the FCC in BellSouth's Comments in Docket 96-45 dated June 1,1998 (Exhibit 1, page 5), the following example illustrates the impact of these additional costs to BellSouth in the state of Georgia. To place 1,000 feet of 200 pair 26 gauge aerial cable BellSouth will incur these costs:

Georgia
26 Gauge
200 Pair Aerial

1	(A)	(B)	(C) = (A)*(B3)	(D) = (C) * 1,000
2 **Component**	**Factor**	**Material $/Foot**	**Unit Cost**	**$/1,000 Feet**
3 Material	1	$ 0.953	$ 0.953	$ 952.50
4 Supply (Exempt)	1.38		$ 1.314	$ 1,314.45
5 Tax	0.04		$ 0.038	$ 38.10
6 Placing	2.32		$ 2.210	$ 2,209.80
7 Splicing	0.43		$ 0.410	$ 409.58
8 Engineering	0.89		$ 0.848	$ 847.73
9 Total	6.06		$ 5.772	$ 5,772.16

1996 IN-PLANT FACTORS

STATE	FRC	MATERIAL FACTOR	TELCO FACTOR	PLUG-IN FACTOR	HARDWIRE FACTOR
GA	157C	1.0740	N/A	N/A	N/A
GA	257C	1.2601	N/A	1.0616	1.5856
GA	357C	1.1872	N/A	1.0583	1.7171
GA	*COMP	1.2250	N/A	1.0597	1.6379
GA	377C	1.2194	1.0763	N/A	N/A
GA	5C	4.0580	3.1294	N/A	N/A
GA	6C	1.0000	1.0000	N/A	N/A
GA	12C	8.6787	4.8280	N/A	N/A
GA	22C	6.0580	4.2588	N/A	N/A
GA	45C	6.0934	1.6936	N/A	N/A
GA	52C	7.9806	6.3348	N/A	N/A
GA	85C	1.8643	1.6726	N/A	N/A
GA	86C	1.0000	1.0000	N/A	N/A
GA	812C	3.1481	2.7838	N/A	N/A
GA	822C	2.1099	1.7697	N/A	N/A
GA	845C	4.3055	1.4013	N/A	N/A
GA	852C	1.7065	1.7065	N/A	N/A

*COMPOSITE OF 257C AND 357C

STATE: GEORGIA

1996 INPLANT FACTORS STUDY

	CATEGORY	EXPENDITURE TYPE CODE	1995 COST FRC 157C	1995 COST FRC 257C,F257C	1995 COST FRC 357C,T357C	1995 COST COMPOSITE	1995 COST FRC 377C
1.	TELCO LABOR	KP*, CQ*	$8,223	$4,149,945	$809,402	$4,959,347	$1,384,688
2.	TELCO ENGR	KE*	$770	$1,915,283	$1,309,224	$3,224,507	$857,797
3.	TELCO ENGR PROJECTS	CH*	$0	$219,905	$266,375	$486,280	$408,638
4.	OTHER COSTS	434, 451, 471,4, 48A, 583 T 4, 59E, F, 644, 658, 661 T 3, 68A, F, 693, 762 T 9, 77A, 779, 79A, 799, 813, 899, 977, CY*, PA6	$25,108	$720,873	$635,637	$1,356,510	$1,704,456
5.	VENDOR ENGINEERING	461, 2, 3, 4	$0	$2,840,354	$2,291,105	$5,131,459	$4,226,313
6.	VENDOR PLT LABOR	48D, F, H, J, Q, 481, 484, 487	$0	$7,088,148	$5,166,935	$12,255,083	$8,230,833
7.	MATERIAL WITH SALES TAX						
A	- EXEMPT	CQ1	$0	$0	$0	$0	$0
B	- NON-EXEMPT	CJ*, CK1, ABO, 631, 61E, 523	$1,044,156	$80,032,173	$74,048,455	$154,080,628	$97,439,783
8.	STATE SALES TAX	CURR MISC LOADINGS	0.0400	0.0400	0.0400	0.0400	0.0400
9.	NON-EX MATERIAL LESS SALES TAX	LINE 7B / (1 + LINE 8)	$1,003,996	$76,954,013	$71,200,438	$148,154,450	$93,692,099
10.	TOTAL (EXCLUDE 48G DROP WIRE -STUDY DEVELOPED SEPARATELY)	SUM OF LNS 1- 7 (A & B)	$1,078,257	$96,966,681	$84,527,133	$181,493,814	$114,252,508
11.	MATERIAL FACTOR	LINE 10 / LINE 9	1.0740	1.2601	1.1872	1.2250	1.2194
12.	TELCO FACTOR	LINE 10 / (LN 5 + LN 6 + LN 9)	N/A	N/A	N/A	N/A	1.0763

