BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Determination of the cost of basic local telecommunications service, pursuant to Section 364.025, Florida Statutes.	DOCKET NO. 980696-TP ORDER NO. PSC-99-0068-FOF-TP ISSUED: January 7, 1999

The following Commissioners participated in the disposition of this matter:

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FINAL ORDER

BY THE COMMISSION:

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LIST OF ACRONYMS	
ADSL	Asymmetrical Digital Subscriber Line
AFUDC	Allowance for Funds Used During Construction
AG	Office of the Attorney General
ALEC	Alternative Local Exchange Company
ALLTEL	ALLTEL Florida, Inc.
ALSM	Audited LEC Switching Model
AT&T	AT&T Communications of the Southern States, Inc.
B1	Business Access Line
BCPM	Benchmark Cost Proxy Model
BellSouth	BellSouth Telecommunications, Inc.
BR	Brief of Evidence
CAPM	Capital Asset Pricing Model

LIST OF ACRONYMS	
CATV	Cable Television
CB	Census Block
CBG	Census Block Group
CC	Common Carrier
CEV	Controlled Environment Vault
CLEC	Competitive Local Exchange Company
CLLI	Common Language Location Identifier
CO	Central Office
COLR	Carrier of Last Resort
COT	Central Office Terminal
CSA	Carrier Serving Area
CU	Channel Unit
DA	Distribution Area
DCF	Discounted Cash Flow
DDM	Dividend Discount Models
DEM	Dial Equipment Minutes
DLC	Digital Loop Carrier
DLCRT	Digital Loop Carrier Remote Terminal
e.spire	e.spire Communications, Inc.
EAS	Extended Area Service
ECS	Extended Calling Scope
ECV	Environmentally Controlled Vaults
EF&I	Engineered, Furnished and Installed
ERLC	Extended Range Line Card
EXH	Exhibit

LIST OF ACRONYMS	
FCC	Federal Communications Commission
FCCA	Florida Competitive Carriers Association
FCTA	Florida Cable Telecommunications Association, Inc.
FDI	Feeder/Distribution Interface
FDW	Facilities Data Warehouse
FLEC	Forward-Looking Economic Cost
FPSC	Florida Public Service Commission
Frontier	Frontier Communications International, Inc.
GAAP	Generally Accepted Accounting Principles
GTC	GTC, Inc.
GTEFL	GTE Florida, Inc.
HAI	Hatfield Model 5.0a
HM5.0a	Hatfield Model 5.0a
HIP	HAI Inputs Portfolio
ILEC	Incumbent Local Exchange Company
IOT	Interoffice Transport
ITS	ITS Telecommunications Systems, Inc.
IXC	Interexchange Carrier
LEC	Local Exchange Company
LERG	Local Exchange Routing Guide
M/B	Market-To-Book
MCI	MCI Telecommunications Corp.
MPIP	Mechanized Plant In Place
NGDLC	Next Generation Digital Loop Carrier
NID	Network Interface Device

LIST OF ACRONYMS	
Northeast	Northeast Florida Telephone Company, Inc.
OPC	Office of Public Counsel
OSP	Outside Plant
POTS	Plain Old Telephone Service
R1	Residential Access Line
RBOC	Regional Bell Operating Company
RT	Remote Terminal
RUS	Rural Utility Service
S&P	Standard & Poor's Rating Service
SAI	Serving Area Interface
SCIS	Switching Cost Information System
SCM	Switching Cost Model
SCPM	Signaling Cost Proxy Module
SME	Subject Matter Expert
SONET	Synchronous Optical Network
Sprint	Sprint-Florida, Incorporated
TA 96	Telecommunications Act of 1996
TCPM	Transport Cost Proxy Model
TDS	TDS Telecom/Quincy Telephone
TELRIC	Total Element Long Run Incremental Cost
TPI	Telephone Plant Index
TR	Transcript
TSLRIC	Total Service Long Run Incremental Cost
UNE	Unbundled Network Element
US	Universal Service

LIST OF ACRONYMS	
Vista	Vista-United Telecommunications

I. BACKGROUND AND INTRODUCTION

Section 364.025(4)(b), Florida Statutes, requires this Commission to determine and report to the Legislature the total forward-looking cost of providing basic local telecommunications services on a geographic basis no larger than a wire center, using a cost proxy model to be selected by the Commission after notice and opportunity for hearing. As stated in the law, the purpose of this study is to assist the Legislature in establishing a permanent universal service mechanism. For small local exchange companies that serve fewer than 100,000 access lines, Section 364.025(4)(c), Florida Statutes, allows the Commission in its discretion to select a different proxy model or a fully distributed embedded cost allocation.

From October 12 through October 16, 1998, we conducted a formal administrative hearing according to the provisions of Chapter 120, Florida Statutes, and our rules. Twenty parties intervened and participated in the proceeding. There were many issues addressed at the hearing, including the fundamental issue of defining "basic local service" for the purpose of establishing a permanent universal service mechanism. In Section II of this Order, we discuss our decision to define "basic local telecommunications service" as it is defined in Section 364.02, Florida Statutes.

The principal point of contention between the parties was which cost proxy model should we select for the three major incumbent local exchange companies (LECs): BellSouth Telecommunications, Inc. (BellSouth), GTE Florida, Inc. (GTEFL), and Sprint-Florida, Incorporated (Sprint). BellSouth, GTEFL, and Sprint either sponsored or supported the BCPM 3.1 cost proxy model. AT&T Communications of the Southern States, Inc. (AT&T) and MCI Telecommunications Corp. (MCI) sponsored the HAI 5.0a cost proxy model. Both models contain highly complex algorithms and require thousands of discrete input values. Proponents of both models argued that while neither model was perfect, their model was superior and best met the requirements of Section 364.025(a), Florida Statutes. In Section III of this Order we provide a detailed discussion of both models and a full explanation of our decision to adopt the Benchmark Cost Proxy Model 3.1. We also discuss our decision to require the BCPM sponsors to make certain model revisions and submit a revised version of the model no later than January 12, 1999. In Section IV of this Order, we explain our decision to require the aggregating of costs at the wire center level.

In Section V of this Order, we determine the numerous input values for the model, including such items as fill factors, poles, taxes, expenses, digital loop carriers, and cable costs, and we explain our decision that for all inputs not specifically addressed in this Order, each LEC's proposed inputs are reasonable surrogates for an efficient provider's inputs. The specific values that we adopt are found in Appendix A.

As we explain in Section VI of this Order, BellSouth, GTEFL, and Sprint are the only three local exchange companies that must use the cost proxy model selected in Section II. Due to the required structural changes to the model, we are unable to provide final cost proxy model results. Appendix B to this Order shall be filed with the report to the Legislature and will contain the final cost proxy model results.

As we explain in Section VII, we support the use of the embedded cost methodology proposed by the small LECs with several required adjustments. The embedded cost methodology produces a lower cost for basic local service than the outputs of the models, and we believe that it is appropriate to use the lower costs. In addition, we also provide forward-looking cost data so that the Legislature has the entirety of the information available for the small LECs. The seven small LECs advocated an embedded cost study methodology for determining their costs. No party opposed the small LEC cost methodology. One commissioner dissented on this issue. He does not believe that the Commission should endorse and submit to the Legislature embedded cost data for the small LECs. Instead, he believes that forward-looking data resulting from a cost proxy model should be used consistently for small and large LECs in any effort to facilitate competition through the creation of a permanent, intrastate universal service mechanism.

Set forth below is our Order in compliance with the statutory mandate of Section 364.025(4)(b) and (c), Florida Statutes.

II. DEFINITION OF BASIC LOCAL TELECOMMUNICATIONS SERVICE

A. Introduction

This issue asks the first fundamental question with regard to our selection of a cost proxy model to determine the cost of basic local telecommunications service for the purpose of establishing a permanent universal service mechanism. That question is how should we define "basic local telecommunications service" as it is used in Section 364.025(4)(b), Florida Statutes.

B. Discussion

The FCCA argues that we should adopt a definition of basic local telecommunications service that accounts for the full range of profitable exchange services, not merely "dial tone" service. The FCCA contends that the Legislature must have this information on the typical family of services that comprise basic local telecommunications service so that it can accurately assess the profitability of residential service and the need, if any, for state universal service support. The FCCA argues that the cost of the typical family of services should include the cost of dial tone service as well as the costs associated with a typical spending pattern of optional calling, access service and vertical services. The FCCA believes that this definition should be used in choosing the appropriate proxy model so that the model will recognize that the network facilities which provide local exchange service provide other services as well.

The FCCA also argues that, as a practical matter, a cost study for basic local telecommunications service will necessarily include other services and cannot be simply limited to dial tone service. The FCCA contends that a large portion of the facilities used in providing basic local telecommunications services are used to provide various other services, including switched access, vertical services and other intraLATA services. As a result, the FCCA believes, this Commission cannot determine the cost of dial tone service without including in that cost the functionality which underlies numerous other services. If we were to do otherwise, the FCCA believes, the Legislature might end up comparing the full cost of the loop and the switch to only the price of dial tone service. Such an inappropriate comparison may result in an erroneous conclusion that a government subsidy is needed. The FCCA does not believe that it would be wise to attempt to allocate a portion of the cost of the loop and the switch to dial tone service, as it contends that this not easily accomplished and is an inherently arbitrary approach. According to the FCCA, such an allocation runs counter to the realities of the telecommunications marketplace. A customer cannot order basic dial tone service from one carrier and vertical services from another carrier. These services must all be ordered from a single carrier, whether it be the incumbent or a new entrant. Further, the revenues from all of these services are the revenues any company serving an individual residential customer would expect to receive to offset the cost of serving that customer and therefore represent the true revenues that a carrier expects to receive from a customer for basic local service. The FCCA argues that a subsidy is necessary only when the total revenues a company expects to receive from customers for a service are inadequate to recover the costs of the service. The FCCA then reaches the FCC's conclusion that "failure to include all revenues received by the carrier could result in substantial overpayment of the carrier." <u>See</u> FCC Report and Order on Universal Service, CC Docket No. 96-45, FCC 97-157, ¶200 (Universal Service Order).

The FCCA further supports its position through an analysis of the distribution of BellSouth's residential local revenues. The FCCA claims that 91% of BellSouth's residential customers purchase more than dial tone local service from BellSouth. The FCCA argues that this figure provides a truer picture of the actual costs and revenues and thereby the need or lack thereof for a government subsidy (state universal service funding). The FCCA also contends that BellSouth's argument that only the cost of dial tone service should be included since a customer can order the local loop by itself through BellSouth is a theoretical argument not based on the reality that the 91% figure above demonstrates. The FCCA believes it completely unnecessary to subsidize BellSouth and GTEFL's very profitable residential service because of their "distorted 'dial tone' analysis."

The FCCA contends that we have adequate statutory authority to employ the definition that the FCCA advocates. The FCCA argues that Section 364.025(4)(b), Florida Statutes, does not limit us to consideration of only "dial tone" service in our cost determination. Instead, the FCCA believes that this statutory provision requires us to prepare a cost study to assist the Legislature in establishing a permanent universal service mechanism. The FCCA notes that Section 364.025(1), Florida Statutes, defines universal service as an "evolving level of access to telecommunications services . . ." The FCCA then argues that it is clear the Legislature intended that we are to determine the cost of universal service in this proceeding. Accordingly, the FCCA believes that this specific definition of universal service in the statute gives us adequate opportunity and discretion to adopt the FCCA's typical family of exchange services definition. The FCCA argues that it would be inconsistent with the legislative intent of the statute in this universal service proceeding to limit the scope of the definition of basic local telecommunications service to that found in Section 364.02(2), Florida Statutes. The FCCA contends that this more limited definition was intended to govern the rates an LEC must freeze when choosing price cap regulation, not to govern a universal service proceeding.

The FCCA argues that even if we do not adopt the FCCA's family of services definition for basic local telecommunications services, we should still calculate the family of services cost in addition to the dial tone cost. The FCCA states that we should report both cost figures so that the Legislature has the information necessary to make an informed decision on the subsidy (universal service funding) issue. AT&T, e.spire, MCI, and WorldCom adopt the arguments made by the FCCA with regard to this issue.

On a similar note, the Attorney General argues that if the cost proxy model selected includes the entire cost of the loop and non-traffic-sensitive central office equipment (NTS-COE) facilities, the applicable revenues to be used as a comparison (benchmark) to those costs must be the revenues from all services which use, share and benefit from the use of the loop and NTS-COE facilities. The Attorney General notes that the FCC-State Joint Board and the FCC agree with this position. See FCC 97-157, ¶200. The OPC makes a similar argument with regard to the benchmark comparison.

In contrast to the FCCA, BellSouth believes that the answer to what constitutes "basic local telecommunications service" in Section 364.025(4)(b), Florida Statutes, is clearly provided by Section 364.02(2), Florida Statutes. BellSouth essentially argues that the same term found in one section of Chapter 364 is specifically defined in another part of the same statute. As a result, the interpretation is simple and requires only a reading of the term as it is defined by the plain language of the statute. ALLTEL, the Attorney General, Northeast, the OPC, and Vista make a similar argument for use of the definition of basic local telecommunications service found in Section 364.02(2), Florida Statutes.

The FCTA also makes an argument similar to BellSouth's, but with two additional points. First, the FCTA stresses that the appropriate definition of "universal service" is a separate issue not specifically addressed in this proceeding. Second, the FCTA argues that universal service support should not apply to business line services but only the first residential line. Time Warner adopts the FCTA's position on this and all other issues before us in this proceeding.

BellSouth does not agree that Section 364.025, Florida Statutes, is ambiguous on this issue, as the FCCA and AT&T argued. BellSouth does not believe that the statute's definitions of basic local telecommunication service (Section 364.02(2)) and universal service (Section 364.025(1)) are in conflict. BellSouth contends that the first statutory provision clearly defines the term, while the latter recognizes that there may be a need in the future to redefine basic service based on changes in technology, services, and market demand.

BellSouth argues that the FCCA and AT&T's agenda underlying their position on this issue is obvious. BellSouth believes that these parties are ignoring the plain meaning of the statute to ensure that any universal service fund that may arise is as small as possible. BellSouth argues that these parties desire such an outcome because they do not serve local residential customers in rural high cost areas, the customers who stand to benefit the most from a universal service fund.

BellSouth believes that the FCCA and AT&T have pursued the goal of making a universal service fund as small as possible in two distinct ways. First, BellSouth argues that through use of the family of services definition these parties seek to artificially raise the level of revenue available to support basic local telecommunications service in order to reduce the size of any subsequently created universal service fund. BellSouth contends that the use of such a definition would only serve to maintain the implicit subsidies that an explicit universal service fund is designed to eliminate. Second, BellSouth believes that AT&T and the FCCA's position that high and low cost areas should be averaged statewide clearly seeks to eliminate the need for any universal service subsidy to high cost areas of the state.

In addition, BellSouth argues that the FCCA and AT&T's proposal would move the Commission beyond the relatively narrow legislative mandate for this proceeding, which is to determine the cost of basic local telecommunications service. BellSouth believes that it is inappropriate to consider larger policy decisions involved with setting the size of a universal service fund in the context of this proceeding.

Finally, BellSouth believes that this issue boils down to a determination of what service(s) constitute "universal service." In other words, what level of service should be universally available to all Florida citizens? BellSouth notes that although the FCCA and AT&T argue that all residential revenues should be taken into account when any future universal service fund is considered, they do not argue that every residential service must be offered as a part of universal service. BellSouth argues that this observation supports its conclusion that these parties are not arguing for an expanded definition of universal service or basic local telecommunications service but instead are trying to interject policy and economic issues not within the scope of this proceeding.

GTEFL also supports the definition of basic local telecommunications service found in Section 364.02, Florida Statutes. GTEFL points out that Section 364.02 defines specific terms, such as "basic local telecommunications service", for all of the provisions of Chapter 364, including Section 364.025(4)(b). GTEFL believes that this is a clear statutory mandate with regard to defining the term in question and is consistent with the maxim of statutory interpretation that statutory provisions must be read in relation to one another. Accordingly, GTEFL contends that we cannot accept the arguments of the FCCA and AT&T to create a new definition for the purpose of this proceeding. GTEFL believes that this is an attempt to include as many services as possible in the revenue benchmark that will likely be part of the universal service funding scheme. GTEFL stresses that this funding issue is not before us in this proceeding.

In slight contrast to BellSouth and GTEFL, Sprint supports the definition of basic local telecommunications service provided by the FCC in Paragraph 56 of its Universal Service Order. In this order, the FCC defines the level of service for universal service support as single party service; voice grade access to the public switched network; dual-tone multi-frequency signaling or its functional equivalent; access to emergency services; access to operator services; access to interexchange service; access to directory assistance; and toll limitation service for certain customers. Sprint contends that this definition does not differ significantly from the definition found in Section 364.02, Florida Statutes, advocated by the other Florida LECs in this proceeding. Sprint notes that it has provided cost information for the specific costs that are not included in the FCC definition but included in the Florida statutory definition: the cost of adding white pages and the cost of access to relay services.

Sprint strongly disagrees with the "typical family of services" definition advocated by the IXCs in this proceeding. Sprint believes that this proposal, which would require a determination of the average revenues per residential customer for all services provided by the LEC, is inconsistent with the requirements of Florida and federal law. Sprint further adds that the proposal is not responsive to any issue for which the Legislature requested a study and report by the Commission. Sprint agrees with GTEFL and BellSouth that Section 364.025(4) uses the phrase "basic local telecommunications service" in the manner in which the Legislature defined the term in Section 364.02, Florida Statutes.

Sprint supports this conclusion with the statutory construction maxim found in Vocelle v. Knight Bros. Paper Co., 118 So.2d 664 (Fla. 1st DCA 1960), where the Court stated that when a statute contains a definition of a word or phrase, that meaning must be ascribed to the word or phrase whenever repeated in the same statute unless a contrary intent clearly appears. Sprint contends that a contrary intent does not appear; moreover, the other vertical services that the IXCs wish to include in their proposal are expressly included within the definition of the term "non-basic service" in Section 364.02(8), Florida Statutes, and "network access services" in Section 364.163, Florida Statutes. With regard to the federal definition, Sprint simply argues that like Florida's definition of basic local telecommunications service, the FCC's definition does not include the IXCs' "family of services" such as toll, vertical features or access service.

Sprint argues that use of the typical family of service definition, in conjunction with the proposal to use average revenues from all sources, is clearly inconsistent with the Telecommunications Act of 1996. The intent of the Act was to promote local exchange competition and make implicit subsidies (universal service support) explicit through a universal service fund. The reason for this change in policy is that competition should drive prices closer to cost, and thus implicit subsidies derived from non-basic services would not be sustainable in a competitive market. A universal service fund would take the place of implicit subsidies and seek to preserve the policy goal of universal service in a competitive environment. The Act did not intend for the implicit subsidies to continue in a competitive local exchange market.

Sprint also states that use of average revenues also serves to disregard the wide variance in revenues and profitability of individual customers based on the mix of services used by the customer. For example, customers that only subscribe to basic service would be less profitable to an LEC or a new entrant. Because of competition, the prices for the more profitable customer who uses a significant amount of vertical services should be driven down, thus eroding the source of subsidies for the less profitable customers. Sprint points out that a survey of the highest and lowest revenue categories of its own customers indicates a range in revenues from services other than local service from $51.12 to $.70. Sprint believes that these figures underscore its position that implicit universal service funding will not be sustainable in a competitive market. In conclusion, Sprint argues that the IXCs' proposal will only serve to prolong the implicit subsidies derived from customers who purchase significant quantities of toll services and vertical features.

Frontier, GTC, ITS, and Quincy did not take a position on this issue.

C. Conclusion

We recognize that the parties have presented positions and arguments on various issues involving universal service under the umbrella of this issue. Those issues include whether there should be a state universal service fund and to what revenue benchmark should we compare the cost to determine the funding amount. These other issues are not a part of this hearing process and, moreover, are not relevant to our decision on determining a definition for basic local telecommunications service. This issue of defining basic local telecommunications service is a question of statutory interpretation.

Section 364.025(4)(b) states as follows:

> To assist the Legislature in establishing a permanent universal service mechanism, the

> Commission by February 15, 1999, shall determine and report to the President of the Senate and the Speaker of the House of Representatives the total forward looking cost, based upon the most recent commercially available technology and equipment and generally accepted design and placement principles, of providing basic local telecommunications service on a basis no greater than a wire center basis using a cost proxy model to be selected by the commission after notice and opportunity for hearing.

The parties note two principles of statutory construction that provide guidance in our interpretation of the term "basic local telecommunications service" in this statutory provision. The first principle, as cited by Sprint in the Vocelle decision and previously discussed, is that when a statute contains a definition of a term, that meaning must be ascribed to the term whenever it is repeated in the same statute unless a contrary intent clearly appears. The other useful principle, as argued by GTEFL, is the maxim that statutory provisions must be read in relation to one another.

The first question then is whether the statutory provision itself defines the term. As stated above, Section 364.025(4)(b), Florida Statutes, does not define "basic local telecommunications service." Next, we should examine the entire section, that is, Section 364.025, Florida Statutes. Upon examination of the entire section, it appears that there is no definition to be found.

As described above, several parties, particularly the FCCA, argue that Section 364.025, Florida Statutes, does provide a definition for basic local telecommunications service or, at a minimum, gives us the discretion to determine or create a definition of basic local telecommunications service for this proceeding. The FCCA relies on Section 364.025(1), Florida Statutes. Section 364.025(1), Florida Statutes, states in pertinent part:

> (1) For the purposes of this section, the term "universal service" means an evolving level of access to telecommunications services that, taking into account advances in technologies, services, and market demand for

> essential services, the commission determines should be provided at just, reasonable, and affordable rates to customers, including those in rural, economically disadvantaged, and high cost areas.

The FCCA argues that because we are to determine the cost of basic local telecommunications service for the purpose of establishing a permanent universal service mechanism, we can equate basic local telecommunications service with universal service and create an "evolving" level or definition of basic service.

We disagree with the FCCA's interpretation of Chapter 364, Florida Statutes, in this instance. As BellSouth and many of the parties argue, Section 364.02(2), Florida Statutes, specifically defines "basic local telecommunications services" as follows:

> (2) "Basic local telecommunications service" means voice-grade, flat-rate residential, and flat-rate single-line business local exchange services which provide dial tone, local usage necessary to place unlimited calls within a local exchange area, dual tone multifrequency dialing, and access to the following: emergency services such as "911," all locally available interexchange companies, directory assistance, operator services, relay services, and an alphabetical directory listing.

Not only does Section 364.02, Florida Statutes, define the term in question, but it also begins with the preface: "As used in this chapter: ..." Thus, throughout Chapter 364, Florida Statutes, the Legislature clearly and specifically intended that whenever the term "basic local telecommunications service" is used, the definition found in Section 364.02(2) is to be applied. Such an interpretation also agrees with the statutory construction principles cited above by the parties. If the Legislature had intended that we determine the cost of "universal service" as the FCCA suggests, it could have done so, but it did not. Instead, the Legislature used the term "basic local telecommunications service," a term clearly defined in Section 364.02, Florida Statutes. Accordingly, we find that, for purposes of this proceeding, we shall define basic local telecommunications service referred to in Section 364.025(4)(b), Florida Statutes, as it is defined in Section 364.02, Florida Statutes.

III. COST PROXY MODEL TO DETERMINE THE TOTAL FORWARD-LOOKING COST OF PROVIDING BASIC LOCAL TELECOMMUNICATIONS SERVICE

A. Introduction and Overview

This issue concerns which of the two cost proxy models offered in this proceeding, the HAI Model Release 5.0a sponsored by AT&T and MCI (hereafter, HAI or HAI 5.0a), or the Benchmark Cost Proxy Model Version 3.1 endorsed by BellSouth, Sprint, and GTEFL (hereafter, BCPM or BCPM 3.1), should we select as the platform for estimating the forward-looking cost of providing basic local telecommunications service. Both models contain highly complex algorithms and require thousands of discrete input values. Originally developed and submitted to the Federal Communications Commission (FCC) and the Federal-State Joint Board on Universal Service, both models have continued to evolve over roughly the past two years.

At the outset, it is important to note that the revisions to Section 364.025, Florida Statutes, provide that the cost of basic local telecommunications service is to be determined using a "cost proxy model," a term that arose in the FCC's universal service proceeding. As used by the FCC, a cost proxy model does not use any entity's embedded costs, nor does it attempt to mirror any firm's network architecture and underlying cost structure. Rather, since the FCC was attempting to revamp its high-cost support program to make it competitively neutral, they sought a surrogate measure of the cost of providing basic local service; hence, "cost proxy." The surrogate or proxy cost is intended to represent the forward-looking cost that any telecommunications provider, regardless of identity, would incur in offering basic local service in a given geographic area (on a going-forward basis).

While the concept of a cost proxy model is relatively straightforward, evaluating what constitutes an "appropriate" model is not, due to the complexity inherent in any such model. We have divided our discussion of this issue into several sections. After this initial section, Section B provides a brief discussion and summary of the FCC's 10 cost model criteria contained in its May 7, 1997, Universal Service Order. Section C consists of an overview of each model's approach to customer location and network design. Section D focuses on key modeling issues where HAI and BCPM have different approaches, and this section in turn consists of subsections dealing with specific topics. Section D-1 concerns whether a cost proxy model should build plant to households or to housing units. Section D-2 pertains to whether either model's network design reflects the deployment of forward-looking technology. Section D-3 deals with grid versus clustering methods. Section D-3 discusses the internal model consistency tests as represented by minimum spanning tree analyses submitted by parties to this proceeding. Section D-5 assesses various differences in methodology that affect the size of carrier serving areas to which, and in which, outside plant facilities are built. Differences include analog copper loop length, size of digital loop carrier units deployed, whether the provision of advanced services is impeded, and other assumptions regarding distribution plant design (including lot shape, drop lengths, etc.). Sections D-6 and D-7 evaluate each model's treatment of switching costs, and transport and signaling, respectively. Finally, our conclusion regarding the selection of a cost proxy model is contained in Section D-8.

B. FCC Criteria for Forward-Looking Cost Studies

The FCC's Universal Service Order contains 10 criteria that a forward-looking economic cost (FLEC) study must satisfy in order to be considered for use in determining federal universal service support. The FCC concluded that these criteria must be met whether the FLEC study was sponsored by the industry (such as the HAI or BCPM models), or proposed by a state as the basis for computing its required interstate high-cost support. While a state is not bound by these standards for purposes of determining the appropriate costs for an <u>intrastate</u> universal service mechanism, they nevertheless can provide insight and general guidance into key issues associated with selecting a FLEC cost proxy model. Accordingly, the following summary of the FCC's requirements lays the groundwork for much of the discussion in this and subsequent sections of this Order.

1. The cost model should incorporate the least-cost, most efficient technology currently providing the supported services. Outside plant constructed by the model must terminate at the LECs' existing wire center locations. The loop design in the model should not impede the provision of advanced services; the model's wire center line counts should equal actual LEC wire center line counts; and the model or study "should reflect the incumbent carrier's actual average loop length."

2. The model or study must include a cost for each function necessary to provide the supported services.

3. Only long-run forward-looking costs, where all costs are treated as avoidable and variable, should be included. The study should reflect the current cost of obtaining telecommunications facilities and equipment.

4. The rate of return used in the model must be either (a) the authorized interstate rate of return (currently 11.25%) or (b) the state's authorized return for intrastate services.

5. Economic lives and net salvage percentages used in the model to compute depreciation expense must be within the FCC-authorized range.

6. The model or study must estimate the cost of serving all households and businesses within a geographic area. The model should derive the cost of serving all lines (including multi-line business and residences, special access, and private lines).

7. The model should assign a reasonable portion of joint and common costs to the supported services.

8. The model and its calculations and all supporting data should be available for review by all interested parties. "All underlying data should be verifiable, engineering assumptions reasonable, and outputs plausible."

9. The model must allow for key inputs and engineering principles to be modified. Some key inputs and principles include: cost of capital; depreciation rates; fill factors; input costs; overheads; retail prices; structure sharing factors; fiber-copper crossover points; and terrain variables.

10. Support calculated by the model or cost study must be deaveraged at least to the wire center level, and to more disaggregated levels if feasible.

FCC 97-157, ¶250

C. Customer Location and Network Design

HAI: Customer Location

According to AT&T/MCI witness Wood, the HAI customer location process first develops a database of customer address records. Data for residence locations are provided by Metromail, Inc. The data on business customers are from Dunn & Bradstreet. The addresses are then geocoded (assigned latitude and longitude coordinates). PNR and Associates actually performs the geocoding on behalf of the HAI sponsors. PNR uses a software program called Centrus Desktop to perform the geocoding; the geocoding used for HAI's customer location process is actual address matching, which is the most stringent standard. Customer locations that cannot be successfully geocoded are placed at surrogate locations. Surrogate points are placed uniformly along the census block (CB) boundaries.

Once the customer locations are established, PNR employs an algorithm that identifies all customer locations within a wire center's boundaries that are close enough to be efficiently engineered as a single telephone plant serving area. This process is called "clustering." Clustering identifies actual groups of customers, and also identifies those customer locations that are not part of such groups. Engineering constraints are applied during the clustering process. Clusters that contain five or more customer locations are classified as "main" clusters. Clusters that contain from one to four customers are called "outlier" clusters. The clustering algorithm then determines to which main cluster the various outlier clusters will be "chained" or "homed." Finally, the clustering algorithm computes the area of a rectangle equal to that of the convex hull covering each cluster, as well as the aspect ratio (ratio of height to width) of this rectangle. Each main cluster and the outlier clusters that home on it are considered a serving area.

HAI: Network Design

According to the HAI Model Description, for main clusters, the model lays distribution plant directly over the rectangular areas where customer clusters are located. This plant extends from the serving area interface (SAI) to the customer premises in the cluster. The basic distribution configuration for the main cluster is a "grid" topology, in which tapering backbone cables run north and south from the SAI, while branch cables extend east and west from the backbone cables past the individual subscriber locations.

The backbone cables terminate one lot width from the east and west sides of the rectangle.

The HAI distribution module performs a test to ensure that the longest combined backbone and distribution cable run does not exceed a user-adjustable maximum copper distance. The default value of this cable run is 18,000 feet.

Main clusters with total areas of less than 0.03 square miles and line densities greater than 30,000 lines per square mile consist of high-rise buildings. When these criteria are met and the model assumes a high-rise, the model further assumes the distribution cable is riser cable and that the SAI is located in the basement of the building.

Outlier clusters are served by the nearest main cluster. A main cluster and any subtending outlier clusters together constitute a serving area. Outlier clusters are connected to main clusters by copper road cables extending from the centroid of the main cluster to the centroid of the outlier. No matter whether a customer is located in a main or outlier cluster, the distribution arrangement at the customer's premises is similar. At a point close to the customer's location, a splice and block terminal is installed to connect a drop cable. Drop lengths are predetermined and range from 50-150 feet.

Fiber feeder is extended to any main cluster that has at least one outlier cluster. The road cable carries an analog voice signal if the right-angle route distance from the main cluster to the farthest customer location is less than a user adjustable distance parameter. If the furthest customer is more than the default distance (18,000 feet) from the main cluster, the cable is assumed to carry a digital T-1 signal to a remote T-1 terminal at the centroid of the outlier and is served by T-1 road cable. From the T-1 terminal, copper cables carrying analog signals extend the remainder of the way to the customer locations within the outlier.

In most cases, copper distribution cable is used to link SAIs to customer premises. Fiber is used when any of the following conditions are met: 1)total feeder and subfeeder is greater than a user-adjustable value; 2) a life-cycle cost analysis shows that fiber is more economical; 3) the longest distribution cable run from the wire center to the farthest corner of the main cluster is greater than a user-adjustable maximum analog copper distance; 4) there is at least one outlier cluster subtending the main cluster;

or 5) the wireless investment cap is invoked and leads to the conclusion that one of two wireless systems is assumed to be the least-cost solution for the serving area.

Although the default feeder architecture in the HAI model assumes rectilinear routing (i.e., North-South and East-West), the model does allow the user to "steer" feeder at a different angle toward a cluster of customers. In addition, the user may vary the HAI model's mix of distribution plant (i.e., how much is on poles, versus how much is buried or underground). Further, the model has the capability of looking at each one of the distribution routes, examining the soil types and all related characteristics (such as depth to bedrock and water table depth), and adjusting the structure mix.

Finally, regarding switching, the HAI Model sizes each switch in each central office based on the office's line counts and traffic characteristics. The user can also identify the type of switch for each office location, input it to the model, size it appropriately, and determine the switching investment.

BCPM: Customer Location

To locate customers, the BCPM first determines where roads are present in a census block. A key assumption of BCPM is that customers are located on or near roads. Next, a "fish net" of microgrids is placed over each census block. A microgrid is an area 1/200th of a degree of longitude and latitude, or typically about 1,500 feet by 1,700 feet. Census Bureau data on housing units and business line data obtained from PNR and Associates are aggregated at the census block (CB) level. (A CB is the smallest level for which Census data are available. A Census Block Group (CBG), which is a collection of CBs, generally contains between 250 and 550 housing units; on average, a CBG consists of 31 CBs.)

The Census block housing unit numbers and business lines are then allocated to each of the microgrids in the census block, based on the percentage of the census block's total road miles that occur in a given microgrid. The result is a statistical distribution of customer locations across the microgrids of a wire center.

According to BellSouth witness Duffy-Deno, the next step is to aggregate the microgrids (along with the estimated locations within each microgrid) into Carrier Serving Areas (CSAs). BCPM's CSAs are known as ultimate grids.

BCPM: Network Design

According to the BCPM Model Methodology, the engineering protocol most central to the BCPM network design is limiting the maximum copper loop length within each CSA to less than 12,000 feet. To maximize attainment of this standard, the maximum CSA (equivalently, ultimate grid) size is typically constrained to 1/25th of a degree latitude and longitude (approximately 12,000 feet by 14,000 feet).

The first step in designing the network in BCPM is to create the feeder cable routes. This is actually done in the preprocessing stage, rather than by the model. Beginning at the wire center, a maximum of four main feeder routes run directly north, south, east, and west from the wire center to serve four feeder quadrants.

If the line count in the center 1/3 of a feeder quadrant is greater than 30% of the total feeder quadrant lines, this feeder remains a single feeder and potentially points (is "steered") to the population centroid of the entire feeder quadrant. The 30% figure is used to determine whether there is sufficient line demand in the middle of a quadrant to support the economics of a single feeder. If the line count in the center 1/3 of a feeder quadrant is less than 30% of the total feeder quadrant lines, the feeder splits into two main feeders, each potentially pointed at the population centroid in one half of the feeder quadrant. Each portion of the split main feeder is sized according to the number of customers that it serves. The length of the main feeder(s) is limited to the minimum distance necessary to reach the last subfeeder of an ultimate grid.

Any time the model logic indicates that the main feeder should be redirected, or split, at the point 10,000 feet from the central office, a test is run to determine if the design produces the least cost network. Total feeder cable length (including feeder, subfeeder and subfeeder part two) for the redirected or split feeder system is compared with the total feeder cable length for a design where the main feeder is continued in the original cardinal direction, i.e., due north, south, east or west, and with subfeeders at right angles to the main feeder. The design with the shortest total feeder cable length is selected. Like the HAI Model, the BCPM can also tilt or steer feeder toward customer locations.

From the main feeder, subfeeders branch out toward the individual ultimate grids. Subfeeder is potentially shared by more than one ultimate grid. A digital loop carrier (DLC) site is established (where loop lengths exceed the copper/fiber breakpoint) within each CSA at the road centroid of the ultimate grid. If a CSA is served by copper feeder, the cross connect where copper feeder facilities are connected with copper distribution facilities (the feeder/distribution interface (FDI) site) is established at the road centroid for that ultimate grid.

Right and left connecting cables extend from the DLC location to the road centroid of each occupied distribution quadrant. These connecting cables consist of horizontal connecting cables that extend east and west from the DLC site and vertical connecting cables that vertically connect the horizontal connecting cable to the road centroid of each of the occupied distribution quadrants.

The type of cable used in the feeder system is determined based on the specified copper/fiber breakpoint. The copper/fiber breakpoint is a user adjustable input. The default input for the copper/fiber breakpoint is 12,000 feet. A copper/fiber breakpoint of 12,000 feet requires placing copper in the feeder if the maximum loop length from the wire center to all customers within an ultimate grid is less than 12,000 feet. If the loop length for any customer in the ultimate grid exceeds 12,000 feet, fiber is placed in the feeder to serve all customers in the ultimate grid. For all loops, cable beyond the DLC site is copper.

With the exception of the ultimate grids that remain microgrids in size (due to their line density), each ultimate grid, or CSA, is divided into four potential distribution quadrants. The ultimate grid is divided into four distribution quadrants at the road centroid of the ultimate grid which corresponds to the DLC site. Once the distribution quadrants are formed, data on the road network is used to determine the lengths of horizontal and vertical connecting cable and backbone and branch cable. For modeling purposes, a road-reduced area is developed as the area encompassed by a 500 foot buffer along each side of the livable roads (e.g., excluding limited access freeways and underpasses).

In determining the number of FDIs to install in an ultimate grid, the BCPM reviews the cable sizing used in the grid. When the distribution cable sizing exceeds 1,200 pairs, the BCPM places an FDI at the road centroid within each populated distribution units, and six are filled and four are empty, there are six households but 10 housing units.

According to BellSouth witness Duffy-Deno, by locating and building to an area that encompasses housing units rather than households, BCPM would build more plant than if it simply built to areas based on households. Witness Duffy-Deno also observed that although the BCPM default is building to housing units, the user can change the module so that it builds instead to households. The user does not have to go to the pre-processing stage to effect this change.

Sponsors of HAI support their claim that plant should be built to households by a very strict reading of Paragraph 250 of the FCC's May 7, 1997 Universal Service Order. Criterion 6 states:

> The cost study or model must estimate the cost of providing service to all businesses and households within a geographic region.

Not surprisingly, BellSouth witness Duffy-Deno asserts that ". . . there is a difference of opinion as to whether the FCC truly meant households or did it mean housing units, or did it mean households with current telephone service. Obviously the sponsors of BCPM interpreted that as housing units." The FCC to date has not clarified what it intended by "household," although both the HAI and BCPM sponsors have maintained their respective interpretations since the May 7, 1997, Universal Service Order was issued.

Witness Duffy-Deno further asserted that the appropriate cost proxy model should be costing what it would take to build plant to housing units because of the incumbent's obligation to serve. Presumably, the witness is referring to an LEC's responsibility to provide service to new customers on demand, in a relatively short period of time. However, when asked, witness Duffy-Deno did not know how much of a difference in the BCPM results it would make if one constructed plant to households rather than housing units.

AT&T/MCI witness Wood states that the HAI model accounts for more than just households with a telephone. HAI includes all locations with a telephone regardless of whether anybody was home when the census was taken. According to witness Wood, any place that constitutes a household, the HAI model builds to it, whether it has a telephone or not. AT&T/MCI witness Pitkin defines a housing unit as what he believes the census bureau defines as a housing unit, which is a livable structure.

AT&T/MCI witness Wood contends that there are structures defined as housing units that would not require telephone service. Moreover, witness Wood alleges that the debate over households and housing units relates more to the line count process than it does to the service process. According to witness Wood, HAI adjusts to the line counts that are provided by the local companies.

GTEFL witness Murphy implied that AT&T/MCI witness Wood was trying to mislead us into believing that vacant housing units are things like dilapidated buildings and barns. Witness Murphy doubted that this would be the case. Further, he pointed out that the Census Bureau data reflect, at any given point in time, that just over 10 percent of the living units are going to be vacant. He believes Florida, in particular, would have significant turnover and significant seasonal vacancies.

On balance, we believe that a cost proxy model for intrastate purposes should build plant to housing units, not just occupied households or households with telephone service. Our conclusion is based on two reasons. First, as alluded to by BellSouth witness Duffy-Deno, Florida imposes on incumbent LECs an affirmative carrier of last resort responsibility to provide service to those who request it, subject to our mandated timetables. (While a CLEC is not subject to the same requirements, it is conceivable that something similar might be imposed in the area in which the CLEC chose to serve -- if the CLEC wished to be designated an eligible telecommunications carrier.) Consequently, an LEC would of necessity be constructing plant to serve some (presently) unserved locations prior to demand materializing.

Second, while we have been unable to discern from the record what the precise impact of this modeling assumption would be on the respective proxy models, we believe the effect on a model's results likely is not insignificant. At the outset it is evident that there are more housing units than households, leading one to conclude more plant is needed to serve the former than the latter. Next, HAI builds plant to clusters consisting of households and business locations, while BCPM constructs plant to grids populated with housing units and business locations. However, once HAI has developed its clusters and BCPM its grids, both models assume that their customer locations are uniformly distributed within the clusters and grids, respectively. The number of lines associated with these serving areas may be trued up to match the overall wire center line counts. However, contrary to witness Woods' inference, this adjustment has no effect on the assumed dispersion of customer locations within a cluster or grid, but only on the number of lines per location.

2. Forward-Looking Technology

Criterion No. 1 in Paragraph 250 of the FCC's May 7, 1997, Universal Service Order specifies that the forward-looking cost proxy model should reflect the least-cost, most efficient technologies currently being deployed to provide supported services. MCI witness Wells acknowledged that the HAI model's use of T-1 technology to serve outlier clusters is not forward-looking. He believes, however, that the cost proxy is not always required to incorporate forward-looking technology. According to witness Wells, the FCC only requires that the technology assumed in the model be least-cost, most efficient, and reasonable technology for providing the supported services that are currently being deployed.

In contrast, the BCPM assumes state-of-the-art technology. In some cases it appears that the BCPM may model a more up-to-date technology than is currently in place in many areas. Witness Staihr contends that forward-looking, economic cost should reflect the forward-looking, currently available technology to provide basic service in the most efficient way possible. In order to build the network, the BCPM model assumes state-of-the-art technology. Furthermore, according to witness Staihr, the reason the network is constructed in such a way is because "the FCC said do it this way." As a result of this decision, the BCPM deploys fiber-based digital loop carrier systems equally in urban and rural areas, but these DLCs are more expensive than T-1 on copper. According to witness Staihr, the BCPM ensures that both urban and rural customers receive the same quality of service by deploying the same forward-looking technology in urban and rural areas.

According to GTEFL witness Murphy, the HAI model uses obsolete technology, and its use of a few large DLC terminals is inappropriate for many reasons. First, HAI does not adhere to the 12,000 foot customer serving area standard. Second, the HAI model deploys outdated T-1 on copper-based DLC. With regard to T-1 on copper, witness Murphy states "that is a 25 year old technology that essentially nobody in this country is deploying at this time." In support of his statement, witness Murphy refers to the comments filed by the Rural Utility Services with the FCC. In a filing made on September 24, 1997, on page 3, the Rural Utility Services states, "More important, no one is installing new copper T-1 systems in rural America today except in a few cases on existing plant."

Sprint witness Laemmli echoed the comments of other LEC witnesses and pointed out that deploying T-1 on copper facilities significantly restricts the bandwidth that can be delivered to a customer. The total bandwidth which must be shared to serve a maximum of 24 customers over a T-1 carrier is only 1.544 mb/s, rather than the entire 1.544 mb/s which each customer may receive from a network using fiber optics and DLCs.

Rather than installing copper-based T-1 facilities, GTEFL witness Murphy opined that a more reasonable design would be a small fiber-fed remote DLC terminal. With such an architecture, if demand for advanced services materializes, satisfying that demand would be a matter of replacing the electronics on the other end of the fiber facility. In contrast, if T-1 on copper were initially installed, additional cable facilities would be required to meet any new demand.

In defense of the HAI model design, MCI witness Wells asserted that based on his many years of experience in outside plant engineering, he believes the HAI Model most closely conforms to the guidelines for a narrowband local access network that is least cost, most efficient, and based on currently available technology.

During his deposition witness Wells acknowledged that copper T-1 is not a forward-looking technology. However, he was quick to add that he does not believe that the criterion of forward-looking technology is applicable to these models. He asserted:

> The FCC criteria - - the technology assumed in the cost study or model must be least cost, most efficient and reasonable technology for providing the supported services that is currently being deployed. Providing broad band services is not a requirement of the model. A requirement of the model is least cost, most efficient, currently available technology and is designed to provide specific services such as plain, old telephone service

> (POTS) and not to provide, you know, any kind of forward-looking service.

Upon consideration, we conclude that, except for HAI's constructing T-1 facilities on copper to outlier clusters, both models deploy reasonable forward-looking technologies. As reflected by MCI witness Wells' statements, the HAI sponsors admit that while T-1 on copper is not a forward-looking technology, it is nevertheless appropriate on the basis of the "least cost" standard in those limited areas where it is deployed. We agree that HAI's use of T-1 on copper to serve outlier clusters, which contain at most four locations, should yield the least cost option for serving such remote, low-density areas. However, Florida is and has been for some time a high growth state. We find it unlikely that an outside plant engineer familiar with Florida's demand growth trends would choose a technology that could not accommodate such demographics in a timely manner. Second, as discussed at greater length in Section D-5, while the network constructed by a cost proxy model need not be able to provide advanced services, neither should it inhibit their eventual deployment. Accordingly, we find that a cost proxy model appropriate for Florida should not assume a network that builds T-1 on copper facilities.

3. Grids v. Clustering Methods

An acceptable cost proxy model must be able to construct facilities sufficient to provide basic local telecommunications service to customer locations. Given an exhaustive source which specifically identified all customer locations, this would be only a moderately difficult task. Unfortunately, no such single source exists. Consequently, each of the models must posit a methodology to estimate where customers are likely to be located, and then propose an approach to estimate the amount and types of facilities necessary to serve those locations. Needless to say, this becomes a daunting task.

As described in Section C, the two competing models take very different approaches to customer locations. The BCPM starts with Census Bureau data on the number of households at the census block level and information on the location of the road network within each census block (CB), and overlays each CB with a matrix of microgrids. Based on an assumption that most customers reside near roads, BCPM estimates a probable physical distribution of customers within a census block by allocating the number of housing units within a census block according to the percentage of the CB's road network that exists within each of the microgrids. The BCPM "grid" approach thus first disaggregates available data to microgrids, and then designs its network facilities by reaggregating the microgrids into "ultimate grids," which is its surrogate for a carrier serving area (CSA). For both models, the CSA represents the area served by a single digital loop carrier (DLC) facility.

In contrast to BCPM's allocative approach, the HAI model identifies by census block actual customer locations, by longitude and latitude, as derived by geocoding customer addresses. However, not all households known to exist within a census block can be geocoded. Where there is a discrepancy between the number known to exist and the number which can be geocoded, the remaining households are assumed to be distributed uniformly around the particular CB's geographic boundary. Next, like the BCPM, subject to certain specified constraints, HAI reaggregates its locations into "clusters." This process is accomplished by starting with a given point and adding to it its "nearest neighbor," with the process continuing iteratively until no more points can be added without violating the cluster design constraints. Clusters with five or more locations are "main clusters," HAI's surrogate for a CSA.

In the next section, we evaluate the various arguments for and against gridding versus clustering approaches to customer locations.

<u>BCPM Grids</u>

According to Sprint witness Staihr, a grid in the BCPM is just an area of land that represents a carrier serving area. Telephone engineers build plant to certain groups of people they decide are going to be served together. There are about 23,000 grids in Florida. All grids must fit within a wire center boundary, because the network will be built based on the wire center. After reviewing where the roads are in a CB, the entire CB is overlaid with micro-grids. Each microgrid is about 1500 feet on a side. On average a microgrid is approximately 58.5 acres.

If a particular microgrid has 10% of the roads for a given CB, it is assigned 10% of the housing units for the CB. According to BellSouth witness Duffy-Deno, microgrids have a spatial orientation and the BCPM spatially locates customers to those microgrids. BCPM does not assign a different latitude and longitude to each housing unit. However, witness Duffy-Deno argues BCPM does locate housing units to a microgrid. According to witness Duffy-Deno, "If we took a map of Florida and overlay -- we would overlay the microgrids, those microgrids aren't random. They have a spatial orientation. Their perimeters are defined by latitude and longitude."

The BCPM overlays the entire state with microgrids. Customers are assigned to microgrids, and then they are aggregated into serving areas. BCPM aggregates microgrids to form what is called an ultimate grid. In a rural area in the interior of a wire center, an ultimate grid will have 64 microgrids in it. An ultimate grid is simply a collection of microgrids. Not all microgrids are populated. The model also divides the area into quadrants based on the road centroid of the ultimate grid. By doing so, it identifies whether each of these quadrants is populated.

AT&T/MCI rebuttal witnesses Wood and Pitkin levy several criticisms against the grid technique employed in the BCPM. First, they note that because BCPM's system of grid aggregation and disaggregation is arbitrary and disregards actual customer locations, it can split up in a random manner natural groupings of customers that could and perhaps should be served together. Because BCPM's grid approach essentially allocates customers to portions of a census block based on road mileage, this problem can arise in at least two ways. First, BCPM divides an ultimate grid into four quadrants. Depending upon where, for example, a grouping of four customers actually are situated relative to a quadrant boundary, these four customer locations could be served in as few as one to as many as four different quadrants. Second, groupings of customers that straddle census block boundaries would not be served by BCPM as a single grouping.

AT&T/MCI witnesses Wood and Pitkin level a second criticism which they assert is a serious flaw that renders BCPM incapable of being adopted as the basis for computing the cost of basic local telecommunications service for purposes of universal service. They note the BCPM allocates census block housing unit data to individual microgrids, with these microgrids subsequently being aggregated to ultimate grids. As a result of this allocation process, microgrids will be assigned fractional customer locations. Because of rounding, it is evident that some customer locations will be dropped and sufficient plant not built to serve them.