SOURCE: Capital dollars from the Resource Tracking and Analysis System (RTAP)
Ln 8 State Sales Tax from Tax Office

State: **Georgia** **1996 Inplant Factors Study**

	Category	Expenditure Type Code	1995 FRC 5C	1995 FRC 6C	1995 FRC 12C	1995 FRC 22C	1995 FRC 45C	1995 FRC 52C
	Telco Plant Labor	KP1-KP8, KPA-KPT, CQ4-CQ9, CQF-CQS	$1,605,329	$0	$1,244,127	$6,362,093	$5,307,306	$199,496
	Telco Engineering	KE1-KE8, KEA-KET	$332,420	$15	$1,129,854	$2,374,181	$2,581,702	$45,303
	Telco Engineering Projects	CHB-CHG	$8,684	$0	$216	$45,420	$62,415	$14
	Other Costs	434,451,471,474,48A,583,584,59E,59F, 644,658,661-663,68A,68F,693,762-769,77A, 779,79A,799,813,899,977,CY1-CY8,PA6	($102,884)	$0	($114,896)	($54,332)	$204,991	($13,581)
5.	Vendor Engineering	461,462,463,464	$87,937	$0	$325,975	$583,867	$672,940	$2,610
6.	Vendor Installation	48D,48F,48H,48J,48Q,481,484,487	$215,828	$0	$88,623	$563,126	$9,320,659	$12,640
7.	Material w/sales tax							
A.	- Exempt	CQ1	$758,788	$0	$1,296,828	$3,747,209	$1,289,620	$160,910
B.	- Non-exempt	523,61E,631,ABO,CJ1,CJ3-CJ9,CK1	$994,547	$0	$540,610	$2,823,060	$4,000,702	$61,045
8.	State Sales Tax	Current Miscellaneous Loadings	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400
9.	Non-exempt Mat'l less sales tax	Ln 7B / (1 + Ln 8)	$956,295	$0	$519,817	$2,714,461	$3,846,828	$58,697
10.	Total	Sum Lns 1-7B	$3,880,648	$15	$4,511,337	$16,444,424	$23,440,335	$468,436
	(excludes EXTC 48G Contracted Plant Labor Drop Wire--dollars included in FRC 248C/548C)							
11.	Material Factor	Ln 10 / Ln 9	4.0580	1.0000	8.6787	6.0580	6.0934	7.9806
12.	Telco Factor	Ln 10 / (Ln 5 + Ln 6 + Ln 9)	3.1294	1.0000	4.8280	4.2588	1.6936	6.3348

	FRC 5C	FRC 6C**	FRC 12C	FRC 22C	FRC 45C	FRC 52C
Plant Labor (% conductor feet placed by gauge)	0.62986	0.36762	0.63195	0.44338	0.36762	0.66254
Eng/Mat'l (% investment by gauge)	0.52839	0.25843	0.54692	0.33613	0.25843	0.54839
Contract/Vendor Labor (% sheath feet placed by gauge)	0.61504	0.29090	0.54934	0.37150	0.29090	0.55559

** use 45C % as surrogate

SOURCE: Capital dollars from Resource Tracking and Analysis System (RTAP)
Ln 8 State Sales Tax from Tax Office