Sprint witness Staihr admitted that when microgrids are aggregated back up to form quadrants of ultimate grids, a certain number of persons are served in each quadrant of the ultimate grid.

When one reaggregates what were assigned to the microgrids, if there were some fractions, the result may include a "part of a person." Generally, a part of a person is rounded up or down, and that rounding tends to offset itself.

While acknowledging that under certain conditions BCPM will drop housing units, or equivalently customers, when it aggregates microgrids to generate ultimate grids, witness Staihr stated that the impact was quite small. Specifically, witness Staihr testified that the lines left out due to rounding amounted to 6/1000 of one percent, or 373 out of 6.6 million lines. He further contended that HAI would not have built plant to these locations either, because the HAI model does not build to housing units but only to houses that have telephones.

AT&T/MCI witnesses Wood and Pitkin also believe that there is a serious problem with BCPM's definition of a grid. Because they are defined by degrees of longitude and latitude, the grids are different sizes in different parts of the country due to the curvature of the earth. The BCPM creates CSAs that are substantially larger in the south than they are in the north. According to Wood and Pitkin, BCPM ultimate grids in Florida vary by more than 6%.

HAI Clustering

During the input development process HAI identifies all customer locations within a wire center's boundaries that are close enough to be efficiently engineered as a single telephone plant serving area. This process is called clustering. Customer locations must meet certain criteria in order to be considered members of a particular cluster. No point in a cluster may be more than 18,000 feet in distance (based on right angle routing) from the cluster's centroid. No cluster may exceed 1,800 lines in size. No point in a cluster may be further than two miles from its nearest neighbor in the cluster.

The customer locations "clustered" by HAI are of two types: address-geocoded locations and surrogate locations. As discussed in Section C, address-geocoded data points are generated using a commercial address mailing list in conjunction with a program that yields the longitude and latitude of the address. For known locations that cannot be geocoded in Florida, HAI assumes that such locations will occur uniformly around the perimeter of the census block that contains them.

The success rate for geocoding customer locations varies by density zone. In the lowest two density zones, 0-5 and 5-100 lines per square mile, 34% and 62%, respectively, of customer addresses in Florida were successfully geocoded. The highest percentage, 85%, occurred in the 100-200 lines per square mile zone; on average, 70% of addresses in Florida were geocoded.

Unlike BCPM's grids, clusters can cross census block boundaries. In earlier versions of the HAI model census blocks (CBs)and census block groups (groups of census blocks; CBGs) were used as boundaries. According to AT&T/MCI witness Wood, customer clusters were found actually to exist on both sides of those boundaries. For that reason, he believes that CBs and CBGs should not be used as boundaries for designing plant and identifying customers. The HAI model no longer uses these type boundaries.

According to witness Wood, computers do not like irregular shapes. HAI creates a rectangle, a regular polygon, that has the same size and the same aspect ratio (the ratio of length to width) as the original irregularly-shaped cluster. A service area is thus developed based on rectangles that overlay the actual clusters. The dimensions of these rectangles are ultimately inserted into the HAI model, and plant is actually constructed to them.

Sprint witness Staihr disagrees with the idea that it would be nearly impossible for a model to use an irregular shaped polygon. He contends that this is exactly what the FCC is doing in its hybrid cost proxy model. According to witness Staihr, the FCC is using a grid laid over a cluster, "a grid very similar to the BCPM's grid." He explains that the FCC first constructs clusters using the technique that BCPM uses to cluster grids. Witness Staihr concludes that the FCC's clustering approach is different from the HAI clustering approach.

BellSouth's witness Duffy-Deno testified that the fundamental unit in the HAI model for customer clustering is the irregular polygon cluster developed by PNR. These irregular polygon clusters can span several census blocks, and distributing customers on the perimeter of the census blocks can yield an abnormal cluster at the boundary.

Sprint witness Staihr observed that a local serving area in the Hatfield Model is a cluster, while the local serving area in BCPM is the ultimate grid. A cluster and a grid are not comparable to one another. Often the HAI clusters are significantly larger.

Accordingly, there will be more BCPM ultimate grids than there will be HAI clusters.

After an examination of PNR polygon clusters and their corresponding HAI rectangles, Sprint witness Staihr noted various anomalies. First, he stated that there is a disparity between the shape and orientation of the underlying PNR polygon clusters and the equivalent rectangle calculated by HAI. Second, the PNR clustering algorithm ignores geographic barriers. For example, some clusters extend beyond the borders of the wire center. Third, some PNR clusters overlap, suggesting the potential to overbuild distribution plant in some areas.

The HAI customer location methodology involves the use of an algorithm to cluster customers. Once customers are clustered into main and outlier clusters, PNR constructs a convex hull around the set of address-geocoded and surrogate points associated with that cluster. The PNR polygon cluster is transformed into a rectangle that may have little resemblance to the original underlying PNR polygon. Since the HAI rectangle is used as the basis for modeling distribution plant, distortions between the shape and orientation of the PNR polygon cluster and the resulting HAI rectangle can result in an understatement of the dispersion of customers in the locations identified by HAI via the PNR polygon clusters. This can, in turn, result in a substantial underestimation of distribution plant.

Conclusion

As noted above, it appears that both models' constructs and their implementation -- HAI's clusters and BCPM's grids -- have their flaws. A virtue of BCPM's grids is a standardized definition, but since it is based on degrees of longitude and latitude, the resulting grids will vary in size depending upon where they are located. Nonetheless, BCPM does not "locate" customers; rather, starting from housing unit and road mileage data at the census block level, it generates a probable distribution of where customers most likely will be located.

In contrast, while HAI also relies on essentially the same census data, it goes a step further and employs address-geocoded information to determine the actual physical locations of many customers. However, it does not build plant to these actual locations. As a modeling convenience, it disregards the actual locations of points within its clusters, as well as the shape and orientation of the cluster, and converts its main clusters to equivalent rectangles. Thus, while HAI initially uses actual locations of some customers, ultimately like BCPM, it assumes a uniform distribution of customer locations within a given cluster.

Moreover, because the HAI model converts its clusters to standardized rectangles, there are instances where the HAI model understates the dispersion of customer locations and thus tends to underestimate the amount of outside plant facilities required. This topic, which concerns the internal consistency of a given model, is discussed at length in Section D-4.

In principle, use of geocoded data on actual customer locations should enhance the accuracy of a cost proxy model. At a minimum we would suggest that a cost proxy model should use available geocoded data as a "sanity check" on the model's dispersion of customer locations (and thus route mileage of plant constructed). Since neither model designs and constructs plant to actual, known customer locations, we conclude that there is no clear basis to endorse one approach over the other. Each model distributes locations throughout its surrogate for a CSA, and then constructs plant to these assumed locations. What is more telling is which model does a better job building plant to where it estimates customers reside.

4. Internal Consistency of the Models: MST Analyses

In April 1998, Sprint representatives met with members of the FCC's Universal Service Branch (now part of the Accounting Policy Division) to convey certain information that they had obtained during a proceeding before the Nevada commission. The substance of this meeting was subsequently made public in an ex parte filing in CC Docket No. 96-45 and provided on this proceeding as an exhibit BKS-2 by Sprint witness Staihr. Specifically, Sprint had gained access to Nevada data that had been geocoded by PNR Associates for the HAI sponsors for certain HAI main clusters. Sprint conducted minimum spanning tree (MST) analyses on a sample of these clusters. A minimum spanning tree, a concept from graph theory, represents the shortest possible path to connect a set of points. The results of Sprint's review of the Nevada PNR data led Sprint to conclude that the amount of distribution cable built to serve certain clusters was significantly less than the MST to connect the original geocoded customer locations.

According to Sprint's ex parte filing, this result, which would likely be more prevalent in low density, rural areas, has three causes. First, once a main cluster is defined, a polygon is logically constructed -- referred to as a convex hull -- that surrounds and contains the points of the cluster, and the area of this polygon calculated. Second, HAI logically constructs around the polygon a "minimum bounding rectangle" oriented north-south/east-west, and computes this rectangle's aspect ratio (ratio of its height to width). Third, the data from the first two steps, by cluster, is actually input into the HAI model, where a rectangle with an aspect ratio equal to step 2 and area equal to the polygon in step 1, is computed. Where the initial convex hull that was constructed is irregular in shape, the HAI process causes the modeled rectangle to understate the dispersion that was present in the original underlying customer locations. The ex parte filing indicates that this phenomenon is exacerbated by two HAI modeling assumptions: (a) that drops are a fixed length, with a maximum of 150 feet in length, and (b) that the backbone and branch cable to which the drops connect only extends to within one lot depth and width in the areas modeled.

In this proceeding numerous parties submitted the results of MST analyses conducted on the model they favor and the model they oppose. There was significant dispute as to whose MST study was most appropriate and the relative importance to be attached to a MST analysis, but general agreement as to its relevance.

According to AT&T/MCI witness Wood, the MST analysis can be used as an internal predictor of a model's reasonableness and to validate what it has done internally. However, it cannot be used to validate whether the model performs well in a real world setting. One can compare geocoded and non-geocoded total customer locations as predicted by the model to a MST analysis, and the total route miles of cable that would be required under either scenario, but one cannot use such an analysis to determine or validate how well a model would perform in terms of producing enough cable to serve actual customer locations. Witness Wood agreed with BellSouth witness Duffy-Deno's description that the MST is purely an internal validation check, and not an analysis that will tell whether a model produces sufficient cable to serve an actual area.

BellSouth witness Duffy-Deno testified that the Minimum Spanning Tree Analysis simply estimates the minimum amount of cable needed to connect customers in their assumed serving areas and compares that minimum connecting distance, as the crow flies, with the amount of cable estimated by the model. The key question is whether the model estimates enough cable to connect customers in the locations identified by the model, not in their actual locations. When the test is applied to the BCPM it was short in 24% of BellSouth's serving areas. When the test was applied to HAI, it was short in 68% of BellSouth's serving areas. Witness Duffy-Deno thus concluded that BCPM is much more internally consistent.

Witness Duffy-Deno stated further that the MST analysis is a test of the minimum amount of cable needed to connect customers in identified locations. That the model might build more than the minimum quantity determined by a MST analysis in one area is irrelevant. It is not proper to offset any shortage identified elsewhere with such surpluses, because it is unknown what the appropriate amount of cable needed to serve those customers actually is. Rather, one just knows that one needs at least the minimum spanning tree amount, which is a low-end benchmark. A cost proxy model needs to reach to that benchmark; how much higher than the benchmark is not known. The witness emphasized that cable lengths estimated by a minimum spanning tree analysis represent the low end, the minimum amount of cable needed to connect customers in a serving area. This is because the MST analysis does not account for the fact that cable has to go around natural or manmade obstacles.

Sprint witness Staihr also agreed that it is improper to offset excess cable lengths in one area with defects that occur in another area. Witness Staihr asserted that when one attempts to "net", the places where one builds more with the places where one builds less, as AT&T/MCI witness Pitkin did in his testimony, the result is a misleading and incorrect analysis.

According to BellSouth witness Duffy-Deno, there are two reasons why the HAI model falls short in connecting customers within the underlying PNR clusters. The first reason is the transformation of an irregularly shaped polygon into a rectangle. This transformation tends to compress dispersion. The dispersion of customers that actually occurs in the PNR cluster is greater than the dispersion within the modeled rectangular area. The cause for this contraction is not only the change in the shape, but also the placement of uniform lots within the modeling area. The second reason is that when the model estimates the amount of branch and backbone cable, it will extend the cables to only one lot's width and depth from the perimeter. This problem predominantly arises in rural areas. In rural areas the default drop length value is only 150 feet, so that the customers are compressed even further into the interior of this modeled area in order to be connected to the branch and backbone cable. A comparison of the amount of branch, backbone and drop cable for this modeled area to the amount of distance needed to connect the customers in the underlying PNR cluster indicated that the model comes up short.

Witness Duffy-Deno acknowledged that the results of the BCPM MST analysis shown in his rebuttal testimony did not treat the road centroid in BCPM's ultimate grids as a node to which plant must be built. In addition, he noted that his MST for the HAI model did not treat the centroid of the main cluster as a node. When these adjustments to include the respective centroids as nodes are made, the HAI would be short in 88% of its main clusters in the lowest density zone, while BCPM is short in 43% of its grids in the lowest density zone.

Sprint witness Staihr presented in his rebuttal testimony the results of MST analyses conducted on BCPM and HAI for Sprint's serving territories in Florida. His MST analysis indicated that in the 0-5 lines per square mile zone, 90.8% of HAI's main clusters in Sprint-United's territory had insufficient plant, while the analogous result for Sprint-Centel was 94.2%. Although he did not have results separated between the (former) United and Centel territories, witness Staihr's rebuttal testimony shows that in the 0-5 lines per square mile zone, 28.8% of BCPM's ultimate grids had insufficient plant.

During cross-examination witness Staihr admitted that his MST analyses for the BCPM did not include a point representing the location of the digital loop carrier site within the ultimate grid. When this adjustment is made, 39.9% of Sprint-Florida's ultimate grids are under built in the 0-5 lines per square mile zone.

AT&T/MCI witness Wood does not believe the MST analysis is valid for estimating the extent to which plant may be under built. He believes that unless one knows where a hundred percent of the people are, the test does not tell one anything about whether either model builds enough plant to reach actual customer locations. According to witness Wood, the test is only useful to compare the results.

AT&T/MCI witness Pitkin contends that the MST test is usually performed on a serving area basis. The HAI model does not estimate cost at any level smaller than a serving area. According to witness Pitkin, a problem with the MST analysis that BCPM proponents performed on the HAI model is that they attempt to break out the serving area and separate the main clusters from the outlier clusters.

Witness Pitkin further contends that the MST is an inappropriate benchmarking tool because the distance based on surrogate locations is exaggerated. He believes that spacing customers as far apart from one another on a road network as possible maximizes the dispersion of those customers; since the MST is a measure of dispersion, this spacing will exaggerate the MST distance. Witness Pitkin believes this was established in his rebuttal testimony, that by substituting a percentage of surrogate locations with actual locations, the MST distance demonstrates proving that actual customers are not spaced as far apart from one another as possible. Furthermore, witness Pitkin believes, an exhibit filed by BellSouth witness Duffy-Deno (an MST analysis on satellite location data using only surrogate points) shows that the MST distance using the surrogate points is 26% greater than the MST distance using actual or observed locations.

According to witness Pitkin, the BCPM sponsors used their serving area (the ultimate grid) as their unit of analysis for the MST analysis on the BCPM, but they used only main clusters in the HAI model. In other words, the BCPM model sponsors used distribution areas for the HAI model, and serving areas for the BCPM, thereby excluding cable in the HAI model that they include in the BCPM model. In addition, by eliminating specific distribution areas from their analysis in the HAI model, they eliminated those distribution areas that they knew satisfied the MST criteria. Therefore, according to witness Pitkin any conclusion that the HAI model only meets the MST analysis in a certain percentage of distribution areas is biased because the analysis does not include the full sample of distribution areas. In the BCPM, however, the full sample of distribution areas is included, even the areas guaranteed to meet the MST, thereby lowering the percentage of BCPM distribution areas that do not meet the MST standard.

AT&T/MCI witness Pitkin contends that the results in his Exhibit DJW/BFP-19, entitled "Comparison of HAI Model and BCPM Model distances to the Minimum Standing Tree Distance by Density Zone," are different than results in other comparisons, because his

MST test is applied consistently to both models. While neither model actually matches the MST in the lowest density zone in witness Pitkin's comparison, the BCPM falls farther short. In the lowest two density zones where USF support is most likely to be required, the HAI Model places 25% more route miles than the MST, while the BCPM places only 8% more route miles than the MST.

Witness Pitkin asserts that the HAI Model places more distribution cable than the BCPM in the lowest two density zones and 3,900 more miles of distribution cable than the BCPM for the state of Florida. According to witness Pitkin, since both models use overly conservative surrogate placement assumptions, the MST analysis is known to be overstated. For this reason, the MST is not a valid comparison for either the HAI Model or the BCPM.

Conclusion

At the outset, we note that our staff and the parties were limited in performing exhaustive, independent review and verification of much of the data underlying these MST analyses, in part due to the compressed time frame and in part due to the confidential nature of key data. There was extensive discussion at the hearings about the proprietary nature of the PNR geocoded data underlying HAI's clusters, and the obstacles that existed in gaining access to it. In fact, the HAI sponsors in this proceeding were subject to the same impediments as other parties, and thus relied on PNR to perform analyses for them. Given these caveats, we must rely heavily on the representations of the parties.

Upon consideration, we believe that several conclusions can be drawn regarding the minimum spanning tree analyses submitted in this docket. First, a MST analysis is an internal reasonableness check on a cost proxy model, but the analysis does not provide the amount of facilities required to serve actual customer locations. BellSouth witness Duffy-Deno stated this most succinctly:

> What the models are doing is -- and what this test is doing is determining whether the model estimates enough cable to serve customers in the locations identified by the model. . . . It has no bearing on whatsoever, or it has no -- it is not related in any way to where customers are actually located. We don't have a comprehensive database on that. This is an internal model consistency test. Does the

model estimate enough cable to serve customers in the locations identified by the model?

Second, we believe that a MST represents the minimum route length, because it assumes routing as "the crow flies," and thus ignores geographic barriers such as lakes and swamps. Third, we believe averaging shortfalls and excesses relative to a MST analysis so that, on average, a model "passes" misses the point entirely. The fact that a cost proxy model installed cable facilities in Northeast Tallahassee well in excess of the cable lengths indicated necessary by a MST analysis would be of little solace to those who resided south of Tallahassee if the model under built to them. A model that is reasonably accurate is estimating plant to built. A model that estimates average plant to build cannot adequately disaggregate costs to target needed support for universal service.

Fourth, while the record is somewhat inconclusive, we find that neither model adequately satisfies a minimum spanning tree test. We believe that certain modifications should be made to the cost proxy model selected. Sprint witness Staihr enumerated certain modifications that could be made to the BCPM model. The BCPM has a constraint that restricts the amount of distribution cable built in a quadrant to less than or equal to the road mileage in the quadrant. It is conceivable that relaxing this constraint, especially in the low-density zones, would reduce any shortfall. We will require that the sponsors relax this constraint in order for BCPM's modeled route miles to equal those of the MST analysis.

A second adjustment mentioned by witness Staihr, as well as BellSouth witness Duffy-Deno, pertains to extending backbone and branch cable not just between lots but to the perimeter of the lot. Witness Staihr stated that this step could be applied to the BCPM model. We agree and hereby require that this modification be incorporated by the sponsors of the BCPM model.

5. Size of Carrier Serving Area

In this section we consider various outside plant design issues that relate, directly or indirectly, to the optimum size of a carrier serving area. In general, the size of a carrier serving area (for HAI, main clusters plus any subtending outlier clusters; for BCPM, ultimate grids) is a function of the maximum copper loop length allowed, the size (capacity) and number of digital loop carrier remote terminals installed, and the number of lines served.

Topics that are indirectly related include whether the CSA impedes the deployment of advanced services, lot shape, and deployment of cable across lots.

12 v. 18 Kilofoot Copper Loop Length

According to AT&T/MCI witness Wood, the HAI model will allow loops up to 18,000 feet. He claims, however, that there are no 18,000 foot copper loops in the model runs done for Florida and submitted in this proceeding for any of the companies. Less than 1% of the total copper loops in either model are more than 12,000 feet.

BellSouth witness Bowman testified that the geographic size of BCPM's ultimate grid (approximately 12,000 by 14,000 feet) is used to limit the design of copper loops so that they generally do not exceed more than 12,000 feet. Witness Bowman stated that loops that are 12,000 feet or less can easily provide quality voice-grade service if the proper design criteria are used.

Witness Bowman asserted that the Hatfield model in this proceeding has constructed in excess of 47,000 lines greater than 12,000 feet in length. In contrast, BCPM has about 4,000 lines that are in excess of 12,000 feet. When witness Bowman was asked how there could be loops in excess of 12,000 feet if the BCPM has a modeling criterion of 12,000 kilofeet, he explained: "It's a general design constraint, and we use the 12,000-foot length as nominal. If you recall, these serving areas are approximately 12,000 feet by 14,000 feet at their maximum. So within that, you could find some loops as long as about 13,000 feet under those criteria."

To ensure quality voice-grade service for its long loops, those between 11,100 feet and 13,600 feet, the BCPM uses 24-gauge cable instead of 26 gauge. If a loop is greater than 13,600 feet, BCPM also uses extended range line cards instead of less expensive standard POTS line cards. The Hatfield model does not use extended range line cards on loops beyond 13,600 feet. According to witness Bowman, HAI installs extended range line cards on loops in excess of 17,600 feet for the large DLC systems. For the smaller systems, HAI uses extended range line cards on all of the lines in the system.

According to Sprint witness Staihr, a copper loop longer than 12,000 feet requires a larger gauge cable -- for example, 24-gauge cable instead of 26-gauge cable. In addition, he believes that a loop extending beyond 12,000 feet from the DLC requires an extended range line card based on his discussion with the engineers.

Sprint witness Staihr's analysis indicated that in Florida the BCPM does not have any loops that are over 18,000 feet, although AT&T/MCI witness Pitkin testified that he knew of one. According to AT&T/MCI witness Pitkin, HAI models 84,838 loops in excess of 12,000 feet in Florida.

GTEFL witness Murphy agrees that BCPM generally constrains copper loops from the DLC to the customer to 12,000 feet, while the HAI deliberately designs loops out to 18,000 feet. He agrees that a copper loop beyond 12,000 feet requires a larger gauge cable. In addition, a loop extending beyond 13,400 feet from the DLC requires an extended range line card.

Witness Murphy testified that if the only consideration in this proceeding is cost and the only service that one wants to provide to the consumers in Florida is a voice grade service, then he believes it would be acceptable to use an 18,000 foot standard. But if consumers in Florida want to be able to use their modems effectively and to have a network that will be able to offer the advanced services that the FCC says the network should accommodate, then the 12,000 foot standard should be required. The 12,000 foot standard is the current standard that GTEFL and all of the LECs use across the country.

The AT&T/Lucent Outside Plant Engineering Handbook states that copper loops extending from a DLC generally should not exceed 12,000 feet. MCI witness Wells noted, however, that 18,000 feet is established as the distance over which a copper pair can transmit without load coils. He notes that this is also the standard in the outside plant engineering handbook and several other sources, including the BOC Notes on the Network. Witness Wells also identifies other standards regarding decibel loss. He states:

> Loss in terms of decibels on a loop cannot exceed eight and a half, including the central office. And for next generation digital loop carrier, the channel unit card becomes an extension of the CO. So you've got eight and a half db loss budget and then you go to loss charts and so forth and you can determine the distance that you can go from the DLCRT on

> certain gauges of copper and whether or not it's aerial buried, so forth and so on, to get so far out.

Witness Wells claims the HAI model is designed to this standard.

Witness Wells agrees that Section 12, on page 5 under 12.1.4, Carrier Serving Area, of the BOC Notes on the Network says the maximum loop length in a CSA is 12 kilofeet for 19-, 22-, or 24-gauge cables and 9 kilofeet for 26-gauge cables.

AT&T contends that the only real disagreement between the parties is what cost the models should include for the extended range card electronics necessary to permit quality service in the very small percentage of loops over 12,000 feet.

According to the testimony of MCI witness Wells, the HAI 5.0a already includes the cost of extended range cards for all lines longer than 12,000 feet served by small DLC terminals, as well as the cost of extended range cards (ERC) for copper loops over 17,600 feet served by large DLC units.

The BCPM cost input values for extended range line cards used by BellSouth and GTEFL are twice as much as a standard card for all lines served by large DLC units for copper loops greater than 13,600 feet.

BellSouth witness Bowman alleged that the HAI engineers copper loops beyond the DLC up to 18,000 feet without extended range channel unit cards. HAI does place standard channel unit cards (plug-ins) in its DLCs. According to witness Bowman, the use of standard channel unit cards combined with the length of HAI's loops results in an unacceptable decibel loss.

Standard carrier serving area engineering rules limit the length of the standard 26-gauge copper wire that may extend from the DLC to the customer's premises to 12,000 feet. The 12,000 foot range may be exceeded only if an extended range line card, and larger, 24-gauge cable is used in the loop.

Conclusion

We agree in large part with AT&T that the dispute between the parties is about the cost of the extended range line cards required for certain long loops. The AT&T/Lucent Handbook referred to above indicates that the norm for copper loops is 12 Kft. On the other hand, it then proceeds to specify how to engineer copper loops extending from a DLC remote terminal greater than 12 Kft. Similarly, BellSouth witness Bowman's Rebuttal Exhibit RMB-3, an excerpt from an engineering and planning document pertaining to the DSC Litespan DLC terminal, describes the basic CSA design for this remote terminal, as well as an extended CSA design for serving longer copper loops.

Viewed in isolation, we believe that the choice of maximum allowable copper loop length (12 v. 18 Kft) is likely a cost minimization issue, not an either/or decision. Even assuming that 12 Kft is the rule of thumb, deviations from this standard would be based primarily on what yields the least cost arrangement overall, considering all relevant cost components. Accordingly, we will not place a limit on the maximum allowable copper loop length.

Maximum Size of DLC Units Deployed

HAI

The HAI 5.0a models two types of DLCs: a "high density" and "low density." Like HAI, BCPM models two different DLCs: a small and a large unit.

According to BellSouth witness Bowman, if the ultimate grid or CSA exceeds the limit of 999 housing units, the algorithm determines whether that ultimate grid should be broken down into additional carrier serving areas. The 999 housing unit criterion is an engineering criterion. The factor used for CSA development in the BCPM is a ratio of about 1.2 (approximately 1,200 lines for every 1,000 housing units). The maximum size of the BCPM DLC equipment that can serve a CSA is 1,344 lines. With a fill factor of 90% on that equipment, that brings the 1,344-line capacity down to approximately 1,200.

Witness Staihr testified that 999 housing units is not the maximum number of housing units that BCPM allows to be served per CSA. He explained: "When an ultimate grid is created, and there's a little bit of another ultimate grid left over in a wire center with less than 100 lines, which would be something less than 100 housing units as well, that will be added into that ultimate grade [sic], so they're all served off of the same electronics. It's more efficient to do it that way. So you certainly could end up with more."

BCPM models two sizes of DLCs, one large and one small: 1,344 lines maximum on the large and 240 lines on the small. BCPM places 18,897 DLCs statewide, while HAI installs 10,785. According to the testimony of AT&T/MCI witnesses Wood and Pitkin, BCPM places 223 DLCs that serve only a single household.

According to the HAI model documentation, when fiber feeder is used one of two types of DLC equipment is selected. The first is "high density" DLC. The second is "low density." The choice between these two types is determined for each serving area. If the number of lines is below the user-adjustable threshold default value, the "low density" DLC is used; above that threshold the "high density" DLC is used. Both DLCs are equipped by the model with line cards to provide the "appropriate" grade of service on the analog and digital T-1 pairs fed from the DLC.

AT&T/MCI witnesses Wood and Pitkin argue that BCPM places too many small DLC remote terminals. They assert that this is due to two assumptions in the BCPM: a 12 Kft copper loop length extending from a DLC RT, and a maximum sized DLC sufficient to serve approximately 1000 households. As a result of these assumptions, they assert, in Florida BCPM's average serving area contains only 493 lines. Wood and Pitkin argue that it is possible to avoid placing so many small, expensive DLC RTs if the maximum copper loop length is increased to 18,000 feet (thus allowing more loops to be served by a single DLC, all things equal) and assuming a "large" DLC capable of serving 1800 lines (2016 at a 90% fill factor).

We note that BCPM allows for a DLC to install a second cabinet in order serve up to a 2016-line system. However, this likely would only occur in a very dense area (e.g., a single office complex with many lines).

This subissue hinges on which configuration yields the least-cost choice: a greater number of smaller DLCs coupled with less distribution plant and regular POTS line cards, versus fewer but larger DLCs, more distribution cable plant, and extended range line cards. The only record information on this issue, provided as a late-filed hearing exhibit, consists of the results of two BCPM runs -- one at 12 Kft, one at 18 Kft -- originally prepared as part of a five-state analysis requested by the FCC in its Universal Service docket. The results filed in this proceeding are summed for all Florida LECs. As noted by BellSouth witness Bowman, the BCPM results yield a total investment per line of $1,263 at 18 Kft versus $1,248 per line at 12 Kft. Witness Bowman observes that the "apparent savings from having larger extended carrier serving areas in the Hatfield network is more than offset by the extra cost of needing extended range line cards and larger size and length cable." We note that the specific input values used in these two model runs are unknown; it is quite likely that they differ from those filed in this proceeding. Absent any contrary data, we find that constraining the copper loop length to 12 kilofeet yields the least-cost choice. Moreover, as discussed in the next section, a 12 Kft limit on copper loops ensures that advanced services will not be impeded.

Provision of Advanced Services

The HAI proponents contend that as a result of changes in release 5.0a of the HAI Model, they believe that its longest loops (those over 18,000 feet) can fully accommodate advanced services. Similarly, the BCPM advocates claim its network provides the capability for advanced services when additional equipment is added.

According to AT&T/MCI witness Wood, release 5.0a of the HAI Model replaces the coarse-gauge cable and load coils present in previous versions with T-1 technology. As a result of this change, he believes that its longest loops (over 18,000 feet) can fully accommodate advanced services including ISDN.

The HAI Model 5.0a conducts tests of the outside plant facilities that it models to ensure that the transmission parameters necessary to permit accommodation of advanced services are not exceeded.

Witness Wood notes that the FCC's definition of basic services includes the provision of advanced services. ADSL is available on copper facilities only up to about 18,000 feet. According to witness Wood, with copper facilities longer than 18,000 feet "the service isn't good and the -- the quality isn't good, and the service doesn't work". Witness Wood, however, does not believe that the FCC's May 7, 1997, Universal Service order meant to specify certain bit rates. Criterion No. 1 in Paragraph 250 of the FCC's Order states in part that ". . . The loop design in the model should not impede the provision of advanced services;. . . ."

According to BellSouth witness Bowman, the Telecommunications Act of 1996 specifies that rural customers should have access to services comparable to those of urban customers. Witness Bowman contends that the Hatfield model's minimalist network design will not allow even modems to work for many customers. In contrast, the BCPM network meets design standards which will allow quality modem connections over the network for most customers. He concludes that "the BCPM is the best model for universal service costing because it follows industry accepted design standards used by all telephone companies when they build actual networks, it allows for advanced services when additional equipment is added to the network, and it builds a high quality network over which the people of Florida can actually talk."

The BCPM uses extended range line cards on those loops beyond 13,600 feet. According to witness Bowman, these loops will probably work for voice services. It is unclear whether or not the loops will work well for data services and other advanced services. Witness Bowman believes that in most cases modems would work on loops out to 18,000 feet, but he is concerned with how well they work and the connection rate.

The FCC and the Telecommunications Act require access to comparable advanced services in rural and urban areas. The longer the loop, the more difficult it is to make it work for a modem, and the more difficult it is to make it work for any advanced service. HAI routinely engineers longer loops than does the BCPM.

GTEFL witness Murphy agreed that the FCC requires that the network not be designed in a manner that will impede the implementation of advanced services. Witness Murphy believes that it is important to remain within the guidelines that the FCC has set regarding the network that is modeled, in order to provide universal services and not impede the deployment of advanced services. In addition, he believes that generally accepted engineering practices should be followed.

Witness Murphy testified that one would have to add additional investment to the BCPM network in order to actually provide advanced services, but BCPM has positioned the network so that it could accept and be compatible with that additional equipment. According to witness Murphy, the 12,000 foot standard should be adhered to if "you want your consumers here in Florida to be able to use their modems effectively and to have a network that will be able to offer the advanced services that the FCC says the network should not impede the provision of."

Sprint rebuttal witness Laemmli contends that the HAI model designs a network based on maximum copper loop lengths of 18,000 feet. This design will deny customers with copper loops of that length from accessing advanced services. He believes that forward-looking design standards call for the use of fiber feeder for loop lengths in excess of 12,000 feet.

BellSouth witness Bowman stated that BCPM 3.1 designs a network that has the capability to provide customers in rural and other high cost areas access to advanced services comparable to those provided in urban areas. The BCPM network provides the capability for advanced services when additional equipment is added.

Because the HAI 5.0a only models one T-1 carrier pair per outlier cluster, the model does not have any additional capacity available for requirements such as ISDN, video, or graphics. Witness Bowman asserted that this practice would be inefficient, contending:

> For advanced services, the HAI 5.0a network would have to be overlaid with additional copper cable and repeaters, as well as DLC electronics. This would require digging trenches again, possibly in existing neighborhoods, which is not only expensive, but also very disruptive to existing homes and landscaping. The BCPM 3.1's choice of fiber DLC technology requires only that additional electronics be added at the DLC site.

Conclusion

We note that Section 254(b)(2) of the Act clearly states that "Access to advanced telecommunications and information services should be provided in all regions of the Nation." Deploying technology that would constitute an impediment to providing access to advanced services is unacceptable. We find that HAI's treatment of outlier clusters amounts to such a barrier.

Lot Shape and Deployment of Backbone and Branch Cable

The HAI models rectangular lots that are assumed to be twice as deep as they are wide. It places backbone distribution cable vertically and branch cable horizontally. BCPM models square lots.

The road reduced distribution area is created and used as a modeling tool to estimate backbone and branch and drop cable in the BCPM. Like the HAI model, the BCPM model builds cable between the lots, but BCPM does not go to the end of a lot. It stops at the perimeter because one can place the drop from that location.

According to Sprint witness Staihr, HAI clusters have rectangular lots, and the model always builds the distribution along the short side of the lot. He believes that if HAI made its lots square, it would build more distribution plant. Witness Staihr stated that HAI produces a reduced rectangle by taking the points farthest north, south, east, and west, making a big rectangle, and then converting it to a smaller rectangle. GTEFL witness Murphy alleged that one of HAI's engineering flaws is that its drop lengths links are understated. In other words, the drop will not reach the houses that they are supposed to be serving.

According to MCI witness Wells, the BCPM models customer locations as square lots. He believes this is unrealistic and very inefficient compared to the rectangular lot modeling assumption of the HAI Model.

According to BellSouth witness Duffy-Deno, one reason the HAI model fails the MST test is because when the model estimates the amount of branch and backbone cable, it extends the cables to only one lot's width and depth from the perimeter. In rural areas the HAI default drop value is only 150 feet, so these customers have to be compressed even further into the interior of the modeled area to be connected to the branch and backbone.

Conclusion

As discussed briefly in Section D-4, Sprint witness Staihr and BellSouth witness Duffy-Deno indicated that a possible way to increase the total amount of distribution plant, and thus come closer to matching the length in a minimum spanning tree analysis, was to assume that lots were square rather than rectangular. We agree with MCI witness Wells that a local distribution network architecture based on rectangular lots whose depth is greater than their width is inherently more efficient and requires less cable than BCPM's assumption of square lots. However, we do not find it appropriate to require the use of rectangular lots because it is necessary to model square lots to meet the minimum MST requirements.

6. Switching

The HAI model constructs at least one end office switch in each wire center. It determines the size of the switch by summing the number of switched lines served in the wire center, adjusted for administrative fill, and comparing the result to a maximum default allowable switch size of 80,000 lines. If the number of switched lines served by wire center is, for example, 100,000, the HAI model constructs two 50,000 line switches. In sizing a switch, the model does two additional capacity tests: (1) a comparison of the number of busy hour call attempts produced by all lines in the wire center serving area, relative to the default processor call capacity; and (2) a comparison of the total offered load (in busy hour CCS), relative to the switch default traffic capacity. If either of these capacity constraints is exceeded, the model builds additional switches, with each switch constructed to serve an equal number of lines.

Consistent with the FCC's switching guidelines on cost models (DA 97-1912, Guidance to Proponents of Cost Models in Universal Service Proceeding: Switching, Interoffice Trunking, Signaling, and Local Tandem Investment), the HAI is capable of explicitly modeling combinations of host, remote, and standalone switches. In addition, where such detailed switching cost data is unavailable, the HAI switching module can compute switching using a default "blended" average per line investment that represents an efficient composite mixture of host, remote and standalone switches. The blended cost curve, which has a fixed and a per line component, was developed based on cost data from a Northern Business Information publication, "U.S. Central Office Equipment Market: 1995 Database." The HAI model runs submitted by AT&T and MCI in this proceeding were based on the default blended cost curves.

According to AT&T/MCI witness Wood, the HAI model will size each switch in each central office based on line counts and traffic information for that office. He states that theoretically there are at least two ways to exhaust the capacity of a switch. One is through the total number of lines it can serve, and one is through its central processor that processes calls and processes features. As a practical matter, switch exhaustion is almost always on lines rather than features, but HAI does test both ways to make sure that the switch is sized properly. If the test is close to the threshold for either one of those parameters, HAI places two switches in that central office.

Like the HAI, the BCPM model sizes end office switches subject to three different limiting factors (lines, busy hour calls, and busy hour CCS). If one of these constraints is exceeded, the model builds an additional switch.

According to the BCPM model documentation, there are three stages in determining switching costs for universal service. First, BCPM compiles the switch-specific data inputs to be used for investment development. Second, BCPM generates total switch investments by functional category (FCAT) for each switch. Third, BCPM uses these FCAT investments to generate a Busy Hour unit investment for each basic switch function, based on the subscriber calling and usage rates input into the model.

BCPM first allows for the assembly of various input characteristics by Common Language Location Identifier (CLLI), such as whether the switch is a host or remote, number of switched lines, subtending relationships, and calls and minutes per line by residence versus business. Alternatively, if data at this level of disaggregation is not available, state level defaults can be used. The BCPM also allows for the user to identify a switch vendor type to be used.

Next, functional switch investments for six functional categories are developed. These categories are: processor related cost; line termination -- MDF and protector; line port cost; line CCS usage; trunk CCS usage; and SS7. Three methods are available to develop these investment items. The first approach, the BCPM method, employs default values contained in the model. These default values consist of switch curves by switch type (host, remote, and standalone) that were derived by performing statistical regressions on nondiscounted switch investment data provided by the BCPM sponsor companies. (This data was developed using LEC switching cost models such as Bellcore's SCIS and US WEST's SCM.)

The second approach is the ALSM (Audited LEC Switching Model) method. Where available, this method employs LEC-specific, switch-specific data derived using LEC cost models (such as SCIS or SCM) which is inserted into the BCPM. The third option allows for using within BCPM switch investments from other sources, as long as the data is presented in a compatible format (e.g., separated between host, remote, and standalone). The BCPM uses the information in the LERG to identify which switch is a host, a remote, or a standalone. Given a choice of approach, the unit investments are applied to the respective cost drivers (such as lines or busy hour CCS), to yield total functional investments. Finally, the per unit switching investments for universal service are derived, and the total investment per switch that is attributable to universal service is determined, which is later combined with investments for transport and signaling. In this proceeding GTEFL filed the BCPM using some ALSM inputs, while BellSouth and Sprint used the BCPM method (i.e., the default BCPM switch curves).

According to AT&T witness Petzinger, there are "serious flaws" in the BCPM switch module and modeling errors. BCPM has multiple ways of entering switch price data; they all, however, rely upon data that has been extracted from the proprietary models (SCIS or SCM). The witness noted a few modeling errors in BCPM that she testified should be corrected. First, she stated that the formula that computed the required number of trunks incorrectly used engineered lines, rather than working lines. Second, she observed that there was an apparent incorrect formula associated with how engineering and installation costs for switching are developed in BCPM. Third, witness Petzinger asserted that there was a discrepancy between the cost per line and the amount of usage assigned on a per line basis to universal service, and the total amount of universal service-related switching investment in another place in the model. Upon consideration, we believe that these revisions are reasonable and appropriate, and thus we shall require that the BCPM sponsors make the necessary corrections associated with witness Petzinger's recommendations.

Subject to the above recommended corrections, on balance, we find that there are no apparent major structural differences between the two models' switching cost modules, though there are differences in input values and how they are employed. With respect to the latter aspect, the BCPM uses the LERG to identify the type of switch (host, remote or standalone) currently located in each wire center, and then uses the appropriate type of cost curve to build the same type of switch. AT&T witness Petzinger criticized the BCPM model for assuming that a forward-looking technology would assume that there would be the same kinds of switches in the same locations, and thus no optimization and redesign of the network would occur. We agree with witness Petzinger that the BCPM does not reoptimize the deployment of switching facilities, but neither does the HAI model. Further, as noted above, the HAI model runs filed in this proceeding did not differentiate by switch type, but instead used HAI's "blended" switch curve.

7. Signaling and Transport

The HAI model explicitly computes the investment in signaling links for "A" links (which connect a Signal Transfer Point (STP) to end office or tandem), "C" links (connections between the STPs in a mated pair), and "D" links (connections between STPs of different carrier's networks). It is assumed that these links are all carried on the interoffice transport rings. A minimum of two signaling links are equipped per switch.

The HAI model also computes the costs associated with SS7 traffic by call type. User inputs may be made to specify the number and length of ISDN User Part (ISUP) messages. The Model defaults assume six ISUP messages per interoffice call for set-up, and 25 octets per message. The user may also indicate the number and length of Transaction Capabilities Application Part (TCAP) messages needed for database queries, as well as the percent of calls that require generating TCAP messages. Additional signaling links are added based on message traffic load.

The STP capacity is stated on the basis of total signaling links that can terminate at each STP mated pair, with default values of 720 at an 80% fill, with a maximum STP investment per pair of $5 million. The Switching Control Point (SCP) investment is stated as a function of investment dollars per transaction per second, and reflects the proportion of all calls needing TCAP message generation.

In contrast to the HAI model, the BCPM has a highly simplified calculation. According to the model documentation, the model has a user modifiable input table that reflects the cost of constructing a SS7 network. This table has values per residence and business lines, for small, medium and large companies. The default values were derived by running a beta version of the BCPM Signaling Cost Proxy Model (SCPM) using information from US WEST.

AT&T/MCI witnesses Wood/Pitkin criticize the BCPM transport and signaling modules as being based on embedded network configurations. They state in their testimony: "While the BCPM signaling module uses the existing SS7 signaling network as the basis for the SCPM network (based on embedded data), review of the BCPM signaling calculations indicates that no explicit modeling of signaling cost is performed at this time, which conflicts with one of the FCC's requirements for cost proxy models and F.S. 364.025 (4)(b)."

While we agree that the BCPM currently does not explicitly model an SS7 signaling network and that the HAI model does a superior job here, we believe a few clarifications are in order. First, witnesses Wood and Pitkin assert that the SCPM somehow uses "embedded data," where "embedded data" is implied to have a negative connotation. While the BCPM documentation is not clear, it appears that the BCPM may have developed the SCPM module, populated it with unit cost data on SS7 network components, and run the module based on the "embedded" characteristics reflecting US WEST's SS7 network. Notwithstanding whether US WEST's data is representative of Florida operations, if our description is correct, it would not be accurate to refer to the cost result as "embedded." Second, witnesses Wood and Pitkin allege that because the BCPM does not explicitly model a signaling network, it is in conflict with the FCC's criteria for proxy models. We believe that this allegation is without merit. The FCC's criterion no. 2 from Paragraph 250 of the May 7, 1997, Universal Service Order actually states: "Any network function or element, such as loop, switching, transport, or signaling, necessary to produce supported services must have an associated cost." Both models produce an "associated cost" for signaling; they differ in the details. Third, the BCPM documentation indicates that signaling comprises less than one-half of one percent of the total investment per line.

According to the BCPM model documentation, the Transport Cost Proxy Model (TCPM) module uses information on existing interoffice traffic routing relationships between host, remote, and tandem switches to develop forward looking transport costs using SONET technology. Using actual data on homing relationships, V&H coordinates, the number of working lines, and line to trunk ratios, optimization formulae are employed to yield the most efficient SONET ring topology for a given area. The output of this module is a cost per line for a given SONET ring.

Similarly, the HAI model also assumes all interoffice transport facilities are provisioned on SONET rings. HAI's interoffice network consists of rings for two classes: host-remote and tandem/host/standalone. The model includes an optimization algorithm, whereby a given central office (CO) is placed on a particular SONET ring based on the difference between serving the CO as a node on the ring, as opposed to direct investment.

We note that there is very little information available in this proceeding regarding the modeling of interoffice transport, other than that contained in the respective models' documentation.

Based on our review, we did not discern any glaring flaw in either model's treatment of transport, and thus conclude that either appears reasonable.

E. Conclusion

Both models submitted in this proceeding, the HAI 5.0a and the BCPM 3.1, suffer from various deficiencies. This should come as no surprise, since, by definition, a model does not replicate reality with complete accuracy, but rather attempts to generate a reasonable estimate of some statistic. In this proceeding, limitations are imposed on both model proponents at the outset. First, although their assignment is to estimate the cost of providing basic local service, they must disregard the current placement of facilities (model must reflect forward-looking technology and design and placement principles). Second, while the network to be constructed by a model must be adequate to provide service to all customers, there is no comprehensive database available that identifies the locations of the customers to whom service must be provided.

Nevertheless, we are required to choose between the HAI 5.0a and the BCPM 3.1, in order to comply with Section 364.025(4)(b), Florida Statutes. We believe that, on balance, a model that incorporates a clustering approach in conjunction with geocoded data can better reflect the actual customer groupings to which a network engineer would design outside plant facilities. The BCPM's gridding approach can artificially split up natural clusters of customers, and may in some cases result in an inefficient layout of local distribution facilities. Moreover, the BCPM's grid, while representing a standardized unit of analysis, varies in size according to latitude. While it yields an estimate of the probable distribution of customers, the BCPM does not take advantage of available geocoded data on actual customer locations; it thus builds plant to likely customer locations, not actual locations.

In contrast, the HAI 5.0a incorporates a clustering technique that uses as its starting point geocoded data on actual customer locations, and attempts to design a forward-looking, efficient, cost-effective network for the provision of local basic service. We find, however, that the HAI 5.0a has certain defects and we cannot recommend reliance on its cost estimates. While the HAI model starts out with data on actual customer locations, it disregards much meaningful information and chooses not to build plant to any of these known sites. Instead, for modeling convenience, what began as irregular polygons reflecting natural customer groupings were transformed into regular rectangles. Unfortunately, this step appears to have introduced a downward bias in the model. Thus, in low-density, rural areas, those areas where concerns about sustaining universal service should be focused, the normalized rectangles understate the dispersion that was present in the original points that comprised the irregular-shaped polygon. We acknowledge the vigorous debate in this proceeding over the relevance of MST analyses and the proper way they should be conducted. Nevertheless, we find the analyses and testimony provided by witnesses Staihr and Duffy-Deno on this issue most compelling as to the internal inconsistency within the HAI model.

We wish to emphasize that the BCPM also has its defects. As discussed in prior sections of this Order, the BCPM also has shortfalls in the route miles of plant built, relative to a MST analysis, albeit much less then the HAI model. Witnesses Staihr and Duffy-Deno, however, provided diagnoses of probable causes of these gaps between the BCPM and the MSTs, and offered various remedies.

Another aspect of the BCPM that we find troublesome is that it installs many more digital loop carrier systems than does HAI. As discussed earlier, this result is due primarily to BCPM constraining copper loop lengths to 12 Kft and, to a lesser extent, not installing the largest DLCs available. One anomaly that occurs is that the model may build a DLC to serve only a few customers; since this is undoubtedly not the least-cost option, care should be exercised in employing the model's results. We observe, however, that such oddities are virtually inevitable when dealing with cost models, since they must employ global conditions that dictate specifically when a given type of plant is to be installed. On balance, we find that 12 Kft is a reasonable standard for a maximum copper loop length based on evidence presented that this was a lower cost option and that longer loops might be an impediment to the provision of advanced services.

Upon consideration of the two models submitted in this proceeding, we hereby adopt the Benchmark Cost Proxy Model 3.1. We shall require that the BCPM sponsors make the model revisions discussed in prior sections of this Order as a means to correct MST shortfalls. The BCPM sponsors shall submit a revised version of the model (on CD-ROM and results in hard copy) with associated minimum spanning trees analyses (with all supporting documentation) in conjunction with the compliance filing discussed in Section VI later in this Order, to be filed no later than January 12, 1999. By way of clarification, these revisions shall be applied to the version of BCPM 3.1 referred to by witness Staihr as the September 24, 1998, version, which corrected the model so that the overall cost derived by the model is identical under both a wire center and density zone run.

IV. GEOGRAPHIC BASIS FOR COST PROXY MODEL RESULTS

A. Introduction and Overview

This issue asks a simple question: at what geographic level should the cost proxy model determine and report the cost results? Both models calculate costs below the wire center level. BCPM calculates costs at the "grid" level, which is approximately 1,500 feet by 1,700 feet, while HAI calculates costs at the "cluster" level. The models then aggregate their costs for reporting purposes by averaging the costs of lower-cost "grids" or "clusters" with higher-cost "grids" or "clusters."

At this time, all of the parties agree that the wire center is the appropriate geographic level to determine costs, although differences exist regarding the time period over which this level of aggregation will be appropriate. AT&T, FCCA, FCTA, MCI, Time Warner, and WorldCom have fully endorsed a wire center aggregation for estimating costs. Similarly, BellSouth, GTEFL, and Sprint propose that a wire center level of aggregation would be acceptable initially, due to existing operational and administrative constraints. They recommend that this level of aggregation be used on an interim basis only, and advocate that the goal should be to move towards a smaller geographic area, such as a census block group (CBG).

B. Discussion

AT&T witness Guepe states that "the total forward-looking cost of universal service should be determined on a wire center basis." AT&T contends that costs should be aggregated to a smaller geographic area, such as a CBG, only if retail rates are deaveraged and the application of the test for funding (i.e., benchmark) were both at the CBG level. Both MCI and WorldCom adopt AT&T's position.

BellSouth witness Martin comes to a similar conclusion, but for a different reason. Witness Martin notes that LECs currently gather data at the wire center level. Therefore, the wire center level of aggregation approach would be less burdensome than estimating costs at a level smaller than a wire center, such as the CBG. Witness Martin clarifies BellSouth's position that the wire center level of aggregation should only be an interim policy, noting two reasons. First, costs can vary significantly within a wire center. By estimating costs at smaller geographic areas, such as CBGs, high cost areas can be more accurately targeted. Second, the use of smaller geographic areas to estimate costs, designate service areas, and provide support are conducive to competition. It allows competitors to enter a market without having to serve an extended service area, such as a wire center.

FCTA witness William Barta also concludes that wire center cost aggregation is the most suitable approach. Witness Barta concedes that using smaller geographic areas could increase the accuracy of customer location and network design. He notes, however, that by continually moving to a smaller geographic area to aggregate costs, economies of scale and scope that exist in the LEC's network would be ignored. Time Warner adopted the FCTA's position.

Taking a somewhat unique position, GTEFL witness Seaman stated that costs should be determined on a basis smaller than a wire center. His specific concern was that averaging costs at a wire center level would disregard the variances that exist within a particular wire center. Witness Seaman clarifies that the appropriate "... demarcation for the base rate area is approximately 12,000 feet from the wire center." The 12,000 feet boundary that witness Seaman refers to, however, is not available as a reporting option within BCPM. BCPM can report costs at the level of a grid, census block group, wire center, or density zone. Furthermore, this 12,000 feet boundary is not based on empirical data. Both GTEFL witnesses Seaman and Tucek were unable to specify a geographic level that BCPM does report consistent with their proposed 12,000 feet boundary position. Of the methods for which BCPM can report costs, it appears that GTEFL prefers the grid level. GTEFL does state in its post-hearing brief that it "… does not oppose calculation of costs at a wire center level, but the Commission should resolve to move toward a smaller unit of calculation."

Sprint witness Sichter states that a CBG is the appropriate long-term basis to estimate costs. His reasoning is that costs within the geographic level selected should not vary significantly. Costs estimated at the wire center level, however, do not display these characteristics within Sprint's service territory in Florida. Witness Sichter offers an example using BCPM with Sprint-specific inputs that show that the average cost in the Tallahassee wire center is $28.45. When this same model is processed at the CBG level, the costs in the Tallahassee wire center range from $17.99 to $144.

Nevertheless, witness Sichter does not advocate that universal service costs be calculated at the CBG level at this time, but instead recommends, for administrative reasons, that the wire center level is appropriate. He suggests that it will take approximately two to three years to allow both LECs and the universal service administrator to implement a universal service plan at the CBG level.

C. Conclusion

Upon consideration, we shall require aggregating costs at the wire center level at this time. Both models calculate costs below the wire center level. This information is then used to aggregate costs into larger areas such as CBGs and Wire Centers. Furthermore, LECs currently gather data at the wire center level; hence, calculating costs at a smaller level would be burdensome due to operational and administrative constraints. Yet, as data is gathered at smaller geographic levels, we may need to re-examine the geographic level at which costs are calculated in order to target high cost areas with more precision.

V. COST PROXY MODEL INPUTS

Having selected the BCPM 3.1 cost proxy model and determined that the cost should be reported at the wire center level at this time, we must next decide the specific inputs to the model. We will first discuss several financial inputs: depreciation rates; cost of money; and tax rates. Then, we will discuss the remainder of the model inputs that are in contention before us: supporting structures; structure sharing factors; fill factors; manholes; fiber cable costs; copper cable costs, drops, network interface devices, outside plant mix, digital loop carrier costs, terminal costs, switching costs and associated variables, traffic data, signaling system costs, transport system costs and associated variables, expenses, and other inputs.

A. Depreciation

1. Introduction

Depreciation is one of the inputs into the cost proxy model selected by the Commission. While there is disagreement among the parties regarding the specific lives and salvage values to use in this proceeding, AT&T and BellSouth witnesses believe it is appropriate to use projection lives since, by definition, these lives represent newly placed plant and therefore comport with the FCC's requirement to use forward-looking costs. Remaining lives are inappropriate since they relate to the life remaining of the embedded assets. Each party's position and our determinations are shown below in Table V-A(3).

2. Discussion

AT&T/MCI witness Majoros recommends that the lives and salvage values used in the cost proxy model should be those projection lives and future net salvage values underlying the depreciation rates prescribed in 1995 by the Federal Communications Commission (FCC) for BellSouth and GTEFL. For Sprint, witness Majoros recommends lives and net salvage values from the low end of the FCC prescribed ranges. He asserts that his recommendations are appropriate for use in high cost funding calculations since they are consistent with the FCC's May 7, 1997, Universal Service Order which states:

> Economic lives and future net salvage percentages used in calculating depreciation expenses must be within the FCC-authorized ranges.

Furthermore, based on his review of recent trends in the depreciation reserve and retirement patterns, witness Majoros asserts that the FCC's prescribed projection lives and future net salvage values represent forward-looking costs.

Regarding trends in the reserve, AT&T/MCI's witness Majoros points to the fact that the reserve level for all local exchange carriers reporting to the FCC has grown from 18.7% in 1980 to 48.8%

in 1997 while the 1997 retirement rate was 4.0%. BellSouth's 1997 reserve is 51.2% and GTEFL's is 43.5%. Witness Majoros explains that an increasing reserve is generally a sign that depreciation rates anticipate increasing retirement levels and the expected life of the plant is decreasing. Without indications of a decreasing life, witness Majoros asserts that an increasing reserve might be a sign that depreciation rates are too high.

As further support for AT&T/MCI's position, witness Majoros points out that the FCC directed its staff over a decade ago to put less emphasis on historic data in estimating depreciation lives and more emphasis on company plans, technological developments, and other future-oriented analyses. Additionally, he explains that the FCC reaffirmed its forward-looking position in establishing ranges of projection lives to simplify the depreciation prescription process. The ranges were based on a review of recent retirement patterns, company planning, and the current technological developments and trends.

BellSouth recommends that the appropriate depreciation parameters to use in this proceeding are those resulting from its 1998 BellSouth Florida Depreciation Study (Study). BellSouth witness Cunningham asserts that the recommended lives are forward-looking economic lives in that they represent how long the related assets will have revenue-producing capabilities. According to witness Cunningham, the Study provides explanations of methodology, data, and analysis that support BellSouth's recommendations. As further support for the reasonableness of BellSouth's recommended lives and salvage values, witness Cunningham asserts that these values are consistent with the depreciation lives and salvage values BellSouth uses for intrastate reporting purposes and for external reporting purposes. Lastly, witness Cunningham claims that BellSouth's recommended lives are comparable to the lives last prescribed by the FCC for AT&T in 1994.

BellSouth witness Cunningham and GTEFL's witness Sovereign assert that the lives prescribed by the FCC are not forward-looking because they do not properly assess the impact of technological evolution and increasing competition. Witness Cunningham, however, stated that more competition is likely in the business marketplace than in rural and high cost areas.

In contrast to AT&T/MCI's witness Majoros's testimony, BellSouth's witness Cunningham believes that emphasis on historical retirement patterns is an indication that one expects the future not to vary significantly from the past. He asserts that retirements, particularly for the technology-sensitive accounts, lag well behind the decline in economic value of the assets. Further, witness Cunningham argues, and GTEFL's witness Sovereign agrees, that the fact a reserve has grown over time is not an indication that the reserve is at the appropriate level. He opines that the issue is whether the reserve has increased enough to handle retirements caused by the shift that has occurred in the telecommunications industry.

Witness Cunningham further contends that BellSouth's depreciation lives are based on providing traditional telecommunications services, and would be appropriate even if the only service BellSouth ever provided in the future were narrowband, traditional telephony services. These lives do not consider impacts of future demands for emerging digital and multimedia services, nor do they include the impact of a totally competitive marketplace. He testifies that deployment of fiber in the distribution will be driven by fiber's high capacity, low maintenance, and reliability advantages. Replacement of today's network will occur due to normal mortality and technological obsolescence, that is, when the current technology is not the most efficient means of providing narrowband service in the future.

The lives GTEFL recommends for use in the cost proxy model to calculate the cost of providing basic local service are those that it has been booking on a financial reporting basis since 1996. Many of these lives, witness Sovereign asserts, are the same as or similar to those approved by the Commission in 1992. Further, GTEFL's recommended lives are similar to those used by the Regional Bell Operating Companies (RBOCs) for financial reporting purposes.

Witness Sovereign indicates that a number of sources were reviewed in the development of GTEFL's recommendations. GTEFL used, as a benchmark comparison, the lives resulting from an industry study performed by Technology Futures, Inc. (TFI), as well as lives prescribed by the FCC and lives used by competitors such as AT&T, MCI, and Cable TV companies. Additionally, witness Sovereign states that GTEFL considers the effect that the evolving competitive market will have on the lives of GTEFL's assets. Witness Sovereign, however, was unable to clearly indicate how these sources were used in the determination of GTEFL's recommended lives and salvage values.

Witness Sovereign proffers that competitive impacts must be recognized in establishing the economic value of GTEFL's assets. He notes that some 240 companies hold statewide certificates to operate as alternative local exchange carriers (ALECs). Also, emerging technological developments like wireless local loops and transmission through electric lines as well as through competitors are making bypass of full facilities more of a reality. He claims that competitors will use not only copper twisted wire pairs, but also local wireless, coaxial cable, and the electrical wires into the home. For these reasons, witness Sovereign concludes that depreciation inputs approved for use in this proceeding must reflect competitive considerations.

Regarding competitive impacts, witness Sovereign stated that he is unaware of anyone providing fixed wireless service in GTEFL's territory or whether fixed wireless technology is economically competitive with GTEFL's basic phone service. Further, he is unaware whether Teleport Communications Group (TCG) provides local service in GTEFL's territory. Additionally, he agrees that AT&T has no local facilities in GTEFL's territory.

While witness Sovereign agrees that the distribution facilities of cable TV operators are not similar to distribution facilities of telecommunications companies, he believes that the kind of facility is irrelevant; how it is going to be used is what is important. AT&T/MCI witness Majoros believes that comparisons to AT&T and MCI are inappropriate because their plant is used to provide interexchange, not local exchange, services. Even though the same mortality forces and technological impacts are likely, the fact that interexchange plant has fewer switches and cables permits faster replacement of these assets.

Regarding the TFI studies GTEFL has used as a benchmark, witness Sovereign states that they are not Florida-specific but relate to all GTE operations. Additionally, the studies only address lives for the technology-sensitive accounts (digital switching, copper and fiber cables, and circuit equipment) and GTEFL provided no analysis or support for the lives it is recommending for the remaining accounts. According to witness Sovereign, recommended salvage values for all accounts were based on judgement. Further, we believe that to the extent Florida operations, environment, and other factors vary from the industry or other GTE companies, so will resultant lives.

Sprint did not offer a specific depreciation witness. However, witness Dickerson's testimony addresses the determination of Florida-specific model inputs, of which depreciation is included. Sprint's recommendations for the technology-sensitive accounts are based on the results of an industry study performed by TFI. Neither Sprint Corporation nor Sprint-Florida, however, conducted a similar analysis specifically for Florida properties. Witness Dickerson explained that Sprint hired a depreciation consultant, Mr. Weinert, in several proceedings in other states to review and present testimony regarding the appropriateness of the TFI study results for those states. While witness Dickerson could not provide any information as to what Mr. Weinert's review entailed, a copy of Mr. Weinert's testimony filed in Nevada and North Carolina was provided through discovery. According to witness Dickerson, Sprint did not believe depreciation would be an area of extreme interest in this proceeding since it considered its recommended depreciation lives and salvage values to be conservative.

A review of Mr. Weinert's testimony submitted in North Carolina clearly indicates that he is addressing depreciation parameters reflecting Sprint's specific service life and net salvage values and expectations recommended for its property in North Carolina. Mr. Weinert points out that these lives reflect the service life expectations for a company providing service in a less urban area having more feeder plant and smaller switching centers than the RBOCs. Similarly, Mr. Weinert's testimony in Nevada relates specifically to the depreciation lives and net salvage factors recommended by Sprint/Central Telephone Company-Nevada. No evidence has been given in this current proceeding that the lives and salvage values recommended by Sprint are applicable to Florida plant.

As for Sprint's recommended salvage values for the technology-sensitive accounts, witness Dickerson could not provide any information relating to the determination of Sprint's recommendations except to say that the values were provided by internal experts. The support for Sprint's recommended lives and salvage values not addressed by the TFI study was provided. According to this response, Sprint's recommended lives are generally consistent with those used for external reporting purposes for the general support asset accounts. Expectations for appropriate lives come from analogous tax lives used across the corporation and consensus decisions of management.

For Poles and Conduit, Sprint considered the last approved service lives in Florida, the lives utilized in other Sprint companies and adjustments needed to reflect forward looking lives. Sprint's recommended 14 year life for Poles is comparable with the life assigned to aerial copper cable. For conduit, Sprint recommends a 39.7 year life.

3. Conclusion

The purpose of this proceeding is not to direct BellSouth, GTEFL, or Sprint to use specific depreciation rates for pricing its retail business, but instead to establish the appropriate cost methodologies to be incorporated in the proxy model to determine the cost of basic local telecommunications service for establishing a permanent high cost funding mechanism as required by the Legislature. This proceeding involves determining the reasonableness of the assumptions regarding depreciation expenses to be included in the cost proxy model.

We believe it is reasonable to assume that the depreciation rates developed by the FCC for its 1995 proceedings for BellSouth and GTEFL included consideration of the increasingly competitive market. While the FCC's Universal Service Order requires that depreciation parameters be within the FCC prescribed ranges, we do not believe the Order is preemptive for the determination of intrastate high cost funding cost levels.

GTEFL and Sprint both agree that the lives used for financial accounting purposes should be used in the cost proxy models in this proceeding. AT&T/MCI argue that lives used for financial accounting are governed by Generally Accepted Accounting Principles (GAAP), and the conservatism principle would hold, for example, when alternative expense amounts are acceptable, the alternative having the least favorable effect on net income should be used. While conservatism is effective in protecting the interest of investors, AT&T/MCI's witness Majoros asserts it may not always serve the interest of the ratepayers. He notes that GTEFL argued this point to the FCC in 1993.

All four witnesses were asked if the depreciation parameters used in this proceeding to determine high cost funding cost levels should be the same for GTEFL, Sprint, and BellSouth. AT&T/MCI witness Majoros stated that individual company plans may cause differences in lives, and the nature of the existing equipment may cause differences in parameters between companies. Nevertheless, witness Majoros did admit that he had not seen any differences in company plans in this proceeding. BellSouth's witness Cunningham argues that depreciation parameters should not necessarily be the same for all companies because of differences in planning and equipment. He does agree that if the technologies are the same, then the same life-affecting impacting forces would exist. GTEFL's witness Sovereign stated that he is only addressing appropriate depreciation parameters for GTEFL, but he could see no reason for any differences between the companies. Sprint's witness Dickerson stated that there is a possibility that certain markets might drive different rates of technical obsolescence in various equipment items. Urban markets tend to drive technology deployment faster than rural markets. Also, a higher degree of large business drives a faster rate of technical obsolescence. That may therefore support some variance in the depreciation lives. Since the cost proxy model assumes existing wire centers but essentially rebuilds the network using the most efficient telecommunications technology currently available and the lowest cost network configuration, we believe that it is reasonable to assume the same projection lives and net salvage values for each company. For purposes of this proceeding, our determinations relate to the three large LECs.

When the BCPM sponsors file the revised proxy model with the Commission-approved inputs and prescribed changes, we shall require that the Equal Life Group (ELG) mechanism be disabled when calculating the capital cost factors. As BellSouth's witness Duffy-Deno explained, ELG is a method of calculating a depreciation rate based on the life expectations of each of the equally-lived sub-groups constituting a vintage group. In other words, each vintage is divided into sub-groups, each of which is expected to live an equal life. Each item in any given equal life group is expected to have the same life as each other item in that group. The required depreciation for the vintage is the summation of the requirements for each equal life group; each individual group is expected to recover its investment over the life for that group. Because we rejected the use of ELG in the early 1980's, the cost model should be revised so that there is no ELG mechanism.

The projection life is a forecast of the future of the property. Trends in life or retirement can sometimes be expected to continue. Technical and economic obsolescence are ongoing and an historical life analysis will reflect these factors to the extent that they were present in the past. Our decision in this proceeding is based on a review of BellSouth's Study, the FCC's most recent prescribed lives for BellSouth and GTEFL, the FCC prescribed ranges, and the results of the TFI studies submitted by GTEFL and Sprint.

As discussed earlier, AT&T/MCI's depreciation parameter recommendations reflect what was prescribed by the FCC for BellSouth and GTEFL in 1995. For Sprint, lives and net salvage values from the low end of the FCC prescribed ranges are recommended. BellSouth's recommendations are the result of its 1998 Depreciation Study. GTEFL's recommendations reflect what it has been booking on a financial reporting basis since 1996. Sprint's recommendations for the technology-sensitive accounts are based on the results of a TFI industry study. For the general support asset accounts, Sprint generally utilized depreciation lives consistent with those used for external reporting purposes. For Poles and Conduit, Sprint considered the last approved service lives in Florida, the lives utilized in other Sprint companies and adjustments needed to reflect forward looking lives.

The technology-sensitive accounts (digital switching, digital circuit, and metallic cables) represent the majority of each company's investment and are the most controversial. BellSouth's and Sprint's recommended projection lives are the result of using the technology substitution model, the purpose of which is to determine how fast a new technology is displacing an older technology. The substitution model forecasts the rate at which fiber technology is substituting for copper technology. A basic assumption of the model is that Fiber-In-The-Loop will bring broadband services to the home, displacing copper plant.

While witness Sovereign stated that he reviewed the TFI analysis and the data used in that analysis, he could not discuss the inputs necessary to perform the substitution analysis. He views the details of the model as not being as important as the fact that the results from the model are comparable to other telecommunications companies.

Regarding the technology substitution model, we agree with AT&T/MCI witness Majoros that an inherent flaw with the model is that it assumes the new technology will completely replace, not supplement, the old technology. For example, Asynchronous Transfer Mode (ATM) switching will be deployed as a supplement to digital switches, not as a replacement. Further, the use of digital subscriber line technologies, may permit the copper cable plant to fulfill its life expectancy rather than shorten it.

Additionally, AT&T/MCI witness Majoros points out that the substitution model is based on several input assumptions that are under the control of the person performing the analysis. Different assumptions could therefore yield different results with the same model. We believe that this makes the outputs of the model very subjective.

In this proceeding, BellSouth witness Cunningham presented a publication by James R. Bright relating to the accuracy of predictions resulting from the substitution model. Mr. Bright states that the accuracy of predictions based on the first 5 to 10 percent of displacement data may be very poor, while forecasts based on 20% to 25% displacement data seem to be quite accurate. While witness Cunningham agreed with Mr. Bright's statement, he pointed out that he also believed accurate predictions with less than 20% to 25% displacement data could be made. BellSouth represents that it began deploying fiber feeder cable in 1990 with annuals that had displacement rates ranging from 2.08% to 4.25% with the highest taking place in 1998. Displacement rates were not available from GTEFL or Sprint since they simply relied on the results of the substitution analyses TFI performed. GTEFL did not provide any information regarding the substitution model when requested. While Sprint did answer fundamental questions regarding the model, it was unable to provide annual displacement rates.

Further, AT&T/MCI witness Majoros provides compelling evidence that illustrates that BellSouth's retirement forecasts, as a result of the substitution model, have tended to be much more aggressive than actual results. He provides a comparison of BellSouth's forecasted metallic cable retirements for the 1992-1997 period to actual retirements booked for the same period. The results indicate that BellSouth's forecast overestimated retirements by about 400% or $934 million.

Another illustration of the overestimation of the substitution model's forecasts can be shown for GTEFL. (Table V-A(1) GTEFL provided a comparison of its forecasts of copper cable retirements to actual retirements for the 1993-1997 period.

Table V-A(1): 1992 and 1994 GTEFL Retirement Forecast for Metallic Cable Accounts ($000)

	1992-1994 Forecast	Actual 1993-1997 Retirements
Aerial	$27,723	$17,978
Underground	32,213	11,560
Buried	65,510	59,278

This shows that GTEFL's retirement forecasts have also tended to be much more aggressive than actual results.

The lives that we adopt for BellSouth, GTEFL, and Sprint in this proceeding are based on a forecast of how fast fiber technology will displace copper facilities. If history serves as a guide, it would seem probable that BellSouth's forecasts for this displacement would be rather overstated from what will actually take place. While similar information was not provided by GTEFL or Sprint, we believe the same concerns would apply.

A review of the data submitted by BellSouth in its depreciation study shows that its retirements of copper plant have not been much different for the 1993-1997 period than they were for the 1973-1977 period before the advent of fiber technology. If one were to rely totally on history (Table V-A(2)), it would then follow that the life expectancy for copper cable today should be no different than it was in the 1973-1977 period. However, BellSouth's lives are much shorter than in the 1973-1977 period to recognize that fiber technology or even wireless technology will impact the life of copper facilities. The point of contention is how much impact there will be.

Table V-A(2): BellSouth Retirement Rates

Metallic Cables	1973-1977	1993-1997
Aerial	1.6%	1.2%
Buried	1.3%	1.0%
Underground	1.0%	1.5%

While similar information was not submitted by GTEFL or Sprint, we believe that their percentages would be similar.

Regarding company planning for installing fiber in the distribution portion of the network, BellSouth is beginning deployment in all new residential developments requiring buried cable. Plans for existing copper facilities, however, are to use them to satisfy current and forecasted demands. The network strategic plans submitted by BellSouth, GTEFL, and Sprint indicate that fiber deployment will be driven by economics, implementation of market driven broadband services, and strategic positioning for the company.

Upon consideration, we hereby adopt the life projections recommended by AT&T/MCI witness Majoros for BellSouth for the metallic cable accounts in this proceeding. We do not believe the lives recommended by BellSouth, GTEFL, and Sprint for the technology-sensitive accounts are reasonable. Further, we are not satisfied with the technology substitution model either used or relied on by each of these companies. Additionally, we find no reason not to assume similar expectancies for GTEFL and Sprint.

For digital switching, we believe a 13-year life is appropriate. The life for digital switching recognizes increased interim retirements and a shorter overall life span as evidenced by BellSouth's submitted information. For a digital circuit, we believe an eight-year life is appropriate. The recommended life for digital circuit recognizes a shorter life for optical equipment as asynchronous equipment is phased out and replaced with Synchronous Optical Network (SONET) equipment. While other digital circuit equipment can be expected to continue providing viable functions in a SONET environment, slower growth can be expected.

The general support assets include motor vehicles, buildings, and office furniture and support equipment. These assets are not impacted by technology with the exception of the computer account. Upon consideration, we believe a compromise of the parties' positions is appropriate. Sprint's (Sprint and Centel) recommended lives are analogous to tax lives used across the corporation, and consensus decisions of management. GTEFL provided no support for its recommended lives other than they are the same as used for financial reporting purposes.

For Motor Vehicles, Garage Work Equipment, Furniture, and Company Communication Equipment, we adopt lives that are generally consistent with those recommended by AT&T/MCI for BellSouth and by BellSouth. Sprint did not recommend a life for Company Communication Equipment. The recommended lives are 7.5 years, 12 years, 11 years, and 7 years, respectively. We believe that these lives are reasonable and appropriate to use in this proceeding.

AT&T/MCI did not recommend lives for Aircraft or Special Purpose Vehicles. The only company having aircraft investment is GTEFL. Upon consideration, we believe GTEFL's recommended 5-year life is reasonable and appropriate for use in this proceeding.

Special purpose vehicle equipment is used in special situations where the locale dictates a need for alternative transportation to provide for customer service needs. As such, we find that BellSouth's recommended 7-year life is reasonable and appropriate for the purpose of this proceeding.

AT&T/MCI also did not recommend lives for Buildings for Sprint. Upon review of the information submitted in this proceeding, we find that AT&T/MCI's recommended 40-year life for GTEFL reasonable and appropriate to use in this proceeding.

The last three accounts to address in the General Support Asset function are General Purpose Computers and Office Support Equipment. For Other Work Equipment, we find a life of 12 years is consistent with the AT&T/MCI recommendations for GTEFL and Sprint and is appropriate. We also find a five-year life for computers is appropriate and is consistent with the life recommended by BellSouth and GTEFL. We find a 10-year life for office equipment is consistent with the life recommended by AT&T/MCI for GTEFL and Sprint and reasonable to use in this proceeding.

From General Support Assets, we next turn to Central Office Assets. AT&T/MCI did not provide life recommendations for radio, DDS circuit, or analog circuit investments. Sprint did not provide recommendations for operator systems or radio investments. Upon consideration, we adopt lives for operator systems, radio, and DDS circuit investments that are consistent with the recommendations of BellSouth and reasonable for this proceeding.

Analog circuit equipment will be phased out as analog switches are replaced with digital switches. Additionally, the conversion devices that perform analog-to-digital and digital-to-analog translations will also be phased out as digital switches continue to be deployed and with deployment of integrated digital loop carrier (IDLC), digital cross-connect systems, and fiber cabling. For these reasons, we find that the recommendations made by BellSouth and GTEFL are reasonable and appropriate for this proceeding. The recommended eight-year life represents BellSouth's life (rounded).

With regard to information/origination assets, AT&T did not provide recommendations for station equipment(station apparatus and Large PBX) investments. GTEFL did not provide a recommendation for Large PBX investments. Sprint did not provide recommendations for any of the information/origination accounts. Upon consideration, we find BellSouth's recommended 6-year life for each of these accounts is reasonable and appropriate for this proceeding.

The lives of cable and wire assets also must be determined. Poles represent the supporting structure for aerial cable and wire facilities. We agree with BellSouth that poles will continue to be influenced by the traditional forces of retirement such as deterioration, road construction, and joint use contracts. We believe, however, that fiber technology will have an impact on this plant. As metallic aerial facilities are replaced, the replacement will probably not be aerial, but rather buried or underground. For this reason, in this proceeding, we believe a life of 30 years is reasonable and appropriate.

For the fiber cable accounts, we find that the use of BellSouth and GTEFL's projection lives of 20 years is appropriate for this proceeding. We agree with BellSouth that with a new technology such as fiber cable, enhancements and refinements are still taking place due to manufacturing defects and fiber clouding. As noted in BellSouth's data for these accounts, retirement activity has been insufficient to provide reliable results from any statistical analysis. While there is no reason to think future generations of fiber cable will not live similarly to copper cable, we do not believe that the earlier generations of this technology will experience that type of life characteristic.

Intrabuilding cable consists of cables and wires on the company's side of the demarcation point, or standard network interface, which are placed inside customers' buildings or between buildings on the same customer's premises. BellSouth's recommended 20-year life is based on an analysis of historical data and life expectations for this equipment. While we believe that retirements in this account have been insufficient to perform meaningful analyses, we do find that BellSouth's recommended life is reasonable for the purpose of this proceeding.

Submarine cable is flanked on either side of the splice of runs of aerial, buried, or underground cable. According to BellSouth's Study, retirement of this cable will occur concurrent with the retirement of the flanking metallic cable. Accordingly, we believe a similar life to that recommended for aerial and buried metallic cable is appropriate.

The last account to be addressed is Underground Conduit. We find little reason for a life less than 50 years for this account in this proceeding. This life is consistent with that recommended by AT&T/MCI for GTEFL and Sprint.

In this section, we will address the various salvage values that form inputs to the cost proxy model. As discussed earlier, AT&T/MCI's depreciation parameter recommendations reflect what was prescribed by the FCC for BellSouth and GTEFL in 1995. For Sprint, AT&T/MCI recommends net salvage values from the low end of the FCC prescribed range. BellSouth's recommendations are the result of its 1998 Depreciation Study. GTEFL's recommendations are based on judgement. Sprint's recommendations are based on internal company experts. Upon consideration, we hereby adopt values based on a review of the historical data submitted and future salvage expectations. Our adopted salvage values are rounded to the nearest 5%, which we believe is reasonable.

Next, we will address the salvage values of technology specific accounts. We hereby adopt values for digital switching and digital circuit investments that reflect a general consensus of the positions of AT&T/MCI, BellSouth, and GTEFL. With the increase of digital technology, we believe the reuse potential for this equipment will be minimal. Any removal costs should offset the attendant salvage. We therefore find that a 0% future net salvage value is reasonable and appropriate.

Historically, net salvage for metallic aerial cable for BellSouth has averaged about negative 7%, while GTEFL has averaged negative 27%. Retirements have been minimal indicating that reliance on the results of statistical analyses is not meaningful. Upon consideration, we adopt a salvage value for metallic aerial cable that reflects the labor-intensive nature of removal of this plant consistent with AT&T/MCI's recommendations for GTEFL and Sprint of negative 35%.

When underground cables are retired, they are physically removed from the conduit. Historically for BellSouth, removal costs have typically been offset by attendant salvage. On the other hand, GTEFL has realized very little salvage from its retirements during the past eight years. We believe some realized salvage should be expected from underground cable retirements; the amount, however, will depend on the copper market at the time of retirement. For this reason, we finds a negative 10% net salvage, as GTEFL has recommended, to be reasonable and appropriate for this proceeding.

Buried cables are abandoned in place with some cost of removal associated with cutting and capping at the pedestal. Based on the data submitted by BellSouth and GTEFL, we find that a negative 10% net salvage value is reasonable and is appropriate for this proceeding.

We must also determine the salvage values for general assets. Upon review of the information submitted in this proceeding, we find that the salvage values recommended by BellSouth, GTEFL, and Sprint are reasonable and acceptable for Aircraft, Special Purpose Vehicles, Garage Work Equipment, Other Work Equipment, Buildings, and General Purpose Computers.

For Motor Vehicles, net salvage for BellSouth has averaged about 13% for the 1990-1997 period with the most recent three years averaging about 22%. Net salvage for GTEFL has averaged about 16% for the 1990-1997 period with the most recent three years averaging about 11%. Upon consideration, we believe that future salvage projections for motor vehicles will be similar to what has been realized in the past. Accordingly, we find that a net salvage value of 15% is appropriate.

BellSouth's recommended 10% net salvage for Furniture is based on a decreasing trend exhibited in the historical data and future expectations. GTEFL, on the other hand, has not experienced a decreasing trend in net salvage and certainly lends little credence to its recommended zero net salvage. Upon review, we hereby adopt BellSouth's recommended 10% net salvage as reasonable and appropriate for this proceeding.

Net salvage for Office Support Equipment for both BellSouth and GTEFL has historically averaged less than 5%. Therefore, we find that use of a 0% net salvage is appropriate.

Net salvage for Company Communication Equipment has been erratic for both BellSouth and GTEFL. Each company, however, has historically realized net salvage of 10% or more. Upon consideration, we adopt the 10% net salvage value recommendation of BellSouth.

Next, we must determine the salvage values for central office assets. AT&T/MCI did not provide net salvage recommendations for radio, DDS circuit, or analog circuit investments. Sprint did not provide recommendations for operator systems, radio, DDS circuit, or analog circuit investments. GTEFL did not provide a recommended net salvage for DDS circuit investments.

All parties recommending a net salvage value for operator systems investments agree with a zero net salvage. We find this recommendation within reason and hereby adopt a zero net salvage value for these investments.

BellSouth's recommended negative 5% net salvage for radio systems investments is consistent with its experience as well as GTEFL's experience. We find that this recommendation is reasonable and adopt it for this proceeding.

We believe little salvage will be realized from the retirement of DDS circuit investment. While BellSouth's five year band of salvage data has averaged 2.5%, we believe that this percentage will continue to decrease. Therefore, we hereby adopt a zero net salvage value for this account. Likewise, we find that negative net salvage of 5% for analog circuit is in line with recent trends submitted by BellSouth and appropriate for this proceeding.

The next group of accounts is information and origination assets. AT&T/MCI provided recommendations only for Other Terminal Equipment. GTEFL did not provide a salvage recommendation for Large PBX investments. Sprint did not provide salvage recommendations for any account in this function. Upon consideration, we adopt the zero net salvage recommendations of BellSouth and GTEFL for the Station Apparatus and Large PBX accounts as reasonable and acceptable for use in this proceeding.

BellSouth recognizes that salvage historically realized for Other Terminal Equipment is considered abnormal. GTEFL's net salvage experience, on the other hand, approaches zero. Upon consideration, we adopt a zero net salvage for this account.

We must also address the salvage values for cable and wire assets. First, the removal of poles is very labor intensive as is evidenced by the salvage data submitted by BellSouth and GTEFL. Historically, net salvage has averaged about negative 67% for BellSouth and about negative 66% for GTEFL. Sprint provided no information for this account. Upon consideration, we adopt AT&T/MCI's net salvage of negative 75% for this account because it is more consistent with the future expectations for this account than BellSouth's or GTEFL's recommendations of negative 60% and negative 10%, respectively.

Historically, both BellSouth and GTEFL have incurred negative net salvage of less than 5% in the retirement of submarine metallic cables. This plant is abandoned in place. Sprint provided no information for this account. As such, we find that a negative 5% net salvage is reasonable and appropriate for this account.

Historical net salvage for the Intrabuilding Network Cable account for BellSouth has ranged from about negative 3% to negative 8%. For GTEFL, historical net salvage has ranged from about negative 2% to 0%. Sprint provided no information for this account. We agree with BellSouth's assumption that the cost of removing this type of cable will continue to be greater than any realized salvage. We therefore adopt BellSouth's and GTEFL's recommended negative 10% net salvage as reasonable for this proceeding.

For the fiber cable accounts, both BellSouth and GTEFL have recommended the same net salvage expectations as for their metallic cables. Sprint did not provide information for this account. According to BellSouth, while the fiber cable accounts have experienced limited retirements, future salvage should be comparable to the salvage values expected for metallic cables. We therefore adopt values that mirror the values adopted for metallic cables.

BellSouth, GTEFL, and Sprint recommend a negative 10% net salvage for underground conduit facilities. AT&T/MCI also recommends negative 10% net salvage for GTEFL and Sprint with a recommendation of negative 7% for BellSouth. Upon consideration, we therefore adopt a negative 10% salvage value, which is consistent with the parties' positions and recognizes that removal costs will be incurred with the rebuilding and moving of handholes and manholes.

Table V-A(3): Commission-Ordered Lives and BellSouth, GTEFL, and Sprint Recommended Lives

	Commission-Ordered	BellSouth	GTEFL	Sprint
Account	(Yrs.)	(Yrs.)	(Yrs.)	(Yrs.)
Motor Vehicles	7.5	8.0	8.0	4.2
Aircraft	5.0		5.0	
Special Purpose Vehicle	7.0	7.0	10.0	8.0
Garage Work Equipment	12.0	12.0	10.0	7.0
Other Work Equipment	12.0	1.0	10.0	7.0
Buildings	40.0	40.0	30.0	31.0
Furniture	11.0	1.0	10.0	10.0
Office Support Equipment	10.0	11.0	10.0	0.0
Company Comm. Equipment	7.0	7.0	10.0	
Genl Purpose Computers	5.0	5.0	5.0	3.0
Digital Switching	13.0	10.0	10.0	11.0
Operator Systems	10.0	10.0	10.0	
Radio Systems	9.0	9.0	10.0	
Circuit-DDS	8.0	8.0	8.0	11.0
Circuit-Digital	8.0	9.0	8.0	11.0
Circuit-Analog	8.0	7.8	8.0	11.0
Station Apparatus	6.0	6.0	7.0	
Large PBX	6.0	6.0		
Other Terminal Equipment	6.0	6.0		
Poles	30.0	34.0	20.0	14.0
Aerial Cable-Metallic	18.0	14.0	14.0	1.0
Aerial Cable-Fiber	20.0	20.0	20.0	20.0
Undergrd Cable-Metallic	23.0	12.0	12.0	1.0
Undergrd Cable-Fiber	20.0	20.0	20.0	20.0
Buried Cable-Metallic	18.0	14.0	14.0	18.0
Buried Cable-Fiber	20.0	20.0	20.0	20.0
Submarine Cable-Metallic	18.0	14.0	1.0	
Submarine Cable-Fiber	20.0		20.0	
Intra-Bldg Netwk Cable-Met.	20.0		1.0	
Intra-Bldg Netwk Cable-Fiber	20.0	20.0	20.0	
Conduit	50.0	50.0	40.0	39.7

Table V-A(3): AT&T/MCI Recommended Lives

	BellSouth	GTEFL	Sprint	Centel
Account	(Yrs.)	(Yrs.)	(Yrs.)	(Yrs.)
Motor Vehicles	7.0	7.0	7.0	7.0
Aircraft				
Special Purpose Veh.				
Garage Work Equipment	12.0	12.0	12.0	12.0
Other Work Equipment	1.0	12.0	12.0	12.0
Buildings	40.0	40.0		
Furniture	11.0	1.0	1.0	1.0
Office Support Equipment	10.0	10.0	10.0	10.0
Company Comm. Equipment	7.0	7.0	7.0	7.0
Genl Purpose Computers	4.4	6.0	6.0	6.0
Digital Switching	16.0	16.0	16.0	16.0
Operator Systems	10.0	8.0	8.0	8.0
Radio Systems				
Circuit-DDS				
Circuit-Digital	10.0	9.0	11.0	11.0
Circuit-Analog				
Station Apparatus				
Large PBX				
Other Terminal Equipment	7.0	7.0	7.0	7.0
Poles	30.0	20.0	20.0	20.0
Aerial Cable-Metallic	18.0	20.0	20.0	20.0
Aerial Cable-Fiber	20.0		2.0	2.0
Undergrd Cable-Metallic	23.0	2.0	2.0	2.0
Undergrd Cable-Fiber	20.0	20.0	20.0	20.0
Buried Cable-Metallic	18.0	20.0	20.0	20.0
Buried Cable-Fiber	2.0	2.0	2.0	2.0
Submarine Cable-Metallic				
Submarine Cable-Fiber				
Intra-Bldg Netwk Cable-Met.	20.0	20.0	20.0	20.0
Intra-Bldg Netwk Cable-Fiber	20.0	20.0	20.0	20.0
Conduit	0.0	0.0	0.0	0.0

Table V-A(3): Commission-Ordered Salvage Values and BellSouth, GTEFL, and Sprint Recommended Salvage Values

	Commission-Ordered	BellSouth	GTEFL	Sprint
Account	(%)	(%)	(%)	(%)
Motor Vehicles	1.0	16.0	10.0	20.0
Aircraft	0.0		0.0	
Special Purpose Veh.	0.0	0.0	0.0	0.0
Garage Work Equipment	0.0	0.0	0.0	0.0
Other Work Equipment	0.0	0.0	0.0	0.0
Buildings	0.0	0.0	0.0	0.0
Furniture	10.0	10.0	0.0	0.0
Office Support Equipment	0.0	0.0	0.0	0.0
Company Comm. Equipment	10.0	10.0	0.0	
Genl Purpose Computers	0.0	0.0	0.0	0.0
Digital Switching	0.0	0.0	0.0	3.0
Operator Systems	0.0	0.0	0.0	
Radio Systems	0.0	0.0	0.0	
Circuit-DDS	0.0	2.0		
Circuit-Digital	0.0	0.0	0.0	(1.0)
Circuit-Analog	0.0	(3.0)		
Station Apparatus	0.0	0.0	0.0	
Large PBX	0.0	0.0		
Other Terminal Equipment	0.0	0.0	0.0	
Poles	(75.0)	(60.0)	(10.0)	(43.0)
Aerial Cable-Metallic	(35.0)	(14.0)	(10.0)	(18.0)
Aerial Cable-Fiber	(35.0)	(14.0)	(10.0)	(20.0)
Undergrd Cable-Metallic	(10.0)	(8.0)	(10.0)	(12.0)
Undergrd Cable-Fiber	(10.0)	(8.0)	(10.0)	(14.0)
Buried Cable-Metallic	(10.0)	(7.0)	(10.0)	(9.0)
Buried Cable-Fiber	(10.0)	(7.0)	(10.0)	(10.0)
Submarine Cable-Metallic	(5.0)	0.0	(10.0)	
Submarine Cable-Fiber	(5.0)		(10.0)	
Intra-Bldg Netwk Cable-Met.	(10.0)		(10.0)	
Intra-Bldg Netwk Cable-Fiber	(10.0)	(10.0)	(10.0)	
Conduit	(10.0)	(10.0)	(10.0)	(10.0)

Table V-A(3): AT&T/MCI Recommended Salvage Values

	BellSouth	GTEFL	Sprint	Centel
Account	(%)	(%)	(%)	(%)
Motor Vehicles	10.0	16.0	10.0	10.0
Aircraft				
Special Purpose Veh.				
Garage Work Equipment	0.0	0.0	0.0	0.0
Other Work Equipment	1.0	0.0	0.0	0.0
Buildings	4.0	0.0		
Furniture	14.0	9.0	0.0	0.0
Office Support Equipment	10.0	8.0	0.0	0.0
Company Comm. Equipment	10.0	0.0	0.0	0.0
Genl Purpose Computers	0.0	0.0	0.0	0.0
Digital Switching	0.0	0.0	0.0	0.0
Operator Systems	0.0	0.0	0.0	0.0
Radio Systems				
Circuit-DDS				
Circuit-Digital	0.0	3.0	0.0	0.0
Circuit-Analog				
Station Apparatus				
Large PBX				
Other Terminal Equipment	10.0	0.0	0.0	0.0
Poles	(7.0)	(7.0)	(7.0)	(7.0)
Aerial Cable-Metallic	(11.0)	(3.0)	(3.0)	(3.0)
Aerial Cable-Fiber	(11.0)	(2.0)	(2.0)	(25.0)
Undergrd Cable-Metallic	(7.0)	(17.0)	(30.0)	(30.0)
Undergrd Cable-Fiber	(6.0)	(9.0)	(20.0)	(20.0)
Buried Cable-Metallic	(8.0)	(10.0)	(10.0)	(10.0)
Buried Cable-Fiber	0.0	(10.0)	(10.0)	(10.0)
Submarine Cable-Metallic				
Submarine Cable-Fiber				
Intra-Bldg Netwk Cable-Met.	(12.0)	(10.0)	(30.0)	(30.0)
Intra-Bldg Netwk Cable-Fiber	(12.0)	(10.0)	(15.0)	(15.0)
Conduit	(7.0)	(10.0)	(10.0)	(10.0)

B. Cost of Money

1. Overview

The cost of money is one of the required inputs into the cost proxy model. Three witnesses filed direct and rebuttal testimony in this proceeding regarding the appropriate forward-looking economic cost of capital of the three large LECs for the provision of basic local service. BellSouth/Sprint witness Billingsley did not recommend a specific cost of capital figure but instead testified that the use of an 11.25% cost of capital by BellSouth and Sprint in their respective cost studies was reasonable and conservative. GTEFL witness Vander Weide recommended that an average cost of capital of 12.65% be used in the forward-looking studies of the cost of providing basic local service. AT&T/MCI witness Hirshleifer testified that the midpoints of his cost of capital ranges of 8.50% for BellSouth, 8.55% for Sprint, and 8.74% for GTEFL are the appropriate forward-looking costs of capital that should be used in this proceeding.

2. Discussion and Conclusions

To determine the appropriate forward-looking cost of capital to be included in the cost of providing basic local service, it is necessary to estimate the forward-looking cost of debt and equity. In addition, it is necessary to determine the appropriate mix of debt and equity in the capital structure. Combining these inputs produces the cost of capital estimates endorsed by the respective witnesses.

Capital Structure

In its cost study, BellSouth assumed a capital structure of 60% equity and 40% debt. In its cost study, Sprint assumed a capital structure of 59.6% equity and 40.4% debt. Witness Billingsley relied upon these relative levels of capitalization in his determination of the reasonableness of the overall cost of capital of 11.25% used by both BellSouth and Sprint in their respective cost studies.

GTEFL witness Vander Weide used a capital structure of 77.6% equity and 22.4% debt in arriving at his recommended overall cost of capital for GTEFL. These ratios represent the average market-based capital structure ratios of the Standard & Poor's (S&P's)

industrial companies for the five year period ended December 31, 1997.

AT&T/MCI witness Hirshleifer considered the average capital structure ratios for his index of comparable companies to determine the appropriate capital structure for the large LECs. His index included the Regional Bell Holding Companies (RBHCs) and the larger independent telephone companies. On a book value basis, he found the average capitalization for his index to be 43% equity and 57% debt as of December 31, 1997. On a market value basis, he found the average to be 80% equity and 20% debt for the same period. Witness Hirshleifer testified that the market value debt weights at the holding company level probably understate long-run target weights in the capital structure for the provision of basic local service. Consequently, he contended that it would be inappropriate to rely solely on current market value capital structure weights of the telephone holding companies when calculating the weighted average cost of capital. In employing both the book value and market value averages to establish his respective ranges for the weighted average cost of capital for each of the large LECs, witness Hirshleifer's analysis assumed an average capital structure of 61.5% equity and 38.5% debt.

As of June 30, 1998, BellSouth's capital structure was comprised of 56.4% equity and 43.6% debt. Sprint's capital structure was comprised of 60% equity and 40% debt as of June 30, 1998. According to the Moody's Investor Service (Moody's) report regarding GTEFL dated April 1998, GTEFL had a capital structure comprised of 23.4% common equity, 0.7% preferred stock, and 75.9% debt as of December 31, 1997.

We not believe GTEFL has provided adequate support for its recommended 77% equity ratio. We have not found any state commission that has approved a cost of capital based upon an average market-based capital structure as proposed by witness Vander Weide in this proceeding. In orders from other states regarding GTE companies, the equity ratio approved by the respective commissions has ranged from a low of 52.0% (Hawaii, Order No. 15345, issued January 31, 1997) to a high of 61.7% (Alaska, Docket No. U97-87, Order No. 2, issued November 14, 1997.)

GTEFL witness Vander Weide testified that the market-based capital structure of 77.6% equity and 22.4% debt "is a conservative estimate of the target capital structure GTE would employ in the competitive local exchange environment assumed by a forward-looking economic cost study." AT&T/MCI witness Hirshleifer testified, however, that it is critical the target capital structure used to determine the cost of capital in this proceeding be related to the business of providing universal service. He said, "this is a distinctly different, and far less risky business than the overall combined businesses of the publicly-traded GTE holding company, or of the S&P Industrials." Moreover, although it is questionable whether GTEFL would actually raise capital on a going-forward basis by issuing a mix of 77% equity and 23% debt, GTE Corporation (GTE), in fact, did not propose to raise capital in this manner in its failed attempt to acquire MCI. Although the transaction was never consummated, when GTE announced its unsolicited offering to acquire MCI in October 1997, GTE's plan was to fund the $28 billion acquisition with debt and assume MCI's $5.2 billion in outstanding debt obligations. Duff & Phelps Credit Rating Company, press release dated October 16, 1997.

We have strong reservations regarding whether equity capitalization approaching the 60% level is truly necessary for the provision of basic local service given witness Hirshleifer's testimony that the business of providing universal service is of relatively low risk compared to the many more risky business endeavors being pursued by the telephone holding companies. However, since both witnesses Billingsley and Hirshleifer employed relatively the same percentages of equity and debt in the analyses that led to their recommended costs of capital, we find that a capital structure of 60% equity and 40% debt is appropriate in determining the appropriate weighted average cost of capital for purposes of this proceeding.

Cost of Debt

Witness Billingsley testified that the forward-looking cost of debt for BellSouth is 6.57%. He arrived at this rate by adding the average spread between the yields on triple A-rated public utility bonds and 30-year Treasury bonds from October 1987 through July 1998 of .80% to the average yield on 30-year Treasury bonds for the period May 1998 to July 1998 of 5.77%. Witness Billingsley used a similar analysis to arrive at his recommended forward-looking cost of debt for Sprint of 6.92%. The average spread between single A-rated public utility bonds and 30-year Treasury bonds over the same period was 1.15%. BellSouth's debt is rated triple A and Sprint's debt is rated single A by S&P's Rating Service.

Witness Vander Weide testified that the forward-looking cost of debt for GTEFL is 6.70%. This rate is the yield to maturity (YTM) on Moody's single A-rated industrial bonds for September 1998. He testified that the industrial companies are a good proxy for the risks of investing in the facilities required to provide local exchange services on a forward-looking basis. Both witnesses Billingsley and Vander Weide testified that their estimates of the market cost of debt are conservative because they do not include the flotation costs that must be paid to issue debt securities.

In his recommendation, AT&T/MCI witness Hirshleifer assumed a cost of debt of 6.42% for BellSouth, 6.03% for Sprint, and 6.46% for GTEFL. He arrived at these rates by calculating the YTM as of August 31, 1998, of all of BellSouth's, Sprint's, and GTEFL's outstanding debt issues, including the debt of the holding companies and any subsidiaries as reported in the S&P Bond Guide. He testified that the YTM is a forward-looking cost of debt that measures the rate these companies would have to pay if the bonds were issued at the measurement date, and reflects investors' expectations regarding the future returns on these publicly-traded bonds.