State: Georgia — 1996 Inplant Factors Study

	Category	Expenditure Type Code	1995 FRC 85C	1995 FRC 86C	1995 FRC 812C	1995 FRC 822C	1995 FRC 845C	1995 FRC 852C
1.	Telco Plant Labor	KP1-KP8, KPA-KPT, CQ4-CQ9, CQF-CQS	$2,251,037	$0	$305,510	$2,153,869	$735,807	$12,177
2.	Telco Engineering	KE1-KE8, KEA-KET	$470,724	$0	$107,929	$351,800	$263,958	$1,230
3.	Telco Engineering Projects	CHB-CHG	$39,962	$0	$92	$83,943	$218,188	$0
4.	Other Costs	434,451,471,474,48A,583,584,59E,59F, 644,658,661-663,68A,68F,693,762-769,77A, 779,79A,799,813,899,977,CY1-CY8,PA6	$78,656	$0	($730)	$40,975	$123,326	$286
5.	Vendor Engineering	461,462,463,464	$163,701	$0	$1,470	$205,630	$141,554	$0
6.	Vendor Installation	48D,48F,48H,48J,48Q,481,484,487	$423,045	$0	$33,625	$456,427	$3,548,897	$0
7.	Material w/sales tax							
A.	- Exempt	CQ1	$792,238	$0	$117,520	$392,082	$782,967	$4,787
B.	- Non-exempt	523,61E,631,ABO,CJ1,CJ3-CJ9,CK1	$5,323,566	$0	$278,941	$3,581,635	$1,851,868	$28,838
8.	State Sales Tax	Current Miscellaneous Loadings	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400
9.	Non-exempt Mat'l less sales tax	Ln 7B / (1 + Ln 8)	$5,118,813	$0	$268,213	$3,443,880	$1,780,642	$27,729
10.	Total (excludes EXTC 48G Contracted Plant Labor Drop Wire--dollars included in FRC 248C/548C)	Sum Lns 1-7B	$9,542,929	$0	$844,357	$7,266,361	$7,666,565	$47,318
11.	Material Factor	Ln 10 / Ln 9	1.8643	1.0000	3.1481	2.1099	4.3055	1.7065
12.	Telco Factor	Ln 10 / (Ln 5 + Ln 6 + Ln 9)	1.6726	1.0000	2.7838	1.7697	1.4013	1.7065

SOURCE: Capital dollars from Resource Tracking and Analysis System (RTAP)
Ln 8 State Sales Tax from Tax Office

'E: GEORGIA

1996 PLUG-IN AND HARDWARE IN-PLANT STUDY

	FILE 542, INVESTMENTS		PLUG-IN FTR	FILE 542, INVESTMENTS			TOT PIM & HWM	% PLUG-IN	% HDWR	PLUG-IN FACTOR	PLUG-IN PORTION	IN-PLANT MATERIAL	LEFT OVER	HARDWIRE FACTOR
	PLUG-IN MATL	PLUG-IN INPL	D	HDWR MATL	HDWR INPL	G	H	I	J	K	L	FACTOR	N	O
	B	C	(C/B)	E	F	(F/E)	(B+E)	(B/H)	(E/H)	COL D	(K X I)	M	(M - L)	(N / J)
C	$45,558,984	$48,363,775	1.0616	$27,790,602	$51,020,466	1.8359	$73,349,586	0.62	0.38	1.0616	0.6594	1.2601	0.6007	1.5856
C	$80,771,891	$84,315,474	1.0583	$14,780,617	$33,881,796	2.2923	$75,552,508	0.80	0.20	1.0583	0.8513	1.1872	0.3359	1.7171
IMP	$106,330,875	$112,679,248	1.0597	$42,571,219	$84,902,262	1.9944	$148,902,094	0.71	0.29	1.0597	0.7567	1.2250	0.4683	1.6379

)MPOSITE 257C & 357C

te: Use column D if it is higher than 1 + Tax Rate (Sales Tax Rate = 4%). Otherwise, use 1 + Tax Rate because Plug-in Inplace costs includes material costs, transportation, taxes and prorated portion of installed labor charges, engineering and certain other costs accumulated during the year for the involved accounting location and subaccount.

)URCE: File 542, Investments from Finance, Tax rates from Tax Office, and Material Factor from In-Plant - COE Study

Request: Explain how TPIs are developed.

Response: Telephone Plant Indices (TPIs) are used in cost studies to estimate the change in future material price and/or installed investment from one year to a future year. The TPIs are price indices that measure the relative changes in the prices BellSouth pays for construction of telephone plant between specific periods of time. A TPI is an average of prices, or of price relatives at specific points or periods of time, constructed for a specific purpose. It should be noted that TPI forecasts are forecasts of installed equipment price changes. They are not intended to be forecasts of technology changes or productivity improvements.