Witness Billingsley challenged witness Hirshleifer's estimates of BellSouth's and Sprint's cost of debt. Witness Billingsley testified that witness Hirshleifer incorrectly estimated each firm's cost of debt because he relied upon the cost of debt issued by the holding companies of BellSouth and Sprint and because he included debt issues that were not issued to fund telephone network assets.

Witness Hirshleifer testified that the best estimate of the cost of debt is the weighted average cost over all of the subject company's outstanding issues, including the debt of the holding company and any subsidiaries. He said that he included the holding companies and all the subsidiaries in his analysis of the cost of debt to be consistent with his estimate of the cost of equity. Witness Hirshleifer testified that since the estimate of the cost of equity must be performed at the holding company level, to be consistent he wanted to estimate the cost of debt at the holding company level. In addition, to the extent that the provision of universal service is of relatively low risk compared to many of the risky businesses being pursued by the holding companies, witness Hirshleifer noted that his estimate of the cost of debt at the holding company level would be conservatively high.

Although he did his analysis at the holding company level, witness Hirshleifer agreed that it would also be appropriate to consider only the debt of BellSouth, Sprint, and GTEFL for purposes of estimating the cost of debt in this proceeding and provided the information necessary to make that determination. The cost of debt estimates for BellSouth, Sprint, and GTEFL as of August 31, 1998, recognizing only the debt issues of each LEC are 6.42%, 6.07%, and 6.57%, respectively.

Witness Hirshleifer's analysis was based upon all debt issues of each company as reported by S&P. It was never demonstrated why witness Billingsley believed the proceeds from the bonds issued by BellSouth and Sprint that witness Hirshleifer relied upon in his analysis were used for any purpose other than to support the companies' telephone operations. Witness Hirshleifer testified that although the debt listed for each of the companies in the S&P Bond Guide reflected debt with varying maturities, none of the debt was short-term debt such as BellSouth's commercial paper program. He noted that short-term debt is less expensive than long-term debt and that all businesses are funded with both long-term and short-term debt. He concluded that to the extent his analysis did not include the effect of the lower cost of short-term debt, his estimates would be upwardly biased.

Using the methodology employed by witness Billingsley for estimating the forward-looking cost of debt but updating the inputs through September 30, 1998, BellSouth's indicated cost of debt is 6.29%. This rate was determined by adding the three month (July - September 1998) average yield on 30-year Treasury bonds of 5.48% and a risk premium of .81% to account for the average difference between the yields on triple A-rated public utility bonds and 30-year Treasury bonds (October 1987 - September 1998). The rate for Sprint is 6.63% (5.48% plus 1.16%). Since GTEFL's debt is also rated single A, it would have approximately the same cost of debt as Sprint based upon this analysis.

Upon consideration, we find that 6.5% is a reasonable estimate of the true forward-looking cost of debt for purposes of this proceeding. This rate falls between the current yields to maturity for BellSouth and GTEFL as of August 31, 1998, of 6.42% and 6.57%, respectively, as calculated by AT&T/MCI witness Hirshleifer, excluding the securities not directly related to BellSouth and GTEFL. The 6.5% rate exceeds the average yield on 30-year Treasury bonds for September 1998 of 5.19% by 131 basis points. Finally, while the average yield for the index of AAA-rated public utility bonds exceeded the yield on 30-year Treasury bonds on average by approximately 81 basis points over the last 10 years, over the last 4 years BellSouth's actual experience has been a spread of only 41 basis points on average over the yield on 30-year Treasury bonds. In addition, while the average yield for the index of A-rated public utility bonds exceeded the yield on 30-year Treasury bonds on average by approximately 116 basis points over the last 10 years, over the last 4 years Sprint's and GTEFL's actual experience has been a spread of only 64 and 66 basis points, respectively, on average over the yield on 30-year Treasury bonds. Based on this information, one could argue that BellSouth's, Sprint's, and GTEFL's actual experience indicates their true forward-looking cost of debt is something less than 6.0%. However, based upon the results of witness Billingsley's yield-spread analysis and witness Hirshleifer's YTM analysis, we beleive the 6.5% cost rate is the most appropriate estimation of the forward-looking cost of debt for purposes of this proceeding.

Cost of Equity

Witness Billingsley used three models to estimate the cost of equity of BellSouth and Sprint. Since BellSouth is a subsidiary of BellSouth Corporation and Sprint-Florida is a subsidiary of Sprint Corporation, neither company has equity traded in the market. Thus, there is no direct market information upon which to estimate BellSouth's and Sprint's cost of equity capital. Therefore, it was necessary for witness Billingsley to infer BellSouth's and Sprint's cost of equity by evaluating the available market data for publicly traded companies that are demonstrated to be comparable in risk with BellSouth and Sprint. In his first approach, witness Billingsley applied the discounted cash flow (DCF) model to two groups of firms he identified as comparable in risk to BellSouth and Sprint, respectively. In his second approach, he used the capital asset pricing model (CAPM). Finally, he conducted a risk premium analysis. From these analyses, he concluded that the current cost of equity capital for BellSouth is within the range of 14.20% to 14.46% and the current cost of equity capital for Sprint is within the range of 14.30% to 14.53%.

Witness Vander Weide used one model to estimate the cost of equity of GTEFL. Since GTEFL is a subsidiary of GTE Corporation and therefore does not have equity traded in the market, witness Vander Weide had to rely on market data of publicly traded companies to estimate the cost of equity capital of GTEFL. Witness Vander Weide applied the DCF model to an index of S&P industrial companies. He testified that since the S&P Industrials are a well-known sample of publicly-traded competitive companies whose risk, on average, approximates the risk of providing telecommunications services in a competitive market, I believe the S&P Industrial group is a good proxy for the risks of investing in the facilities required to provide local exchange services on a forward-looking basis. Based upon this analysis, he concluded that the current cost of equity capital for GTEFL is 14.30%.

AT&T/MCI witness Hirshleifer relied upon two models for estimating the cost of equity for BellSouth, Sprint, and GTEFL. For the same reasons cited by witnesses Billingsley and Vander Weide, witness Hirshleifer had to rely on market data of publicly traded companies to estimate the cost of equity capital of the three large LECs. In his first approach, witness Hirshleifer applied the DCF model to a group of companies he identified as comparable in risk to BellSouth, Sprint, and GTEFL. The second method he used was the CAPM model. These two models produced a range of estimates of the cost of equity capital for BellSouth of 9.35% to 9.96%, for Sprint of 9.41% to 10.08%, and for GTEFL of 9.50% to 10.35%. He assumed the midpoint of each of these ranges of 9.65%, 9.74%, and 9.92% as the appropriate costs of equity for BellSouth, Sprint, and GTEFL, respectively.

BellSouth and Sprint witness Billingsley used the constant growth or single stage form of the DCF model which assumes growth remains constant over an indefinite or infinite holding period. The growth rates used in this analysis were the 5-year earnings growth rates forecasted by Institutional Brokers' Estimate Service (IBES) and Zacks Investment Research, Inc. His DCF model included an adjustment of 5% for the recovery of flotation costs and recognized the quarterly compounding of dividends. He applied this form of the DCF model to two indices of companies he identified as comparable in risk to BellSouth and Sprint, respectively. Witness Billingsley used a cluster analysis to identify each index of 20 firms. Based upon this analysis, he concluded that his DCF analysis indicated a cost of equity for BellSouth in the range of 14.45% to 14.46% and a cost of equity for Sprint in the range of 14.43% to 14.53%.

GTEFL witness Vander Weide also used the constant growth or single stage form of the DCF model which assumes growth remains constant over an indefinite or infinite holding period. The growth rates used in this analysis were the 5-year earnings growth rates forecasted by IBES. His DCF model included an adjustment of 5% for the recovery of flotation costs and recognized the quarterly compounding of dividends. He applied this form of the DCF model to an index of S&P industrial companies he assumed to be comparable in risk to GTEFL. In applying the DCF model to the S&P industrial companies, he excluded companies from the group which did not have a reported stock price, pay a dividend, have a positive growth rate, have at least one common share outstanding, and have at least three analysts' long-term growth estimates. In addition, he eliminated those 25 percent of companies with the highest and lowest DCF results. Based upon this analysis, he concluded that his DCF analysis indicated a cost of equity for GTEFL of 14.30%.

AT&T/MCI witness Hirshleifer used the variable growth or three stage form of the DCF model, which distinguishes between short and long-term growth rate projections. He assumed the first stage lasts five years because that is the longest horizon over which analysts' forecasts of growth are available. For this period, he used the 5-year earnings growth rates forecasted by IBES. He assumed the second stage lasts 15 years during which the growth rate falls from the high level of the first five years to the growth rate of the U.S. economy by the end of year 20. From the twentieth year onward, the growth rate is set equal to the growth rate of the economy because he believes rates greater than that cannot be sustained into perpetuity. The long-term growth forecast used after year 20 was derived by averaging the long-term Gross National Product (GNP) growth forecasts obtained from the Wharton Econometric Forecasting Associates and from Ibbotson Associates. Witness Hirshleifer used the annual form of the DCF model. His model did not include an adjustment for flotation costs. He applied this form of the DCF model to an index of companies he identified as comparable in risk to the three large LECs. Witness Hirshleifer selected the RBHCs and larger independent telephone companies from the list of telephone operating companies in the S&P Industry Survey. Based upon this analysis, he concluded that his DCF analysis indicated a cost of equity for BellSouth of 9.35%, for Sprint of 9.41%, and for GTEFL of 9.50%.

We have reviewed the DCF analyses conducted by each of the witnesses. Regarding which DCF model is more appropriate for estimating the cost of equity capital of the three large LECs, we find that the multi-stage DCF model employed by AT&T/MCI witness Hirshleifer is superior to the single stage DCF model used by BellSouth and Sprint witness Billingsley and GTEFL witness Vander Weide. Witness Hirshleifer testified that the form of the DCF model he used is well supported in the financial community. He noted that prominent economists familiar with cost of capital research have recognized that the simple perpetual growth DCF model using short-term forecasts is inappropriate to use if a company's short-term growth rate is expected to exceed the long-term growth of the economy. He noted that Stewart Myers and Lynda Borucki state that:

> [f]orecasted growth rates are obviously not constant forever. Variable growth-rate DCF models, which distinguish short- and long-term growth rates, should give more accurate estimates of the cost of equity. Use of such models guards against the naive projection of short-run earning changes into the indefinite future.

Stewart C. Myers and Linda S. Borucki, "Discounted Cash Flow Estimates of the Cost of Equity Capital--A Case Study," Financial Markets, Institutions & Instruments, Vol. 3, No. 3, New York University Salomon Center, 1994.

In addition, he noted that Ibbotson Associates state that:

> [t]he reason it is difficult to estimate the perpetual growth rate of dividends, earnings, or cash flows is that these quantities do not in fact grow at stable rates forever. Typically it is easier to forecast a company-specific or project-specific growth rate over the short run than over the long run. To produce a better estimate of the equity cost of capital, one can use a two stage DCF model. ... For the resulting cost of capital estimate to be useful, the growth rate over the latter period should be sustainable indefinitely. An example of an indefinitely sustainable growth rate is the expected long-run growth rate of the economy.

Stocks, Bonds, Bills and Inflation, 1996 Yearbook, Ibbotson Associates, Chicago, pp. 158-159. Finally, he referenced the finance text book, Investments, in which the authors William Sharpe, Gordon Alexander, and Jeffery Bailey state:

> Over the last 30 years, dividend discount models (DDMs) have achieved broad acceptance among professional common stock investors. ... Valuing common stock with a DDM technically requires an estimate of future dividends over an infinite time horizon. Given that accurately forecasting dividends three years from today, let alone 20 years in the future, is a difficult proposition, how do investment firms actually go about implementing DDMs? One approach is to use constant or two-stage dividend growth models as described in the text. However, although such models are relatively easy to apply, institutional investors typically view the assumed dividend growth assumptions as overly simplistic. Instead, these investors generally prefer three-stage models, believing that they provide the best com[illegible]nation of realism and ease of application.

William F. Sharpe, Gordon J. Al[illegible] and Jeffery V. Bailey, Investments, Fifth Ed., Prentice H[illegible] Englewood Cliffs, New Jersey, 1995, pp. 5[illegible]-591. Witness Hirshleifer testified that neither witness Billingsley nor witness Vander Weide cited any credible support for the applicat on of the perpetual growth DCF model using short-run growth forecasts in the current environment. Moreover, it appears far more reasonable that the true estimates of BellSouth's, Sprint's, and GTEFL's cost of equity would be produced by a DCF analysis that assumes a growth rate of 9.5% for the first 5 years and linearly decreases to a long-run sustainable rate of 5.5% by year 20, than the estimates produced by DCF analyses that assume growth rates will remain constant at 12.1% to 13.4% forever. This is particularly true in light of BellSouth's and GTEFL's forecasted growth rates over the next 5 years of 8.1% and 8.9%, respectively.

We considered the arguments raised by each witness regarding the debate over whether the quarterly or annual form of the DCF model is more appropriate. However, because the difference between BellSouth and Sprint witness Billingsley's DCF results using the quarterly model versus the annual model was negligible, it was not necessary to make a determination on this point.

Regarding the debate over whether flotation costs should be recognized in the estimation of the cost of equity, we believe an adjustment should be made to allow for the recovery of these costs. Based upon GTEFL witness Vander Weide's testimony, the inclusion of flotation costs would increase the cost of capital by 20 to 30 basis points.

We also reviewed the indices of firms that each witness testified are comparable in risk to each of the three LECs. We have strong reservations regarding BellSouth and Sprint witness Billingsley's and GTEFL witness Vander Weide's testimonies that their indices of industrial firms are more comparable to the risk associated with BellSouth's, Sprint's, and GTEFL's provision of basic local service than AT&T/MCI witness Hirshleifer's index of telephone holding companies that are actually engaged in this line of business. Regarding witness Billingsley's indices, witness Hirshleifer testified that "if one were to accept the results of his cluster analysis, then one would have to believe that the risk of the network element leasing business was more similar to the risks faced by Coca-Cola, McDonalds and Wal-Mart stores, as examples, than to the risks faced by BellSouth's parent company (which owns LECs and the underlying network elements)." He noted that major brokerage firms and investment banks which issue analyst reports for the telephone holding companies do not use a cluster analysis when choosing proxy companies for valuing these companies. Instead, he noted that these firms consider other telephone holding companies to be the best proxies for the subject telephone company being valued. Witness Hirshleifer also testified that by selecting groups of companies with growth rates that exceed a reasonable forecast of the aggregate economy and assuming that these growth rates will remain constant into perpetuity, witness Billingsley "systematically guarantees an inaccurately high cost of equity estimate inconsistent with investor expectations."

Witness Hirshleifer testified that GTEFL witness Vander Weide did not demonstrate how his index of companies from such diverse industries as automobile manufacturers, oil companies, producers of food and food ingredients, publishing and entertainment companies, and pharmaceutical firms was comparable in risk to GTEFL. He noted that, because witness Vander Weide's "analysis is based on the performance of large industrial companies generally rather than a group of comparable companies, his results are of no relevance to the wholesale telephone business or the provision of universal service." He also noted that major brokerage firms and investment banks which issue analyst reports for GTE Corporation view other telephone holding companies to be the best proxies for the subject telephone holding company being valued.

Although BellSouth and Sprint witness Billingsley and GTEFL witness Vander Weide claim their respective indices are comparable in risk to BellSouth, Sprint, and GTEFL, and that the RBHCs and other independent telephone companies in AT&T/MCI witness Hirshleifer's index are not, a detailed comparison of the indices does not bear this out. We compared the averages of three measures of investment risk for each index. The measures were provided by each witness and were calculated as of December 31, 1997. We first compared the average market-to-book (M/B) ratio for each index. The average M/B ratio for witness Billingsley's index for BellSouth is 8.8. The average M/B ratio for witness Hirshleifer's index is 5.1. The average M/B ratio for BellSouth for the same period was 3.7. The average BARRA beta for witness Billingsley's index for BellSouth is .83. The average BARRA beta for witness Hirshleifer's index is .73. The BARRA beta for BellSouth for the same period was .76. Finally, the average of the IBES 5-year growth rate projections for witness Billingsley's index for BellSouth is 13.41%. The average of the IBES 5-year growth rate projections for witness Hirshleifer's index is 9.50%. The 5-year IBES growth rate projection for BellSouth for the same period was 8.11%. It is clear from this analysis that, contrary to BellSouth witness Billingsley's testimony, his index is not comparable in risk to BellSouth and therefore the results of his DCF analysis on this index are not reflective of BellSouth's true cost of equity. Moreover, this analysis shows that the index of RBHCs and large independent telephone companies relied on by AT&T/MCI witness Hirshleifer is comparable in risk to BellSouth and therefore the results of his DCF analysis on this index are reflective of the true cost of equity for BellSouth.

As noted earlier, witness Hirshleifer testified that witness Vander Weide did not identify a comparable group consisting of companies with similar risk. He noted that the only evidence witness Vander Weide offered regarding comparability was predicated upon his assumption that the risk of GTEFL providing basic local service in Florida was greater than the risk of GTE Corporation, the holding company. Witness Vander Weide argued that since GTEFL is more risky than GTE Corporation and because in his opinion the Value Line beta for GTE Corporation of .95 cannot be statistically distinguished from the assumed beta of 1.0 for the S&P Industrials, the S&P Industrials are therefore a conservative proxy for the forward-looking risk of GTEFL.

Witness Hirshleifer testified that the most widely-accepted technique for determining the cost of capital of a company is to determine the cost of capital of companies with businesses comparable to the line of business under consideration. He rebutted witness Vander Weide's underlying assumption by noting that the business in question, that is, the business of GTEFL providing basic local service, is far less risky than many of the businesses GTE Corporation is involved in, such as wireless and international ventures. He further noted that had witness Vander Weide considered the forward-looking BARRA beta for GTE Corporation of .75, he would have properly concluded that GTE Corporation is actually less risky than either the S&P Industrials or the market as a whole.

BellSouth and Sprint witness Billingsley next employed the common form of the CAPM model. To use this model, he had to make assumptions regarding the appropriate beta, market return, and risk-free rate. He used a prospective measure of beta supplied by BARRA. The beta coefficient measures the systematic risk of investing in a security. The systematic risk is the risk that cannot be eliminated through diversification. Generally speaking, the higher the beta, the greater the risk and vice versa. The average beta for the BellSouth index was .83, and for the Sprint index was .84. To estimate the market return, witness Billingsley applied the same form of the DCF model discussed earlier to the S&P 500 index of companies. Using market data for the month of July 1998, he estimated an expected return on the S&P 500 of between 15.85% and 16.09%. Finally, for the risk-free rate, he used the average expected yield implied by the prices of 20-year Treasury bond futures contracts quoted during July 1998 of 6.14%. Based upon this analysis, he concluded that his CAPM analysis indicated a cost of equity for BellSouth in the range of 14.2% to 14.4% and for Sprint in the range of 14.3% to 14.5%.

In his other analysis, AT&T/MCI witness Hirshleifer used the market risk premium form of the CAPM model. To employ this model, he had to make assumptions regarding the appropriate beta, market risk premium, and risk-free rate. He considered two measures of beta. The first measure, based on historical stock returns, was provided by Dow Jones Beta Analytics. The indicated beta from this source was .72 for BellSouth and .78 for GTE. To confirm the reasonableness of this approach, he also considered the prospective measure of beta supplied by BARRA. The beta for BellSouth as of the same period was .76 and for GTE was .75. He defined the market risk premium as the added expected return that investors require to hold a broad portfolio of common stocks instead of risk-free Treasury securities. Based on a DCF analysis of the S&P 500 using the same DCF model discussed earlier, he determined a market risk premium over one-month Treasury bills of 5.3% and a market risk premium over long-term Treasury bonds of 3.8%. He also considered the historical spread between total stock returns and treasury returns as calculated by Ibbotson Associates. The arithmetic average spreads (indicated market risk premiums) over one-month Treasury bills ranged from 5.49% to 9.15%. The average spreads over long-term Treasury bonds ranged from 4.54% to 7.69%. Based on these analyses, he concluded that reasonable estimates of the market risk premium are 7.5% over one-month Treasury bills and 5.5% over 20 year Treasury bonds. Finally, for the risk-free rate, he used the average yields on one-month Treasury bills and 20-year Treasury bonds. For one-month Treasury bills he used a long-run average yield of 4.53% and for 20-year Treasury bonds he used the average yield for December 1997 of 6.02%. Based upon this analysis, he concluded that his CAPM analysis indicated a cost of equity for BellSouth of 9.96% and for GTEFL of 10.35%. To estimate the CAPM cost of equity capital for Sprint, he assumed the average of the entire sample of 10.08%.

We believe BellSouth witness Billingsley's CAPM analysis overstates the true cost of equity of BellSouth. AT&T/MCI witness Hirshleifer testified that had witness Billingsley properly taken into account the fact that the growth rates used in his analysis would eventually slow, he would have arrived at market risk premiums more consistent with what is supported in the current financial literature. Witness Hirshleifer noted several current articles which discuss the forward-looking market premium over Treasury bonds in the 2.0% to 6.0% range. In witness Billingsley's analysis, the difference between his indicated market return through July 1998 of 15.85% to 16.09% and the YTM on 20-year Treasury bond futures contracts through July 1998 of 6.14% indicates a market premium of 9.71% to 9.95%, well in excess of the level supported by independent sources.

In discussing his CAPM analysis, AT&T/MCI witness Hirshleifer conceded that for purposes of estimating the long-term cost of capital there is a preference for using the long-term Treasury interest rate. He also agreed that it would be reasonable to use the predicted BARRA beta instead of a historical measure of beta in the CAPM analysis. The BARRA betas for BellSouth, Sprint Corp., and GTE Corporation are .76, .79, and.75, respectively. Using these measures of beta, the YTM on 20-year Treasury bond futures contracts through September 1998 of 5.72%, and the range of forward-looking market risk premiums of 5.5% to 7.5% from witness Hirshleifer's analysis, the indicated CAPM cost of equity estimates for BellSouth and GTEFL are in the range of 9.9% to 11.4%. The indicated estimate for Sprint is in the range of 10.3% to 11.7%.

In his final approach, BellSouth and Sprint witness Billingsley applied a market risk premium analysis. He defined the equity market risk premium as the difference between the return on a broad basket of equity securities (the market) and the return on a low-risk or riskless benchmark security. In this analysis, he calculated the risk premium as the difference between the expected return on the S&P 500 and the current market yields on public utility bonds from the period October, 1987, through June. 1998. To estimate the market return, he applied the same form of the DCF model discussed earlier to the S&P 500 index of companies. For BellSouth, he used the yield on triple A-rated public utility bonds. For Sprint, he used the yield on single A-rated bonds. His analysis showed that the average risk premium from late-1987 to mid-1998 was 6.74% over triple A-rated bonds and 6.57% over single A-rated bonds. Adding the first premium to the three month (April - June 1998) average return on AAA-rated public utility bonds of 6.89% produced a cost of equity for the S&P 500 of 13.63%. Adding the second premium to the three month (April - June 1998) average return on A-rated public utility bonds of 7.12% produced a cost of equity for the S&P 500 of 13.69%.

However, witness Billingsley testified that when interest rates decline, the equity risk premium widens, and when interest rates rise, the equity risk premium narrows. He cited a study conducted by R.S. Harris and F.C. Marston to support this opinion. As a result of this study, witness Billingsley testified the risk premium must be increased. During the period of Harris and Marston's study, the average risk premium was 6.47% and the average yield on long-term Treasury bonds was 9.84%. Because the yield on 30-year Treasury bonds has decreased to 5.68% (July 1998), he argued that the appropriate risk premium was 9.18% instead of the 6.47% risk premium indicated by the Harris and Marston study. Using this alternative approach, he concluded that his analysis indicated an expected return on the S&P 500 of 14.86%, which is the current average level of 30-year Treasury bonds for the month of July of 5.68% plus the adjusted risk premium of 9.18%.

We believe witness Billingsley's risk premium analysis overstates the true cost of equity of BellSouth and Sprint. In reviewing witness Billingsley's market risk premium analysis, we note that the market premium is not constant but instead increases and decreases over time. Schedules RSB-5 and RSB-6 show that the risk premium over the period covered by witness Billingsley's analysis varied from as little as 3.90% to as great as 8.86% when measured against triple A-rated bond yields and from 3.48% to 8.77% when measured against single A-rated bond yields. For this reason, it appears the average risk premium calculated by this analysis already accounts for changes in the risk premium due to changes in the level of interest rates. We believe it would be double counting to include the additional 2.71% premium (9.18-6.47=2.71) witness Billingsley included in his risk premium estimates of BellSouth's and Sprint's cost of equity. Removing this 2.71% premium, the indicated return for the S&P 500 is 12.2%, without accounting for the fact that the average yield on 30-year Treasury bonds continued to decline from July, 1998, through September, 1998. Moreover, this number is conservatively high because it reflects the cost of equity for the S&P 500. The S&P 500, with an assumed beta of 1.00, is generally considered more risky than individual companies with betas significantly less than 1.00, such as BellSouth with a beta of .76 and GTEFL with a beta of .75.

Upon consideration, we have determined that the cost of equity for BellSouth falls within the range of 9.9% to 12.5% and for Sprint and GTEFL within the range of 10.2% to 12.5%. These ranges include an allowance of 30 basis points for the recovery of flotation costs. Since a point estimate of the cost of equity must be used to establish the overall cost of capital, we hereby adopt 11.5% for this proceeding. This return is conservatively high considering the fact that it represents a 6.3% market premium over the average yield on 30-year Treasury bonds for September, 1998, of 5.19% and a 5% market premium over the forward-looking cost of debt of 6.5%.

Overall Cost of Capital

BellSouth and Sprint witness Billingsley and GTEFL witness Vander Weide discussed at length their opinions of the risk being faced by companies in the telecommunications industry since the passage of Telecommunications Act of 1996. In their discussions of risk, they overlooked two very fundamental points. First, witnesses Billingsley and Vander Weide misstate the risk that is relevant to this proceeding. AT&T/MCI witness Hirshleifer testified that the telecommunications industry is a very broad category that includes such businesses as cellular operations, PCS, wireless communications endeavors, long distance, and international operations. On the other hand, he pointed out that the business for which the cost of capital is being estimated in this proceeding is the business of universal service.

Both witnesses Billingsley and Vander Weide admitted that for purposes of setting prices in this proceeding, we should only consider the forward-looking cost of capital associated with the provision of universal service. Witness Hirshleifer testified that the business of providing universal service is of relatively low risk compared to many of the risky business endeavors being pursued by the telephone holding companies. He also noted that in its Universal Service Order, the FCC specifically stated at Paragraph 250(4) that "until facilities-based competition occurs, the impact of competition on the LEC's risks associated with the supported services will be minimal because the LEC's facilities will still be used by competitors using either resale or purchasing access to the LEC's unbundled elements." Witness Hirshleifer concluded that it has been clearly recognized by financial analysts and the bond rating agencies that the business of providing universal service is less risky and more stable than the other businesses being pursued by the telephone holding companies. For these reasons, the discussion of risk in witnesses Billingsley's and Vander Weide's testimonies, to the extent it deals with the global state of the telecommunications industry rather than the actual business of providing universal service in Florida, is irrelevant to the determination of the cost of capital in this proceeding.

Second, regarding the risk that is relevant to the provision of basic local service, both witnesses Billingsley and Vander Weide ignored the fact that the financial markets have been continuously absorbing and incorporating information about competition and technological and regulatory change. Witness Hirshleifer testified that, when assessing the cost of capital of any publicly-traded company, the market accounts for all known risks existing currently and the possibility of risks that could develop or increase in the future. He further noted that the market continuously evaluates real-world information regarding all relevant risks, including those which may arise or increase in the future, and incorporates the likelihood of those risks occurring into the current costs of capital of the telephone holding companies. Witness Vander Weide admitted that investors consider all the risks, including industry changes, that a firm might incur over the future life of the company. Since all of the witnesses in this proceeding have relied upon market information in the models they have used, to the extent the market considers the risks referred to by witnesses Billingsley and Vander Weide important, the market has already accounted for these risks in the financial measures used by the witnesses to estimate the cost of capital of these companies.

Upon consideration, we hereby adopt an overall cost of capital of 9.5% for purposes of this proceeding. This is the fall-out of a capital structure of 60% equity and 40% debt, a forward-looking cost of debt of 6.5%, and a cost of equity of 11.5%. For the reasons discussed earlier, we believe the 9.5% is a reasonable estimate of the large LEC's true forward-looking cost of capital and represents an appropriate cost of money for an efficient provider of universal service. AT&T/MCI witness Hirshleifer testified that "the 11.25% cost of capital advocated by BellSouth and Sprint, and the 12.65% cost of capital advocated by GTE are far in excess of the forward-looking cost of capital for the provision of network elements or universal service, and are inconsistent with publicly-available cost of capital estimates by parties outside the context of this proceeding." He noted that the 11.25% was determined by the FCC in September 1990. Since that time, 30-year Treasury bond rates have fallen 380 basis points from an average of 8.99% in September 1990 to an average of 5.19% in September 1998. Witness Hirshleifer concluded that given the significant decline in capital costs as indicated by the drop in yields on 30-year Treasury bonds and "the real-world, investor-oriented evidence" discussed in his testimony, there is no evidence to support witness Billingsley's and witness Vander Weide's estimates as the true costs of capital of BellSouth, Sprint, and GTEFL for the provision of universal service. We believe the 9.5% cost of capital is reasonable for BellSouth, Sprint, and GTEFL in light of the evidence presented.

C. Taxes

Income taxes, deferred income taxes and taxes other than income are necessary elements for the cost proxy model. Both models, as filed, lacked certain key components.

During deposition AT&T/MCI witness Wood indicated that the HAI model employed in this proceeding does not address the effect of either deferred state or federal income taxes. He also said that separate spreadsheets would have to be developed, independently of the model, for each class of depreciable property, so that those calculations could be entered into the model. Witness Wood did acknowledge that if deferred taxes were included in the model, the costs would be lower. He also said the inclusion of deferred taxes would be a change he would suggest to the model.

Although BellSouth witness Duffy-Deno stated that the BCPM model did not recognize the deferral of state income taxes, the model does incorporate federal deferred income taxes. He did indicate where the appropriate factors could be inserted in the model. He also provided the information required to replace default factors used in the model with Florida-specific factors.

Both state and federal deferred taxes are appropriate for use in determining basic local service costs. BellSouth witness Duffy-Deno indicated he was not sure whether Florida income taxes were deferred, but saw no problem with including them if they are deferred. Accordingly, we find that both federal and state deferred income taxes are appropriate for consideration in this proceeding.

At the hearing, we took Official Recognition of Order No. PSC-98-0604-FOF-TP, Docket No. 960833-TP, issued April 29, 1998. The information relied on in that order still appears to be reasonable. There have been no significant changes that would affect the rates since our Order was issued. We find, therefore, the rates approved in that docket are appropriate for this proceeding: 1.53 per cent for gross receipts and 1.20 per cent for ad valorem and other taxes.

Table V-C(1) shows the rates recommended by the witnesses and the rates that we hereby approve. AT&T/MCI's are default numbers based on national averages. The combined rate is a mathematical combination of the state and federal income tax rates. For example, use of the state and federal income tax rates provided by BellSouth, GTE Florida and Sprint and approved by us produces a combined rate of 38.57% (.055 + ((1-.055) x .35) = 38.57%).

Table V-C(1): Tax Rate Comparison

Type of Tax	AT&T/MCI	BellSouth	GTE-FL	Sprint	Commission
Income:					
Federal	35.00%	35.00%	35.00%	35.00%	35.00%
State	05.50%	05.50%	05.50%	05.50%	05.50%
Combined	39.25%	38.57%	38.57%	38.57%	38.57%
Taxes Other Than Income:					
Ad valorem	NA	00.90%	01.20%	00.90%	00.90%
Ad val. & other	NA	NA	NA	NA	01.20%
Gross receipts	05.00%	NA	03.03%	NA NA	01.53%
Other	NA	NA	NA	01.00%	30.00%

Because this proceeding is intended to gauge the cost of basic local service in Florida on a forward-looking basis, as mandated by the Legislature, we believe Florida-specific rates are appropriate. We hereby require the use of Florida-specific tax rates and the inclusion of the effect of state and federal deferred income taxes in order to determine the cost of basic local service in Florida. The Florida-specific state income tax rate shall be 5.5 per cent. The federal income tax rate shall be 35 per cent. The combined federal and state income tax rate shall be 38.57 per cent. The factor for gross receipts shall be 1.53 per cent. A 1.2 per cent factor shall be used for ad valorem and other taxes.

<u>OVERVIEW: SECTIONS V-D through V-T</u>

The following sections, Sections V-D through V-T, address the remainder of the inputs required for the cost proxy model. Of the total cost of providing service, the loop components constitute the majority of the cost, approximately 73 percent, according to GTEFL. Switching costs are the next largest category, representing about 14 percent of the total cost, according to GTEFL.

We note that because BCPM 3.1 is a cost proxy model as is HAI 5.0a, some of the results may appear to be counter-intuitive from an engineering standpoint. For example, a model may call for a manhole, or part of a manhole, to be built in a rural area because of the overall plant mix that is assumed. This type of anomalous result occurs because these proxy models are not models an engineer would use when designing an actual network. We believe, however, that overall these anomalies result in minimal effects on the cost determination process.

During this proceeding, our staff asked BellSouth, GTEFL, and Sprint to recommend inputs if the HAI Model were recommended. BellSouth recommended the HAI 5.0a inputs proposed by witnesses Jamshed K. Maden, Michael D. Dirmeier and David C. Newton (Georgetown Consulting Group). In its response GTEFL stated that it "objects to this request as it is vague, ambiguous, overly broad and unduly burdensome." As part of its response, Sprint provided documents detailing the difference between the BCPM and HAI inputs and "approximations" of the calculations necessary to convert BCPM inputs to HAI inputs, but "reserves the right to develop Florida-specific inputs for use in HAI, if chosen."

Our staff also requested that AT&T recommend inputs if the BCPM Model were recommended. MCI adopted AT&T's response. AT&T responded:

> The structure and algorithms used in BCPM 3.1 are not comparable to the structure and algorithms used in HAI 5.0a. Simply attempting to modify the inputs to BCPM 3.1 to resemble those in HAI 5.0a will produce [no] meaningful answer. Moreover, there is insufficient time available in this proceeding to accomplish this task. . . . the FCC spent three months on a similar project before abandoning the effort.

AT&T did provide a copy of AT&T and MCI's response to the Mississippi Public Service Commission staff of suggested outside plant inputs for BCPM.

We have analyzed each input and addressed AT&T's criticisms of the LECs' proposed inputs. Generally speaking, each input begins with a definition or discussion about the input, analysis of the parties' positions, and our determination on the value for the particular input.

For each input not specifically discussed, we consider each LEC's proposed input as representative of an efficient provider in its territory. Therefore, we find that for all the inputs not specifically addressed in this Order, each LEC's proposed inputs are considered to be reasonable surrogates for an efficient provider and thereby adopted.

Differences Among the LECs' Inputs Methodologies and Documentation

As different as many of BCPM's and HAI's inputs are, there are also differences in the methodology the LECs used to calculate their BCPM inputs. For example, GTEFL excluded nonrecurring expenses from its expense calculation, while BellSouth and Sprint did not. (Section V-S). Regarding outside plant mix (Section V-L), BellSouth proposed using the BCPM defaults, while GTEFL and Sprint provided inputs specific to each's territory.

What particular data was considered confidential varied by LEC. For example, GTEFL's copper and fiber cable, and its labor costs are confidential, while the same costs for BellSouth and Sprint are not confidential (Section V-H). The breadth and depth of back-up documentation varied considerably among the LECs, as will be seen in the various subparts to the remainder of Section V of this Order.

As implied in the above discussion, the LECs' methodologies for input development are not necessarily comparable on an "apples to apples" basis. In fact, for several inputs, it is unclear whether all the LECs included the same costs, let alone determined the costs the same way.

GTE Florida witness Tucek discussed this at the hearing:

> In a nutshell, very little can be concluded from looking at the differences among various sets of inputs. Just like trying to count the number of inputs we've populated in BCPM, it's a futile endeavor to search for meaning in the differences between the inputs proffered by the parties in this proceeding. The reason for this is that for any such comparison to be meaningful, the inputs must include the same types of costs.
>
> The lesson we can learn from my rebuttal testimony is that it is very important to make sure there's no mismatch in what each company has included in like named inputs before

> trying to assign meaning to the differences. Any comparison of these data rely on the unproven assumption that the inputs that are called by the same name are developed on the same basis. We've already seen this to not be the case with something as basic as a pole.
>
> Given the time available, the complexity of the two proposed models, and multiple sets of proposed inputs not necessarily calculated using the same methodology, we have done our best to evaluate all of the evidence available. However, we note that there may be further adjustments to the model inputs that are appropriate.

<u>BellSouth's Use of Projected 1998-2000 Data</u>

While GTEFL and Sprint used 1997 data as the basis for many inputs, BellSouth used projected 1998-2000 data. BellSouth arrived at its projected data by using Telephone Plant Indices (TPIs):

> In our particular study, we used three years, so each one of them is year over year. We use -- if you look at a '98, '99, 2000, you would have a TPI that would show the price change from '97 to '98, '98 to '99, and '99 to 2000. And what we've done in our study is, instead of using all three of them, we tried to hit a midpoint of the time frame, and we took the three numbers and straight averaged them. So you had one TPI that would bring it to a representative midyear of that period. And it is applied to material. That's the one we used.

BellSouth witness Caldwell contends that the use of projected data is appropriate:

> In terms of looking at the study, we felt that we had budgeted data that would reflect any cost changes that were relevant to the next three years, and it would just give us a more forward-looking view than just using a simple flash cut in time for material prices.

BellSouth did, however, index more than material prices. It also indexed expenses.

Sprint-Florida witness Dickerson, however, disagreed with the use of projected costs:

> As appropriate to a forward-looking design assumption, Sprint did not apply any indices or factors to its current material or labor costs to reflect future costs. . . .In contrast to the ILEC's embedded network, a "forward-looking" network is assumed to be based 100% on the best, most current technical design, currently available technology and <u>current</u> [emphasis added] costs. That is, it represents the network design, technology and costs that an efficient ILEC experiences today as it builds and expands its network using "best in class" technology and design.

Our staff requested that BellSouth rerun BCPM 3.1 without indexing material, labor, and contractor costs to see if a significant change in the cost of basic local service resulted. BellSouth found that without indexing for inflation or deflation, the average monthly cost of basic local service decreased by $0.36 on an uncapped investment basis, and $0.35 on a capped investment basis.

This proceeding is to determine the cost of basic local service using a proxy cost model. We find Sprint's arguments against indexing persuasive. We believe that indexing may be appropriate, for example, in a contract arbitration, but not in this proceeding. Therefore, throughout the remainder of Section V, we will include, where appropriate, our determination on BellSouth's indexing.

<u>Types of Input Values: National Default, State-Specific, LEC-Specific and Geographic-Specific</u>

Both BCPM 3.1 and HAI 5.0a provide default input values that are, by their very nature, national. However, these national default inputs may be changed. Inputs may be specific to a particular company or geographical area, or they may be specific to a state. In general, the LECs believe that, where possible, inputs should be specific to their service territories.

BellSouth believes that the inputs "must be as specific as possible. . . .should be company-specific by territory." When "possible," BellSouth recommends "Florida-specific cost inputs which reflect the forward-looking cost of providing service in BellSouth territory in Florida." However, BellSouth also used some of the BCPM 3.1 defaults: "[D]efaults which were found to be representative of BellSouth's Florida costs, were used when BellSouth-specific data was not available in the format, or at the level of detail, required by the BCPM 3.1."

GTEFL proposed company-specific inputs rather than BCPM defaults "based on: (1) the materiality with which the inputs affect costs, and (2) GTE's ability to develop the company-specific inputs in the format required by BCPM in the time allowed."

Sprint believes that the inputs should be Florida-specific. However, Sprint-Florida does not believe that there should be a "standard set of inputs" for all Florida LECs using BCPM, because "the model's precision in developing cost by location would be diminished."

Each of the LECs had different responses when asked if there should be any inputs which are Florida-specific rather than LEC-specific. BellSouth responded that:

> Cost input values should be reflective of the costs incurred in a particular operating territory, regardless of which local exchange carrier is providing the service.

This presumably implies that, for example, the cost of switches would be similar for all LECs serving in BellSouth's territory, but different in Sprint's territory. We believe, however, that if BellSouth were to compete in Sprint's territory, it is far more likely that BellSouth's switch costs in Sprint's territory would not be the same as Sprint's switch costs, but would rather be the same as BellSouth's switch costs in its traditional territory.

GTEFL essentially agrees with BellSouth:

> State or averaged inputs do not reflect the production technologies, input prices, and other company-specific circumstances of any ILEC.
>
> . . .

> I [GTEFL witness Tucek] would suggest that if this Commission wants the cost model and the cost model inputs to result in meaningful estimates of forward-looking cost, it is important that we estimate the forward-looking cost of providing local service on each carrier's own network. The reason for this is that the supported services are likely to be provided primarily out of the incumbent's network for the foreseeable future, if not indefinitely.

Sprint believes that there are some inputs that "should be constant for all companies in the state, ..." These inputs are taxes, cost of money, and depreciation. Sprint states that "several" input categories could be considered "Engineering specifications - such as CSA size, pole spacing, manhole spacing, cable sizing factors - that can be readily be determined from industry standard documents." For the remaining inputs, including cable and DLC costs, as well as support ratios and operating expense ratios, Sprint suggests that a range might be employed to take into account cost differences attributable to company size.

Upon consideration, we conclude that this proceeding is to develop the cost of an efficient provider in Florida, not necessarily an LEC's cost in its service territory. We do believe it is important to remember that any hypothetical efficient provider may or may not operate only in historic LEC territories. A provider could operate in Tampa and Jacksonville. If this is the case, would the provider's general and administrative expenses in Tampa differ from those it incurs in Jacksonville? Would Sprint's plant mix remain the same if it competed with BellSouth in Miami? Or would it more likely resemble BellSouth's plant mix? We believe that whether an input should be specific to a particular geography, LEC, or the state as a whole, needs to be analyzed on an input-by-input basis, which we have done with each of the inputs discussed in this Order.

D. Support Structures

The category of supporting structures includes the costs of poles, anchors and guys, the placement of feeder and distribution conduit, and the placement of buried feeder and distribution cable. We will address each of the support structure inputs separately.

Poles, Anchors, and Guys

AT&T supports the value found in the HAI model documentation. According to the HAI model documentation, the HAI places a 40-foot, class 4 treated southern pine utility pole. The total installed investment is $417.00. This includes the anchors and guys. BellSouth's base cost for an installed pole is $391.70, which is for a 40-foot, class 4 pole. The base cost for installed anchors and guys is $100.46. The pole cost input used by GTEFL is a weighted average of a 30-foot, class 5 pole and a 40-foot, class 4 pole. The weights are based on the mix of poles which are solely-occupied by GTEFL. GTEFL's base cost for an installed pole in soft rock and normal terrain is $786.81. In hard rock, GTEFL's base cost for an installed pole is $1,057.26. The base cost for installed anchors and guys is $143.05 in all terrain types. Finally, Sprint models a 45 foot, class 5 pole. Sprint's base cost for an installed pole is $549.00. Its base cost for installed anchors and guys is $314.27.

Since the parties propose different pole sizes, we believe we first must determine what is the appropriate pole size or sizes to be used in the selected model. In addition, there is the question of whether inputs should be company-specific, geographic-specific, or statewide. We note that in reality, companies place several different types and sizes of poles in their territory; however, the models have limitations which restrict the ability to address every scenario.

According to witness Dickerson, Sprint modeled a 45 foot pole in order to support its level of structure sharing (30% assigned to telephone for Sprint). He states that in order to have span clearance between a power facility, a telephone company, and a cable company, a 45 foot pole is required. Furthermore, based on witness Dickerson's discussions with various construction and planning managers, in order to enjoy the level of sharing that is depicted on every single pole by virtue of only putting one input into the model, which says on every single pole 70% of the costs is shared away, it would be necessary to assume a 45-foot pole.

BellSouth models a 40-foot pole because BellSouth's network subject matter experts concluded that joint use agreements with major power companies were based on a standard pole height of 40 feet. GTEFL assumes solely-occupied poles are 30 feet and jointly-occupied poles are 40-foot poles. The HAI Inputs Portfolio (HIP) used by AT&T does not specify why a 40-foot pole was specifically chosen.

Where parties did specifically state why a certain pole size was chosen, the decision appeared to be based on the level of sharing. Structure sharing is specifically addressed in Section V-E of this Order; we note here the percentages assigned to telco accounts for aerial plant by each company are: BellSouth, 39.88%; GTEFL, 53.58%; and Sprint, 30%. HAI assumes pole sharing of between 50% - 25%, based on density.

While there was little evidence presented on pole size, there was some evidence regarding pole costs. Much of the evidence on pole cost focused on data submitted by the various LECs to the FCC in response to a survey. The costs provided in response to the FCC's survey were compared to what the LECs submitted in this proceeding. According to AT&T/MCI witness Wells, the HAI "pole costs have been validated via comparison to LEC pole cost data gathered by the FCC." GTEFL witness Tucek believed that witness Wells' comparison was flawed because he was comparing GTEFL's response to the FCC with the HAI default value. The HAI default value is the installed cost of a pole including anchors and guys. Witness Tucek asserted that GTEFL's response to the FCC did not include the same items as HAI and, therefore, it is an "apples and oranges" comparison. Sprint's witness Dickerson also stated that Sprint's response to the FCC did not reflect all the costs related to the cost of pole materials and installation. Upon review, we conclude that the responses received by the FCC in its data request regarding pole costs are not an appropriate basis for validating pole costs proposed by the LECS in this proceeding.

Upon consideration, we believe it is appropriate to model two pole sizes: a 45-foot, class 5 pole for providers in Sprint's territory, and a 40-foot, class 4 pole for providers in the territories of GTEFL and BellSouth. We find it is reasonable to assume that ALECs would have approximately the same sharing opportunities and pole sizes as the resident LEC. According to Sprint, its assumption of a 45 foot pole is based on its sharing factors. Sprint assumes the greatest level of sharing of poles. We could not find any data presented by the parties that contradicts Sprint's claim. Therefore, we shall require that a 45-foot pole be modeled in Sprint's territory. In addition, we believe Sprint's pole spacing, guy spacing, and relative pole units (the number of poles, on average, between each placement of an anchor and guy) are appropriate for Sprint's territory.

We believe it is appropriate to model a 40-foot pole in the territories of GTEFL and BellSouth. Once again there is no record evidence contradicting this pole size. However, there was some discussion regarding pole spacing for GTEFL. GTEFL's witness Tucek was questioned why GTEFL uses the same spacing of 175 feet in all density zones; he replied "Every pole in GTE's systems is not 175 feet apart. For modeling purposes, we put in an average value." Witness Tucek also stated that he ran the BCPM model using the HAI assumptions for pole spacing and anchors and guy wires, and the monthly cost per line increased by three cents. As with structure sharing, we believe spacing issues are best determined by those most familiar with their territory, the LECs themselves. Furthermore, we reiterate that this is a model, and every spacing scenario cannot be duplicated. We find that territory-specific pole spacing, guy spacing, and relative pole units are appropriate and recommend accepting the values as submitted by GTEFL and BellSouth.

We believe the appropriate costs for a 45-foot pole are the costs submitted by Sprint. In addition, we find that the costs of anchors and guys for the 45 foot pole submitted by Sprint are an appropriate surrogate for the territory. No other party provided any cost information for a 45 foot pole, or the anchors and guys necessary to support it. Sprint's material cost for its pole is based on its vendor prices. There is no evidence to suggest that a generic provider placing a 45-foot pole could do so at a lower cost than what was provided. The same is true for anchor and guy costs.

For a 40-foot pole and associated anchors and guys, we find that BellSouth costs are an appropriate surrogate for what a generic provider would pay for a 40 foot pole to be placed. GTEFL provided its specific pole costs for a 30 and a 40 foot pole (the numbers are proprietary). Its base material costs for a 40 foot pole appear to be similar to that provided by BellSouth. On the other hand, GTEFL's total costs are almost double that of BellSouth. GTEFL did not provide adequate data to support its pole costs. Furthermore, as was the case with several of the inputs, the LECs did not draw comparisons between their inputs. We believe that GTEFL's costs are excessive. When witness Tucek was asked why GTEFL's pole cost are greater than Sprint's and BellSouth's, he merely responded "I don't have access to Sprint's or BellSouth's numbers other than what they filed, so I can't tell you why." He stated that it should not be assumed that like named inputs are developed on the same bases. Upon consideration, we find that BellSouth's pole, and anchor and guy costs are an appropriate surrogate for the cost an efficient provider could expect to incur in its territory, as well as the territory of GTEFL.

<u>Placement Costs for Feeder and Distribution Conduit, and Buried Feeder and Distribution Cable</u>

AT&T estimated the costs for various excavation methods through a team of experienced outside plant experts. According to witness Caldwell, BellSouth structure placement costs for placing conduit, trenching/plowing buried cables and placing poles are based on an average of the 10 existing BellSouth contracts with OSP contractors in Florida. BellSouth does not have data that identifies the percentage of time associated with each activity in the structure tables. Therefore, BellSouth Network experts reviewed the BCPM defaults. Since these experts found these default values to be reasonable and representative of BellSouth's operations in Florida, the defaults were used. GTEFL used the BCPM defaults. Sprint's BCPM inputs for these functions were based on the specific conditions encountered in Sprint's Florida service area. Costs for buried and underground structures were developed based on the contractor prices in effect for 1998 within Sprint's Florida serving area. The construction activity percentages, also contained in the structure tables, were based upon an analysis of the actual 1997 contractor jobs for construction of feeder and distribution routes within Sprint's Florida serving area.