Joel Popkin and Company, as BellSouth consultants, assists BellSouth's Network Department with the development of TPIs. In general, the methodology uses econometric techniques to establish a mathematical relationship between the historical movement in each of the labor and material components that make up the TPIs and the historical movement in each of the explanatory variables. The explanatory variables are usually aggregate measures of the U.S. economy, e.g. price deflators from the national income and product accounts, the U.S. union wage rate, copper prices, etc. These econometric techniques provide a systematic, quantifiable statement of what has happened in the past. Use of these relationships implicitly makes the assumption that past history will repeat itself.

Attached to this response, Attachment A, is a non-proprietary explanation of the development process and the BellSouth Regional 1997-1999 TPIs used in the USF cost studies in BellSouth's territory, Attachment B. The TPIs, themselves, and the historical data used in their development are not proprietary. However, forecast information and Joel Popkin's methodology are proprietary.

It is recognized that over the life of an investment, inflation causes fluctuations in the forward-looking investment amount. The investment amount should thus be levelized over the time period in which the study results (the planning period) will be used. The investment inflation factors (levelization factors) are the cumulative average of projected inflation rates from the BellSouth TPIs. The levelization factor, when multiplied by the base investment results in a forward-looking investment that is representative of the planning period. Calculation of the 1997-1999 average levelized inflation factor is attached with Attachment B.

BellSouth Region
Telephone Plant Indexes
and Forecasts

1.00 Introduction

1.01 General

The BellSouth Region Telephone Plant Indexes (BSRTPI) (Appendix A) and BSRTPI Forecasts (Appendix B) are price indexes which measure the relative changes in the prices BellSouth pays for the construction of telephone plant between specific periods of time. This document has been prepared to assist BellSouth organizations responsible for planning, budgeting, economic analysis, capital recovery and Comptrollers in estimating and comparing the costs associated with the construction of telephone plant relative to time.

1.02 Purpose

The purpose of this document is to discuss basic methodology and assumptions used in the development of the BellSouth Region Telephone Plant Indexes (BSRTPI) and BSRTPI Forecasts and to provide updated historical indexes and the current view of the forecasts for the BellSouth telephone plant accounts.

1.03 Definition and Meaning of Telephone Plant Index

A telephone plant index (TPI) is an average of prices, or of price relatives at specific points or periods of time, constructed for a specific purpose. A price relative is a price in a given year divided by a price in a base year. An average may be defined as one figure that represents a group of figures.

The purpose for which an index number is constructed determines the items to be included in the sample, and the weights, or relative importance, to be accorded each item in the construction of the index number. Thus, the index of the prices for digital switching machines would not be suitable for the measurement of prices for telephone poles.

A telephone plant index number is not an exact measurement but an estimate of changes in prices. Cost and time limitations prevent basing an index on the entire group of items for which an index number is desired. Almost all index numbers are based on samples of items, and so the resulting figures are merely estimates for the universe from which the samples are drawn. What is necessary is that the estimates be good ones that can be explained and defended for the purpose for which it is constructed.

An index number does not stand by itself but is thought of as a series of index numbers constructed in reference to some base period, or point of comparison, that appears regularly over a long period of time. A telephone plant index number refers specifically to price movements over a period of time.

It should be noted that TPI forecasts are intended to be forecasts of price changes of equipment. They are not intended to be forecasts of technology changes or productivity improvements. For example, faster transmission rates may mean that fewer pieces of equipment will provide the same level of service at a cheaper per circuit cost than before. The TPI, though, is not designed to measure that type of change. The TPI only measures the changes in the prices of equipment that is being installed. While new equipment will be included in the index as such equipment is installed, the quantity of new equipment purchased will not affect the index; only the price trend of the equipment affects the index. For example, the price difference between one piece of equipment and a different piece of equipment that replaces it will not show up as a price change in the index. However, any price changes in one piece of equipment whether they result from competition, technological change or learning curve effects will be reflected in the index. Where the quantity effects of changes in the network will be observed is when total expenditures are deflated using the TPI.