The costs for placing underground conduit and buried cable vary widely among the parties, especially between the LECs and the HAI sponsors. BellSouth's buried cable structure costs do not vary by type. This is also true of Sprint's costs. According to AT&T/MCI witness Wells, this is "simply wrong." He believes it costs much less per foot to plow cable than it does to trench and backfill. When Sprint's witness Dickerson was questioned regarding witness Wells' assertion, he stated "this is a perfect illustration why an attempt to use national generalizations doesn't arrive at the correct and best information to calculate specific average costs." Witness Dickerson went on to explain that Sprint-Florida has negotiated a master contract for contractor work which has a rate for placing cable which covers all installation techniques (e.g., trench and backfill, rocky trench, backhoe, etc.). BellSouth's witness Caldwell's response to witness Wells was almost identical to that of witness Dickerson. According to witness Caldwell, in BellSouth's contracts, the prices for such activities as plowing, backfilling, or trenching do not vary on a per foot basis.

AT&T/MCI witness Wells was also critical of GTEFL for its use of the BCPM default values rather than its Florida-specific costs. Witness Tucek explained that GTEFL was unclear how it would develop the analogous inputs for this category so it chose to use the BCPM 3.1 default inputs. Witness Wells questioned why BellSouth's costs for placing underground structure are four times that of Sprint, since the LECs have access to the same pool of contractors in Florida. According to BellSouth witness Caldwell, BellSouth's numbers are taken as an average of all the contracts it has with placing vendors. Witness Caldwell also states that those contracts are bid by geographic area. She believes one thing that may drive the cost difference between BellSouth and Sprint is that they serve different geographic areas. As an example, in some cases BellSouth may do more burying in a particular geographic area, so its contractor may develop the contract by figuring in a lower price for burying than for placing conduit.

Sprint's witness Dickerson was asked to respond to AT&T/MCI's witness Wells' assertion that Sprint models buried cable structure at less than half the cost of BellSouth. Witness Dickerson stated that he has not compared Sprint's inputs to those of BellSouth. However, he did speculate that looking at Sprint's percent activity inputs, which are based on Sprint's actual construction techniques that were monitored for a recent annual period, the bulk is related to plowing. He notes that the construction prices input in Sprint's master contract reflect the types of construction that the contractors can expect to employ. He believes BellSouth's cost study may reflect more urban area construction than does Sprint which could tend to be more expensive.

We believe that placement costs do vary by geography. While AT&T/MCI witness Wells' argument that buried costs vary by installation technique is correct intuitively, the LECs have provided compelling evidence that their contracts have a fixed per foot charge for all types of installations. Therefore, we find that the inputs provided by BellSouth and Sprint for placement activities in their respective territories are appropriate. Furthermore, we find that the BCPM defaults adopted by GTEFL are appropriate for its territory.

E. Structure Sharing Factors

Structure sharing factors are applied to telephone poles and their anchors and guys, conduit, and buried cable for feeder and distribution. The factors themselves are expressed as the local exchange carrier's percentage of investment for poles, conduit, and related equipment.

According to AT&T/MCI witness Wells, as with other inputs, HAI's structure sharing inputs are "derived directly from the judgement of the OSP Engineering Team." BellSouth's proposed structure sharing inputs, according to BellSouth witness Caldwell, "are BellSouth-specific values representative of BellSouth's sharing arrangements in Florida." In addition, BellSouth asserts that because it "is a large efficient provider of telecommunications services in Florida. . . . structure sharing arrangements reflect economies of scale that an efficient provider would be able to expect to achieve on a going-forward basis." GTEFL witness Tucek argued that GTEFL's proposed structure sharing inputs are "based upon GTEFL's actual experience in Florida." GTEFL describes their structure sharing inputs:

> GTE's pole sharing input for normal and soft rock placement is 53.58 percent; for hard rock placement, the sharing input is 54.52 percent. These percentages are based on the number of poles to which GTE attaches, and on whether or not GTE is the only utility using the pole. The sharing and price inputs for poles represent a composite of 30 foot non-shared poles and 40 foot shared-use poles. There is no distinction between normal and soft rock placement because GTE's existing vendor contracts for pole placement do not make this distinction. Likewise, the sharing inputs of 100 percent for buried placement and 97.18 percent for conduit and manholes reflect GTE's current experience in Florida and the assessment of GTE operating personnel in Florida.

On a "going-forward basis," GTEFL witness Tucek does not "think that there will be enough opportunities to share that is going to change these numbers for the network as a whole, . . . these inputs are the most – are representative of the most efficient levels." In terms of a new entrant, witness Tucek agreed that "seeking out opportunities to share the cost of burying cable" "may be efficient," but he pointed out that "[F]or the opportunity to exist for the new entrant, there has to be someone there willing and able at that point in time and at that particular location who wants to bury the plant."

Sprint witness Dickerson describes his company's structure sharing inputs:

> Structure sharing, which impacts the percent of costs assigned to telephone, is based upon an assessment of current and projected opportunities to have other entities share the cost of the support structure. For example, the percent assigned to telephone is set at 30 percent for aerial feeder to reflect existing and expected pole sharing and pole attachment agreements. On the other hand, the percent assigned to telephone for buried and underground (conduit and manhole) feeder structures is set at 95 percent for most grids[1] to reflect the fact that sharing with other entities, such as power companies and cable companies, is limited. There are work coordination, safety, and available space considerations which make significant sharing of buried and underground construction costs unlikely.

Tables V-E(1) through V-E(8) provide a side-by-side comparison of the structure sharing inputs proposed by AT&T/MCI, BellSouth, GTEFL, and Sprint. The percentages represent the percent of the structure costs assigned to telephone operations. Most of tables have identical inputs for Normal, Soft Rock, and Hard Rock terrain.

Table V-E(1): Feeder Conduit

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	50%	99%	97.18%	100%
6-100	50%	99%	97.18%	97.5%/98%*
101-200	40%	99%	97.18%	95%

[1]Grids whose density is between 0 and 100 households per square mile is set at greater than 95% to "reflect that the opportunity for structure sharing is even more limited in areas of very low density." (EXH 39, p. 244)

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
201-650	33%	99%	97.18%	95%
651-850	33%	99%	97.18%	95%
851-2550	33%	99%	97.18%	95%
2551-5000	33%	99%	97.18%	95%
5001-10000	33%	99%	97.18%	95%
>10001	33%	99%	97.18%	95%

*98% for Hard Rock

Table V-E(2): Distribution Conduit

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	100%	99%	97.18%	100%
6-100	50%	99%	97.18%	95%
101-200	50%	99%	97.18%	90%
201-650	50%	99%	97.18%	90%
651-850	40%	99%	97.18%	90%
851-2550	33%	99%	97.18%	90%
2551-5000	33%	99%	97.18%	90%
5001-10000	33%	99%	97.18%	90%
>10001	33%	99%	97.18%	90%

Table V-E(3): Buried Feeder Cable

Density	AT&T/MCI	BellSouth	GTEFL	Sprint*
0-5	40%	99%	100%	100%
6-100	40%	99%	100%	100%/97.5%*
101-200	40%	99%	100%	100%/95%*
201-650	40%	99%	100%	100%/95%*
651-850	40%	99%	100%	100%/95%*
851-2550	40%	99%	100%	100%/95%*
2551-5000	40%	99%	100%	100%/95%*
5001-10000	40%	99%	100%	100%/95%*

Density	AT&T/MCI	BellSouth	GTEFL	Sprint*
>10001	40%	99%	100%	100%/95%*

*100% for Plow and Rocky Plow, 97.5% and 95% for Other Activities, depending on density zone.

Table V-E(4): Buried Distribution Cable

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	33%	96%	100%	100%
6-100	33%	96%	100%	100%/95%*
101-200	33%	96%	100%	100%/90%*
201-650	33%	96%	100%	100%/90%*
651-850	33%	96%	100%	100%/90%*
851-2550	33%	96%	100%	100%/90%*
2551-5000	33%	96%	100%	100%/90%*
5001-10000	33%	96%	100%	100%/90%*
>10001	33%	96%	100%	100%/90%*

*100% for Plow and Rocky Plow, 95% and 90% for Other Activities, depending on density zone.

Table V-E(5): Aerial Feeder Cable

Density	AT&T/MCI*	BellSouth	GTEFL	Sprint
0-5	50%	39.88%	53.58%/55.00%**	30%
6-100	33%	39.88%	53.58%/55.00%**	30%
101-200	25%	39.88%	53.58%/55.00%**	30%
201-650	25%	39.88%	53.58%/55.00%**	30%
651-850	25%	39.88%	53.58%/55.00%**	30%
851-2550	25%	39.88%	53.58%/55.00%**	30%
2551-5000	25%	39.88%	53.58%/55.00%**	30%
5001-10000	25%	39.88%	53.58%/55.00%**	30%
>10001	25%	39.88%	53.58%/55.00%**	30%

*Includes anchors and guys
**55.00% for Hard Rock

Table V-E(6): Aerial Feeder Cable – Anchors and Guys

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	NA	100%	100%	100%
6-100	NA	100%	100%	100%
101-200	NA	100%	100%	100%
201-650	NA	100%	100%	100%
651-850	NA	100%	100%	100%
851-2550	NA	100%	100%	100%
2551-5000	NA	100%	100%	100%
5001-10000	NA	100%	100%	100%
>10001	NA	100%	100%	100%

Table V-E(7): Aerial Distribution Cable

Density	AT&T/MCI*	BellSouth	GTEFL	Sprint
0-5	50%	39.88%	53.58%/55.00%**	30%
6-100	33%	39.88%	53.58%/55.00%**	30%
101-200	25%	39.88%	53.58%/55.00%**	30%
201-650	25%	39.88%	53.58%/55.00%**	30%
651-850	25%	39.88%	53.58%/55.00%**	30%
851-2550	25%	39.88%	53.58%/55.00%**	30%
2551-5000	25%	39.88%	53.58%/55.00%**	30%
5001-10000	25%	39.88%	53.58%/55.00%**	30%
>10001	25%	39.88%	53.58%/55.00%**	30%

*Includes anchors and guys
**55.00% for Hard Rock

Table V-E(8): Aerial Distribution – Anchors and Guys

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	NA	100%	100%	100%
6-100	NA	100%	100%	100%
101-200	NA	100%	100%	100%
201-650	NA	100%	100%	100%

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
651-850	NA	100%	100%	100%
851-2550	NA	100%	100%	100%
2551-5000	NA	100%	100%	100%
5001-10000	NA	100%	100%	100%
>10001	NA	100%	100%	100%

Each LEC proffers structure sharing inputs based on its own data. Sprint adjusted its data to reflect anticipated trends, while GTEFL did not adjust its data to reflect future potential sharing possibilities. It is unclear whether BellSouth looked at forward looking trends for sharing. AT&T/MCI sponsors the HAI 5.0a inputs which offer an average sharing percentage based on the HAI OSP Engineering team's judgement. AT&T/MCI witness Wells agreed with Sprint witness Laemmli's assertion that because anchors and guys are only used to support the telephone facilities on poles, 100 percent of their cost should be assigned to the telephone company. Witness Wells states that in comparison with the LECs' aerial structure sharing, HAI 5.0a "shows considerably more structure sharing (i.e., a lower percentage paid by the telephone company) in the urban area than in the rural area. . . .There is no supporting documentation to explain the LEC's modeling logic, which appears lacking in sound OSP Engineering judgement." He does agree that there is "consistency among all input values in the most rural density zone."

With regard to below ground sharing (underground and buried cable), witness Wells sees a "most significant difference." He states that "in the most urban areas for below ground structures, the forward-looking view of the HAI Model OSP Engineering Team is that the telephone company will be able to share underground costs with two other utilities on the average. . . ." This contrasts with what witness Wells characterizes as "virtually zero amounts of sharing" for the LECs. His rebuttal to the LECs is based on the Lucent OSP Engineering Handbook, quoted by GTEFL witness Bowman, which states "[i]n areas where both power and telephone utilities plan to bury their facilities, a joint trench is usually advantageous."

GTEFL vigorously disputes HAI's sharing percentages and argues:

> Even if one takes the position that it is the costs of some hypothetical new entrant that is going to rebuild the entire network that should be modeled, greatly increased levels of sharing still cannot be supported. Even under this hypothesis, the required coincidence of wants in space and time among the sharing utilities must be assumed as well. However, there is no hypothetical new entrant that will completely rebuild the electric power and cable TV networks in GTE's serving areas. Like GTE, their networks are already in place along with sharing arrangements that made sense at the time.

Among Sprint witness Laemmli's criticisms of the HAI sharing percentages is that HAI is "unrealistically assuming not only a complete reconstruction of the telephone network, but also of every other power, CATV, water, gas and sewer company's infrastructure." Sprint witness Laemmli asserts that in order to accept HAI's sharing percentage, one must believe that wherever a LEC would place aerial cable, so would a power company, with the same holding true for buried and underground cable. He contends that this is not the case:

> [T]he economics of power and telephone networks are different. It is far more expensive for a power company to bury a cable than it is for them to place aerial wire. This because [sic] of the far more expensive buried conductors, deeper trench required, and more expensive transformers, etc. that must be used. In contrast, because the cost varies less and there are significant maintenance savings, Sprint-Florida finds burying cable to be the far more economical alternative. Each provider is going to make network decisions that are in their own economic interests.
>
> The net result is that Florida Power Corporation is 81% [footnote omitted] aerial while Sprint is 78% buried. Sprint is 17% underground and Florida Power has no underground facilities. Structure sharing does not overcome the economics driving this mix

> and it is not expected to change significantly in the future.

Another sharing area where AT&T/MCI and the LECs disagree is in the sharing percentages for buried cable. AT&T/MCI assume a 33 percent sharing percent for buried distribution cable. In effect, this means that the telephone company incurs 33 percent of the cost of burying distribution cable, and other utilities are responsible for the remaining 67 percent. Although AT&T/MCI witness Wells agreed that the 33 percent "cannot" be achieved today, he asserted that the future should be different:

> And our position is that in a competitive environment, that buried structure sharing will take place far in excess of what exists today for the reasons that there will be incentive for utilities to want to share the cost of a trench that haven't existed in the past because utilities have been rate base regulated and had an incentive to do their own trench.
>
> There will also be regulatory pressure to minimize the number of trenches that are dug. There will also be many more utilities out there in a competitive environment, once again driving toward single trenches.
>
> And so we see that there will be incentive as well as additional opportunity that will result in significantly more sharing of both buried and underground structure in the future.

Sprint witness Dickerson's view is dramatically different from MCI's:

> Here is the quantum assumption that they base, they share away 67% of below-ground construction cost based on an assumption that we are not only trying to reconstruct a telephone network, but somehow simultaneously we're reconstructing the entire power and cable network.

MCI witness Wells asserts that the network being built is a hypothetical scorched node network designed to "get at the cost basis, the appropriate cost basis." He characterizes as "misleading" any assumption that the telephone scorched node network also means "scorching" power companies.

Our first step in determining the appropriate sharing inputs is to evaluate HAI's inputs. HAI's inputs are default, estimated inputs that assume high levels of sharing by any standard. We agree with AT&T/MCI that the inputs should be for a scorched node, hypothetical network. However, we believe that inherent in HAI's assumption of extremely high sharing in below ground networks is the assumption that other utilities' networks have also been scorched. This is completely inappropriate. While this proceeding is to determine the cost of a forward-looking scorched node network, there needs to remain a basis in reality if the costs developed for the network are to have any relevance to the cost of basic local telephone service. We believe that assuming sharing percentages which require, for example, power and cable TV companies to rebuild their networks so that more of the cost of a telephone network can be shifted to other industries, means a network severed from reality.

Our second step is to determine whether the sharing inputs should be the same in the territories of BellSouth, GTEFL, and Sprint, or whether they should LEC-specific. Telephone companies, whether they are LECs or competitive local exchange carriers (CLECs), must deal with the other utilities in their areas. While it is possible that other utilities' structure requirements may be similar across company territories, it is more likely that they are different. This does not mean that we view LEC sharing inputs as appropriate as LEC sharing percentages. Rather, we believe that the LECs are functioning as surrogates for an efficient provider in a specific geographic area.

The final step is to determine what, if any, adjustments are required to the sharing percentages proposed by the LECs. We are persuaded by the LECs' arguments that the sharing percentages are best determined by those most familiar with current levels of sharing, that is, the LECs themselves. While we are encouraged by Sprint's trend analysis to determine if any changes needed to be made, we are even more encouraged that Sprint's adjustments were relatively minor. This provides more support for the sharing percentages because it is likely that if BellSouth had completed a similar analysis, its adjustments would be relatively minor as well. We note that GTEFL did at least consider whether its numbers would change in the future.

Upon review, we find that BellSouth's, GTEFL's, and Sprint's sharing percentages represent the forward-looking sharing percentages available to any efficient provider in each LEC's respective territory. Accordingly, we hereby adopt each LEC's proposed sharing percentages because they are a reasonable surrogate for sharing percentages likely to be achieved by an efficient provider of basic service.

F. Fill Factors

According to FCTA witness Barta, in its simplest definition, a "fill factor represents the percentage of the network facility that is being used." In BCPM 3.1 or HAI 5.0a, fill factors are not model inputs; rather, the fill factors result from using a cable sizing factor and, for distribution cable, the number of pairs per housing unit (or household) and per business. BellSouth describes cable fill and sizing factors this way:

> A cable fill factor represents the percent of cable pairs that is working, that is working pair/available pairs. A cable fill factor is used when the number of available pairs is known. A cable sizing factor is used when the number of available pairs is unknown. The cable sizing factor accounts for the fact that cables are purchased in discrete sizes, 100, 200, etc. Both factors are designed to allow maintenance operations to cost-effectively deal with defective pairs and administer customer turnover. In BCPM 3.1, the cable sizing factor for distribution works in conjunction with the number of distribution pairs per housing unit/business to determine required cable sizes.

Distribution fill factor

The BCPM default cable sizing factor is 100 percent. BellSouth and Sprint propose a cable sizing factor for all density zones of 100 percent, while GTEFL proposes a cable sizing factor of 98 percent across all density zones. HAI's distribution cable sizing factors range from 50 percent in the lowest density zone to 75 percent in the three highest density zones.

The BCPM 3.1 defaults are 2 pairs per housing unit and 6 pairs per business. BellSouth and Sprint propose 2 pairs per housing unit and 6 pairs per business. GTEFL also proposes 6 pairs per business, but 2.5 pairs per housing unit. AT&T/MCI witness Wells proposes 1.5 pairs per household and 3 pairs per business. Witness Wells asserted that, "[T]here is excessive cost in oversizing copper distribution cables based on historically low utilization rates that can no longer be justified." Witness Wells believes that because "the actual number of lines are modeled for large businesses," the number of pairs per business should be reduced from the LECs' proposed 6, to 3 pairs. Overall, MCI witness Wells estimated that HAI's computation results in a distribution fill factor of approximately 60 percent.

Although BellSouth is currently placing about 1.4 to 1.5 pairs per housing unit, it is proposing 2 pairs for this proceeding because when the two pairs are used with a cable sizing factor of 100 percent, they will "produce the projected actual fill that BellSouth feels they will encounter in the distribution plant." BellSouth's actual distribution fill as of December, 1997, is 41.3 percent.

Although GTEFL apparently can place up to four pairs per housing unit, GTEFL witness Tucek was unsure what the actual practice is. GTEFL's 98 percent cable sizing factor "reflects the need for administrative spare." Sprint witness Dickerson stated that the distribution cable sizing factor "works in concert with the related model input assumption of two pairs per housing unit to achieve a reasonable overall distribution cable fill. Generally these model inputs result in distribution cable fills ranging from approximately 40% to 50%.

The distribution cable sizing factor and the number of pairs per housing unit work together from the very lowest levels of building distribution plant. For example, if a new street has 40 houses, and the current local service provider provisions two pairs per house with a cable sizing factor of 100 percent, then two multiplied by 40, or an 80 pair cable is needed. However, there is not a 80 pair cable, so the cable to be placed is the next largest size, or 100 pair. This has the effect of increasing the number of pairs available for use because this "real world" constraint means that the cable installed will never be less than the number of pairs needed, but is likely to be greater than the number of pairs needed, thus generating additional spare capacity. Therefore, it is not possible to derive the actual fill factor by simply dividing the cable sizing factor by the number of pairs per housing unit. For example, a 100 percent cable sizing factor divided by two pairs per housing unit means that the highest the fill factor can be is 50 percent. It is likely to be something less, such as the 40 to 50 percent fill factor that BellSouth and Sprint calculate from their inputs.

The fill factor that results from the inputs can have a significant effect on the cost. For example, assuming a fill factor of approximately 40 percent, as BellSouth experiences, then for every 100 pair cable, 40 pairs are in use, while 60 pairs are vacant. This means that 40 working pairs pay for the entire 100 pair cable.

BellSouth argues that even though it places approximately 1.4 to 1.5 pairs per housing unit, two pairs must be used as an input in order that the resulting fill factor approximates BellSouth's current fill factor. Sprint, on the other hand, places two pairs per housing unit. It is unclear whether GTEFL is actually placing 2.5 pairs in its territory.

Neither BellSouth nor Sprint provided reasons why they believed 100 percent to be the appropriate cable sizing factor. GTEFL reflects two percent for spare in its cable sizing factor, reducing the factor from 100 percent to 98 percent. This has the effect of further increasing spare capacity.

We again emphasize that this proceeding is to develop the forward-looking economic cost of basic service in Florida, which is defined as flat rate residence and single-line flat rate business. We agree that spare capacity is essential in the construction of every network, even a hypothetical network. Nevertheless, we disagree that simply because BellSouth's actual distribution fill factor is 41.3 percent, for example, that the effective fill factor in a forward-looking economic cost proxy model should also be 41.3 percent. Furthermore, BellSouth itself is not placing two pairs per housing unit, rather it is placing 1.4 to 1.5 pairs. We also disagree with Sprint's contention that a 15-20 percent second line penetration rate translates today into a two pairs per housing unit assumption. GTE Florida's 2.5 pairs per housing unit assumption creates even more spare capacity than either of the two other LECs. Although GTEFL's second line penetration has been given confidential treatment, we are not persuaded that 2.5 pairs per housing unit remotely resembles a reasonable assumption. Rather, it appears to be designed to produce a maximum of spare capacity in a network, to be paid for by current customers.

We are not persuaded by either BellSouth or Sprint that two pairs per housing unit is appropriate as an input to this model. Certainly, spare capacity is necessary, but the cable sizing factor can be used to ensure adequate spare capacity. Likewise, we do not agree that GTEFL's 2.5 pairs per housing unit represents what an efficient provider would provision. The LECs seem to base their arguments on the projected ongoing increase in additional household telephone lines. We agree that the penetration of second lines has increased and is likely to increase. But it is too early to conclude that a current 15 or 20 percent second line penetration rate means that a forward-looking economic cost model should reflect at least two pairs per housing unit. We note that this proceeding is not to determine the actual cost faced by any of these LECS, but is rather to estimate the forward-looking cost of an efficient provider building a scorched node network all at once, all at the same time. AT&T/MCI witness Wells notes that with AT&T/MCI's proposed inputs, there are approximately 40 spare lines for each group of 60 customers. We are persuaded by AT&T/MCI that for the inputs to the distribution fill factor, an efficient provider building a scorched node network would not use two or 2.5 pairs per housing unit, thus providing approximately 60 spare lines for every 40 lines in service. Therefore, we agree with AT&T/MCI that the number of residential pairs per unit should be 1.5.

All three LECs proposed six pairs per business, with AT&T/MCI's counter at three pairs per business location. As stated earlier, witness Wells believes that because "the actual number of lines are modeled for large businesses," the number of pairs per business should be reduced from the LECs' proposed six, to three pairs. We have no evidence on what the average number of lines is per small business location. According to BellSouth, BCPM 3.1 "uses the actual number of business lines if it exceeds the user adjustable line per business location (currently set at 6)." Since the model overrides this user adjustable input if necessary, we do not believe that it is necessary to input six pairs per business. Therefore, we are persuaded that a smaller number of pairs per business location may be safely input into the model. Upon consideration, we shall require that three pairs per business location be used.

It is unclear why GTEFL believes that with a 2.5 pairs per housing unit assumption, GTEFL felt it also necessary to reduce the amount of cable available for use from 100 percent to 98 percent. Simple arithmetic shows that using 98 percent simply increases the amount of spare capacity. Reducing the cable sizing factor from 100 percent to 98 percent reduces GTEFL's proposed maximum fill factor from 40 percent to approximately 39 percent. We are not persuaded that the cable sizing factor should be reduced from 100 percent when the number of pairs per housing unit is 2.5. We are persuaded by GTEFL that a two-point reduction in the cable sizing factor to account for administrative spare on its face may be reasonable, but that any reduction can only be considered in concert with the number of pairs per housing unit.

Upon consideration, concomitant with our determination of 1.5 pairs per housing unit and three pairs per business location, we hereby adopt a cable sizing factor of 90 percent, providing a 10 percent allowance for administrative spare capacity. This will produce an effective maximum fill of 60 percent, which we believe to be an appropriate upper limit for the distribution fill factor.

Feeder fill factor

BellSouth proposes a single feeder cable sizing factor of 71.1 percent for each density zone. GTEFL proposes a single feeder cable sizing factor of 65 percent for each density zone. Sprint's proposed feeder cable sizing factor ranges from 53.48 percent in the lowest density zone to 59.30 percent in the highest density zone. Sprint witness Dickerson increased each factor by approximately 10 percent at the hearing in this proceeding. This increases the range from approximately 58.8 in the lowest density zone to approximately 65.2 percent in the highest density zone.

Because feeder size is based on the total of all residential and business lines in a specific geographic area, there is no analogous input to distribution cable's x (a variable) pairs per household or business location. Therefore, the cable sizing factors are less than for distribution cable.

As with the distribution cable sizing factor, use of the feeder cable sizing factor results in a fill somewhat less than the factor. The actual factor will vary based on, again, the "real world" constraint that feeder cables only are sold in certain sizes; thus in some routes, a provider might need to go to the next largest size cable. This constraint increases spare capacity.

Again, BellSouth proposes a feeder cable sizing factor that "is designed to produce a fill for feeder cable representative of the projection of actual fill of copper feeder plant experienced in Florida over time." BellSouth's actual feeder fill is 65.4 percent. GTEFL found that its 65 percent value resulted in an "effective average" copper feeder fill of 53.5 percent. Sprint asserts that its "data reflects a real world balance between inventory carrying costs (non-working cable pairs) against the cost of construction for adding additional cable pairs at a later date."

AT&T/MCI proposed feeder cable sizing factors of 65 percent in the lowest density zone, 75 percent in the next lowest density zone, and 80 percent in the remainder of the zones.

Again, we are not persuaded that calculating inputs so that they result in an LEC's actual fill is the most appropriate way to build a scorched node network using a forward-looking economic cost model. Given that the standard is that of a low-cost efficient provider, we find that a hypothetical provider would need to strike the right balance between available pairs for growth and other necessities and the cost of those spare pairs. BellSouth's feeder cable sizing factor is far more representative of an efficient provider than either GTEFL's or Sprint's. Furthermore, we believe that much like distribution fill, feeder fill is not territory-specific within Florida. We believe, however, that feeder fill is likely to vary by density zone. Although there are differences between BellSouth's feeder cable sizing factor and AT&T/MCI's, the differences are not significant.

Upon consideration, we hereby adopt an approximate middle ground: the feeder cable sizing factor for all three LEC territories shall be 68 percent in the lowest density zone, 72 percent in the next lowest density zone, and 75 percent in the remainder of the zones.

G. Manholes and Handholes

A manhole is the large physical encasement where cables are brought underground. Included within the manhole inputs category are handholes, adders, conduit and a sharing factor.

AT&T/MCI's manhole costs include the cost of a prefabricated concrete manhole, including backfill and restoration. BellSouth's manhole and handhole inputs are based on an average of the 10

	HAI	BellSouth	GTEFL	Sprint*
Manhole - 12*6*7 -Normal -Soft Rock -Hard Rock	-$ 5,640	-$9,509.95 - 9,509.95 - 18,018.86	-$10,971.33 - 10,971.33 - 16,227.80	-$4,512 - 4,832 - 5,152

*Sprint adopted the BCPM default values.

As illustrated in Table V-G(1), the total cost for manholes and handholes in some cases varies significantly between the parties. In determining the manhole and handhole costs to be input in the selected model, we believe it is appropriate to use data representative of Florida costs and conditions. BellSouth and GTEFL have provided Florida-specific costs. However, as discussed in many of the other inputs, we are not able to perform an "apples to apples" comparison. GTEFL filed support for its specific manhole and handhole costs for such things as materials, labor, engineering, and placement under confidential cover. BellSouth, on the other hand, provided the total costs of materials and labor for normal placement based on a straight average of its OSP contracts for hard rock placement, BellSouth included additional labor costs.

In reviewing and comparing the limited information provided by GTEFL and BellSouth, we have been unable to determine why there are some significant discrepancies in handhole and manhole costs. When GTEFL's witness Tucek was asked why GTEFL's costs appear to be so much greater than the BCPM default, he stated: "we have no information on those defaults, so I'm unable to tell you what's in them."

After reviewing GTEFL's confidential information on this subject matter, it appears that its placement costs are a significant percentage of its total costs. We do not know if this is because of geography or simply because of the way the company chose to calculate its placement costs. In addition, GTEFL's total materials loading (which includes freight, sales tax, provisioning and minor materials) seems to be a significant percentage of its total costs.

Again, we note that this proceeding is to determine the forward-looking costs that an efficient provider of local service would incur. We believe that BellSouth's handhole and manhole inputs, less its inflation or deflation factors, are an appropriate surrogate. We believe that since BellSouth's cost was derived from a straight average of its OSP contracts in each district in BellSouth's territory in Florida, it captures varying costs throughout the various regions in the state.

As noted above, the adder is the additional ducts placed when building a manhole. As shown in Table V-G(2), BellSouth did not provide costs for the adder. According to witness Caldwell, since the adder called for by BCPM was the same size as the manhole (12*6*7), "there wasn't really any need to place it in the model again." She went on to state that anything that BellSouth is going to place can be accommodated with nine ducts. We find that it is appropriate to include the costs of an adder, since nine ducts may be sufficient for BellSouth, but it may not be for the generic provider for which costs are being determined.

Table V-G(2)

	HAI	BellSouth	GTEFL	Sprint*
Adder -12*6*7 -Normal -Soft Rock -Hard Rock	-n/a	-n/a	-$3,206.94 - 3,401.30 - 3,595.66	-$2,640 - 2,800 - 2,960

*Sprint adopted the BCPM defaults.

While GTEFL proposed inputs for an adder for each soil type, GTEFL notes that: "No adders are used for soft rock. For hard rock the following number of adders are used: Handhole=4; Manhole 4*6*7=8; Manhole 12*6*7=20." GTEFL did not provide specific material and labor costs for its adder inputs. We are puzzled by the note referenced above; if GTEFL does not use adders in soft rock, why is there an input? Furthermore, it appears that the BCPM model only includes the adder with the 12*6*7 manhole for all soil types; GTEFL notes adders are used for differing size manholes and handholes.

Sprint's adder inputs are the BCPM default values. According to Sprint witness Dickerson the decision to use the BCPM default was based on recent manhole installation in Sprint's Nevada serving area. Absent better information, we believe the BCPM defaults adopted by Sprint are an appropriate surrogate for adder costs.

<u>Conduit Costs</u>

The next component which makes up manhole inputs is conduit costs. HAI's conduit costs are $.60 per foot. According to the

HIP, these costs were obtained from several suppliers. The labor to place conduit in trenches is included in the cost of the trench, not the conduit cost.

GTEFL, BellSouth, and Sprint also provide conduit costs on a per duct foot basis. BellSouth's conduit input is based on an average of the 10 existing BellSouth contracts with OSP contractors in Florida. GTEFL's inputs are based on GTE-specific prices. Sprint has adopted the BCPM default. In each case, it appears that the parties are providing only their total materials costs.

We find no evidence in this proceeding regarding how per foot costs for conduit should be calculated or what sharing factor should apply. After reviewing the limited data, we believe BellSouth's input of $2.24 per foot is clearly an outlier, when compared to GTEFL's input of $1.39, Sprint's input of $.73 and the AT&T/MCI input of $.60. Although the specific numbers are proprietary, we have reviewed GTEFL-specific materials input and found that an engineering and a materials loading is applied. (We do not have similar data for AT&T/MCI or Sprint.) GTEFL's materials costs before loadings are comparable to the total cost proposed by Sprint and AT&T/MCI. We believe an average of the inputs proposed by AT&T/MCI, GTEFL, and Sprint will provide an appropriate estimate of costs an efficient provider could incur statewide. Therefore, we adopt a conduit cost of $.91 per duct foot.

With regard to conduit sharing, we have no information on the AT&T/MCI recommended sharing percentage for conduit. BellSouth's percent assigned to the telco account is 99%, GTE's is 97%, and Sprint's is 100%. Upon review, we find that the appropriate sharing factor is 98%. This number was derived by averaging the data provided by GTEFL and BellSouth. We believe this data is representative of conduit sharing characteristic in Florida and is a reasonable surrogate for an efficient provider statewide.

Manhole Sharing

With regard to manhole sharing, the GTEFL and BellSouth percentage assigned to the telco account for their manholes is the same as for their conduit. The BCPM default values adopted by Sprint range from 75% for the handhole to 90% for the 4*6*7 manhole. (We were unable to locate HAI's manhole sharing percentages in the model documentation.) As with conduit sharing, we find that the appropriate sharing factor would be 98%. This number was derived by averaging the data provided by GTEFL and BellSouth. We believe this data is representative of conduit sharing characteristic in Florida and is a reasonable surrogate for an efficient provider statewide.

H. and I. Fiber Cable Cost and Copper Cable Cost

Fiber and copper cable are utilized as underground, buried, and aerial cable. The BCPM 3.1 input sheets include costs for material, as well as other components necessary so that the cost is provided for engineered, furnished, and installed (EF&I) cable. The HAI inputs are for a total, EF&I cost.

Each party developed its fiber and copper cables cost using the same methodology. Therefore, the summaries below refer to the development of both fiber and copper cable.

AT&T/MCI's outside plant inputs for use in the HAI model "have been developed and validated by the HAI OSP Engineering Team." In addition, input values have been validated by contacting a variety of material vendors and contractors of OSP services. Members of the OSP Engineering Team have compared assumptions and input values to those of the LECS by members of the OSP Engineering Team.

For copper cable, the HAI documentation states that:

> In the opinion of expert outside plant engineers whose experience includes writing and administering hundreds of outside plant "estimate cases" (large undertakings), material represents approximately 40% of the total installed cost. This is a widely used rule of thumb among outside plant engineers. Such expert opinions were also used to determine that the average engineering content for installed copper cable is 15% of the installed cost. The remaining 45% represents direct labor for placing and splicing cable, exclusive of the cost of splicing block terminals into the cable.

For fiber cable, however:

> Splicing Engineering and Direct Labor are included in the cost of the Remote Terminal Installations, and the Central Office Installations, since field splicing is unnecessary with fiber cable pulls that are as long as 35,000 feet between them.
>
> Placing Engineering and Direct Labor are estimated at $2.00 per foot, consisting of $0.50 in engineering per foot, plus $1.50 direct labor per foot. These estimates were provided by a team of Outside Plant Engineering and Construction experts.

BellSouth witness Caldwell described how BellSouth developed its cable cost inputs:

> BellSouth used BellSouth-specific costs for both copper and fiber cable. Material prices for copper and fiber cable were obtained from procurement records that reflect actual BellSouth purchase prices and contractual agreements. . . .future inflation trends (TPIs) were also taken into consideration in order to reflect forward-looking costs. Telephone company engineering and labor costs were derived from BellSouth's Florida in-plant loading factors. In-plant factors convert material prices to a Florida-specific installed investment (less contractor costs that are handled separately in the structure tables of BCPM 3.1). BellSouth-specific cable costs reflect economies of scale and vendor prices that an efficient provider would be able to expect to achieve on a going forward basis.

The TPI that witness Caldwell referred to is an "account specific" telephone plant index that "indicate[s] the price change for material that will be anticipated." This future price change may be inflationary or deflationary, depending on the account. BellSouth applied the TPI to develop material costs for 1998, 1999, and 2000. Then, BellSouth used a three-year "straight" average of the 1998, 1999, and 2000 material costs.

The TPI is the first of several factors BellSouth applied to each of its cable material costs. In addition to the TPI, other in-plant loading factors were applied to the inflation-adjusted material costs. They include factors for exempt, tax, telco, contract, and engineering. Exempt is defined as expensed material costs. Exempt includes, for example, terminals less than 100 pair and splicing enclosures. Tax is simply the sales tax. Telecommunications represents the cost of BellSouth's labor. Contract refers to contract labor, while Engineering reflects the costs of BellSouth's engineers.

These factors are developed as percentages, and then applied to the material costs adjusted for inflation. For example, for underground fiber cable, the TPI indicates a 3 percent deflation. Once the underground fiber cable material cost has been adjusted for the deflation, then the other factors are applied. For underground fiber cable, the exempt factor is 22.14 percent, the tax is 6 percent, the telco factor is 45.56 percent, the contract factor is 8.85 percent, and the engineering factor is 9.13 percent. An identical percentage for each of the in-plant loadings is applied to each size of cable. For example, the factors are the same for underground fiber cable whether it is 24 pair cable or 288 pair cable.

The factors, other than tax, vary by cable. For example, buried copper cable's inflation factor is 4.04 percent. The exempt factor is 57.28 percent, tax is 6 percent, the telco factor is 148.93 percent, there is no contract factor, and the engineering factor is 45.35 percent.

GTE Florida based its material and labor inputs "on the prices that GTE currently pays for these inputs in Florida." GTEFL's proposed inputs "have been presented on a combined material and labor basis, in order to preserve the confidentiality of the data." Thus, it is not possible for us to describe how GTEFL developed its cable costs.

Sprint witness Dickerson described how Sprint developed its fiber and copper cable costs:

> The inputs for cable costs were developed separately for copper and fiber cable and include labor and material costs. Copper cable inputs were based on Sprint's current material prices and Florida specific company

> and contractor labor costs prices for engineering and installation. Fiber cable costs were developed in the same manner.

Sprint applied four factors to their material costs. These include a tax rate of 6.59 percent, labor overhead factors for placing and splicing, and an engineering factor. Sprint did not provide the actual factors used in developing the cost of its material. These factors, though, unlike BellSouth's factors, apparently differ by cable pair size. Our analysis demonstrates that actual cable material cost as a percent of total cost for 26 gauge buried copper cable ranged from less than 9 percent for 12 pairs, to almost 64 percent for 4200 pair cable. As the proportion of actual material cost increases, then, of course, the proportion of loading factors decreases. This implies that some economies of scale for non-material costs exist as the size of cable increases.

In contrast to BellSouth, Sprint did not use any type of index to calculate potential inflationary effects.

In Tables V-H(1) through V-H(3), a side-by-side comparison of each party's inputs is provided for fiber cable. The dollar amount is the total material cost input.

Table V-H(1): Underground Fiber Cable Total Cost Comparison

Size	AT&T/MCI (Feeder)	BellSouth	GTEFL	Sprint
288	NA	$15.82	$11.88	$15.01
216	$13.10	NA	NA	NA
144	$9.50	$8.00	$10.64	$9.41
96	$7.10	$5.52	[illegible].79	$7.51
72	$5.90	$4.28	$4.94	$6.55
60	$5.30	$3.56	$4.45	$6.07
48	$4.70	$2.97	$3.62	$5.51
36	$4.10	$2.08	$2.94	$4.91
24	$3.50	$1.65	$2.37	$4.58
18	$3.20	$1.24	$2.13	$4.43
12	$2.90	$1.10	$1.78	$4.23

Table V-H(2): Buried Fiber Cable Total Cost Comparison

Size	AT&T/MCI*	BellSouth	GTEFL	Sprint
288		$19.06	$13.77	$14.26
[illegible]16		NA	NA	NA
[illegible]		$9.63	$10.72	$8.[illegible]
96		$6.65	$6.46	$6.23
72		$5.15	$5.01	$5.16
60		$4.29	$$4.51	$4.64
48		$3.58	$3.68	$4.07
36		$2.51	$3.00	$3.42
24		$1.99	$2.43	$3.06
18		$1.50	$2.05	$2.90
12		$1.32	$1.84	$2.68

*HAI 5.0a Inputs Portfolio shows costs for underground and aerial fiber feeder, but none for buried fiber feeder.

Table V-H(3): Aerial Fiber Cable Total Cost Comparison

Size	AT&T/MCI (Feeder)	BellSouth	GTEFL	Sprint
288	NA	$19.70	$12.54	$13.90
216	$13.10	NA	NA	NA
144	$9.50	$9.96	$10.28	$7.82
96	$7.10	$6.88	$7.07	$5.96
72	$5.90	$5.33	$5.55	$5.33
60	$5.30	$4.44	$4.68	$4.68
48	$4.70	$3.71	$4.32	$4.15
36	$4.10	$2.59	$3.58	$3.70
24	$3.50	$2.06	$2.57	$3.22
18	$3.20	$1.55	$2.24	$3.03
12	$2.90	$1.37	$1.85	$2.83

Tables V-H(4) through V-H(9) provided a side-by-side comparison of the proposed copper cable prices. The HAI 5.0a Inputs Portfolio states that for feeder and distribution, pair size below 400 pairs is 24 gauge; for 400 and above pairs, 26 gauge cable is used. The copper feeder costs are described for underground and aerial, while the type of copper distribution cable is not described at all. Therefore, for comparison purposes, the distribution cable will be shown in the Buried Cable Tables.

Table V-H(4):
24-Gauge Underground Copper Cable Total Cost Comparison

Size	AT&T/MCI (Feeder)	BellSouth	GTEFL	Sprint
4200		$95.21	$73.67	$61.69
3600		$81.61	$63.40	$50.61
3000		$68.01	$53.12	$43.65
2400		$54.41	$42.84	$31.51
2100		$47.91	$37.86	$27.68
1800		$42.35	$32.72	$23.80
1200		$28.19	$22.40	$14.21
900		$29.45	$17.79	$12.39
600		$14.68	$12.16	$8.95
400		$9.78	$7.31	$8.51
300		$7.34	$5.77	$7.10
200	$4.25	$4.89	$4.20	$5.47
100	$2.50	$2.45	$2.58	$4.03
50		$1.22	$1.81	$3.51
25		$0.61	$1.33	$3.23
18		$0.61	$1.33	$2.83
12		$0.61	$1.33	$2.54

Table V-H(5):
24-Gauge Buried Copper Cable Total Cost Comparison

Size	AT&T/MCI (Distribution)	BellSouth	GTEFL	Sprint
4200		$83.16	$84.96	$53.39
3600		$71.28	$73.10	$43.21
3000		$59.40	$61.23	$37.45
2400		$47.52	$49.37	$26.18
2100		$41.58	$43.61	$23.18
1800		$35.64	$35.16	$19.83
1200		$23.73	$21.54	$11.46
900		$17.86	$16.48	$10.24
600		$12.02	$11.25	$7.55
400		$8.30	$7.59	$6.30
300		$6.66	$5.95	$5.27
200	$4.25	$4.35	$4.33	$4.51
100	$2.50	$2.31	$2.66	$3.07
50	$1.63	$1.30	$1.85	$2.55
25	$1.19	$0.78	$1.35	$2.27
18	NA	$0.78	$1.35	$1.98
12	$0.76	$0.78	$1.35	$1.73
6	$0.63	NA	NA	NA

Table V-H(6):
24 Gauge Aerial Copper Cable Total Cost Comparison

Size	AT&T/MCI (Feeder)	BellSouth	GTEFL	Sprint
4200		$123.95	$70.39	$45.14
3600		$106.24	$60.59	$36.81
3000		$88.53	$50.78	$32.03
2400		$70.83	$40.98	$22.82
2100		$61.97	$38.19	$20.47
1800		$53.12	$31.01	$17.68
1200		$34.78	$20.43	$10.89
900		$26.67	$15.73	$9.79
600		$18.23	$10.89	$7.63
400		$12.38	$7.04	$5.78
300		$9.51	$5.98	$4.80
200	$4.25	$7.37	$4.32	$4.23
100	$2.50	$4.05	$2.65	$2.97
50		$2.53	$1.84	$2.51
25		$1.63	$1.37	$2.28
18		$1.63	$1.37	$1.90
12		$1.63	$1.37	$1.64

Table V-H(7):
26 Gauge Underground Copper Cable Total Cost Comparison

Size	AT&T/MCI (Feeder)	BellSouth	GTEFL	Sprint
4200	$29.00	$78.40	$58.93	$61.69
3600	$26.00	$67.68	$50.73	$50.61
3000	$23.00	$57.08	$42.53	$43.65
2400	$20.00	$46.20	$34.32	$26.53
2100	NA	$40.79	$30.34	$23.32
1800	$16.00	$35.32	$24.54	$20.05
1200	$12.00	$24.61	$17.28	$11.71
900	$10.00	$18.92	$12.82	$10.51
600	$7.75	$12.67	$9.01	$7.70
400	$6.00	$8.44	$5.78	$7.69
300		$6.33	$4.65	$6.48
200		$4.22	$3.40	$5.06
100		$2.11	$2.16	$3.82
50		$1.06	$1.58	$3.40
25		$0.53	$1.22	$3.18
18		$0.53	$1.22	$2.78
12		$0.53	$1.22	$2.51

**Table V-H(8):
26 Gauge Buried Copper Cable Total Cost Comparison**

Size	AT&T/MCI (Distribution)	BellSouth	GTEFL	Sprint
4200	NA	$69.17	$56.18	$53.39
3600	NA	$59.29	$48.37	$43.21
3000	NA	$49.41	$40.56	$37.45
2400	$20.00	$39.53	$32.75	$20.86
2100	NA	$35.10	$28.95	$18.53
1800	$16.00	$30.80	$23.41	$15.83
1200	$12.00	$22.88	$15.80	$8.80
900	$10.00	$15.31	$12.14	$8.24
600	$7.75	$11.87	$8.51	$6.21
400	$6.00	$7.53	$5.97	$5.42
300		$5.68	$4.77	$4.61
200		$4.09	$3.49	$4.07
100		$2.24	$2.21	$2.85
50		$1.38	$1.60	$2.44
25		$0.95	$1.23	$2.22
18		$0.95	$1.23	$1.94
12		$0.95	$1.23	$1.70

Table V-H(9):
26-Gauge Aerial Copper Cable Total Cost Comparison

Size	AT&T/MCI (Feeder)	BellSouth	GTEFL	Sprint
4200	$29.00	$97.63	$56.01	$45.14
3600	$26.00	$83.68	$48.23	$36.81
3000	$23.00	$69.74	$40.45	$32.0[illegible]
2400	$20.00	$53.08	$32.67	$18.54
2100	NA	$46.44	$30.44	$16.72
1800	$16.00	$42.77	$24.77	$14.47
1200	$12.00	$28.90	$16.28	$8.75
900	$10.00	$22.25	$12.45	$8.18
600	$7.75	$15.93	$8.64	$6.55
400	$6.00	$10.90	$5.91	$5.07
300		$8.58	$4.83	$4.27
200		$6.13	$3.47	$3.87
100		$3.55	$2.23	$2.79
50		$2.32	$1.62	$2.42
25		$1.68	$1.27	$2.23
18		$1.68	$1.27	$1.86
12		$1.68	$1.27	$1.62

Tables V-H(10) through V-H(18) provide a side-by-side comparison of AT&T/MCI's, BellSouth's, and Sprint-Florida's material costs and material as a percent of total cost. GTE Florida's material and labor costs are confidential.

Table V-H(10):
Underground Fiber Cable Material Cost Comparison

	AT&T/MCI (Feeder)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
288	NA	NA	$8.51	53.8%	$7.01	46.7%
216	$11.10	84.7%	NA	NA	NA	NA
144	$7.50	78.9%	$4.30	53.8%	$3.78	40.2%
96	$5.10	71.8%	$2.97	53.8%	$2.63	35.0%
72	$3.90	66.1%	$2.30	53.7%	$1.95	29.8%
60	$3.30	62.3%	$2.00	56.2%	$1.66	27.3%
48	$2.70	57.4%	$1.60	53.9%	$1.39	25.2%
36	$2.10	51.2%	$1.12	53.8%	$1.02	20.8%
24	$1.50	42.9%	$0.89	53.9%	$0.83	18.1%
18	$1.20	37.5%	$0.89	71.8%	$0.75	16.9%
12	$0.90	31.0%	$0.59	53.6%	$0.63	14.9%

Table V-H(11):
Buried Fiber Cable Material Cost Comparison

	AT&T/MCI		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
288			$8.51	44.6%	$7.01	49.2%
216			NA	NA	NA	NA
144			$4.30	44.7%	$3.78	45.7%
96			$2.97	44.7%	$2.63	42.2%
72			$2.30	44.7%	NA	NA
60			$2.00	46.6%	$1.66	35.8%
48			$1.60	44.7%	$1.39	34.2%
36			$1.12	44.6%	$1.02	29.8%
24			$0.89	44.7%	$0.83	27.1%
18			$0.89	59.3%	$0.75	25.9%
12			$0.59	44.7%	$0.63	23.5%

**Table V-H(12):
Aerial Fiber Cable Material Cost Comparison**

	AT&T/MCI (Feeder)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
288	NA	NA	$8.51	43.2%	$7.68	55.3%
216	$11.10	84.7%	NA	NA	NA	NA
144	$7.50	78.9%	$4.30	43.2%	$3.78	48.3%
96	$5.10	71.8%	$2.97	43.2%	$2.57	43.1%
72	$3.90	66.1%	$2.30	43.2%	$2.12	39.8%
60	$3.30	62.3%	$2.00	45.0%	$1.66	35.5%
48	$2.70	57.4%	$1.60	43.1%	$1.39	33.5%
36	$2.10	51.2%	$1.12	43.2%	$1.12	30.3%
24	$1.50	42.9%	$0.89	43.2%	$0.79	24.5%
18	$1.20	37.5%	$0.89	57.4%	$0.67	22.1%
12	$0.90	31.0%	$0.59	43.1%	$0.54	19.1%

**Table V-H(13):
24-Gauge Underground Copper Cable Material Cost Comparison**

	AT&T/MCI (Feeder)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
4200			$20.37	21.4%	$33.99	55.1%
3600			$17.46	21.4%	$27.28	53.9%
3000			$14.55	21.4%	$23.59	54.0%
2400			$11.64	21.4%	$16.14	51.2%
2100			$10.25	21.4%	$14.01	50.6%
1800			$9.06	21.4%	$11.87	49.9%
1200			$6.03	21.4%	$6.27	44.1%
900			$6.30	21.4%	$5.63	45.4%

	AT&T/MCI (Feeder)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
600			$3.14	21.4%	$3.79	42.3%
400			$2.09	21.4%	$2.55	30.0%
300			$1.57	21.4%	$2.09	29.4%
200	$1.70	40.0%	$1.05	21.5%	$1.50	27.4%
100	$1.00	40.0%	$0.52	21.2%	$0.69	17.1%
50			$0.26	21.3%	$0.40	11.4%
25			$0.13	21.3%	$0.23	7.1%
18			$0.13	21.3%	$0.26	9.2%
12			$0.13	21.3%	$0.17	6.7%
6			NA	NA	NA	NA

Table V-H(14):
24-Gauge Buried Copper Cable Material Cost Comparison

	AT&T/MCI (Distribution)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
4200			$22.35	26.9%	$33.99	63.7%
3600			$19.16	26.9%	$27.28	63.1%
3000			$15.97	26.9%	$23.59	63.0%
2400			$12.77	26.9%	$16.14	61.7%
2100			$11.18	26.9%	$14.01	60.4%
1800			$9.58	26.9%	$11.87	59.9%
1200			$6.38	26.9%	$6.27	54.7%
900			$4.80	26.9%	$5.63	55.0%
600			$3.23	26.9%	$3.79	50.2%
400			$2.23	26.9%	$2.15	40.5%
300			$1.79	26.9%	$2.09	39.7%
200	$1.70	40.0%	$1.17	26.9%	$1.50	33.3%
100	$1.00	40.0%	$0.62	26.9%	$0.69	22.5%
50	$0.65	40.0%	$0.35	26.9%	$0.40	15.7%
25	$0.48	40.0%	$0.21	26.9%	$0.23	10.1%
18	NA	NA	$0.21	26.9%	$0.26	13.1%
12	$0.30	40.0%	$0.21	26.9%	$0.17	9.8%
6	$0.25	40.0%	NA	NA	NA	NA

Table V-H(15):
24-Gauge Aerial Copper Cable Material Cost Comparison

	AT&T/MCI (Feeder)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
4200			$22.03	17.8%	$33.99	75.3%
3600			$18.88	17.8%	$27.28	74.1%
3000			$15.73	17.8%	$23.59	73.6%
2400			$12.59	17.8%	$16.14	70.7%
2100			$11.01	17.8%	$14.01	68.4%
1800			$9.44	17.8%	$11.87	67.1%
1200			$6.18	17.8%	$6.27	57.6%
900			$4.74	17.8%	$5.63	57.5%
600			$3.24	17.8%	$3.79	49.7%
400	$1.70	40.0%	$2.20	17.8%	$2.55	44.1%
300	$1.00	40.0%	$1.69	17.8%	$2.09	43.5%
200			$1.31	17.8%	$1.50	35.5%
100			$0.72	17.8%	$0.69	23.2%
50			$0.45	17.8%	$0.40	15.9%
25			$0.29	17.8%	$0.23	10.1%
18			$0.29	17.8%	$0.26	13.7%
12			$0.29	17.8%	$0.17	10.4%

Table V-H(16):
26-Gauge Underground Copper Cable Material Cost Comparison

	AT&T/MCI (Feeder)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
4200	$11.60	40.0%	$14.05	17.9%	$33.99	55.1%
3600	$10.40	40.0%	$12.13	17.9%	$27.28	53.9%
3000	$9.20	40.0%	$10.23	17.9%	$23.59	54.0%
2400	$8.00	40.0%	$8.28	17.9%	$12.52	47.2%
2100	NA	NA	$7.31	17.9%	$10.84	46.5%
1800	$6.40	40.0%	$6.33	17.9%	$9.15	45.6%
1200	$4.80	40.0%	$4.41	17.9%	$4.46	38.1%
900	$4.00	40.0%	$3.39	17.9%	$4.27	40.6%
600	$3.10	40.0%	$2.27	17.9%	$2.88	37.4%
400	$2.40	40.0%	$1.51	17.9%	$1.95	25.4%
300			$1.14	18.0%	$1.64	25.3%
200			$0.76	18.0%	$1.20	23.7%
100			$0.38	18.0%	$0.54	14.1%
50			$0.19	17.9%	$0.32	9.4%
25			$0.09	17.0%	$0.19	6.0%
18			$0.09	17.0%	$0.23	8.3%
12			$0.09	17.0%	$0.15	6.0%

Table V-H(17):
26-Gauge Buried Copper Cable Material Cost Comparison

	AT&T/MCI (Distribution)		BellSouth		Sprint	
Size	**Material Cost**	**Material as % of Total**	**Material Cost**	**Material as % of Total**	**Material Cost**	**Material as % of Total**
4200	NA	NA	$16.08	23.2%	$33.99	63.7%
3600	NA	NA	$13.79	23.3%	$27.28	63.1%
3000	NA	NA	$11.49	23.3%	$23.59	63.0%
2400	$8.00	40.0%	$9.19	23.2%	$12.52	60.0%
2100	NA	NA	$8.16	23.2%	$10.84	58.5%
1800	$6.40	40.0%	$7.16	23.2%	$9.15	57.8%
1200	$4.80	40.0%	$5.32	23.3%	$4.46	50.7%
900	$4.00	40.0%	$3.56	23.3%	$4.27	51.8%
600	$3.10	40.0%	$2.76	23.3%	$2.88	46.4%
400	$2.40	40.0%	$1.75	23.2%	$1.95	36.0%
300			$1.32	23.2%	$1.64	35.6%
200			$0.95	23.2%	$1.20	29.5%
100			$0.52	23.2%	$0.54	18.9%
50			$0.32	23.2%	$0.32	13.1%
25			$0.22	23.2%	$0.19	8.6%
18			$0.22	23.2%	$0.23	11.9%
12			$0.22	23.2%	$0.15	8.8%

Table V-H(18):
26-Gauge Aerial Copper Cable Material Cost Comparison

	AT&T/MCI (Feeder)		BellSouth		Sprint	
Size	Material Cost	Material as % of Total	Material Cost	Material as % of Total	Material Cost	Material as % of Total
4200	$11.60	40.0%	$15.14	15.5%	$33.99	75.3%
3600	$10.40	40.0%	$12.97	15.5%	$27.28	74.1%
3000	$9.20	40.0%	$10.81	15.5%	$23.59	73.6%
2400	$8.00	40.0%	$8.23	15.5%	$12.52	67.5%
2100	NA	NA	$7.20	15.5%	$10.84	64.8%
1800	$6.40	40.0%	$6.63	15.5%	$9.15	63.2%
1200	$4.80	40.0%	$4.48	15.5%	$4.46	51.0%
900	$4.00	40.0%	$3.45	15.5%	$4.27	52.2%
600	$3.10	40.0%	$2.47	15.5%	$2.88	44.0%
400	$2.40	40.0%	$1.69	15.5%	$1.95	38.5%
300			$1.33	15.5%	$1.64	38.4%
200			$0.95	15.5%	$1.20	31.0%
100			$0.55	15.5%	$0.54	19.4%
50			$0.36	15.5%	$0.32	13.2%
25			$0.26	15.5%	$0.19	8.5%
18			$0.26	15.5%	$0.23	12.4%
12			$0.26	15.5%	$0.15	9.3%

Careful review of these inputs and related information illustrates that each LEC calculated its cable costs differently. For example, BellSouth indexed its material costs for inflation, while Sprint did not. Unlike BellSouth, Sprint apparently does not include a factor that reflects any expensed material. GTE Florida includes both material and labor in its cable costs. All three LECs, however, state that the material prices are based on actual material prices paid. Since GTEFL filed for confidential treatment of the piece parts to its cable inputs, and Sprint did not provide the actual factors it uses, it is not possible to exhaustively compare on an "apples to apples" basis any cable cost component other than actual material prices. We note that after review of actual material prices, material prices, in general, do not vary very much among the LECs and HAI's inputs.

It is not possible to determine whether each LEC calculated cable costs in the same manner, or even included the same cost components. It is possible that one LEC might have captured a particular cost in cable cost, where another LEC captured it somewhere else. Therefore, it has been difficult for us to compare final cable costs and ensure that the cable costs include the same components.

AT&T/MCI's criticisms of the LECs' cable costs are, for the most part, confined to copper cable. MCI witness Wells found that HAI's fiber costs "are shown to be very reasonable." This is apparently because HAI's cost is either within the LECs' range or above it.

For copper cable, witness Wells' primary criticism for all LECs appears to be that, although there is no 24 gauge copper cable "manufactured in sizes larger than 2400 pairs," the LECs have input values for the sizes above 2400. In response, BellSouth witness Caldwell agreed that the 4200 pair is no longer manufactured, although she stated that the 3600 pair "can be specially ordered." Since BCPM 3.1 includes these sizes, BellSouth "extrapolated" the costs. GTEFL witness Tucek states that GTEFL also "extrapolate[d] the inputs." For its extrapolation, GTEFL assumed that it received "the same economies of scale of scope in purchasing cables of this size that we get with the smaller size cable." Sprint witness Dickerson, on the other hand, "fully understands that there are not 24-gauge cable manufactured for the sizes and, therefore, it has satisfied the model input by inputting its 26-gauge material costs." Although it is unclear why BCPM 3.1 would include cable sizes that no longer exist, we believe an LEC could reasonably develop numbers either through extrapolation or through the use of another size copper cable.

Criticisms of BellSouth's copper cable inputs include: 1) BellSouth's not modeling distribution cable below 25 pair, 2) BellSouth's feeder cable costs improperly including terminals, and 3)BellSouth's 26 gauge cables incorrectly priced higher than 24 gauge cables. In addition, witness Wells criticized BellSouth's use of material loading factors.

BellSouth does not use 18 or 12 pair-cable in its distribution network because "it's easier to inventory, maintain and just place the 25." Therefore, BellSouth models the same price for 25, 18, and 12 pair 24 gauge and 26 gauge copper cable. GTEFL also models the same price for 25, 18, and 12-pair 24 gauge and 26 gauge copper cable; it apparently does not purchase 18 pair and 12-pair cable. Sprint, however, does model different prices for 25, 18, and 12 pair cable, although it is not clear whether these are extrapolated prices. BellSouth may not find it efficient to use 18 and 12-pair cable, but another efficient LEC might. Therefore, since this proceeding is to develop the cost of an efficient provider, not simply of the incumbent, we agree with witness Wells that there should be discrete prices for 18 and 12-pair cable.

The reason that BellSouth includes terminals in its feeder cable costs, is that BellSouth includes terminals of 100 pair or less in its material loading category, exempt material. Exempt material is material exempt from tracking; thus, it is expensed rather than capitalized. Exempt material is determined through the use of a loading factor, a percentage of investment. We agree with AT&T/MCI's criticism that this creates an anomaly in a cost proceeding such as this one, although we have no solution as to how BellSouth might correct this anomaly.

Another criticism of BellSouth's use of loading factors is that they are linear -- that is, no adjustment is made for size. The factor is the same whether it is applied to the smallest increment or to the largest size of material. We find that BellSouth's use of linear loading factors, while easy for BellSouth to apply, can generate results that seem to beg questions. For example, for 26 gauge buried copper cable, actual material cost as a percentage of total cost stays constant at about 23 percent no matter whether the cable is 12 pair or 4200 pair. This means that the total cost of this cable is always about 4.3 times the actual material cost; thus, no economies of scale for exempt material, engineering, or BellSouth labor, ever occur. It seems very unlikely that there are no economies generated as cable sizes grow larger. Sprint apparently agrees, since for the same cable the total cost ranges from 11 times the material cost for 12 pair cable to approximately 1.6 times the cost for 4200 pair cable.

In determining cable costs, BellSouth alone has used a TPI to adjust its cable prices before it applies the loadings. BellSouth uses TPIs because it assumes costs will be computed for the average midpoint of a 1998-2000 planning period. BellSouth is careful to note that in some cases use of the TPI results in deflation, not inflation. While use of a planning period may be necessary in a proceeding that involves a specified time period, e.g., a contract, use of a price index and planning period does not appear to be necessary for a proxy cost model. The proxy model constructs a network at a certain point in time based on the input values of that date, not over a three-year planning period. Sprint did not make "any speculative future adjustments. . . ." We believe that the use of TPIs in conjunction with a three-year planning period unnecessarily complicates an already complex process.

Witness Wells criticized Sprint, asserting that Sprint's underground cable costs are improperly higher than its aerial and buried costs. Sprint's witness Dickerson responded to this criticism by stating underground cable has higher labor placement costs because of the need to "pump out manholes," and "monitor continuously for the presence of gas." He also asserted that "this is a red herring issue anyway in that there's very little underground cable assumed in Sprint-Florida's plant mix." We believe Sprint's explanation is plausible.

The primary criticism leveled at the HAI cable cost inputs is that they are not based on actual experience. In their defense, the HAI sponsors provided a confidential copy of the Fassett papers. Dean Fassett, a member of the HAI engineering team, solicited validation data from various, confidential firms that supply telephone material. We have reviewed this document. It is unknown how many, if any, of the price quotes supplied come from contractors that work with LECs in Florida. The papers are not organized in a fashion that would even permit us to review a summary of data supplied. Portions of the Fassett papers were virtually illegible due to handwriting and the fact that the filed copy was obviously several copies away from original papers. We do not believe that the Fassett papers provide sufficient substantiation for any cable prices.

We believe that where possible and practical, Florida-specific data should be utilized, keeping in mind that the costs should be those of an efficient provider. Different efficient providers, however, are likely to see different costs. Sprint witness Dickerson attributes much of differing costs to providers' "ability to negotiate a price with a vendor, which is largely a function of volume purchases. . . ." In addition, witness Dickerson believes that some of the differential may be caused by equipment sizes: "For example, a large RBOC may use a larger type of equipment than

Sprint might use in a more rural area, and so, therefore, they might get a better price on a particular unit that services a large volume of capacity."

The question remains as to whether cable cost should be LEC-specific. Cable costs are divided into two components, essentially material and labor. We agree with witness Dickerson that different companies may purchase the same material for different prices, for the most part, based on market power. Would an efficient provider be able to purchase cable for the same price as BellSouth, Sprint, or GTEFL? The answer will depend on who the provider is. A very large provider might negotiate a better deal; a smaller provider may negotiate a worse deal. This proceeding is to determine the costs of an efficient provider, that is, a generic provider. If BellSouth were to build plant in Sprint's territory would it pay Sprint's prices for material? Would it pay the material prices it pays in its historic territory? We believe the answer to be "maybe" for material. But what about labor? It is likely that some labor rates in Miami differ from those, for example, in Destin. But for the installation of cable? We believe it might, but maybe not for a generic efficient provider who builds plant in Miami and Destin.

Upon consideration, we find that a Florida-specific, statewide cost is a reasonable assumption for what an efficient provider is likely to pay. We find that BellSouth's use of linear loading factors produces inherently unreasonable results. We also believe that BellSouth's use of TPIs is inappropriate in this proceeding. Sprint-Florida's loading factors, although their precise composition is unclear, appear to produce more reasonable results than BellSouth's factors. Furthermore, Sprint's results apparently do not include terminals within cable costs, nor do they include the application of TPIs as BellSouth's inputs do. Due to GTEFL's claim of confidentiality, we are not permitted to publicly analyze their results. Upon consideration, we believe that for fiber and copper cable, Sprint's BCPM 3.1 inputs adequately represent the costs an efficient provider is likely to pay. Therefore, we find that for fiber and copper cable, Sprint's BCPM 3.1 inputs be utilized as a surrogate for an efficient provider.

J. Drops

The drop is the cable that extends from the customer's premises to the terminal. The terminal is where the drop wires are connected to the distribution cable. The HAI and the BCPM each model drops differently (especially with regard to drop length). Therefore, a strict comparison of the two is not possible.

The HAI model assumes the following in determining its drop investment. Drop lengths are predetermined and range from 50-150 feet. The time necessary to place an aerial drop is 10 minutes per drop and 10 minutes for each 50 ft. of drop strung. As with the network interface device, the labor estimate assumes a crew installing aerial drop wires throughout a neighborhood in coordination with the installation of NIDs, terminals, and distribution cables. For buried drop placement HAI also assumes the labor estimate based on a crew installing buried drop wires throughout a neighborhood. The HAI buried drop sharing fraction is .50 for all density zones. The percentage of aerial drops equals the percentage of aerial distribution cable.

The BCPM determines the appropriate drop length through internal calculations. BellSouth used BellSouth-specific costs for the material, travel, and installation labor associated with the drop. For its drop inputs, GTEFL developed company-specific values for material and labor based on the prices GTEFL currently pays in Florida. According to witness Dickerson, Sprint drop cable costs were developed based on Sprint's actual current vendor material prices and specific estimates for installation.

<u>Drop Length</u>

While the intent of this section is to establish the appropriate aerial and buried drop cable costs, we believe it is necessary to briefly discuss drop lengths. The drop length received much attention in this proceeding.

In the HAI model, drop lengths are predetermined and range from 50-150 feet depending on density. It is assumed that drops run from the front of the property line. Therefore, housing and building set-backs determine drop length. The model assumes that lot sizes are twice as deep as they are wide. The model further assumes that houses and building are usually placed towards the front of lots.

In the BCPM, the road reduced distribution area is created and is used as a modeling tool to estimate drop cable. The BCPM assumes the drop extends from the branch cable to the middle of the customer's lot and is capped at 500 feet.

We found little support for use of predetermined drop lengths. According to the HIP, house and building set-backs determine the drop length. It is assumed that these set-backs range from as short as 20 feet in certain urban cases to longer distances in more rural settings. We are unable to locate any documentation that supports the 20 feet assumption. Furthermore, we note that the last nationwide study of actual loops produced results indicating that the average drop length is 73 feet. In the five density zones that range from 650 lines per square mile, to 10,000+ lines per square mile, HAI assumes a drop length of 50 feet. This means that in these five density zones (650-10,000+) HAI's drops may be too short.

According to GTEFL's witness Tardiff, the HAI's predetermined drop lengths are "an ill-conceived approach." He believes the drops would not reach the customers they are intended to serve. This is echoed by GTEFL's witness Murphy, who believes one of HAI's engineering flaws is that its drop lengths are understated. As discussed earlier in this Order, we believe the BCPM modeling assumptions (with the specified modifications) are most appropriate.

Drop Cable Costs

Some of the components which make up the per foot drop costs include material, installation, labor, sharing and structure factors. Table V-J(1) provides the proposed total cost per foot for buried drops, and Table V-J(2) provides the proposed total costs for aerial drops for each party by density zone.

**Table V-J(1):
Drop Cost-Buried Per foot**

DENSITY Zone	AT&T/MCI	BellSouth	GTEFL	SPRINT	BCPM Default
0-2550	$.74	$.70	$.62	$.74	$.77
2550-5000	.89	.70	.62	.74	.77
5000-10000	1.64	.70	.62	.74	.77
10,000+	5.14	.70	.62	.74	.77

**Table V-J(2):
Drop Cost-Aerial Per foot**

DENSITY Zone	AT&T/MCI	BellSouth	GTEFL*	SPRINT	BCPM Default
0-100	$.26	$.26	$.62	$.74	$.77
100-650	.28	.26	.62	.74	.77
650-10,000+	.33	.26	.62	.74	.77

*GTEFL's buried and aerial drop input values are the same. GTEFL is modeling 100% buried drop costs.

For the buried drop the parties' total costs are fairly comparable, with the exception of HAI's cost in the 5000+ density zones. In the 5000+ density zone HAI increases its placement costs significantly, with a placement cost of $1.50 per foot in the 5000-10,000 zone, and $5.00 per foot in the 10,000+ zone. We agree conceptually that buried drop placement costs would tend to increase in densely populated areas; however, at some point buried placement would be abandoned due to the costs of burying drops in urban areas. According to the HIP, the opinion of OSP experts was used by HAI to arrive at its per foot values.

BellSouth's placement costs for buried drop are $.58 per foot for all density zones, and its drop materials do not vary by density zone. Travel time was averaged, and placement time was the same in rural and urban areas. Witness Caldwell argues that the difference in travel time would not be significant enough to cause a difference in the per foot costs. The specific placement costs used by GTEFL are proprietary; however, they are much closer to BellSouth's reported costs tnan those from the HAI OSP experts. In addition, while we do not have specific placement cost data for Sprint, it likely would be closer to that of BellSouth. Upon review, we believe a simple average of the LEC's total cost estimates is reasonable. Accordingly, we adopt a total cost of $.69 per foot for buried drops. This value is reasonable based on the information available, and it falls within the range of costs provided.

With regard to aerial drops, there are much greater discrepancies among the parties. GTEFL did not model aerial drops and did not provide costs. GTEFL witness Tucek, however, admitted that not all of GTEFL's drops are buried. There appears to be a large discrepancy in material costs for the aerial drop. BellSouth's material cost per foot is $.07, Sprint's is $.32, and HAI's is $.10. While BellSouth's placement costs are reported at $.19 per foot, and Sprint's at $.42, the HAI's range from $.16-$.23 per foot (depending on density). We were unable to determine why Sprint's materials costs for aerial drops are more than four times that of BellSouth. Sprint's material cost comes from the material lot database. While we agree that a large firm such as BellSouth likely has significant buying power, we must determine the costs an efficient provider serving the market would pay for this item. It is certainly not known if these providers will be large or small.

We believe that BellSouth's material cost may be too low because of its greater buying power, while Sprint's cost appears to be too high. Therefore, we adopt HAI's material costs of $.10 per foot for aerial drops. With regard to placement costs, we find BellSouth's input to be an appropriate surrogate. BellSouth's placement costs also approximate the midpoint of the placement costs estimated by HAI. Therefore, we adopt a total cost for aerial drops is $.29 per foot.

K. Network Interface Device

The network interface device (NID) is the device at the customer's premises (both commercial and residential) within which the drop wire terminates.

According to the HIP, the residence NID is assumed to have the capacity for 2 lines, and the business NID is assumed to have the capacity for 6 lines. The NID investment is calculated as the cost of the NID case plus the product of the protection block per line and the number of lines terminated.

For the residential NID, HAI uses a loaded labor rate of $35 per hour which excludes exempt material loadings that normally include the material cost of the NID and drops. The labor estimate assumes a crew installing NIDs throughout a neighborhood in coordination with the installation of drops, terminals, and distribution cables. A work time of 25 minutes was used, based on the opinion of outside plant subject matter experts. The same labor and work time assumptions were made for the business NID.

BellSouth used BellSouth-specific costs for the material, travel, and installation labor associated with the NID. A regional labor rate of $43.45 was used with a travel time of .1834 hours and an installation time of .7500 hours. The same NID, protector, and interface are used to serve residence and business customers; therefore, there is no difference in the costs.

According to witness Tucek, GTEFL developed a company-specific value for the NID. The material and labor inputs are based on what GTEFL currently pays for these inputs in Florida. The labor costs are based on single source provider unit price contracts with contract labor service providers. Travel time is not a separate payable rate and, if required, is presumed to be included by the contract firm. This input was presented by GTEFL on a combined materials and labor basis, in order to preserve the confidentiality of its data.

Cost inputs for the NID were developed based on Sprint's actual current vendor material prices and specific estimates for installation.

The BCPM default makes several assumptions with regard to NIDs. Different NIDs are used for business and residence locations. One housing unit is included for each living unit or business location, in addition to one protector and one interface per drop pair terminated.

As with many of the inputs, it appears that each party calculated its NID costs differently and did not necessarily include the same components. We have reviewed the material costs for the "NID" from each LEC and AT&T/MCI, but it is unclear what components are included in those materials' costs. Also, the capacity of the NIDs modeled by Sprint and GTEFL is not known. For example, BellSouth provides a material cost for the NID housing, the interface and the protector; the other LECs did not provide this detail. GTEFL and Sprint provided a material cost for the "NID" not separated into any piece parts. Finally, AT&T/MCI provided a cost for the residential and business NID case and the protector. We assume but are unsure that the NID case includes the interface. Table V-K(1) provides a summary of the nonproprietary information provided.

TABLE V-K(1):
Residence/Business Costs for Installed NID
(all density zones)

	BCPM Default		BellSouth		GTEFL		SPRINT		AT&T/MCI	
	Res.	Bus.	Res.	Bus.	Res.	Bus.	Res.	Bus.	Res.	Bus.
NID	$30.73	$30.73	$32.06	$32.06	$29.49	$29.49	$58.95	$99.85	$25.00	$40.00
Protector			$11.51	$11.51					$4.00	$4.00
Interface			$13.04	$13.04						
TOTAL	$30.73	$30.73	$56.61	$56.61	$29.49	$29.49	$58.95	$99.85	$29.00	$44.00

Upon review of the record in this proceeding, we are unable to find any compelling evidence which supports calculating NID costs in any specific manner. The material costs provided by AT&T/MCI are at the low end of the spectrum, while Sprint's material costs are the highest. (As noted above, each LEC claims to use company-specific costs.) There is a much greater discrepancy in material cost between parties for the business NID. Like BellSouth, GTEFL modeled the same total costs for the business and residential NID. When GTEFL's witness Tucek was questioned on this matter, he stated he did not know why the costs were the same and had no information that would lead him to believe they should be different. According to BellSouth, it uses the same NID, protector and interface for residence and businesses; therefore, there is no difference in cost.

Based on this limited information, we must ask several questions. To begin with, should NID costs for purposes of a cost proxy model be LEC-specific? Like many of the inputs, the NID's costs are basically made up of materials and labor. While we are aware that different companies pay different prices for materials and labor, we must determine what an efficient provider would pay. Therefore, we find that NID costs shall not be company-specific.

Second, should the cost of the business NID and residential NID be different? According to the HIP, HAI models a residential NID that is assumed to have the capacity for 2 lines, and a business NID that is assumed to have the capacity for 6 lines. According to the BCPM model documentation, different NIDs are used for business and residence locations; however, the BCPM default is the same for both. Both Sprint and AT&T/MCI provided separate material costs for the residential and business NID; however, it is not clear what capacity NIDs Sprint is modeling. We note that the material cost for Sprint's business NID is almost three times as high as its residential NID. We believe there should be different costs for the business and residence NID. Accordingly, we shall require a 2-line residence NID and a 6-line business NID. (The NID capacity should not be confused with our determination on the appropriate lines per household made in Section V.F in this Order. The lines ordered in that section are for distribution planning purposes.) Although BellSouth uses the same size NID (six pair), protector, and interface for both business and residence, we do not know if an efficient provider entering BellSouth's territory would do the same.

As noted above, the parties' materials cost estimates vary considerably, and where provided, specific placement costs also vary widely. Furthermore, in some cases it is not known what, if any, loadings were applied, what piece parts are included, or what is the capacity of the NIDs being modeled. We do know that BellSouth and AT&T/MCI both model a six-line business NID. Upon review, we find that a simple average of BellSouth's and AT&T/MCI's business NID costs is appropriate. The total cost for a business NID shall be $50.00. With regard to the two-line residential NID, the total cost shall be $30.00. This input was derived based upon the relationship between the cost of the business and residential NID provided by both AT&T/MCI and Sprint, where the cost of the residential NID is approximately 60% of the cost of the business NID.

L. Outside Plant Mix

Outside plant mix describes the mix of aerial, buried, and underground cable by normal, soft rock, and hard rock terrain by density zone. Outside plant mix is defined for three types of outside plant: distribution (copper); copper feeder; fiber feeder; and fiber (interoffice) transport.

AT&T/MCI's proposed inputs are the default values found in HAI 5.0a. Referencing Bellcore's BOC Notes on the LEC Networks - 1994, HAI 5.0a states poles are the most common structure for distribution. It also states that HAI 5.0a's default values "reflect an increasing trend toward use of buried cable in new subdivisions." Three reasons contribute to this trend. First, prior to 1980, buried cable was "relatively expensive and unreliable" because "cables filled with water blocking compounds had not been perfected." Second, "reliable" splice closures for buried cable "were not the norm." And, last, "the public now clearly desires more out-of-sight plant for both aesthetic and safety-related reasons." Underground cable, according to HAI 5.0a, is "primarily used for feeder and interoffice transport cables, not for distribution cable." For copper and fiber feeder cable, the same reasoning applies.

BellSouth witness Caldwell supports the BCPM 3.1's default inputs as BellSouth's recommended inputs for outside plant:

> BellSouth analyzed the BCPM 3.1 default values at the wire center level. The distribution between aerial, buried, and underground placement was found to be reasonable. Thus, the BCPM 3.1 defaults were used.

When asked whether BellSouth knew its plant mix, witness Caldwell replied that BellSouth, through its loop sampling for unbundled network elements study, knew the plant mix only at the statewide level. BellSouth defends its use of the defaults:

> While BellSouth acknowledges that plant mix varies by soil type and density of lines served, actual data at this granular level of detail does not exist. BellSouth does maintain some plant mix data at the wire center level. BellSouth's analysis of the wire center data reinforced our subject matter expert judgment that the BCPM 3.1 default plant mix was representative of what would occur in BellSouth's territory. In particular, less buried and underground cable is found in rocky soil, less aerial and more underground cable is found in urban areas, etc.

GTEFL witness Tucek states that "the inputs for structure mix, sharing, and the prices of cable and the other outside plant components largely determine the cost of the loop, which makes up roughly 73 percent of the total cost per line. GTE changed these inputs because of their relative importance to overall costs." In order to develop the structure mix numbers, GTEFL:

> mapped each exchange served by GTE in Florida to the BCPM density zones based on the overall density, line density, of the exchange lines per square mile; and we took actual exchange level data on sheath feet by outside plant type; by type, feeder and distribution, aerial, buried and underground. And the actual data falls out with the numbers that we see here.

Sprint's proposed inputs are "specific" to its serving area. Sprint witness Dickerson described how the plant mix inputs were developed:

> The cable plant mix inputs are developed separately for copper feeder and distribution and fiber feeder. The percentages of cable facilities placed in either buried, underground or aerial locations were based on an analysis of Sprint's facilities in Florida adjusted to reflect a forward-looking trend for greater use of buried copper cable and greater use of underground fiber cable.

In order to determine if Sprint-Florida needed an adjustment, it analyzed the gross plant additions for 1994 - 1997:

> Construction additions were used as the basis for determining the forward-looking adjustment for plant mix. Construction additions for the period of 1994 through 1997 were trended through the year 2000 with linear regression, and the percent plant mix was calculated for each cable type by year. The resulting change in plant mix, by type of cable, from 1994 to 2000 was determined to be the forward-looking adjustment. In the case of fiber cables, underground fiber increased 4% over this period, buried decreased 4% and aerial remained unchanged. For copper cables, underground copper was found to decrease 3%, buried increased 3% and aerial remain unchanged. These percentage changes were then applied to the actual plant mix percentages calculated from Sprint's cable information in the FDW (Facilities Data Warehouse), with the exception of copper distribution. No adjustments were made to distribution cable, as underground copper distribution cable was only

1.2% of the total distribution cable, and using the above adjustments would result in 0% underground copper distribution cable.

For illustrative purposes, Tables 4(1)-1 through 4(1)-12 provide a side-by-side comparison of the parties' inputs for Normal and Soft Rock for copper distribution and feeder, fiber feeder, and fiber transport. All of the input values that we establish in this Order, including those for Hard Rock, a e in Appendix A.

Table V-L(1):
Distribution Plant Mix (Normal and Soft Rock) - Underground

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	0	0	.27%	.8%
6-100	0	2%	.27%	1.0%
101-200	0	5%	.38%	1.1%
201-650	0	8%	.82%	1.2%
651-850	0	15%	.87%	1.2%
851-2550	0	25%	.96%	1.3%
2551-5000	5%	40%	.53%	1.4%
5001-10000	5%	60%	1.95%	1.4%
>10001	10%	90%	1.95%	1.5%

Table V-L(2):
Distribution Plant Mix (Normal and Soft Rock) - Buried

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	75%	60%	78.11%	87.5%
6-100	75%	61%	78.11%	87.1%
101-200	75%	62%	73.91%	86.7%
201-650	70%	62%	77.42%	86.4%
651-850	70%	65%	79.52%	86.1%
851-2550	70%	65%	69.36%	85.9%
2551-5000	65%	55%	64.88%	85.6%
5001-10000	35%	35%	24.14%	85.5%
>10001	5%	10%	24.14%	85.3%

Table V-L(3):
Distribution Plant Mix (Normal and Soft Rock) - Aerial

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	25%	40%	21.62%	11.7%
6-100	25%	37%	21.62%	11.9%
101-200	25%	33%	25.72%	12.2%
201-650	30%	30%	21.77%	12.4%
651-850	30%	20%	19.61%	12.7%
851-2550	30%	10%	29.68%	12.8%
2551-5000	30%	5%	34.59%	13.0%
5001-10000	60%	5%	73.9%	13.1%
>10001	85%	0	73.9%	13.2%

Table 4(1)-4:
Copper Feeder Plant Mix (Normal and Soft Rock) - Underground

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	5%	10%	6.2%	12%
6-100	5%	15%	6.2%	14%
101-200	5%	20%	14.4%	15.7%
201-650	20%	25%	24.09%	17.1%
651-850	40%	45%	28.08%	18.3%
851-2550	60%	65%	33.87%	19.4%
2551-5000	75%	80%	31.66%	20.3%
5001-10000	85%	90%	64.22%	21.2%
>10001	90%	95%	64.22%	21.9%

**Table 4(1)-5:
Copper Feeder Plant Mix (Normal and Soft Rock) - Buried**

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	45%	50%	82.41%	84.7%
6-100	45%	45%	82.41%	82.9%
101-200	45%	40%	68.36%	81.4%
201-650	40%	35%	59.8%	80.1%
651-850	30%	30%	60.37%	79%
851-2550	20%	25%	50.26%	78.1%
2551-5000	10%	20%	48.32%	77.2%
5001-10000	5%	10%	22.54%	76.5%
>10001	5%	5%	22.54%	75.8%

**Table 4(1)-6:
Copper Feeder Plant Mix (Normal and Soft Rock) - Aerial**

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	50%	40%	11.39%	3.3%
6-100	50%	40%	11.39%	3.1%
101-200	50%	40%	17.24%	2.9%
201-650	40%	40%	16.12%	2.8%
651-850	30%	25%	11.55%	2.7%
851-2550	20%	10%	15.86%	2.5%
2551-5000	15%	0	20.03%	2.5%
5001-10000	10%	0	13.24%	2.3%
>10001	5%	0	13.24%	2.3%

Table 4(1)-7:
Fiber Feeder Plant Mix (Normal and Soft Rock) - Underground

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	5%	10%	86.91%	23.5%
6-100	5%	15%	86.91%	25.8%
101-200	5%	20%	92.14%	28.6%
201-650	10%	25%	90.78%	31.8%
651-850	40%	45%	93.74%	35.8%
851-2550	60%	65%	90.65%	40.8%
2551-5000	75%	80%	94.7%	47.2%
5001-10000	85%	90%	96.67%	55.8%
>10001	90%	95%	96.67%	67.8%

Table 4(1)-8:
Fiber Feeder Plant Mix (Normal and Soft Rock) - Buried

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	60	50	12.89	74.4
6-100	60	45	12.89	72.1
101-200	60	40	7.63	69.4
201-650	60	35	8.24	66.2
651-850	30	30	5.13	62.3
851-2550	20	25	7.48	57.4
2551-5000	10	20	2.97	51.1
5001-10000	5	10	0	42.7
>10001	5	5	0	30.8

Table 4(1)-9:
Fiber Feeder Plant Mix (Normal and Soft Rock) - Aerial

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	35%	40%	.21%	2.1%
6-100	35%	40%	.21%	2.1%
101-200	35%	40%	.24%	2.0%
201-650	30%	40%	.97%	2.0%
651-850	30%	25%	1.13%	1.9%
851-2550	20%	10%	1.88%	1.8%
2551-5000	15%	0	2.33%	1.7%
5001-10000	10%	0	3.33%	1.5%
>10001	5%	0	3.33%	1.4%

Table 4(1)-10:
Fiber Transport Plant Mix (Normal and Soft Rock) - Underground

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	20%	10%	86.91%	23.5%
6-100	20%	15%	86.91%	25.8%
101-200	20%	20%	92.14%	28.6%
201-650	20%	25%	90.78%	31.8%
651-850	20%	50%	93.74%	35.8%
851-2550	20%	75%	90.65%	40.8%
2551-5000	20%	85%	94.7%	47.2%
5001-10000	20%	85%	96.67%	55.8%
>10001	20%	95%	96.67%	67.8%

**Table 4(1)-11:
Fiber Transport Plant Mix (Normal and Soft Rock) - Buried**

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	60%	80%	12.89%	74.4%
6-100	60%	77%	12.89%	72.1%
101-200	60%	74%	7.63%	69.4%
201-650	60%	70%	8.24%	66.2%
651-850	60%	47%	5.13%	62.3%
851-2550	60%	22%	7.48%	57.4%
2551-5000	60%	15%	2.97%	51.1%
5001-10000	60%	15%	0	42.7%
>10001	60%	5%	0	30.8%

**Table 4(1)-12:
Fiber Transport Plant Mix (Normal and Soft Rock) - Aerial**

Density	AT&T/MCI	BellSouth	GTEFL	Sprint
0-5	20%	10%	.21%	2.1%
6-100	20%	8%	.21%	2.1%
101-200	20%	6%	.24%	2%
201-650	20%	5%	.97%	2%
651-850	20%	3%	1.13%	1.9%
851-2550	20%	3%	1.88%	1.8%
2551-5000	20%	0	2.33%	1.7%
5001-10000	20%	0	3.33%	1.5%
>10001	20%	0	3.33%	1.4%

Both AT&T/MCI and BellSouth used default inputs. GTEFL developed inputs based on its current plant mix. Sprint developed inputs based on its current mix, and then went one step further. It performed an analysis to see if the structure mix was changing. Sprint found that its structure mix was changing in feeder by 3 and 4 percent, for copper and fiber, respectively.

As discussed in the introduction and overview to Section V of this Orde., we are not persuaded that national inputs which have not been reviewed by subject matter experts familiar with Florida are appropriate for use, if Florida-specific or Florida-reviewed inputs are available.

Sprint witness Dickerson asserts that HAI's national defaults are "heavily skewed toward aerial cable which may have a lower initial cost. . . . The maintenance costs for aerial cable and poles is (sic) significantly higher than the maintenance costs for buried cable." Witness Dickerson states that Sprint places "large amounts of buried cable" because of "the ease of burying cable in Florida's soil and the obvious need to significantly storm-proof Sprint's network." We are persuaded by witness Dickerson that HAI's national defaults for structure mix are not appropriate for use in Florida.

Of the three LECs which have submitted proposed structure mix inputs, all developed them differently. BellSouth used the BCPM 3.1 defaults; GTE Florida submitted inputs based on its current plant mix; and Sprint submitted inputs based on its current mix, adjusted for current and future trends.

Based on the record evidence, we find that in what proportion, and where, different types of plant are used is specific to a geographic area. A LEC's current plant mix is indicative of past and present decisions on plant placement. Technology may change future decisions. Upon consideration, we find that Sprint's methodology is the most appropriate because Sprint adjusted its current geographic mix for future trends. However, we would have preferred to see, for example, Sprint's plant mix geographically deaveraged for its Centel and United territories. This type of deaveraged information would have been more reflective of Sprint-Florida's territory.

A new, efficient provider is likely to have a plant mix reflecting today's conditions, not yesterday's or 1970s' conditions. The types of trend analyses that Sprint used appear to capture how plant mix is changing in its territory and are indicative of the expected plant mix of another provider operating in the same territory.

We would prefer that GTEFL's and BellSouth's methodology be similar to Sprint's methodology. GTEFL used current data but did not perform a forward-looking adjustment. However, it is possible that GTEFL's fiber data does reflect current plant mix. As can be seen in Tables 4(1)-5 and 4(1)-6, the majority of GTEFL's copper feeder in the lower density zones is buried cable, while in the higher density zones, it is primarily underground cable. This is different from fiber feeder, where fiber is primarily underground cable in all density zones. GTEFL witness Tucek did not know why this occurs, other than it "is the results that came out of the GTE data." Given that fiber is a relatively recent (post 1970s') technology, we believe that the plant mix for fiber feeder might be more reflective of current and future placements than for that of copper feeder.

BellSouth's structure mix inputs, as noted above, are unadjusted BCPM 3.1 defaults that have been reviewed and approved by BellSouth employees. We are puzzled by BellSouth's use of defaults when it might have extrapolated the inputs from available data.

We believe that Sprint's method for developing inputs is the method GTEFL and BellSouth should aspire to in any future universal service proceeding. However, the adjustments made by Sprint (3 and 4 percent) are small enough, assuming similar circumstances, that we believe that GTEFL's inputs need not be altered. We would have been uncomfortable with BellSouth's use of BCPM 3.1 defaults if BellSouth's network department had not reviewed them and found them appropriate. We believe geographic-specific inputs are preferable and most appropriate for structure mix. If those are unavailable, we believe that the second-best choice is reviewed and approved defaults by knowledgeable employees familiar with the geographic area. We also believe that the incumbent providers know best what the appropriate structure mix should be in their geographic areas, representing what an efficient provider's structure mix would likely be.

Upon consideration, we find that the LECs' proposed structure mix inputs for BellSouth, GTE Florida, and Sprint-Florida are reasonable surrogates for what an efficient provider would use in each geographic area, and, thus are approved as submitted for use in those respective LEC territories.

M. Digital Loop Carrier

According to the HAI Model Description, one of two types of digital loop carriers (DLCs) is selected when fiber feeder is used. The DLCs are designated as high or low density based on the number of lines. When DLC equipment is used, the investment is calculated in the Distribution Module. There are 12 separate items which may be included in HAI's total DLC investment. These are items such as site preparation, power, common equipment, and optical patch panels. The DLCs are equipped by the model with "line cards of the type required to provide the appropriate grade of service on the analog and digital (T-1) pairs fed off the DLC."

BellSouth has chosen to use the BCPM 3.1 default inputs after BellSouth's Network experts reviewed them and found these defaults to be reasonable and reflective of BellSouth's operation in Florida. We note that BellSouth does not deploy systems with fewer than 96 lines and, therefore had no data on small systems. According to the BCPM 3.1 Model Methodology, the model places either a large or small integrated DLC. The BCPM applies a user adjustable 90% engineering fill factor for both large and small DLCs.

GTEFL's DLC inputs are based on GTEFL-specific input prices; materials and labor inputs are based on the prices GTEFL currently pays for these inputs in Florida. GTEFL's specific costs are proprietary. GTEFL's DLCs do not include huts or environmentally controlled vaults (ECVs).

Sprint's DLC costs were based on its current vendor costs and actual installation costs within its Florida serving area. Sprint's next generation digital loop carrier (NGDLC) model configuration includes costs only to support the level of basic service specified by the FCC. Sprint's specific DLC costs are proprietary.

The majority of the record evidence regarding the DLC was directed at the DLC placement and the number of DLCs necessary to serve a given carrier service area. There was little evidence specifically addressing the cost of the DLCs. The input category of DLC is made up of the digital loop carrier remote system (DLCRT), the central office terminal (COT), POTS cards (or nonextended range line cards) and extended range line cards. Table V-M(1) provides the costs proposed by each party.

Table V-M(1): DLC Inputs Proposed by the Parties					
DLC Remote Terminal					
DLC SIZE	**BCPM 3.1 Default**	**BellSouth**	**GTEFL**	**Sprint**	**AT&T/MCI**
0	$19,120.17	$19,120.17	$23,753.40	$23,158.57	$18,300.00
25	$19,203.56	$19,203.56	$23,753.40	$23,158.57	$18,300.00
49	$23,789.75	$23,789.75	$23,753.40	$26,928.10	$18,300.00
97	$23,886.56	$23,886.56	$30,299.76	$26,928.10	$27,700.00
121	$37,691.12	$37,691.12	$30,299.76	$36,675.90	$27,700.00
193	$37,873.22	$37,873.22	$46,238.96	$36,675.90	$37,100.00
241	$64,291.00	$64,291.00	$51,245.72	$125,031.75	$37,100.00
385	$68,377.00	$68,377.00	$89,196.69	$130,818.01	$70,000.00
673	$96,859.00	$96,859.00	$113,125.29	$148,568.72	$88,500.00
1345	$165,236.00	$165,236.00	$132,112.15	$166,109.52	
DLC Central Office Terminal					
DLC SIZE	**BCPM 3.1 Default**	**BellSouth**	**GTEFL**	**Sprint**	**AT&T/MCI***
0	$11,268.16	$11,268.16	$3,319.04	$1,264.02	
25	$11,749.30	$11,749.30	$3,319.04	$1,264.02	
49	$12,711.57	$12,771.57	$3,319.04	$1,264.02	
97	$13,192.71	$13,192.71	$6,975.50	$1,264.02	
121	$14,608.60	$14,808.60	$6,975.50	$1,264.02	
193	$15,770.87	$15,770.87	$22,492.54	$1,264.02	
241	$22,176.00	$22,176.00	$23,030.58	$8,311.56	
385	$22,176.00	$22,176.00	$23,962.73	$8,540.09	
673	$22,176.00	$22,176.00	$29,833.16	$9,297.59	
1345	$26,881.00	$26,881.00	$39,474.77	$10,055.09	

Table V-M(1): DLC Inputs Proposed by the Parties					
DLC Non-extended Range Line Cards					
DLC SIZE	**BCPM 3.1 Default**	**BellSouth**	**GTEFL**	**Sprint**	**AT&T/MCI**
0		$94.00	$72.26	$98.59	$100.00
25		$94.00	$72.26	$98.59	$100.00
49		$94.00	$72.26	$98.59	$100.00
97		$94.00	$72.26	$98.59	$100.00
121		$94.00	$72.26	$98.59	$100.00
193		$94.00	$72.26	$98.59	$77.50
241		$89.11	$72.26	$68.02	$75.50
385		$89.11	$72.26	$68.02	$75.50
673		$89.11	$72.26	$68.02	$75.50
1345		$89.11	$63.89	$68.02	$75.50
Extended Range Line Card					
DLC SIZE	**BCPM 3.1 Default**	**BellSouth**	**GTEFL**	**Sprint**	**AT&T/MCI** Inputs**
Large	$187.50	$187.50	$183.03	$105.88	
Small	$125.00	$125.00	$183.03	$132.26	

*HAI did not provide COT inputs. **HAI's DLCRTs are equipped with a line card; therefore, it is not a separate input.

As illustrated in the table above, costs vary significantly in some cases. AT&T/MCI's costs in most cases seem to be much less than the costs proposed by the LECs. As noted above, AT&T/MCI have included many items in their DLC costs; however, GTEFL's witness Tardiff argues that the costs associated with DLCs in the HAI model do not include some very critical items in the calculations. Witness Tardiff believes capital costs for rights-of-way have not been included beyond the $3,000 allocated for site preparation and power. He also states that costs of underground sites, which are used by the LECs in urban areas but not modeled in HAI 5.0a, can range up to $150,000. According to the HIP, the majority of the HAI DLC inputs are based on the experience and opinion of a team of outside plant engineers. We agree with witness Tardiff that HAI's costs apparently do not include costs for rights-of-way. Although specific numbers are confidential, Sprint has included in its site preparation costs for easements. It appears that these costs may be significant and should not be omitted. Since the AT&T/MCI numbers seem very much out of line with the Florida-specific data provided by GTEFL and Sprint, we do not believe the AT&T/MCI DLC costs are appropriate inputs into the selected proxy cost model.

While the most substantial variances in costs appear to be between those proposed by AT&T/MCI and the LECs, there are some significant discrepancies in cost proposals among the LECs. In most cases, Sprint's costs, especially for the larger size DLCs, are greater than GTEFL's, although Sprint's COT costs appear to be much less. As discussed below, we are unable to do an apple to apples comparison of costs to determine why these discrepancies exist.