1.04 History

AT&T began forecasting the Bell System Telephone Plant Index (the precursor to the current BellSouth Region Telephone Plant Index) in 1974. The methodology used at that time was to correlate components of AT&T's BSTPI with major price indexes published by the federal government that moved similarly to the components. Forecasts of the government series could then be used to proxy percent changes in the BSTPI composites.

In late 1978, Joel Popkin and Company (JPC) began revising the methodology that AT&T was using to forecast the BSTPI. The revised methodology involved splitting the BSTPI for each account and subaccount into two main groups: 1) labor and 2) materials. Secondly, econometric techniques were used in the forecasting process to estimate structural relationships between the labor and materials components of the BSTPI and aggregate macroeconomic explanatory variables.

In 1987, Joel Popkin and Company, as BellSouth consultants, began assisting in the development of the BellSouth Region Telephone Plant Indexes and Forecasts.

BellSouth Region
Telephone Plant Indexes
and Forecasts

2.00 BSRTPI Methodology

2.01 General

Joel Popkin and Company uses the general methodology it recommended to AT&T to forecast the BSRTPI. The method uses econometric techniques to establish a mathematical relationship between the historical movement in each of the labor and materials components that make up the BSRTPI and the historical movement in the explanatory variables. The explanatory variables are usually aggregate measures of the U.S. economy, such as price deflators from the national income and product accounts, the U.S. union wage rate, copper prices and other macroeconomic variables.

What these econometric techniques provide is a systematic, quantifiable statement of what has happened in the past. Use of those relationships implicitly makes the assumption that history will more or less repeat itself. Much of the time it does. However, special circumstances can always arise which make the future outcome different from what history would predict.

It is never expected that the explanatory variables chosen will predict perfectly any component of the BSRTPI. It is very rare when mathematical relationships such as these statistically explain even close to 100 percent of any variable's historical movement, let alone its future movement. Even if the relationships did explain the historical movements well, there would be no guarantee that relationships that existed in the past would continue to explain future variation in the components. Nor is there a guarantee that errors would not be made in predicting the explanatory variables that are used to forecast the TPI components.

The relationships estimated for the BSRTPI are complicated by another factor. Much of the historical information on which the BSRTPI relationships are based consist of predivestiture AT&T data. Those data are not only for a different company but are also for the United States as a whole, not a specific region. Of possibly greater importance, is the fact that those data reflect a much different structure of the telecommunications industry than exists today.

Because the AT&T historical data are the only TPI data available for materials, other than BellSouth's own data, it is necessary to assume that the generalized relationships will continue to hold in a broad way. However, it is important to re-estimate the relationships as new index values are added each year. That allows the data specific to BellSouth to have more and more influence on the parameters of the relationships as time passes.

2.02 Capital Trend Rate or Long Term Rate

Forecasts of the BSRTPI are generally prepared 9-10 years past the last actual indexes. For uses requiring longer projections, a capital trend rate or long term rate is also calculated. The long term rate is developed by analyzing the forecasted values for the most distant five years of the forecasting horizon. In most cases, the modal value (that is the value observed most frequently) is selected as the long term rate. If a clear trend is present in the five-year period, judgment is used to determine if that trend should be projected into the future or if the modal rate should be used. In addition, if there is reason to believe that long-term technological change is occurring, then that is also considered when determining the long term rate. Of course, the further into the future the forecast applies, the larger the forecast error is likely to be. For the periods for which the long term rate is used, many unforeseen factors could influence the actual outcome of the cost increases.

2.03 Indexes and Weights

Some items in a sample or within an account are much more important than others, and for this reason it becomes essential to weight some items more heavily than others in the construction of an index number. A weight is a number that reflects the importance of the items, and the various weights used show the relative importance of the items in the make-up of the index number. The weight may be thought of as a multiplier of the price of the item; a heavy weight applied to a price relative has a greater influence on the index number than a light weight applied to a price relative. Weights are essential. Without their use an index could be dominated largely by relatively unimportant items, and such an index would not give a true picture of the price change as a whole.

3.00 BSRTPI Assumptions

3.01 Macroeconomic Assumptions

The macroeconomic assumptions underlying the forecast are a mixture of BellSouth (BellSouth Corporation Economic Forecast and Joel Popkin & Company (JPC) forecasts. The BellSouth forecast provided the real gross domestic product (GDP) assumptions and the forecast of the implicit price deflator. The BellSouth forecast of the nonresidential deflator was used to determine the forecast of the nonresidential structures deflator and the Producer Price Indexes (PPI) for capital equipment. JPC forecast the union wage and copper price variables based on BellSouth growth and inflation assumptions.