We were provided with GTEFL's DLCRT, COT, and line card costs under confidential cover. GTEFL's costs appear to include materials, labor, installation and maintenance, engineering and planning, and a loading factor, which includes freight, sales tax, provisioning, and minor materials. While costs were provided, there was little supporting documentation, so we are unable to determine what is included in the total costs. On the other hand, Sprint provided a very detailed breakdown of its costs. While the actual numbers are confidential, what makes up these costs is not. Sprint's costs specifically identified components such as site costs, assemblies, transceivers, cabinets, batteries, channel unit cards, engineering, and installation. With regard to Sprint's DLC cost, witness Dickerson stated "our cost is our cost." He believes, based on simple business dynamics, that a larger provider such as the Bell companies could purchase these items cheaper than Sprint.

Since the cost information provided by GTEFL and Sprint were in two very different formats, with varying degrees of specificity, we can not do an apples to apples comparison. As noted by GTEFL's witness Tucek, it is unknown what costs other parties have included in their corresponding inputs, even when the inputs are referred to with the same name. Furthermore, he also states, "I can assure you that only Sprint and BellSouth can testify to what their costs for DLCs or any other network component includes." We did review the material costs provided by GTEFL and Sprint for the DLCRT, and the material costs can vary considerably for comparably sized equipment. In addition, we have reviewed other documents which show how drastically comparably sized DLCRT's costs can vary by brand.

Once again, we must emphasize that the purpose of this proceeding is to determine the costs of an efficient generic provider to be input into a cost proxy model. The model only allows one input for each size DLC and COT, and non-extended (or POTS) and extended range line cards. These inputs include many component parts that vary drastically depending on various factors; therefore, in the "real world", a provider could incur varying costs for placing the same size DLCRT. We believe the total cost provided by GTEFL and Sprint are their best estimates based on their experiences with certain size DLCRTs, COTs, and line card purchasing and placement. Similarly, BellSouth believes the BCPM default values are reasonable and reflective of BellSouth's operation in Florida.

Upon consideration, we find that an appropriate surrogate cost for an efficient provider in the state of Florida for DLCRTs, the DLCCOTs, and the extended and nonextended range line cards is an average of those cost estimates proposed by GTEFL, Sprint, and BellSouth. We believe that there are a number of variables in calculating the costs for the DLCRT. With costs for similarly sized items varying significantly by brand, it is unknown what an efficient provider would or could select or purchase. In addition, costs for site preparation, rights-of-way, and other components vary. We find that this averaged cost is a reasonable estimate of what an efficient provider could expect to incur. Therefore, we adopt the values found in the table below.

Table V-M(2):
Commission-Ordered DLC Inputs

DLC Remote Terminal	
Size	**Ordered Inputs**
0	$22,011
25	$22,039
49	$24,824
97	$27,038

Table V-M(2):
Commission-Ordered DLC Inputs

121	$34,889
193	$40,263
241	$80,189
385	$96,131
673	$119,518
1345	$154,486
Central Office Terminal	
Size	**Ordered Inputs**
0	$5,284
25	$5,444
49	$5,785
97	$7,144
121	$7,683
193	$13,176
241	$17,840
385	$18,226
673	$20,436
1345	$25,470
Non-extended Range Line Cards	
Size	**Ordered Value**
0	$88
25	$88
49	$88
97	$88

**Table V-M(2):
Commission-Ordered DLC Inputs**

121	$88
193	$88
241	$76
385	$76
673	$76
1345	$74
Extended Range Line Card	
Size	**Ordered Inputs**
Large	$159
Small	$147

N. Terminal Costs

This section will address the appropriate inputs for the indoor and outdoor serving area interface (SAI), commonly referred to as the feeder distribution interface (FDI). This section will also address the drop terminal.

<u>Serving Area Interface</u>

The SAI connects distribution cables to a feeder cable. A SAI may be placed indoors or outdoors.

AT&T/MCI Wells states that the prices for the HAI 5.0a model are based on the opinion of engineering experts. BellSouth used company-specific FDI costs to reflect BellSouth's costs in Florida. The material prices were obtained from procurement records and were adjusted for inflation. The engineering and labor costs were developed from Florida-specific in-plant factors. GTEFL's outdoor SAI inputs are based on GTEFL-specific prices. The indoor SAI costs are the BCPM defaults.

Table V-N(1) illustrates the costs presented in this proceeding for the indoor SAI, while Table V-N(2) presents the proposed costs of the outdoor SAI by the various parties.

Table V-N(1):
Service Area Interface (SAI) - Indoor

	BCPM 3.1 Default	BellSouth	Sprint	GTEFL	HM 5.0a
50					98.00
100	811.60	2,042.60	1,102.64	811.60	148.00
200	1,293.09	4,085.20	1,979.68	1,293.09	296.00
300	1,965.71	6,127.80	2,781.51	1,965.71	N/A
400	2,324.03	8,170.40	3,733.75	2,324.03	592.00
600	3,757.00	12,255.60	5,412.63	3,757.00	888.00
900	4,901.36	18,383.39	8,043.74	4,901.36	1,232.00
1200	6,867.06	24,511.19	10,825.25	6,867.06	1,776.00
1800	8,658.36	36,766.79	13,456.37	8,658.36	2,464.00
2100	11,095.80	42,894.59	18,067.16	11,095.80	N/A
2400	13,559.71	49,022.38	21,500.11	13,559.71	3,352.00
3000	16,669.77	61,277.98	26,912.73	16,669.77	N/A
3600	19,605.42	73,533.58	32,174.96	19,605.42	4,928.00
4200	23,362.42	85,789.17	37,587.59	23,362.42	N/A
5400					7,392.00
7200					9,656.00

Table V-N(2):
Service Area Interface (SAI) - Outdoor

	BCPM 3.1 Default	BellSouth	Sprint	GTEFL	HM 5.0a
50					250.00
100	1,885.00	1,615.68	1,197.67	1,549.28	350.00
200	2,120.00	3,231.36	1,371.59	1,742.42	600.00
300	2,355.00	4,847.05	1,590.54	1,935.57	N/A
400	2,590.00	6,462.72	1,794.08	2,674.16	1,000.00
600	5,509.00	9,658.30	2,447.66	3,812.00	1,400.00
900	6,848.00	11,674.24	3,361.55	4,892.78	1,900.00
1200	7,586.00	13,926.99	4,039.73	5,420.07	2,400.00
1800	8,717.00	19,407.84	5,736.78	7,739.70	3,400.00
2100	11,490.00	22,583.39	6,684.45	10,057.68	N/A
2400	11,490.00	24,371.28	7,110.22	10,057.68	4,300.00
3000	11,713.00	33,138.93	8,623.59	10,036.65	N/A
3600	14,055.60	41,102.57	10,348.31	12,043.98	6,000.00
4200	16,398.20	45,377.34	12,073.03	14,051.31	N/A
5400					9,200.00
7200					10,000.00

The costs for the SAIs vary significantly among the parties. We note the costs for the SAIs provided by AT&T/MCI are supported by the HIP. According to the HIP, "prices are the opinion of a group of engineering experts." GTEFL witness Murphy asserts that a chart sponsored by AT&T/MCI witness Wells, which was intended to show the HAI's default values, provides costs 81% higher than the lowest estimates received by the OSP engineering experts, which was omitted data on SAI costs. The HAI engineering team received contractor/vendor data for SAIs in several sizes. Table V-N(3) illustrates the information provided.

Table V-N(3):
Contract Vendor Data

Size	High	Low	Average
3600	$6,612	$6,116	$6,364
1800	3,850	3,570	3,710
1200	5,330	2,610	3,587
600	2,825	1,529	2,177
400	992		
200	902		
100	642		

Regarding the cost information provided by the LECs for the indoor and outdoor SAIs, it appears that the costs for these inputs were calculated differently by each LEC. For example, BellSouth has indexed its material costs for inflation, while it appears that Sprint has not. While we are aware Sprint has applied various loading factors, such as a supply expense factor, to its material costs, we do not know the values of the factors applied. GTEFL's outdoor SAI costs include materials and labor. GTEFL has adopted the BCPM default for indoor SAI costs. We can do an "apples to apples" comparison of the LECs' costs only for materials. Although GTEFL's request for confidentiality precludes discussion of numbers, we note that the material prices provided for the outdoor SAI do vary significantly by company. The numbers show BellSouth generally has the lowest material costs, while Sprint's appear to be the highest.

We find very little opposition to the costs submitted by the LECs. Witness Wells was critical of the fact that BellSouth's engineering costs were applied on a linear basis based on the pair count of the SAI. The example provided by witness Wells shows that BellSouth included $312.66 to engineer a 100 pair indoor SAI and $13,131.68 to engineer a 4200 pair SAI (i.e., 42 times more).

According to witness Wells, "real world engineering costs for an indoor SAI vary little by pair size."

BellSouth witness Caldwell stated that engineering costs do vary by size. She also explained that the big cost drivers are the records and accounting necessary to update all of BellSouth's records on each one of its cable pairs. She notes that a record must be kept of where each pair works and what it is connected to.

While we agree with witness Caldwell that engineering costs may vary somewhat by pair size, we do not accept BellSouth's linear assumption for engineering costs. While BellSouth appears to have the lowest materials costs of all the LECs, they have significantly higher total costs in some cases more than three times as much as the next closest LEC. This is likely due in part to the engineering costs and the application of an inflation factor. Therefore, we reject the use of BellSouth's indoor and outdoor SAI costs in the selected proxy cost model.

While each company has proposed its own costs for indoor and outdoor SAIs with the exception of GTEFL who adopted the BCPM defaults for the indoor SAI, we are not persuaded that SAI costs must be LEC-specific. As was discussed in sections of this Order, LEC-specific costs are not necessarily appropriate, given the many variables a generic new entrant may face in Florida. Accordingly, we will require state-specific costs for indoor and outdoor SAIs. Upon consideration, we hereby adopt the state-wide costs for the indoor and outdoor SAIs shown in Tables V-N(4) and V-N(5). While these costs are those sponsored by Sprint, we believe they are appropriate surrogates of the costs faced by an efficient provider.

Table V-N(4):
Commission-Ordered Indoor SAI Inputs

Size	Ordered Input
100	1,102.64
200	1,979.68
300	2,781.51
400	3,733.75
600	5,412.63
900	8,043.74

Size	Ordered Input
1200	10,825.25
1800	13,456.37
2100	18,067.16
2400	21,500.11
3000	26,912.73
3600	32,174.96
4200	37,587.59

Table V-N(5):
Commission-Ordered Outdoor SAI Inputs

Size	Ordered Inputs
100	1,197.67
200	1,371.59
300	1,590.54
400	1,794.08
600	2,447.66
900	3,361.55
1200	4,039.73
1800	5,736.78
2100	6,684.45
2400	7,110.22
3000	8,623.59
3600	10,348.31
4200	12,073.03

Drop Terminal

The drop terminal is where the drop wires are connected to the distribution cable.

The full installed cost supported by AT&T/MCI for the 25 pair aerial drop terminal is $128, and $170 for the 25 pair buried drop terminal. According to the HIP, price quotes for just the material portion were received from several sources. BellSouth's drop terminal costs are included as exempt material in the in-plant factors used to develop the installed investment of cable. According to GTEFL witness Tucek its material and labor costs are based on the prices GTEFL currently pays. Sprint's costs were developed based on Sprint's actual current vendor material prices and specific estimates for installation.

Table V-N(6) illustrates the total costs for the aerial and buried drops supported by each party.

Table V-N(6):
Total Buried and Aerial Drop Terminal Costs

Buried Drop Terminals	AT&T/MCI	BellSouth	GTEFL	Sprint	BCPM Default
6 Line	n/a	n/a	203.00	117.19	157.05
12 Line	n/a	n/a	220.03	145.29	440.87
25 Line	$170.00	n/a	365.35	219.76	451.00
Aerial Drop Terminals	**AT&T/MCI**	**BellSouth**	**GTEFL**	**Sprint**	**BCPM Default**
6	n/a	n/a	125.66	150.32	95.98
12	n/a	n/a	175.07	180.16	131.81
25	$128.00	n/a	292.16	282.99	216.00

As illustrated above, BellSouth did not provide costs for aerial or buried drop terminals. BellSouth noted that the material cost of drop terminals less than 100 pair is not separately identifiable in the in-plant calculations for plant items. These terminals are included in exempt material classifications for aerial and buried cable accounts and are therefore zeroed out in the BCPM.

As shown in Table V-N(6), HAI only costed the 25 pair terminal. While the HIP states that price quotes for the material portion only were received from several sources, these sources were not further identified.

We believe that the costs of the aerial and buried drop terminals should reflect Florida data characteristics when available. The costs proposed by Sprint and GTEFL for aerial drop terminals are fairly close. While Sprint did provide its material costs separately, GTEFL did not provide this same information. Based on the fact that little evidence was proffered regarding costs for drop terminals, we infer that the parties must not believe this input is a significant cost driver. Therefore, we find that for aerial drop terminals a simple average of Sprint and GTEFL's costs would be an appropriate surrogate for an efficient provider throughout the state. Table V-N(7) illustrates the values that we adopt.

Table V-N(7):
Commission-Ordered Aerial Drop Terminal Inputs

Size	Ordered Inputs*
6	$138
12	178
25	288

*Rounded to next whole dollar.

Sprint and GTEFL's total costs for buried drop terminals differ. We believe that this may be due to geographic differences that result from burying drop terminals. Sprint's material costs for buried drop terminals are less than its aerial drop terminal material costs, although its total buried costs are greater. GTEFL's total costs are greater than Sprint's total buried terminal costs. We have no evidence that burying drop terminals in GTEFL's territory or BellSouth's territory would be any more costly than in the territory of Sprint. Therefore, we hereby adopt Sprint's buried drop terminal inputs as a reasonable state-wide surrogate. The approved values are illustrated in Table V-N(8).

Table V-N(8):
Commission-Ordered Buried Drop Terminal Inputs

Size	Ordered Inputs*
6	$117
12	$145
25	$220

*Rounded to next whole dollar.

O. and P. Switching Costs and Associated Variables and Traffic Data

This section refers to the costs of the switches and various component parts. Because Section V-P Traffic data is an integral component of developing switching costs, we have included it with Section V-O Switching costs and associated variables.

AT&T/MCI's proposed switching and traffic inputs are described in the HIP. Given that these inputs are structured somewhat differently than the BCPM inputs, and that AT&T/MCI did not provide equivalent BCPM inputs, we will not provide a detailed discussion of HAI's switching inputs. Some of the HAI switching inputs include Switch Port Administrative Fill, Analog Line Circuit Offset for DLC Lines, per Line, and Processor Feature Loading Multiplier. Some of HAI's traffic inputs include IntraLata Calls Completed, Local DEMs (Dial Equipment Minutes) Thousands, Intrastate Business/Residential DEMs, and Residential/Business Holding Time Multipliers (Residential/Business). We will discuss, however, AT&T witness Petzinger's criticisms of the LECs' BCPM inputs.

BellSouth witness Caldwell explained how BellSouth developed its switching costs and traffic data. BellSouth Florida-specific analyses were used to provide the detailed data for wire centers in the state. State-specific information on calling rates, usage rates, loading factors and host/remote characteristics were used along with company average data and line counts that are consistent with data generated from other BCPM modules.

GTE Florida witness Tucek described how the switching and traffic inputs were developed:

> The percent of local calls and the percent of residence lines were based on actual 1997 data for GTE Florida. These values were 84.63 and 71.40 percent, respectively. As noted above, the switch percent line fill is based on the national average value for GTE. The land and buildings loading factors are based on the ratio of the corresponding 1997 ARMIS account balances to digital switching investment, where these numbers have been adjusted to replacement values using C.A. Turner indices where available. The investment by wire center for each category listed above are based on SCIS and Costmod runs for representative model offices in GTE's network, and on the switch type and number of lines in each Florida wire center. These investments reflect the pricing GTE obtains for initial switch placements and for capacity additions. The investments include telco engineering and installation costs, as well as common equipment and power. Accordingly, the BCPM inputs for these factors have been set to zero. The usage inputs, line-to-trunk ratio, the percent of local calls that are interoffice, and the call completion fraction were set to values consistent with the SCIS and Costmod runs.

Sprint witness Dickerson described the inputs necessary for switching and how Sprint-Florida developed them:

> The inputs included in BCPM related to the development of switching costs are included in the SW (switching) State Default Inputs Table, the Signaling Investments Table, the Switching-Coefficient Input Table, the Global Inputs Table, and the SW Discount Factor Tables, the Audited LEC Switching Model (ALSM) and the Switch User Data File. These tables include data specifying the calling characteristics of Sprint's customers in

> Florida and financial information necessary to determine the cost of switching equipment used in providing local telephone service in Florida. The information included in these tables is used by the model to determine the amount of switching investment required to provide the level of local service specified by the performance parameters in the tables. The model also uses the information included in these tables to determine that portion [of] switching equipment costs that are required to provide the basic local service.
>
> The company specific inputs included in the SW State Default Input Table are the 5ESS and DMS share inputs. The remaining inputs in the table are default values that are believed to be representative of Sprint operations in Florida. Additional company specific inputs contained in the Audited LEC Switching Model (ALSM) and the switch user data File include the following:
>
> Minimum Investment per line
>
> Getting Started Investment
>
> Line CCS[2] Investment and Trunk CCS Investment
>
> SS7 Investment
>
> Umbilical CCS Investment
>
> Engineered Call per line and CCS per line
>
> Line/Trunk Ratio
>
> Percent Fill

In addition, the inputs for the Signaling Investment, Switching Coefficient, and Global Input Tables "are default values that are representative of Sprint's operations in Florida." The SW

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[2]Centum Call Seconds, or hundred call seconds.

Discount Factor table's inputs are "company specific" and "are the current discount rates applicable to new switching equipment purchases for Sprint-Florida and distribution of access lines by switch equipment type."

Standalone Coefficients, Host Coefficients, and Remote Coefficients

All three LECs proposed the BCPM defaults. These are the BCPM switch curve coefficients. Upon review, we adopt the default values as reasonable surrogates for an efficient provider.

Global Inputs, Switching Discount Adjustment Factor Table, Vendor Discounts for Small Switches, and Partitioning Percentages for Small Switches

BellSouth, GTEFL, and Sprint have used defaults for numerous inputs without criticism by AT&T witness Petzinger. These inputs include Global Inputs (except for the Excess CCS Option), Switching Discount Adjustment Factor Table, Vendor Discounts for Small Switches, and Partitioning Percentages for Small Switches. Upon review, we approve the LECs' proposed inputs as reasonable and appropriate for this proceeding.

The Excess CCS Option is to include reserved CCS investment in either line port or usage. BCPM documentation states:

> Many local exchange companies and their regulating entities have agreed that the Reserve CCS investment is a function of line ports, while the BCPM switch regression model includes this investment as a part of usage. SCIS provides both options. The two applications can be considered equally appropriate, depending on the individual company's engineering practices and policy at the state level. BCPM offers this option so as not to exclude any valid economic policies.

Those companies that include the Reserve CCS capacity switching investment in the Line Port investment category are "required" to provide a non-discounted dollar amount per line for 5ESS and DMS host/standalone and remote switches. In this proceeding, both BellSouth and GTEFL elected to use the Line port investment category, while Sprint uses the Usage. Because an efficient provider may not have access to SCIS, we shall require that both BellSouth and GTEFL include the Reserve CCS capacity switching investment in the Usage category, as Sprint already does.

In the State Default Table, BellSouth must zero out its dollar amount per line for 5ESS and DMS host/standalone and remote switches. GTEFL did not provide this information, so GTEFL should continue to use a zero value for its inputs.

For the Vendor Discounts for Small Switches and Investment Parameters for Small Switches, all the LECs filed the BCPM defaults. The discount defaults are zero "because the data used for development of that curve represents net prices." The source for the Investment Parameters for Small Switches is a switch curve:

> . . . developed by Dr. David Gable of Queens College. It was presented to the FCC by Dr. Gable on August 20, 1997 in a study titled "Estimating the Costs of Switches and Cable Based on Publicly Available Data." The study was based on a regression analysis using data provided by the Rural Utility Service (RUS) for about 136 switches. A final version of this report, with slightly revised results, was recently published . . . .

Witness Petzinger argued that the small switch prices:

> . . . certainly would not be applicable to a GTE or Sprint, as the buying power of these companies would certainly allow them to obtain better pricing than the extremely small companies that provided the data in the RUS study. (I also have serious reservations about using Dr. Gabel's data even for small companies purchasing small switches. . . .

Witness Petzinger then asserts that the "slightly revised results" "raise[s] serious questions about the BCPM sponsor's definition of 'slightly revised.'" Witness Petzinger did not, however, provide alternative small switch prices. Absent any other information, we find witness Petzinger's assertions to be unproven. Therefore, we hereby adopt the LECs' proposed input prices for Small Switches.

State Default Table

The State Default Table has both required and optional inputs. Table V-O(1) provides a side-by-side comparison of the LECs' inputs and BCPM defaults for the required inputs. Only BellSouth provided inputs for the optional inputs. The optional inputs include traffic parameters such as Number of Busy Hour Local/EAS Calls Per Residence Line, Number of Toll Minutes Per Call Per Business Line, as well as Reserve CCS $ Per Line for 5ESS and DMS switches discussed above.

BCPM documentation states that if "D" is chosen for Default Engineered CCS and Calls per Line or Calculation of USF Investment per Line, the model will use "engineered inputs to estimate switch investment." If "C" is chosen, then the model uses the "optional inputs to estimate switch investment." BellSouth chose "D" for both inputs; therefore, we shall require that the remaining optional inputs be zeroed out, as they are not necessary.

Table V-O(1):
State Default Required Inputs

	BCPM Default	**BellSouth**	**GTEFL**	**Sprint**
ARMIS % Local Calls	81.5%*	88%	85%	85%
ARMIS % Toll Calls	18.5%*	12%	15%	15%
ARMIS % Residence Lines	67.4%*	69.36%	71.4%	71.85%
ARMIS % Business Lines	32.6%*	30.64%	28.6%	28.15%
Default Engineered Calls/Line	2.5	2.46	1.53	2.5
Default Engineered CCS/Line	3.6	3.24	2.90	3.6
Land Loading	0.0117	0.0099	0.0331	0.0117
Building Loading	0.0738	0.1473	0.5690	0.0738
Telco E&I Factor	0.0577	0.0870	0.0000	0.0577
Common Equipment & Power Factor	0.0682	0.0992	0.0000	0.0682
% Local Calls -- Interoffice	60%	74%	78%	60%
ABSBH CCS/Trunk	28.8	28.8	28	28.8

	BCPM Default	**BellSouth**	**GTEFL**	**Sprint**
Feature Calls/Total Calls	Not Applicable to Universal Service	30%	30%	30%
SS7 Usage Attributable to Basic Calls	25%	25%	100%	25%
Line/Trunk Ratio	14	14	12	14
Switch Percent Line Fill	88%	85%	86%	90%
5ESS Share	50%	69%	50%	22%
DMS Share	50%	31%	50%	78%
Call Completion Fraction	0.7	0.741	0.65	0.7

*"Typical Input Value," Benchmark Cost Proxy Model Release 3.1: Switch Model Inputs, April 30, 1998 ed., pp. 7-9.

In studying these inputs, we note that for each input the values proposed by the LECs are similar to each other and sometimes identical to the default inputs, with only four major exceptions. These exceptions are GTEFL's inputs for Building Loading, TELCO E&I Factor, Common Equipment & Power Factor, and SS7 Usage Attributable to Basic Calls.

All of these inputs are specific to a geographic area, and are thus best estimated by the incumbent provider. Excluding the exceptions, the input values are similar, if not identical. Therefore, we hereby approve these inputs, again excluding the exceptions, as proposed.

GTEFL's Building Loading factor is 56.9 percent, compared with BellSouth's 14.73 percent and Sprint's BCPM default of 7.38 percent. GTEFL's Building Loading factor is almost four times as high as BellSouth's and almost eight times as high as Sprint's factor. This means that for every switch GTEFL installs, an additional 56.9 percent of the cost is added to the switch cost for the building, compared to 14.73 percent for BellSouth. We do not find GTEFL's Building Loading factor to be at all reasonable when compared with what BellSouth and Sprint propose. We find that a reasonable, yet conservative approach is to require GTEFL to use BellSouth's Building Loading factor. Therefore, we shall require that GTEFL use BellSouth's Building Loading factor of 14.73 percent.

GTEFL explained that its Telco E&I Factor and its Common Equipment & Power Factor are zeroed out because GTEFL includes these costs in the costs of its switches. Later in this Order, we will discuss GTEFL's use of GTD switches, and require that GTEFL use the BCPM default values for the placement of 5ESS and DMS switches in conjunction with our ordered switch discounts. As a result of that requirement, we believe that a reasonable, conservative surrogate for these factors is BellSouth's factor inputs. Therefore, GTEFL shall use BellSouth's Telco E&I and Common Equipment & Power Factors.

According to GTEFL, it attributes 100 percent of SS7 usage to basic calls, compared with 25 percent for BCPM's default used by BellSouth and Sprint. BCPM documentation describes its rationale:

> The portion . . . that is attributable to Universal Service is the portion associated with basic call setup. Other types of calls are considered vertical services and features and are not part of the definition of Universal Service.

BCPM's documentation is persuasive, and we do not believe GTEFL's assertion that 100% of SS7 usage is attributable to basic calling. Therefore, we require that GTEFL's input for the Portion of SS7 Usage Attributable to Local Calling be changed to 25 percent.

Switch Discount Factor Table

The SW Discount Factor Table contains, for 5E and DMS switches, the New Discount Rate, the Growth Discount Rate, the Percent of Lines New, and the MDF and Protector Discount. The BCPM defaults are 50 percent for each category. GTEFL proposed the default inputs because it modeled its GTD switches. BellSouth proposed specific, confidential values for these inputs. Sprint proposed its inputs, which are confidential, except for the Percent of Lines New, which Sprint proposed to be 100 percent, which means all lines are modeled as new.

AT&T witness Petzinger criticizes BellSouth for using different discount inputs for "new" and "growth" lines. She contends that the use of growth prices is "inappropriate":

> All of the models proposed in this proceeding are "snapshot" models. Performing full, life-cycle analyses costing is extremely difficult and requires a tremendous amount of contentious forecasting. As snapshot, or point-in-time models, they capture the cost of equipment to serve current demand. Incorporating the cost of growth into the switch prices changes the fundamental definition of the models and the cost study. And BCPM uses special growth prices solely for switching, while ignoring "growth" costs with respect to the remainder of the network.
>
> All the companies should be using switch prices that reflect the best price that can be obtained for new switches, as appropriate for a long run study where a new network is being placed, and where only the wire center and customer locations are fixed.

Sprint witness Dickerson agreed. He explained the difference between the new and growth discounts:

> One [discount] would be for the purchase of switches, the other would be for the purchase of additional equipment related to growth on an existing switch. What my study that I filed reflected is the conservative, in terms of resulting in a lower cost. It assumed the higher of the two discounts, which is the discounts [sic] afforded to unbundled loop switch purchases.

BellSouth witness Caldwell disagreed with witnesses Petzinger and Dickerson:

> And when BellSouth does their calculation, it is appropriate to include not only the replacement of a switch, but a certain amount of growth associated with that switch. And you have different discounts from the vendors based on whether it is a replacement job or a growth job. It's their method of pricing.

> The SCIS runs are not based just on replacements. They are based on a meld of growth jobs and replacements. And the reason we do that is, this concept of this network dropping from the sky and being there today, that's just not realistic. I mean, even if you could do that, tomorrow you've got to have growth. So we use a meld. So our numbers from the meld relationship is [sic] going to be higher.

We agree with witness Caldwell that the "network dropping from the sky and being there today" is not realistic. Nevertheless, that characteristic is one of the defining parameters for the proxy cost models under consideration. Moreover, growth is included in the switching module of BCPM (as it is elsewhere in BCPM), through the use of fill factors. Table V-O(1) provides the category called "Switch Percent Fill," with LEC proposed values ranging from 85 to 90 percent.

We find witness Petzinger's arguments against growth discounts and lines to be persuasive. Furthermore, we believe that BellSouth's defense of growth is lacking in merit because it is based on a false premise, which is that the cost proxy model is a long-run model, not a snapshot model. Therefore, we shall require that 100 percent of lines be considered new.

Both BellSouth's and Sprint's discount percentages are different. Given that the switch discount percentages have been afforded confidential treatment, we cannot provide an exhaustive discussion of the discounts. We do believe that the switch discount is not specific to a particular geographic area. Rather, it is likely to depend on such factors as a LEC's purchasing decisions (one brand of switch versus another) and purchasing power (great versus medium or small). We believe that the switch discount used in this model should be such that it is a reasonable surrogate for the discount an efficient provider might obtain. Therefore, we hereby adopt a new switch discount rate of 66 percent. We shall also require a MDF and Protector discount rate of 29 percent.

<u>GTEFL's Use of GTD Switches</u>

According to AT&T witness Petzinger, GTEFL "has not used the default switch prices based on the BCPM regression coefficients in the model for some of the switches." Witness Petzinger asserts that the GTD-5 switch is neither forward-looking nor least cost. Witness Petzinger argues that it is not forward looking because of an apparent lack of sales of new switches. She argues that it is also not least cost:

> In this proceeding, the average price per line for the GTD-5 switches is $195, higher than the average price per line for all 5E or DMS switches for BellSouth, Sprint and GTE. The average break down to consistently higher prices for GTD-5 standalones, hosts and remotes than the equivalent standalone, host and remote switches in the other switch technologies.

GTEFL vigorously disputes witness Petzinger's claim. GTEFL witness Tucek points to information he gathered from the GTD supplier's website, for example, a $12 million software upgrade for GTD switches for British Columbia Tel. He did admit that GTEFL probably has not purchased a GTD switch in the last five years, although he did say that he wasn't sure if GTEFL had purchased "any digital switches in the last five years other than remote switching units, which would probably include GTD-5s." He did not provide any examples of new GTD switches sold, whether in the United States or not.

Would a new efficient provider choose to purchase a GTD switch? We suspect not because there is no record evidence which shows that GTD switches are being purchased in quantity in the United States. This proceeding is to determine the cost an efficient provider would encounter in Florida. Although witness Petzinger did not provide sufficient evidence that the GTD switch is not forward-looking because of its technology, we find her assertions persuasive that the GTD switch is not in common use in the United States, nor are new GTD switches currently being purchased in any appreciable quantity. Therefore, we do not believe that it is likely an efficient provider in Florida would tend to purchase a GTD switch rather than a 5ESS or DMS switch. Therefore, we shall require that GTEFL use the default values for the placement of 5ESS and DMS switches, along with our ordered switch discount.

Q. Signaling System Costs

Simply defined, signaling is communication among wire centers. Other than the HAI 5.0a Model description of the signaling inputs, we were unable to find any other AT&T/MCI testimony on signaling. Because we are selecting the BCPM, our analysis will center on BCPM signaling. In her prefiled testimony, BellSouth witness Caldwell describes BellSouth's development of signaling costs:

> Signaling costs are determined in BCPM 3.1 based upon two investments for signaling; investment per line for residence and investment per line for business. Default values were found to be representative of BellSouth's forward-looking signaling costs.

No mention is made in GTEFL witness Tucek's prefiled testimony, but comparison of GTEFL's signaling inputs with BellSouth show that GTEFL also used BCPM default values. In contrast to GTEFL, Sprint did address signaling inputs in a discovery response. Sprint stated that it used BCPM defaults. BCPM 3.1 Model Methodology states:

> [T]he signaling cost for a wire center is based on a weighted average of residence and business lines associated with that wire center. Values in the input table are developed by running the BCPM Signaling Cost Proxy Module (SCPM)[footnote omitted] for portions of the U S West territory. . . . In general, analysis from SCPM data runs indicates that signaling accounts for less than ½ of one percent of total per line investment.

The default values proposed by the LECs are for a large company, $5.11 for residence, and $9.93 for business. We find that the BCPM 3.1 default inputs, as proposed by the LECs, are reasonable and appropriate.

R. Transport System Costs and Associated Variables

In its simplest definition, transport system costs and associated variables refers to the costs of transport between wire centers. It is also commonly known as interoffice transport or IOT.

Given that we have selected the BCPM 3.1 Model rather than the HAI 5.0a, we note that when asked what inputs AT&T would recommend to BCPM 3.1, if the BCPM 3.1 Model was recommended for use, AT&T provided a number of inputs. AT&T, however, did not provide any inputs for IOT. HAI's inputs for transport include, for example, Transmission Terminal Investment, Number of Fibers, Transmission Terminal Fill (DS-0 level), Digital Cross Connect System, Installed, per DS-3, and Transport Placement.

BellSouth witness Caldwell describes how BellSouth developed its interoffice transport inputs:

> Transport costs are determined from the BCPM interoffice transport module. This module incorporates the forward-looking Synchronous Optical Network (SONET) ring architecture in determining network design and subsequent costs. Inputs to this module reflect BellSouth-specific costs for Florida. They include fill factors, SONET material prices, number of nodes on a ring, air-to-route factor, the mix of aerial, underground and buried fiber in the interoffice transport.

GTE witness Tucek states that "[T]he maximum number of nodes on a SONET ring was set to eight." According to Sprint witness Dickerson, "[F]rom input parameters included in the Transport Input Table, the Equipment Price Table and the Ring Size Table, the BCPM 3.1 develops the interoffice transport facilities investment necessary to provide basic local services."

Also, Sprint witness Dickerson describes how Sprint developed the inputs for the Transport Input Table:

> With limited exceptions the inputs for the Transport Input Table were developed from data relating to Sprint's Florida operations. The inputs for the percentage of fiber optic cable installed in aerial, buried and underground

> locations were derived from data contained in the mechanized plant in place (MPIP) engineering databases, adjusted to reflect a forward-looking trend of increased underground fiber plant. The Miscellaneous Equipment and Power Factor was derived based on the very recent 1997 ARMIS data.
>
> The air-to-route mile factor was developed by comparing air miles calculated using V&H coordinates to actual route miles for a sample of routes.. [sic] The sample included over 130 local and EAS routes in all areas of the Company's service territory. The sheath sharing factor was developed from engineering databases of route-specific fiber facilities.
>
> The EAS% factor was developed from 1997 usage data. Finally the BCPM default values for Line to Trunk ratio factors were determined to be representative of Sprint-Florida's forward-looking service quality standards and thus were utilized in Sprint's filing.
>
> The inputs for the Equipment Price Table specify equipment and installation prices for circuit equipment used in providing interoffice facilities. The material prices included in the table reflect vendor discounted prices, Florida sales tax, and Florida specific engineering and labor costs.
>
> The Ring Size Table specifies the parameters for determining the capacity of the fiber optic ring facilities used to provide interoffice communications. The inputs included in this table are consistent with current engineering standards employed in sizing interoffice fiber optic ring facilities in Florida.

There are three main sections of inputs to the Transport Module: Manual Transport Inputs, the Ring Size Table, and Equipment Price Inputs.

Manual Transport Inputs

These inputs encompass both transport and fiber factors. Table V-R(1) provides the transport factors for the three LECs and the BCPM 3.1 default.

Table V-R(1): Transport Inputs

	BCPM 3.1 Default	BellSouth	GTEFL	Sprint
1. Maximum number of nodes on a ring	12	9	8	6
2. Air to Route Factor	1.410	1.370	1.410	1.307
3. Access line to DSO trunk factor associated with host remote links	6	6	6	6
4. Access line to DSO trunk factor associated with host tandem trunks	10	10	10	10
5. %Special access circuits to the number of exchange access lines	5.0%	5.0%	5.0	14.7%
6. Maximum repeater spacing (miles)	40	35	40	40
7. MOU per DS1	216,000	216,000	216,000	216,000
8. Does a 2 point ('folded') ring use separate routing for the two sides	N	N	N	N
9. Percent of interoffice MOUs that are EAS	25.00%	25.00%	25.00%	56.77%
10. Used to identify 'like' tandems	7	11	7	7

We find that because the inputs are identical for lines 3, 4, 7, and 8, it is reasonable and appropriate to adopt these input numbers contained in these lines.

For line 1, we believe that a single state number is appropriate because an efficient provider is likely to use the same number of nodes in Tampa as in Miami or in Tallahassee. Upon review, we require that eight be used because it is reasonable within the range of numbers.

Line 2, the air to route factor is "[A] multiplier used to increase airline mileage distances to estimate the cable route mileage distance." We believe that this is specific to a given geographic area; therefore, we shall require that each LEC, acting as a surrogate for an efficient provider, use its proposed number.

Line 5 is the special access factor or "[T]he percentage of subscriber lines in proportion to the number of switched access lines." Both BellSouth and GTEFL used the BCPM default; therefore, it appears that both LECs consider the default to be the best number available. Since we believe that this factor is also specific to a given geographic area, we shall require that each LEC, acting as a surrogate for an efficient provider, use its proposed number.

Line 6 is "[T]he number of miles at which point a SONET signal regenerator is required between two wire centers on a SONET ring." BCPM documentation indicates that this value "is dependent upon the SONET terminal equipment selected and input for the study." Since each LEC is functioning as a surrogate for an efficient provider, we believe that since this input is not dependent upon traffic and other geographically-sensitive factors, it is appropriate for a state-specific number. Since BellSouth did not provide record evidence supporting the 35 miles, we shall require 40 miles as the input as it is a reasonable and appropriate number.

Line 9, percent of interoffice MOUs that are EAS, presents an interesting problem. Only Sprint provided a company-specific percentage. BellSouth and GTEFL utilized the BCPM defaults. We believe that this is specific to a given geographic area; therefore, we require that each LEC, acting as a surrogate for an efficient provider, use its proposed number.

Line 10 is the input "used in the process of identifying the homing relationship of a remote to its host and hosts to its tandem." This number represents a CLLI match. Because this number represents a CLLI match, we find that it is necessary for each LEC to use its proposed number.

The second part of these manual inputs is the Fiber Factors table.

Table V-R(2): Fiber Factor Inputs

	BCPM 3.1 Default	BellSouth	GTEFL	Sprint
1. Mileage Equipment Aerial Fiber (per fiber mile)	75%	33%	75.00%	75.00%
2. Mileage Equipment Underground Fiber (per fiber mile)	75%	33%	75.00%	75.00%
3. Mileage Equipment Buried Fiber (per fiber mile)	75%	33%	75.00%	75.00%
4. Fiber Pole Factor	0.23	0.3278	0.23	0.176
5. Fiber Conduit Factor	0.45	0.9544	0.45	0.616
6. Miscellaneous Equipment & Power Factor	0.06	0.0571	0.06	0.0614
7. Sheath Sharing Factor	0.68	0.68	0.68	0.52
8. Two Point Sheath Sharing Factor	0.5	0.5	0.5	0.5
9. Fiber Mix - Aerial	5.0%	9.9%	5.00%	2.00%
10. Fiber Mix - Underground	30.0%	48.2%	30.00%	36.00%
11. Fiber Mix - Buried	65.0%	41.9%	65.00%	62.00%

We believe that because the inputs are identical for line 8, it is appropriate to adopt the input numbers contained in this line.

Lines 1-3 provide the utilization rates for aerial, underground, and buried fiber. According to Sprint witness Dickerson, Sprint used default values because "these are based on engineering practices and do not vary from state to state." GTEFL also used the default values, with BellSouth providing "BellSouth-specific costs . . . [for] fill factors." Although BellSouth's values vary significantly from the defaults used by GTEFL and Sprint, we are not persuaded that use of either actual values or defaults is incorrect. Furthermore, these utilization rates should be geographic-specific. Therefore, we adopt the values as proposed by the LECs as representing the appropriate inputs for these three lines.

Line 4, the Fiber Pole Factor, and line 5, the Fiber Conduit Factor are multipliers that add pole and conduit costs when aerial and underground cable is "required." GTEFL uses the BCPM default for both, while BellSouth and Sprint provide their own percentages. Because these factors are multipliers, essentially providing a generic cost increment, we believe that a simple average would more correctly capture the average cost of an efficient provider. Therefore, we hereby adopt a Fiber Pole Factor of 0.245, and a Fiber Conduit Factor of 0.673.

Line 6 is the Miscellaneous Equipment and Power Factor. Only GTEFL used the BCPM input. As with the fiber pole and conduit factors, we believe that a simple average would best represent the average cost of an efficient provider. Therefore, we hereby adopt a Miscellaneous Equipment and Power Factor of 0.06, which is equal to the BCPM default.

Line 7 is the Sheath Sharing Factor, which is a multiplier. It is used to reflect sharing of the same fiber facility by multiple transport systems, and reduces the cost. Again, we believe that a simple average best represents the average cost of an efficient provider. Therefore, we adopt a Sheath Sharing Factor of 0.63.

Lines 9, 10, and 11 are fiber mix factors for aerial, underground, and buried cable. These factors represent what percentage of each type of cable BCPM will use in developing interoffice transport. As with plant mix, we find that these factors are specific to a particular geography. Therefore, we adopt each LEC's proposed inputs as reasonable surrogates for an efficient provider.

Ring Size Table

The user adjustable inputs for the Ring Size Table is the Planning Threshold, which determines the planning threshold at which a large capacity terminal for the ring will be utilized. The ring size begins with OC3, continues to OC12, then OC12 times 2, then to OC48 up to OC48 times 10. The BCPM default is 57.5 percent, which is what GTEFL utilized. BellSouth's input for the OC3 is 60.0 percent, while Sprint's is 66 percent. For the remainder of the table, both BellSouth and Sprint use 85 percent as the planning threshold.

With the one exception for OC3, BellSouth and Sprint have provided identical planning threshold percentages. For OC3, BellSouth's and Sprint's planning threshold percentages are 60 percent and 66 percent, respectively.

The planning threshold is more appropriately a Florida-specific number because any efficient provider would be likely to use the same planning threshold for OC12 in Tampa as it might in Jacksonville or Tallahassee. We also believe that an appropriate approach for determining state-specific numbers is to determine if any of these LECs have planning thresholds that are similar. BellSouth and Sprint have identical planning thresholds, with one exception, OC3. For OC3, we shall require that a simple average of BellSouth's 60.0 percent and Sprint's 66.0 percent, or 63.0 percent be used by BellSouth, GTEFL, and Sprint. Because BellSouth's and Sprint's percentages are identical, 85.0 percent, we shall require that GTEFL use 85.0 percent as well for the remainder of the planning thresholds.

Equipment Price Inputs

There are six types of inputs in the Equipment Price Table, two of which, Units Required, and DS1 System Capacity, are identical for each LEC. All three LECs used BCPM defaults. Units Required provides "the number of components required when costing out a SONET ring." DS1 System Capacity is self-explanatory. We believe that these inputs should not vary, and therefore, agree with the LECs' use of BCPM defaults. We hereby adopt the inputs for Units Required and DS1 System Capacity remain as proposed by the LECs.

The other four types are Material, Other (includes engineering and installation), Utilization, and Discount. Discount is the manufacturer's discount.

Tables V-R(3) through V-R(5) provide the Equipment Price Inputs by LEC. GTEFL used the BCPM defaults.

Table V-R(3): Equipment Price Inputs - BellSouth

	Material	Other	Discount	Utilization
Fiber Tip Cable per Fiber	$72	$12	31%	85%
Fiber Patch Panel per Fiber	$167	$17	57%	85%
Sonet Terminal Shelf (OC3)	$16,710	$878	41%	NA
-DS3 Card	$3,749	$124	45%	67%
-DS1 Card	$564	$19	45%	100%
Sonet Terminal Shelf (OC12)	$35,656	$1,874	41%	NA
-OC3 Card	$6,418	$235	39%	NA
-3DS3Card (OC12)	$10,670	$346	46%	31.8%
Sonet Terminal Shelf (OC48)	$75,742	$3,982	41%	NA
-OC3 Card	$14,435	$372	57%	NA
-3DS3Card (OC48)	$10,698	$282	56%	22%
DSX3 Cross Connect Shelf	$7,016	$954	38%	27%
-DSX3 Cross Connect Card	$596	$17	53%	27%
DSX1 Cross Connect Jack Field	$1,490	$5,210	50%	85%
Channel Bank Shelf	$4,634	$277	33%	85%
-Channel Bank Card	$299	$12	33%	85%
Fiber Repeater (OC3)	$16,710	$878	41%	NA
Fiber Repeater (OC12)	$35,656	$1,874	41%	NA
Fiber Repeater (OC48)	$75,742	$3,982	41%	NA

Table V-R(4): Equipment Price Inputs - GTEFL (BCPM Default)

	Material	Other	Discount	Utilization
Fiber Tip Cable per Fiber	$50	$8	20%	57%
Fiber Patch Panel per Fiber	$29	$13	47.5%	57%
Sonet Terminal Shelf (OC3)	$27,204	$3,190	41.5%	NA
-DS3 Card	$3,742	$384	42%	67%
-DS1 Card	$272	$31	51%	95%
Sonet Terminal Shelf (OC12)	$44,922	$4,950	45%	NA
-OC3 Card	$9,454	$506	35%	NA
-3DS3Card (OC12)	$4,404	$456	36%	67%
Sonet Terminal Shelf (OC48)	$83,936	$11,040	41%	NA
-OC3 Card	$18,581	$514	57%	NA
-3DS3Card (OC48)	$5,884	$429	56%	67%
DSX3 Cross Connect Shelf	$310	$97	38%	81%
-DSX3 Cross Connect Card	$256	$41	20%	67%
DSX1 Cross Connect Jack Field	$1,620	$785	47.5%	80%
Channel Bank Shelf	$4,000	$735	20%	80%
-Channel Bank Card	$200	$32	20%	80%
Fiber Repeater (OC3)	$25,673	$3,750	52%	NA
Fiber Repeater (OC12)	$50,509	$4,500	56%	NA
Fiber Repeater (OC48)	$91,707	$8,250	46%	NA

Table V-R(5): Equipment Price Inputs - Sprint

	Material	Other	Discount	Utilization
Fiber Tip Cable per Fiber	$50	$17	0%	75%
Fiber Patch Panel per Fiber	$100	$34	0%	75%
Sonet Terminal Shelf (OC3)	$18,112	$6,084	0%	NA
-DS3 Card	$2,278	$765	0%	67%
-DS1 Card	$192	$64	0%	95%
Sonet Terminal Shelf (OC12)	$39,323	$9,491	0%	NA
-OC3 Card	$3,016	$799	0%	NA
-3DS3Card (OC12)	$4,342	$1,156	0%	67%
Sonet Terminal Shelf (OC48)	$92,798	$22,819	0%	NA
-OC3 Card	$6,241	$1,659	0%	NA
-3DS3Card (OC48)	$5,634	$1,498	0%	67%
DSX3 Cross Connect Shelf	$312	$105	0%	75%
-DSX3 Cross Connect Card	$316	$106	0%	75%
DSX1 Cross Connect Jack Field	$967	$325	0%	75%
Channel Bank Shelf	$5,316	$1,786	0%	75%
-Channel Bank Card	$195	$66	0%	75%
Fiber Repeater (OC3)	$14,928	$5,014	0%	NA
Fiber Repeater (OC12)	$40,560	$13,624	0%	NA
Fiber Repeater (OC48)	$71,922	$19,124	0%	NA

In order to determine the final cost, the discount is applied to the material costs. This number is then added to "Other," which includes engineering and labor for installation. Table V-R(6), below, provides the final cost for each LEC, as well as the BCPM default.

Table V-R(6): Final Cost Inputs

	BellSouth	GTEFL (BCPM Defaults)	Sprint
Fiber Tip Cable per Fiber	$62	$48	$67
Fiber Patch Panel per Fiber	$89	$28	$134
Sonet Terminal Shelf (OC3)	$10,737	$19,104	$24,196
-DS3 Card	$2,186	$2,554	$3,043
-DS1 Card	$329	$164	$256
Sonet Terminal Shelf (OC12)	$22,911	$29,657	$48,814
-OC3 Card	$4,150	$6,651	$3,815
-3DS3Card (OC12)	$6,108	$3,275	$5,498
Sonet Terminal Shelf (OC48)	$48,670	$60,562	$115,617
-OC3 Card	$6,579	$8,504	$7,900
-3DS3Card (OC48)	$4,989	$3,018	$7,132
DSX3 Cross Connect Shelf	$5,304	$289	$417
-DSX3 Cross Connect Card	$297	$246	$422
DSX1 Cross Connect Jack Field	$5,955	$1,636	$1,292
Channel Bank Shelf	$3,382	$3,935	$7,102
-Channel Bank Card	$212	$192	$261
Fiber Repeater (OC3)	$10,737	$16,073	$19,942
Fiber Repeater (OC12)	$22,911	$26,724	$54,184
Fiber Repeater (OC48)	$48,670	$57,772	$91,046

As can be seen from Table V-R(6), GTEFL used the BCPM defaults. BellSouth's inputs were provided by its network subject matter experts. Sprint's inputs are "estimate[s] from Network Planning derived from vendor quote," with the exception of the cross connect shelf and card, whose source is a vendor quote. In addition, Sprint stated that the channel bank costs (both shelf and card) are "not included in USF calculations."

We are puzzled by Sprint's 0 percent discounts. Comparing Sprint's and BellSouth's material costs prior to discount, the material prices are rather similar. It seems likely that Sprint would be able to negotiate a discount from vendor prices for these materials. We also believe that, where possible, use of Florida-specific inputs are more appropriate than defaults. Therefore, we find that BellSouth's inputs are the most reasonable and appropriate. Thus, we shall require that GTEFL and Sprint also use BellSouth's inputs.

Our adopted values for each input table are shown below.