4.00 Conclusions

It is apparent that a multitude of forecasting methodologies are available that can establish relationships between the historical movement of the various components of the BSRTPI and the corresponding projected future movement of those same components. Nonetheless, this document has been prepared, for the purpose of providing a consistent and useful tool, to reflect BellSouth telephone plant price trends and to assist BellSouth organizations responsible for planning, budgeting, capital recovery and economic analysis of telephone plant within BellSouth or BellSouth subsidiaries.

As improvements in both data and methodology become available, changes will be made to incorporate those improvements into the BellSouth Region Telephone Plant Indexes and Forecasts.

LABOR TPIs

	LABOR								
						CONTRACT			
	TELCO ENGINEERING	TELCO COE	TELCO OSP	TELCO STATION	CONDUIT	BUR&UG CABLE	AERIAL CABLE	POLES	
1994	1.7	3.3	-0.9	3.3	5.3	1.4	3.3	2.6	
1995	2.1	-1.2	0.9	-1.2	8.3	2.6	3.2	3.1	
1996	5.1	3.1	3.0	3.1	3.6	3.4	2.8	2.1	
1997	3.9	3.5	3.5	3.5	3.1	2.6	3.3	2.7	
1998	4.1	3.5	3.7	3.5	3.5	3.1	3.6	3.0	
1999	4.1	3.8	3.7	3.8	3.5	3.1	3.6	3.0	
2000	4.2	3.8	3.8	3.8	3.6	3.2	3.6	3.2	
2001	4.3	4.1	3.9	4.1	3.6	3.3	3.7	3.2	
2002	4.3	4.1	3.9	4.1	3.7	3.4	3.7	3.3	
2003	4.3	4.1	3.9	4.1	3.7	3.4	3.7	3.3	
2004	4.4	4.2	3.9	4.2	3.7	3.4	3.8	3.3	
2005	4.4	4.2	4.0	4.2	3.7	3.4	3.8	3.3	

Labor TPIs reflect year-over-year differences.

1996
BELLSOUTH
ACCOUNT AVERAGE LEVELIZED INFLATION LOADINGS
FOR FORWARD-LOOKING STUDIES

BELLSOUTH		TELEPHONE PLANT INDICES (TPI) 1997 A	1998 B	1999 C	CUMULATIVE INFLATION FACTORS 1997 D 1+(A/100)	1998 E 1+(B/100)XD	1999 F 1+(C/100)XE	TOTAL G D+E+F	LEVELIZED INVESTMENT INFLATION LOADINGS H G/3
Land	20C	2	2	2	1.0200	1.0404	1.0612	3.1216	1.0405
Building	10C	2	2	2	1.0200	1.0404	1.0612	3.1216	1.0405
Gen Purpose Computer	530C	-12	-10	-8	0.8800	0.7920	0.7286	2.4006	0.8002
Digital Switch	377C	-1	0	2	0.9900	0.9900	1.0098	2.9898	0.9966
Circuit-DDS	157C	-3	-2	-1	0.9700	0.9506	0.9411	2.8617	0.9539
Circuit-Digital Pair Gain	257C	0	-2	0	1.0000	0.9800	0.9800	2.9600	0.9867
Circuit-Other Digital	357C	-3	-2	-1	0.9700	0.9506	0.9411	2.8617	0.9539
Poles	1C	4	4	4	1.0400	1.0816	1.1249	3.2465	1.0822
Aerial Cable-Copper	22C	-1	2	3	0.9900	1.0098	1.0401	3.0399	1.0133
Aerial Cable-Fiber	822C	-1	0	1	0.9900	0.9900	0.9999	2.9799	0.9933
Underground Cable-Copper	5C	-2	1	3	0.9800	0.9898	1.0195	2.9893	0.9964
Underground Cable-Fiber	85C, D, F, T5C	-2	-1	1	0.9800	0.9702	0.9799	2.9301	0.9767
Buried Cable-Copper	45C	0	3	3	1.0000	1.0300	1.0609	3.0909	1.0303
Buried Cable-Fiber	845C	1	1	2	1.0100	1.0201	1.0405	3.0706	1.0235
Submarine Cable-Copper	6C	-1	2	2	0.9900	1.0098	1.0300	3.0298	1.0099
Submarine Cable-Fiber	86C	0	1	2	1.0000	1.0100	1.0302	3.0402	1.0134
Intrbldg Ntwk Cable-Copper	52C	-2	1	3	0.9800	0.9898	1.0195	2.9893	0.9964
Intrbldg Ntwk Cable-Fiber	852C	-1	-1	1	0.9900	0.9801	0.9899	2.9600	0.9867
Conduit	4C	3	3	2	1.0300	1.0609	1.0821	3.1730	1.0577

SOURCE: TPI from Network - Forecast Telephone Plant Indexes, Nov 1996 Forecast of % Cost Change

NOTE: The Levelized Investment Inflation Loadings factor is applied to the 1996 material price.

Request: Are the TPIs applied to GCG's digital loop carrier (DLC) inputs?

Response: No, TPIs have not been applied. The three-year average investment inflation factor for DLC is .9867, reflecting a deflation trend.

Request: How do density zones impact placement costs?

Response: BellSouth's cable placing contracts are bid on a large geographical basis covering both dense and non-dense areas. The contractors are aware of the criteria and bid accordingly. Thus, the placing cost per foot installed for an activity is identical for each density zone that the particular contract covers. The inputs BellSouth has submitted to the FCC in the BCPM reflect the average of all master contracts for the state.

Additionally, the contracts do not differentiate between trenching and plowing. Thus, the cost of placing buried cable via a trench is the same as plowing (e.g. the $2.56 below). However, as evident in the chart below, the per foot cost does differ for boring, pushing pipe, and cutting and restoring asphalt, concrete, and sod. Even though the per foot cost to install the cable doesn't differ by density zone, the percent of time the activity occurs does differ. Thus, the average placing cost per foot of cable will differ by density zone.

Percent Activity by Density Zone

	$/Ft-GA	0-5	6-100	101-200	201-650	651-850	850-2550	2551-5K	5001-10K	>10K
Plow	$ 2.56	86%	80%	69%	21%	20%	20%	0%	0%	0%
Rocky Plow	$ 2.56	0%	0%	0%	0%	0%	0%	0%	0%	0%
Trench & Backfill	$ 2.56	10%	11%	11%	30%	20%	20%	5%	5%	3%
Rocky Trench	$ 2.56	0%	0%	0%	0%	0%	0%	0%	0%	0%
Backhoe Trench	$ 2.56	0%	3%	3%	12%	2%	2%	19%	19%	15%
Hand Dig Trench	$ 2.56	0%	0%	0%	3%	6%	6%	8%	8%	8%
Bore Cable	$ 13.11	0%	0%	1%	4%	2%	2%	15%	15%	10%
Push Pipe & Pull Cable	$ 16.56	0%	0%	1%	5%	5%	5%	0%	0%	0%
Cut & Restore Asphalt	$ 6.64	1%	2%	5%	8%	13%	13%	25%	25%	33%
Cut & Restore Concrete	$ 8.36	1%	2%	4%	7%	12%	12%	20%	20%	28%
Cut & Restore Sod	$ 4.81	2%	2%	6%	10%	20%	20%	8%	8%	3%
Average Placing Cost per Foot		$2.70	$2.80	$3.38	$4.64	$5.15	$5.15	$6.50	$6.50	$6.65

Request: Provide a list of the Field Reporting Codes (FRCs).

Response:

CAPITAL ACCOUNTS FOR INCLUSION IN USF COST STUDIES

Account	Field Reporting Code (FRC)	USOAR Account
Land	20C	2111
Motor Vehicle	40C	2112
Special Purpose Vehicles	240C	2114
Garage Work	340C	2115
Other Work	540C	2116
Building	10C, 110C	2121
Furniture	30C	2122
Office Support	430C	2123
General Purpose Computers	530C, 630C	2124
Switching	377C	2212
Circuit/DLC	257C, 357C	2232
Pole	1C	2411
Aerial Copper	22C, 12C	2421
Aerial Fiber	822C, 812C	2421
Underground Copper	5C	2422
Underground Fiber	85C	2422
Buried Copper	45C	2423
Buried Fiber	845C	2423
Conduit	4C	2441

EXPENSE ACCOUNTS FOR INCLUSION IN USF COST STUDIES

Cost Element	Field Reporting Code (FRC)	USOAR Account
Network Support Expense		6110
General Support		6120
COE Switching	377M, 377R	6210 *
COE Transmission	257M, 357M, 257R, 357R	6230 *
Information Originating/Terminating		6310
Poles	1M, 21M, 1R, 21R	6411 *
Aerial Copper Cable	12M, 2M, 22M, 248M,12R, 2R, 22R, 248R	6421.1 *
Aerial Fiber Cable	812M, 822M, 812R, 822R	6421.2 *
Underground Copper Cable	5M, 5R	6422.1 *
Underground Fiber Cable	85M, 85R	6422.2 *
Buried Copper Cable	45M, 548M, 45R, 548R	6423.1 *
Buried Fiber Cable	845M, 845R	6423.2 *
Conduit Investment System	4M, 4R	6441 *
Other Property Plant		6510
Network Operations		6530
Marketing		6610
Services		6620
Executive & Planning		6710
General & Administrative		6720
Uncollectibles		6790

COE – Central Office Equipment

* Plant Specific Operations – These expense accounts relate directly to the capital (investment) account. For example, Pole investment is in account 2411, FRC 1C and Pole expense is in account 6411, FRCs 1M, 1R, 21M, and 21R.

Request: What is included in each of the FRCs and the associated expense accounts?

Response: BellSouth classifies capital costs and expenses in accordance with the rules established in the Code of Federal Regulation Part 32 – Uniform System of Accounts for Telecommunications Companies. The telecommunications plant accounts are designed to show the investment in the company's tangible and intangible plant that has a service life of more than one year and is a substantial amount. Direct and indirect costs that are included in these accounts shall include, but not be limited to:

Labor – includes the wages and expenses of employees directly engaged in or in direct charge of construction work. It includes expenses directly related to an employee's wages, e.g. workman's compensation, payroll taxes, and benefits. The FCC staff has asked for an explanation of the derivation of a particular labor rate used by GCG during the July 15,1998. Please see BellSouth's response to Question 3 of that set of questions. Also, in BellSouth's response to Question 1 to this set of questions, the cost of placing cable is illustrated.

Engineering – includes the portion of wages and expenses of engineers, draftsmen, inspectors, and their direct supervision applicable to construction work. As explained in Question 1, engineering is included as part of the in-plant factors.

Material & Supplies - includes the purchase price of material used at the point of free delivery plus the costs of inspection, loading and transportation, and an equitable portion of provisioning expense.

Contract Work – includes amounts paid for work performed under contract or other agreement by other companies; engineering and supervision applicable to such work; cost incident to the award of

the contracts; and the inspection of such work. As noted in BellSouth's reply to Question 4, the contract costs are considered in the BCPM inputs.

Taxes – includes taxes properly contained in construction costs before the facilities are completed for service, which taxes are assessed separately from taxes on operating property or under construction that permit separate identification of the amount chargeable to construction. Sales tax is included in the in-plant factor and is explained in BellSouth's response to Question 1.

BellSouth's response to Question 1 details the magnitude of the costs contained in the investment for a foot of 200 pair aerial copper cable (FRC 22C) in Georgia.

The expense accounts are comprised of four major expense groups – Plant Specific Operations, Plant Nonspecific Operations, Customer Operations, and Corporate Operations. Expenses recorded in the Plant Specific and Plant Nonspecific Operations groups generally reflect costs associated with the various kinds of equipment identified in the plant asset accounts. Expenses recorded in the Customer Operations and Corporate Operations groups reflect the costs of, or are associated with, functions performed by people irrespective of the organization in which any particular function is performed.

Plant Specific Operations (Accounts 6110-6441) includes:

The costs of inspecting, testing, and reporting on the condition of telephone plant to determine the need for repairs, replacements, rearrangements and changes;

Performing routine work to prevent trouble, replacing items of plant (other than retirements);

Rearranging and changing location of plant;

Inspecting after repairs have been made;