Table V-R(7): Commission-Ordered Transport Inputs

	BellSouth	GTEFL	Sprint
1. Maximum number of nodes on a ring	8	8	8
2. Air to Route Factor	1.370	1.410	1.307
3. Access line to DSO trunk factor associated with host remote links	6	6	6
4. Access line to DSO trunk factor associated with host tandem trunks	10	10	10
5. %Special access circuits to the number of exchange access lines	5.0%	5.0%	14.7%
6. Maximum repeater spacing (miles)	40	40	40
7. MOU per DS1	216,000	216,000	216,000
8. Does a 2 point ('folded') ring use separate routing for the two sides	N	N	N
9. Percent of interoffice MOUs that are EAS	25.00%	25.00%	56.77%
10. Used to identify 'like' tandems	11	7	7

Table V-R(8): Commission-Ordered Fiber Factor Inputs

	BellSouth	GTEFL	Sprint
1. Mileage Equipment Aerial Fiber (per fiber mile)	33%	75.00%	75.00%
2. Mileage Equipment Underground Fiber (per fiber mile)	33%	75.00%	75.00%
3. Mileage Equipment Buried Fiber (per fiber mile)	33%	75.00%	75.00%
4. Fiber Pole Factor	0.245	0.245	0.245
5. Fiber Conduit Factor	0.673	0.673	0.673
6. Miscellaneous Equipment & Power Factor	0.06	0.06	0.06
7. Sheath Sharing Factor	0.63	0.63	0.63
8. Two Point Sheath Sharing Factor	0.5	0.5	0.5
9. Fiber Mix - Aerial	9.9%	5.00%	2.00%
10. Fiber Mix - Underground	48.2%	30.00%	36.00%
11. Fiber Mix - Buried	41.9%	65.00%	62.00%

For the Ring Size Table, we shall require that a planning threshold of 63.0 percent for OC3 be used by BellSouth, GTEFL, and Sprint. For the remainder of the planning thresholds, GTEFL shall use 85.0 percent, as BellSouth and Sprint have done.

For the Equipment Price Table, GTEFL and Sprint must use BellSouth's proposed inputs. BellSouth's proposed inputs are displayed in Table V-R(3).

S. Expenses

This category encompasses the expenses necessary to operate a telephone company. BCPM 3.1 has two ways to incorporate expenses. The first is on a per access line basis, for certain accounts, and the second is expense per investment dollar. HAI includes both network and non-network related operating expenses in its expense modules.

According to AT&T/MCI witness Wood, the HAI Model Description describes how network-related expenses and non-network related expenses are determined:

> The two major categories under which network-related expenses are reported by the ILECs are plant-specific operations expenses and non plant-specific operations expenses. The plant-specific expenses are primarily maintenance expenses. Certain expenses, particularly those for network maintenance, are functions of their associated capital investments. The Expense Module estimates these from historic expense ratios calculated from balance sheet and expense account information reported in each carrier's ARMIS report. These expense ratios are applied to the investments developed by the Distribution, Feeder, and Switching and Interoffice Modules to derive associated operating expense amounts. . . . Other expenses, such as network operations, vary more directly with the number of lines provisioned by the ILEC rather than its capital investment. Thus, expenses for these elements are calculated in proportion to the number of access lines supported.
>
> The Expense Module assigns non-network related expenses to each density range, census block group, or wire center (depending on the unit of analysis chosen) based on the proportion of direct expenses (network expenses and capital carrying costs) for that unit of analysis to total expenses in each category.

These categories include "variable support," which includes such costs as General and Administrative, General Support, which includes, for example, furniture and office equipment, and Uncollectible Revenues.

BellSouth witness Caldwell describes how BellSouth determined its expenses:

> The plant-specific expenses consist mainly of maintenance expenses. These types of expenses

> are considered to be causally related to investment and are developed from three years of projected expense data relative to the same period projections for investment. The result is an expense per dollar of investment for these plant-specific expenses accounts. Non-plant specific expenses, such as Network Operations and Executive and Planning, are not causally related to investment. These expenses are determined on per line per month basis using projected forward-looking expenses and projected number of lines to derive an expense per line.

GTEFL witness Norris describes how GTEFL developed its expense inputs for BCPM:

> There are three types of expense inputs required within BCPM: capital-related expenses, expressed as a percent of investment; non-capital-related expenses, expressed on a per-line basis; and general support asset ratios.
>
> For purposes of BCPM, the adjusted ARMIS expenses discussed by Mr. Olson are further adjusted to remove expenses associated with non-recurring costs, billing and collection costs associated with toll and access, and directory costs. These adjusted expense amounts are then mapped to cost pools. Finally, the expense information mapped to the cost pools is used to calculate the three types of expense inputs required by BCPM.

Expenses, by capital account (e.g., Aerial Cable, Digital Switching, etc.) are divided by the capital account's investment. The investment has been adjusted by C.A. Turner Index so as to provide all investment in today's dollars. The non-capital-related costs are developed by multiplying the expense data by the local direct cost percentage (i.e., local calls divided by total calls) to derive the expenses attributable to local service. These resulting expense amounts are then divided by the number of access lines to calculate a per access line expense. The percentage inputs for the general support asset accounts are calculating by dividing each general support asset account by C.A. Turner-adjusted total plant in service.

Sprint-Florida witness Dickerson describes how BCPM includes expenses and how Sprint-Florida developed its expenses:

> Operating expenses are included in the model on a per line basis for administrative and retailing expenses not associated with specific network facilities. Operating expenses associated with network facilities were included as a percentage of investment in network facilities. Both of these estimates were derived from the actual operating expenses Sprint experienced in Florida during 1997. These operating expense ratios, when applied against the BCPM forward looking investment levels, provide a reasonable estimate of the forward looking expenses associated with basis local service.

AT&T witness Lerma had two primary criticisms of the LECs' expense inputs:

> [T]he accuracy of the BellSouth, GTE, and Sprint operating expense inputs and calculations cannot be confirmed; and . . . the operating expense inputs for BellSouth, GTE, and Sprint are based largely on historical costs and include other inappropriate costs that are not reflective of forward-looking, competitive costs.

During the discovery process and the hearing, three expense issues surfaced that provoked much discussion: the inclusion of non-recurring expense, uncollectible expense, and advertising.

Nonrecurring Costs

GTEFL was the only ILEC to exclude non-recurring expenses because "[T]hese costs are recovered through non-recurring charges associated with service order activity and as such must be removed so as not to recover the same expense twice." AT&T witness Lerma agreed with GTEFL's approach. In contrast, BellSouth witness Caldwell disagrees that nonrecurring charges should be excluded, stating ". . . you're looking at the total cost of serving the customer, and there is a service ordering cost associated with that under your customer operation expense." Sprint witness Dickerson agreed with BellSouth, "I've calculated the total cost to provide basic local service. That's certainly a component of the total costs." Witness Dickerson also said that it could be taken out, but, he reiterated, ". . . it's a component of providing basic local service and it's properly included until direction given otherwise." He did state that "The revenues generated from service connection charges, for example, will not match the nonrecurring costs in general. I think the nonrecurring costs will exceed the cost recovery afforded from those rates." GTEFL also excluded billing and collection costs associated with toll and access, and directory costs.

We have not attempted to exclude nonrecurring costs, billing and collection costs associated with toll and access, and directory costs, from BellSouth's and Sprint's inputs. Given our findings in specific expense categories, we believe it is not necessary to exclude these costs.

Support Ratio Table

Table V-S(1) shows the support ratios as proposed by the LECs.

Table V-S(1): Support Inputs - Large Companies

	BellSouth	GTEFL	Sprint
Motor Vehicle	0.837%	0.811%	0.739%
Special Purpose Vehicles	0.000%	0.000%	0.001%
Garage Work Equipment	0.018%	0.036%	0.032%
Other Work Equipment	0.833%	0.774%	0.627%
Furniture	0.086%	0.231%	0.233%
Office Support	0.276%	1.496%	0.701%
General Purpose Computers	2.662%	1.201%	2.960%
TOTAL SUPPORT RATIO	4.711%	4.549%	5.293%

These support accounts should not be specific to a given geographic area because they are not dependent upon a geographic area. Rather, for the most part, they depend upon a company's strategic and operational activities. Therefore, we find that there should be a Florida-specific support ratio for each of these accounts, rather than a geographic area support ratio.

We also believe that because these are asset to asset ratios, it is unlikely that smaller ratios will occur in the future, due to normal inflation. Since we believe these support ratios will be relatively stable over time, we shall require that the support ratios for each account be averaged, so as to reflect the average costs an efficient provider would incur.

We note that while BellSouth has used TPIs in their calculations to produce a projected cost for 1998-2000, we believe that our required averaging will serve to offset any changes from support ratios based on projected dollars to those based on current dollars. Therefore, we do not believe it necessary for BellSouth to remove the effects of TPIs from its calculations of support ratios.

Our required support ratios are shown below in Table V-S(2).

Table V-S(2): Commission-Ordered Support Ratios

Account	Commission-Ordered Support Ratio
Motor Vehicle	0.7957%
Special Purpose Vehicles	0.0003%
Garage Work Equipment	0.0287%
Other Work Equipment	0.7447%
Furniture	0.1833%
Office Support	0.8243%
General Purpose Computers	2.2743%
TOTAL SUPPORT RATIO	4.8513%

Expense to Investment Ratios

Expense to investment ratios are calculated for telephone plant physical investment, such as cable, switches, poles, etc. Table V-S(3) provides the LECs' proposed large company expense to investment ratios.

Table V-S(3): Expense to Investment Ratio

	BellSouth	GTEFL	Sprint
Network Support Expense	0	0	0.0152
COE Switching	0.0359	0.1739	0.0500
COE Transmission	0.0194	0.0256	0.0296
Poles	0.0155	0.0110	0.0166
Aerial Copper Cable	0.0399	0.0515	0.0863
Aerial Fiber Cable	0.0019	0.0115	0.0159
Underground Copper Cable	0.0214	0.0047	0.0210
Underground Fiber Cable	0.0030	0.0012	0.0047
Buried Copper Cable	0.0340	0.0381	0.0518
Buried Fiber Cable	0.0014	0.0083	0.0059
Conduit	0.0025	0.0021	0.0310

BellSouth provided its Network Support expense in its Monthly Expense Per Line input section; GTEFL did not propose this expense; and Sprint provided the expense as part of its Expense Percent to Investment Ratio table. Network Support Expense includes such accounts as Motor Vehicles, Garage Work Equipment, and Other Work Equipment. We believe that this type of expense is more likely to vary with the number of lines; therefore, we have left Network Support Expense in the Monthly Expense Per Line input section.

Maintenance costs are a major part of these expenses. This can be seen by comparing the ratios of, for example, underground copper cable with those of aerial copper cable, where one would expect to see higher maintenance costs because aerial cable is always exposed to the elements. A significant difference between copper and fiber maintenance costs is also seen; again, we would expect newer technology to require less maintenance.

We believe that although maintenance expenses may appear to be geographic-specific in nature, the new competitive paradigm is likely to be different. This is because an efficient new provider is not likely to provide basic local service using historic LEC service territories. Therefore, we believe that Florida-specific, statewide ratios are appropriate. We find that an average of the LECs' ratios is the most reasonable way to calculate a statewide set of ratios, which we believe to be a reasonable surrogate for what an efficient provider might encounter in Florida.

For several of the ratios, at least one firm has a value that appears to be much different than the others. We are unable to discern why this occurs. Since we are proposing a single set of statewide averaged values, we believe any anomalies in the data should be mitigated.

All of these ratios, however, reflect a mix of both past and current network planning decisions. Because these ratios are expected to represent the costs of an efficient provider using forward-looking technology, these ratios may be too high. However, an argument can also be made that because labor costs represent the bulk of maintenance expenses, it may not be possible to materially decrease these ratios, given the realities of labor contracts and their typical upward wage adjustments. Therefore, we find that a reasonable approach would be to leave the averaged ratios as is and not build in an expense reduction.

BellSouth's ratios are not based on 1997 actual data, but rather projected 1998-2000 expenses and investment. As with Support Ratios, BellSouth need not recalculate its support ratios to reflect current dollars, because we believe that any effect of TPIs is minimized through the averaging process.

Table V-S(4) provides our required expense to investment ratios.

Table V-S(4): Commission-Ordered Expense to Investment Ratios

Account	Commission-Ordered Expense to Investment Ratio
COE Switching	.0866
COE Transmission	.0249
Poles	.0144
Aerial Copper Cable	.0592
Aerial Fiber Cable	.0098
Underground Copper Cable	.0157
Underground Fiber Cable	.0030
Buried Copper Cable	.0413
Buried Fiber Cable	.0052
Conduit	.0119

Per Line Expenses

Unlike expenses such as maintenance, which appear to vary as a function of investment, many telephone company expenses are not directly related to investments, for example, marketing. Marketing expenses are more functionally related to a company's scope of operations. A better measure of scope for these types of expenses, the parties contend, is on a per line basis. Per line expenses are those expenses not causally related to a telephone plant category, such as aerial cable. Alone among the LECs, BellSouth used regional, rather than Florida-specific, expenses and access lines projected for the 1998-2000 time period, to calculate per line expenses. GTEFL and Sprint used Florida 1997 numbers. Determining the appropriate dollar amount of the expense category is where the LECs differ and where AT&T witness Lerma criticized BellSouth's methodology.

Expense categories computed on a per line basis include Network Support, General Support, Other Property and Plant, Network Operations, Marketing, Services, Executive and Planning, General and Administrative, and Uncollectibles. The propriety of recovering Uncollectible Expense and advertising expense (included in Marketing Expense) in the cost of basic local service was disputed in this proceeding.

BellSouth witness Caldwell described uncollectibles "as an expense that you would incur as a result of providing service if you do not have people that pay their bills." We agree that uncollectible expense is a cost of doing business, and thus some level of uncollectible expense should be included in the cost of basic local service.

AT&T witness Lerma contends that "BellSouth, GTEFL, and Sprint-Florida have inappropriately included advertising expenses in marketing expense per line, even though there's virtually no advertising for basic local service." BellSouth witness Caldwell disagrees with witness Lerma's contentions that there is almost no advertising for basic local service, and that, therefore, there should be no advertising expenses included in marketing:

> [T]here are, and there should be [advertising expenses], because of the fact that . . . you're required to advertise universal funding. And these are the advertising costs associated with your basic local exchange service, so those are the type costs that are in there. They have been adjusted from the overall advertising budget of the company, but they are only the advertising costs associated with basic local exchange service. . . . [w]e do advertise from the BellSouth name, and the title commercials that you see on TV that emphasize the BellSouth products, and that is for residence as well as others. . . . Predominantly in this particular case it would be those advertisements that are geared toward your residence customers as well as your very small business customers.

GTEFL witness Norris also disagrees with AT&T witness Lerma, and provides GTEFL's calculation of advertising expense:

> GTE does a certain amount of advertising that is related to informational and instructional advertising for -- you know, if they call us,

> you can use star 69 using the features that are available on your system and so on and so forth.
>
> GTE's total advertising is approximately 10.8 million dollars. Included within our calculations in the development of operating expenses is approximately 10.5 million dollars in advertising expense.

Sprint witness Dickerson disagreed with witness Lerma:

> [T]he question I answered was do you incur marketing expenses associated with basic local service. And my response was, yes, we do, particularly as you head into a forward-looking competitive environment.
>
> [C]ertainly Sprint does image advertising. Sprint does second line promotions. . . . Those expenses Mr. Lerma is talking about would be booked in customer service. The category of customer and corporate operations in my cost study, the level of expense is 62% below the 1997 level. That's far and a way [sic] sufficient to cover any marketing expenses that Mr. Lerma is concerned about.

Witness Dickerson explained why he thought image advertising should be included:

> [I]n a forward-looking environment, where we have predicted substantial reductions, the logic being driven that we're talking about a forward-looking competitive environment which will further discipline companies to be more efficient, I think it's only fair to suggest that in that same environment they're going to advertise to attract and retain customers.

Witness Lerma did agree that advertising for basic local service "could be allowed," but only if "it was determined that it existed," because "if a cost is being incurred to provide that service and if there is a rational study that's been prepared that shows those costs, you know, were incurred to provide that service, then they could be considered."

Witness Lerma also agreed that image advertising is included, as it is part of a corporate operations account. He also agreed that it was not "reasonable" to permit image advertising when customers did not have choices. He agreed, however, that advertising is a "natural cost" of business in a competitive market.

Advertising is a cost of business in a competitive environment. We do not find persuasive, however, the LEC-provided examples of advertised services, with the exception of BellSouth's example of universal service funding. Some advertising costs for basic local service should be included in the cost of basic local service. We believe that as competition grows, we will see more advertising for basic local service from the LECs and CLECs.

With the exception of Uncollectibles, which will be discussed below, BellSouth derived "universal service amounts" from ARMIS 43-03 interstate common line and local switching expense. It derived the "universal service" cost of common line by dividing the interstate expense by the interstate factor of 25 percent. It derived the "universal service" amount of local switching through manipulation of local and interstate Dial Equipment Minutes (DEMs). This resulted in "universal service" percentages applied to total expense that are typically in the 65 to 85 percent range. In other words, virtually all intrastate non-plant-specific expense is attributed to basic local service. AT&T witness Lerma objected to BellSouth's methodology, stating that this proceeding is the first BellSouth-filed BCPM proceeding where BellSouth did not use basic local revenues as a percent of total revenues as the universal service allocator for these accounts. Witness Lerma recommends a single factor of 40.85 percent, which is, of course, considerably less than the range of factors that BellSouth proposes in this proceeding.

Unlike its other per line expense factors, BellSouth calculated its uncollectible amount by dividing total BellSouth basic local exchange revenue by total BellSouth revenue. The resulting 61 percent ratio was then applied to uncollectible expense to determine the amount of uncollectible expense that is attributable to basic local service. Basic local exchange revenue does include revenues from vertical services and ECS, in addition to basic local exchange revenue. We believe that BellSouth's inclusion of vertical services and ECS revenue clearly overstates the amount of uncollectibles related to basic local service.

Sprint's methodology to calculate the factors applied to the non-plant specific expenses is essentially the same as that of BellSouth. Sprint's factors ranged from approximately 90 percent upwards. As with BellSouth, virtually all non-plant specific intrastate expense is attributable to basic local service. Sprint's uncollectible amount comes from its General Ledger account 5301.110, "assigned direct to local service." We were unable to determine whether this account includes only uncollectible expense attributable to basic local service.

GTEFL uses its "local direct cost percentage," or the percentage derived from dividing local calls to total calls to "determine the portion of the expense associated with local services." This percentage is 84.63 percent.

As can be seen in Table V-S(5), not only do the dollar expenses vary by LEC, but not all LECs had expenses for these accounts. For example, General and Administrative expenses ranged from $1.83 for Sprint-Florida to $2.43 for GTEFL and $2.44 for BellSouth. BellSouth was the only LEC, for example, to show expense for Network Support and Other Property and Plant. Overall, BellSouth's total per line expenses were the highest of the three LECs, at $9.14 per line. GTEFL's and Sprint's expenses were considerably lower, at $7.42 and $7.74 per line, respectively.

Table V-S(5): Monthly Per Line Expenses

	BellSouth	GTEFL	Sprint
Network Support	$0.03	$0.00	$0.00
General Support	$1.45	$0.97	$1.58
Information Originating/ Terminating	$0.37	$0.00	$0.11
Other Property and Plant	$0.03	$0.00	$0.00
Network Operations	$2.25	$0.04	$2.34
Marketing	$1.71	$1.57	$0.86
Services	$0.46	$1.36	$0.71

	BellSouth	GTEFL	Sprint
Executive and Planning	$0.10	$0.19	$0.12
General and Administrative	$2.44	$2.43	$1.83
Uncollectibles	$0.32	$0.88	$0.18
TOTAL	$9.14	$7.42	$7.74

AT&T witness Lerma contends that the LECs' methods for calculating expenses are incorrect because they:

> are not reflective of forward-looking, competitive costs, because, first, they're based largely on historical costs, when in fact they should represent costs for an efficient carrier in a forward-looking environment; and, number two, they include other inappropriate costs. Advertising, nonrecurring costs are two examples of these inappropriate costs.
>
> In a competitive environment there is perpetual pressure to reduce operating expense as evidenced by declining cost trends. Reductions to general administrative and network operating unit costs are occurring. Therefore, reliance on inputs based on historical expenses results in overstated costs.
>
> If this Commission adopts the BCPM model and the inputs proposed to determine basic universal service costs, I recommend that at minimum the following adjustments to BellSouth, GTE, and Sprint's operating expense inputs be considered, as referenced in my testimony: A 15% reduction to general administrative expenses, a 30% reduction to network operating expenses, and a reduction in marketing expenses to remove BellSouth's advertising expense.

Witness Lerma also recommends the use of a "single basic local service factor that represents basic local service revenues as a percent of total revenues." We find witness Lerma's recommendation persuasive because we believe that the LECs' methodologies overstate the expenses attributable to basic local service.

We believe that these per line expenses are not inherently geographic-specific in nature. Rather, for the most part, they depend upon a company's strategic and operational activities. We also believe that Florida-specific expenses are appropriate as representative of what an efficient provider is likely to encounter.

We believe that a reasonable method to calculate per line expenses on a Florida-specific basis is to first develop a basic local service allocator. We calculated this factor by dividing the sum of the LECs' basic local revenue and end user common line revenue by their total revenues. Using 1997 ARMIS data, we determined that the appropriate basic local service factor is 39.6 percent. We then summed the LECs' non-plant specific expenses, multiplied them by 39.6 percent, and then divided them by the LECs' total access lines. These amounts were then divided by twelve to yield a monthly per line expense. We view the results of using 39.6 percent as a refinement of the LECs' calculations of expense attributable to basic local service.

These ratios are developed from data which reflect both past and current (1997) relationships. We believe that an efficient provider would have an incentive to keep its costs as low as possible from these historic levels. AT&T witness Lerma recommends a 15 percent reduction of general and administrative expenses, and a 30 percent reduction to network operations expense. We believe that some reduction is warranted; we believe that a 10 percent reduction to all accounts is reasonable. Therefore, we require that per line expenses be reduced by 10 percent to reflect the impact of the mix of current and past relationships. Our required per line expense inputs are shown in Table V-S(6).

Table V-S(6):
Commission-Ordered Monthly Per Line Expenses

Account	Monthly Per Line Expense
Network Support	$0.04
General Support	$0.80
Information Originating/ Terminating	$0.36
Other Property and Plant	$0.01
Network Operations	$1.12
Marketing	$0.75
Services	$1.47
Executive and Planning	$0.07
General and Administrative	$1.64
Uncollectibles	$0.30
TOTAL	$6.56

T. Other Inputs

Wire Center Line Counts

BellSouth, GTEFL, and Sprint each use actual wire center line counts as of the end of 1997. We find that this is appropriate because it will provide the most accurate data from which BCPM can build its network. Therefore, we adopt the use of actual wire center line counts as proposed by the LECs.

Loop Cost Investment Cap

The BCPM default loop cost investment cap is $10,000. This means the per-line investment is capped at $10,000. Both GTEFL and Sprint used $10,000. BellSouth used an investment cap of $4,350. BellSouth used a smaller cap because BellSouth's own study showed the cost to be less than $10,000.

We believe that BellSouth's study provides better, Florida-specific information than the generic BCPM default values. BellSouth's study indicates that where loop costs would exceed $4,350, the loop should not be put in place, and a different technology, such as wireless, should be employed. We therefore believe the $4,350 cap is appropriate for BellSouth, Sprint, and GTEFL.

White Pages Directory Listing Cost

Only GTEFL provided a white pages directory cost listing of $0.40 per line. This was computed by dividing directory expense by the number of access lines. BellSouth did not calculate a cost for this account. Sprint witness Staihr suggested adjusting values in certain 6,600 accounts, but declined to say what values and which accounts.

We believe that given the statutory definition of basic local service, it is appropriate to include a cost for the white pages directory listing. Upon consideration, we find that GTEFL's cost is a reasonable surrogate for an efficient provider in Florida. Therefore, GTEFL, BellSouth, and Sprint shall use GTEFL's per line cost of a white pages listing.

Inputs Not Specifically Addressed

For each input not specifically discussed, we shall consider each LEC's proposed input as representative of an efficient provider in its territory.

As discussed in the Introduction to Section V, and throughout the subparts to this section, BellSouth used Telephone Plant Indices (TPIs) to generate inputs reflective of an average of 1998-2000 costs. In conjunction with our recommendations in other parts of Section V, we hereby require BellSouth to remove the effects of inflation or deflation, thus using current costs, for any input not specifically addressed, where it has used TPIs.

VI. COST PROXY MODEL RESULTS

A. LECS With Greater Than 100,000 Access Lines

In the first part of this section, we address which local exchange companies must use the cost proxy model that we have selected in this proceeding, the BCPM 3.1. The answer is quite simple. Sections 364.025(4)(b) and (c), Florida Statutes, clearly indicate that all companies with 100,000 or greater access lines must use the cost proxy model selected. Those companies with fewer than 100,000 access lines may use the cost proxy model at our discretion. The parties unanimously concur that BellSouth, GTEFL, and Sprint are the only three local exchange companies that meet this criterion and must use the cost proxy model. Therefore, we find that BellSouth, GTEFL, and Sprint must use the cost proxy model selected in this proceeding.

In Section III of this Order, we ordered the BCPM sponsors to make certain structural changes to the model, primarily associated with minimizing the gap between the amount of facilities built by the plant versus the required amount indicated by a minimum spanning tree (MST) analysis. In addition, we required that the sponsors submit a revised version of the model (on CD-ROM), and model runs reflecting our approved inputs with the revised MST analyses. Further, in Section V of this Order, we required that certain adjustments be made to some input values filed in this proceeding (notably, the removal of inflation/deflation values embedded in some of BellSouth's inputs). Accordingly, given the compressed schedule associated with preparing the report to the Legislature that reflects our decisions in this proceeding, we require that BCPM sponsors submit these compliance filings no later than January 12, 1999.

Due to the required structural changes to the model, we are unable to provide final cost proxy model results. Appendix B to this Order shall be filed with the report to the Legislature and will contain the final cost proxy model results.

B. LECS With 100,000 Or Fewer Access Lines

Methodology

ALLTEL witness Curry sponsored the universal service embedded cost methodology used by all of the small local exchange companies (small LECs) in this proceeding. These companies include ALLTEL Flc-ida (ALLTEL), Vista-United Telecommunications (Vista-United), Northeast Florida Telephone Company (Northeast), Frontier Communications of the South, Inc. (Frontier), TDS Telecom/Quincy (TDS), GTC Inc. (GTC), and ITS Telecommunications Systems, Inc. (ITS) Witness Curry states that all of the small LECs used Part 36 jurisdictional separations procedures in developing the embedded costs for each of the companies, and he believes that the small LEC methodology satisfies the legislative requirements for embedded studies. Witness Curry adds that rural LECs are to continue to calculate their interstate Universal Service Costs using embedded costs until at least January 1, 2001.

As witness Curry describes in his direct testimony, all of the small LECs used an 11.25% return on net investment. Modifications were also made by the small LECs to the Part 36 universal cost study including assigning 100% of non-traffic sensitive plant to the state jurisdiction along with non-traffic sensitive local switching equipment. The small LEC methodology excluded private line costs as well as all expenses, investments and reserves associated with pay telephones.

Witness Curry states that the cost proxy models are not appropriate for the small rural LECs, because the proxy models are not representative of the small company costs. He states that because one cannot re-create the network with new plant in reality, higher costs for new technology in the proxy models versus the lower costs of older technology in an embedded network causes the proxy model results to be higher. Witness Curry explains that while electronic costs are declining, copper and the installation costs are increasing. He also argues that when one compares loop plant that averages twenty years old to new plant, the proxy models with new plant are going to be significantly higher.

Witness Curry's embedded cost methodology adopted by the small LECs generally assigns the same types of costs to universal service as do the proxy models used by the larger LECs. When witness Curry was asked why 100% of the non-traffic sensitive plant was assigned to the state jurisdiction, he responded as follows:

> If you look at the proxy models or any other of these cost models, that's the way they're assigning costs in there. What we try to do is parallel the embedded cost of service study

> with the proxy model methodology, and that's what that is right there.

Witness Curry described the similarities between his embedded cost methodology and the cost proxy models in the following manner:

> Well, basically the proxy models, again, they take all the non-traffic sensitive costs and assign it to the cost of universal service. In addition, traffic-sensitive costs associated with local switching are assigned by a factor that equates to local usage through the end-office switch, and that's basically the cost drivers in the embedded cost study also.

Adjustments

Although we will not require major adjustments to the general methodology proposed by the small LECs, we will require numerous adjustments to the monthly cost per access line amounts filed by the companies. Each company states that its calculations are based on the same methodology. There were several differences, however, between the companies. ALLTEL, GTC, ITS and Northeast included Allowance For Funds Used During Construction (AFUDC) in the calculations and the other small LECs did not. ALLTEL, ITS, TDS and Vista included account 7370 Special Charges while the others did not. Account 7370 includes costs such as lobbying and contributions. We have removed AFUDC and account 7370 from the revenue requirements calculation, which is consistent with our normal method of calculating revenue requirements. Only Northeast included uncollectible revenue. Uncollectible revenues were added for the other companies. None of the companies included the amount of gross receipts tax which corresponds to the revenue of the company. Therefore, we recalculated gross receipts tax for all companies.

Some of the adjustments have been made to make the calculation of costs consistent with our usual method of calculating revenue requirements. For example, the amount of working capital was adjusted for each company to the amount computed using the balance sheet method. This resulted in increases for GTC and ITS and decreases for ALLTEL, Northeast and TDS to working capital.

Company-specific adjustments were necessary for several of the companies. Frontier's filed amounts were for total company and had to be adjusted to reflect local amounts only. We corrected the property taxes and also included interest expense in Frontier's amounts. ITS Telecommunication's Systems, Inc.'s ratebase and expenses were reduced to reflect Contributions in Aid of Construction, which was not included by the company. Northeast's deferred taxes were reduced to properly match the amounts on the company's balance sheet.

For the small LECs, the average for corporate operations expense is $6.88 per line per month. For Northeast and ITS, the amounts are $15.31 and $30.74 per line per month, respectively. According to witness Curry, the Federal Communications Commission (FCC) limits the amount of corporate expense per access line which a company is allowed for federal high cost fund purposes. In Florida, only ITS's and Northeast's corporate expenses exceed the limit. We have made an adjustment to limit the amount of corporate expenses included in the calculations of costs for ITS and Northeast, based on the FCC's methodology. This adjustment results in a reduction of the monthly local costs of $.62 and $3.56 for Northeast and ITS, respectively. Even after making this adjustment, Northeast's and ITS's corporate expenses are well above the statewide average for small LECs. Northeast's and ITS's embedded costs per access line shown on Table VI-2 exceed the results of the BCPM model due to the high amount of corporate expenses. The FCC limits corporate expenses, since they are often discretionary and subject to management control. We agree with the FCC and believe that it is reasonable to limit the amount of corporate expense allowed for calculating the amount of high cost support which a company may need for intrastate purposes. For purposes of this Order, we are limiting corporate expenses based on the FCC's methodology. However, if an intrastate universal service fund is implemented, we recommend that a further review of the allowable amount of corporate expenses be conducted.

In 1996, the operations of three companies (St. Joseph Telephone & Telegraph Company, Gulf Telephone Company and The Florala Telephone Company, Inc.) were purchased and merged into GTC, Inc. (GTC). For purposes of this proceeding, the three former companies have been reported separately. After the purchase, the net plant (ratebase) recorded on the books of GTC was increased to reflect a higher value. GTC has not provided any justification to increase its ratebase above the original cost of the assets.

Therefore, we have adjusted the ratebases for the GTC divisions to original cost.

Capital Structure and Return on Equity

As discussed earlier, all of the small LECs used an overall cost of capital of 11.25% for purposes of this proceeding. No witnesses appearing on behalf of the small LECs offered any testimony supporting the capital structure, cost of debt, or cost of equity underlying the assumed 11.25% rate of return. Moreover, there was no evidence presented to support the reasonableness of the 11.25% return other than the fact that this was the default rate established by the FCC in September 1990.

In FCC Report No. CC 98-33 (Docket No. 98-166) issued October 5, 1998, the FCC announced that it was seeking comment on how the formula for calculating the authorized rate of return for local telephone companies should be modified to reflect current market conditions. Since the time of the FCC's determination of the 11.25% rate of return, 30-year Treasury bond rates have fallen 380 basis points from an average of 8.99% in September 1990 to an average of 5.19% in September 1998. AT&T/MCI witness Hirshleifer testified that given the significant decline in capital costs as indicated by the drop in yields on 30-year Treasury bonds, there is no evidence to support 11.25% as the true cost of capital for the provision of universal service.

To be consistent with our use of the embedded cost studies filed by the small LECs for purposes of determining the cost of providing local service, we have used the company-specific debt and equity amounts and embedded cost of debt in determining the appropriate cost of capital for each of these companies. The one exception is the determination of the return on equity (ROE). The estimation of an appropriate ROE is the one input that is the same regardless of whether the return is used in an embedded cost study or a forward-looking cost model.

Because no evidence was presented by the small LECs regarding an appropriate ROE for purposes of this proceeding, it is necessary to estimate a reasonable return. Based upon our analysis in Section V-B of this Order, we shall require an ROE of 11.50% be used for determining the overall cost of capital. Because the purpose of this proceeding is essentially to determine the cost of providing service to high cost areas, it is reasonable to assume the cost of equity for this limited purpose would be the same for all efficient providers of telecommunications service.

Rural Telephone Bank stock was removed from the rate base and included as part of the capital structure. We used the company-specific debt and equity amounts, embedded cost of debt, and an ROE of 11.50% for determining the appropriate cost of capital for each company. The one exception was the determination of the cost of capital for Vista-United. Because Vista-United filed a capital structure comprised of 100% equity, it was necessary to use a hypothetical capital structure to determine the appropriate cost of capital for an efficient provider of universal service. Consistent with our determination in Section V-B of this Order, we shall require a relative capital structure of 60% equity and 40% debt, a cost of debt of 6.50%, and an ROE of 11.50% to determine Vista-United's cost of capital. The return resulting from these assumptions represents an appropriate cost of capital for an efficient provider of universal service.

Results

Table VI-1 shows the cost of basic local telecommunications service per access line per month as filed by the small LECs, the cost after our modifications as described above, and the cost based on BCPM defaults.

Table VI-1:
Comparison of Results: Embedded Costs vs. Cost Proxy Model

COMPANY	EMBEDDED COST PER ACCESS LINE		BCPM DEFAULTS
	Per Company	*Per Commission*	
ALLTEL	$ 41.97	$ 41.32	$ 66.37
Frontier	$ 56.13	$ 44.30	$ 77.96
GTC - Florala	$ 49.81	$ 42.18	$ 96.34
GTC - Gulf	$ 38.07	$ 33.43	$ 64.69
GTC - St. Joe	$ 44.16	$ 38.99	$ 66.85
ITS	$ 71.00	$ 65.50	$ 51.76
Northeast	$ 65.39	$ 55.43	$ 55.39
Quincy	$ 44.40	$ 42.81	$ 50.82
Vista-United	$ 66.54	$ 63.34	$ 31.36

The amounts shown above in the column labeled "per Commission" are the results of using the small LEC methodology and our adjustments. Those amounts should be reported as the 1997 embedded costs of basic local telecommunications service using the small LEC sponsored methodology. The amounts are based on 1997 costs. Costs change from year to year, and the general trend has been a decline in costs. Therefore, these costs should be updated and reviewed before any use is made of the results.

The embedded cost methodology proposed by the small LECs and adjusted by us generally produces a lower cost for basic local service than the outputs of the models. We believe that it is appropriate to use the lower costs. It does not seem reasonable to provide the small LECs with more financial support than they need based on embedded costs. Providing the companies with more support than needed will not necessarily increase competition in the high cost areas. If the embedded costs of the incumbent LEC are lower than the costs of a new entrant, then the incumbent LEC has a cost advantage and will be able to underprice the new entrant and likely keep out competition. Providing the same amount of support per access line to both the incumbent LEC and the new entrant does not help the new entrant overcome any cost advantage of the incumbent LEC.

The amounts do not represent just the cost of basic local telecommunications service. The small LEC methodology does not separate out the costs of certain services such as call waiting and call forwarding. It also does not remove the costs for other services such as nonrecurring services or operator services, which are charged for separately. We nevertheless believe the small LEC methodology is appropriate, and we are not recommending a different definition of basic local telecommunications service than found in Section II of this Order. However, the small LEC methodology does generally produce lower costs than the proxy models.

<u>Conclusion</u>

Section 364.025(4)(c) states as follows:

> (c) In determining the cost of providing basic local telecommunications service for small local exchange telecommunications companies, which serve less than 100,000 access lines, the commission shall not be required to use the cost proxy model selected pursuant to paragraph (b) until a mechanism is implemented by the Federal Government for small companies, but no sooner than January 1, 2001. The commission shall calculate a small local exchange telecommunications company's cost of providing basic local telecommunications services based on one of the following options:
>
> 1. A different proxy model; or
>
> 2. A fully distributed allocation of embedded costs, identifying high-cost areas within the local exchange area the company serves and including all embedded investments and expenses incurred by the company in the provision of universal service. Such

> calculations may be made using fully distributed costs consistent with 47 C.F.R., sections 32, 36, and 64. The geographic basis for the calculations shall be no smaller than a census block group.

Therefore, for the purpose of fulfilling our statutory obligation under Section 364.025(4)(c), we will choose between a fully allocated, embedded cost study or a cost proxy model different than the one selected for the three LECS with 100,000 or greater access lines. Upon consideration, we shall determine the cost of basic local telecommunications service for each of the Florida LECs that serve fewer than 100,000 access lines using the embedded cost methodology proposed by witness Curry, with the modifications discussed above. The resulting costs are shown below in Table VI-2:

Table VI-2:

Company	1997 Costs per Access Line per Month
ALLTEL	$41.32
Frontier	$44.30
GTC-Florala	$42.18
GTC-Gulf	$33.43
GTC-St. Joe	$38.99
ITS	$65.50
Northeast	$55.43
Quincy	$42.81
Vista-United	$63.34

As stated above, we will not use a different cost proxy model as Section 364.025(4)(c), Florida Statutes, permits. We will, however, provide the results for the small LECs using the BCPM 3.1 cost proxy model with the Commission-ordered input values. There was concern raised regarding the use of an embedded cost methodology to determine forward-looking costs for universal service for any local telecommunications service provider, whether large or small. Therefore, we will provide to the Legislature the results for the small LECs using the BCPM with its Commission-ordered input values in Appendix B with our report.

VII. CONCLUSION

We have conducted this proceeding under Chapter 120, Florida Statutes, and the directives of Section 364.025(4)(b) and (c), Florida Statutes. We have based our decision on the evidentiary record before us, the briefs of the parties, and the advisory recommendation of our staff. We believe that our decision is consistent with legislative mandate. This Order will be attached to the report that we submit to the Legislature to satisfy our obligations under Section 364.025(4)(b) and (c), Florida Statutes.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that the definition of basic local telecommunications service referred to in Section 364.025(4)(b), Florida Statutes, is defined in Section 364.02(2), Florida Statutes, as voice-grade, flat-rate residential, flat-rate single-line business local exchange services which provide dial tone, local usage necessary to place unlimited calls within a local exchange area, dual tone multifrequency dialing, and access to the following: emergency services such as "911," all locally available interexchange companies, directory assistance, operator services, relay services, and an alphabetical directory listing. It is further

ORDERED that the Benchmark Cost Proxy Model 3.1 (BCPM), including the required modifications specified in the body of this Order, is adopted pursuant to Section 364.025(4)(b), Florida Statutes. It is further

ORDERED that the costs of basic local telecommunications service calculated by the Benchmark Cost Proxy Model 3.1 (BCPM), with the modifications specified in this Order, should be aggregated up to and reported at the wire center level. It is further

ORDERED that the input values for the Benchmark Cost Proxy Model 3.1 (BCPM), with the modifications specified in this Order, are adopted as found in Appendix A to this Order. It is further

ORDERED that BellSouth Telecommunications, Inc., GTE Florida Incorporated, and Sprint-Florida, Incorporated shall use the Benchmark Cost Proxy Model 3.1 (BCPM), with the modifications specified in this Order, to establish their respective costs for determining basic local telecommunications service. It is further

ORDERED that BellSouth Telecommunications, Inc., GTE Florida Incorporated, and Sprint-Florida, Incorporated shall make the modifications to the Benchmark Cost Proxy Model 3.1 (BCPM) and its input values specified in the body of this Order and provide the results to the Commission no later than January 12, 1999. It is further

ORDERED that under Section 364.025(4)(c), Florida Statutes, the embedded cost methodology, with adjustments as specified in the body of this Order, is adopted for ALLTEL Florida, Vista-United Telecommunications, Northeast Florida Telephone Company, Frontier Communications of the South, Inc., TDS Telecom/Quincy, GTC Inc., and ITS Telecommunications Systems, Inc., to determine those carriers' respective costs of providing basic local telecommunications service. It is further

ORDERED that this docket is closed.

By ORDER of the Florida Public Service Commission this 7th day of January, 1999.

BLANCA S. BAYÓ, Director
Division of Records and Reporting

(S E A L)

WPC

DISSENT

Commissioner J. Terry Deason respectfully dissents from the majority's decision to use an embedded cost methodology for the small local exchange carriers to determine those carriers' respective cost of providing basic local telecommunication service. I believe that the Commission had three options available to it when calculating the cost of basic local service: (1) use the same cost proxy model that is employed for the large local exchange carriers; (2) use a different cost proxy model for the small local exchange carriers; or (3) use a fully distributed embedded cost study for the small local exchange carriers. I believe that a uniform cost standard should be used for all local exchange carriers in any effort to facilitate competition and encourage investment through the creation of a permanent, intrastate universal service funding mechanism.

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Director, Division of Records and reporting and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

M E M O R A N D U M

January 7, 1999

-7 PM

TO: DIVISION OF RECORDS AND REPORTING

FROM: DIVISION OF LEGAL SERVICES (COX) WPC

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

99-0068-FOF-TP

Attached is a **Final Order, with Appendix A only**, to be issued in the above-referenced docket. (Number of pages in order - 441)

WPC/slh
Attachment
cc: Division of Communications
I:\696order.wpc

appendix 196pgs

See 242

490
245
245

DOCUMENT NUMBER-DATE
00279 JAN-7 99
FPSC-RECORDS/REPORTING

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-A: Depreciation Rates

Account	Lives	Salvage Values
Motor Vehicles	7.5	15.0
Aircraft	5.0	50.0
Special Purpose Veh.	7.0	0.0
Garage Work Equipment	12.0	0.0
Other Work Equipment	12.0	0.0
Buildings	40.0	0.0
Furniture	11.0	10.0
Office Support Equipment	10.0	0.0
Company Comm. Equipment	7.0	10.0
Genl. Purpose Computers	5.0	0.0
Digital Switching	13.0	0.0
Operator Systems	10.0	0.0
Radio Systems	9.0	(5.0)
Circuit-DDS	8.0	0.0
Circuit-Digital	8.0	0.0
Circuit-Analog	8.0	(5.0)
Station Apparatus	6.0	0.0
Large PBX	6.0	0.0
Other Terminal Equipment	6.0	0.0
Poles	30.0	(75.0)
Aerial Cable-Metallic	18.0	(35.0)
Aerial Cable-Fiber	20.0	(35.0)
Underground Cable-Metallic	23.0	(10.0)
Underground Cable-Fiber	20.0	(10.0)

DOCUMENT NO.
00279-99

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Account	Lives	Salvage Values
Buried Cable-Metallic	18.0	(10.0)
Buried Cable-Fiber	20.0	(10.0)
Submarine Cable-Metallic	18.0	(5.0)
Submarine Cable-Fiber	20.0	(5.0)
Intra-Blg Netwk Cable-Met.	20.0	(10.0)
Intra-Blg Netwk Cable-Fiber	20.0	(10.0)
Conduit	50.0	(10.0)

Section V-B: Cost of Money
Debt Ratio: 40%
Equity Ratio: 60%
Cost of Debt: 6.5%
Cost of Equity: 11.5%
Overall Cost of Capital: 9.5%

Section V-C: Tax Rates	
State Income Tax	5.5%
Federal Income Tax	35%
Combined Federal & State Income Tax	38.57%
Gross Receipts	1.53%
Ad Valorem	.90%
Other	.30%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-D: Support Structures			
Sprint's Territory-Pole and Guy Spacing and Relative Pole Units (Feeder & Distribution)			
Density	Pole Spacing (in feet)	Guy Spacing (in feet)	Relative Pole Units
0	250	1500	6.00
6	250	1500	6.00
101	250	1500	6.00
201	250	1500	6.00
651	150	1000	6.67
851	150	500	3.33
2551	150	500	3.33
5001	150	500	3.33
10001	150	500	3.33
GTEFL's Territory-Pole and Guy Spacing and Relative Pole Units (Feeder & Distribution)			
Density	Pole Spacing (in feet)	Guy Spacing (in feet)	Relative Pole Units
0	175	1750	10.00
6	175	1750	10.00
101	175	1750	10.00
201	175	1750	10.00
651	175	1750	10.00
851	175	1750	10.00
2551	175	1750	10.00
5001	175	1750	10.00
10001	175	1750	10.00

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Pole and Guy Spacing and Relative Pole Units (Feeder & Distribution)			
Density	Pole Spacing (in feet)	Guy Spacing (in feet)	Relative Pole Units
0	250	1500	6.00
6	250	1500	6.00
101	250	1500	6.00
201	250	1500	6.00
651	150	1000	6.67
851	150	500	3.33
2551	150	500	3.33
5001	150	500	3.33
10001	150	500	3.33

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Poles, Anchors, and Guys

Sprint's Territory - Normal, Soft Rock, Hard Rock Aerial Feeder and Distribution					
Activity	Base Cost Per unit	Density Zones 0-650			
		Cost Adjustment	Installation Costs	% Assigned Telephone	Weighted Amount
Poles	$255.00		$294.00	30%	$164.70
Anchors and Guys	$105.27		$209.00	100%	$52.38
					$217.08

Sprint's Territory - Normal, Soft Rock, Hard Rock Aerial Feeder and Distribution					
Activity	Base Cost Per unit	Density Zone 651-850			
		Cost Adjustment	Installation Costs	% Assigned Telephone	Weighted Amount
Poles	$255.00		$294.00	30%	$164.70
Anchors and Guys	$105.27		$209.00	100%	$47.14
					$211.84

Sprint's Territory - Normal, Soft Rock, Hard R[illegible] Aerial Feeder and Distribution					
Activity	Base Cost Per unit	Density Zones 851>10001			
		Cost Adjustment	Installation Costs	% Assigned Telephone	Weighted Amount
Poles	$255.00		$294.00	30%	$164.70
Anchors and Guys	$105.27		209.00	100%	$94.28
					$258.98

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's & GTEFL's Territory - Normal, Soft Rock, Hard Rock Aerial Feeder and Distribution					
Activity	Base Cost Per unit	Density Zones 0-650			
		Cost Adjustment	Installation Costs	% Assigned Telephone	Weighted Amount
Poles	$229.89		$161.81	39.88%	$156.21
Anchors and Guys	$ 28.45		$72.01	100%	$16.74
					$172.96

BellSouth's & GTEFL's Territory - Normal, Soft Rock, Hard Rock Aerial Feeder and Distribution					
Activity	Base Cost Per unit	Density Zone 615-850			
		Cost Adjustment	Installation Costs	% Assigned Telephone	Weighted Amount
Poles	$229.89		$161.81	39.88%	$156.21
Anchors and Guys	$ 28.45		$72.01	100%	$15.07
					$171.28

BellSouth's & GTEFL's Territory - Normal, Soft Rock, Hard Rock Aerial Feeder and Distribution					
Activity	Base Cost Per unit	Density Zone 851->10001			
		Cost Adjustment	Installation Costs	% Assigned Telephone	Weighted Amount
Poles	$229.89		$161.81	39.88%	$156.21
Anchors and Guys	$ 28.45		$ 72.01	100%	$ 30.14
					$186.35

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		75.00	99.00	$5.55
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		17.00	99.00	1.26
Hand Dig Trench	7.47		2.00	99.00	.15
Boring	53.94		2.00	99.00	1.07
Cut & Restore Asphalt	10.97		1.00	99.00	.11
Cut & Restore Concrete	13.14		1.00	99.00	.13
Cut & Restore Sod	8.28		2.00	99.00	.16
			100%		$8.42

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		71.00	99.00	$5.25
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		19.00	99.00	1.41
Hand Dig Trench	7.47		2.00	99.00	.15
Boring	53.94		2.00	99.00	1.07
Cut & Restore Asphalt	10.97		2.00	99.00	.22
Cut & Restore Concrete	13.14		2.00	99.00	.26
Cut & Restore Sod	8.28		2.00	99.00	.16
			100%		$8.51

BellSouth's Territory - Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		46.00	99.00	$3.40
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		30.00	99.00	2.22
Hand Dig Trench	7.47		5.00	99.00	.37
Boring	53.94		4.00	99.00	2.14
Cut & Restore Asphalt	10.97		5.00	99.00	.54
Cut & Restore Concrete	13.14		4.00	99.00	.52
Cut & Restore Sod	8.28		6.00	99.00	.49
			100%		$9.68

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Feeder Conduit					
Activity	Bas. Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		35.00	99.00	$2.59
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		33.00	99.00	2.44
Hand Dig Trench	7.47		3.00	99.00	.22
Boring	53.94		4.00	99.00	2.14
Cut & Restore Asphalt	10.97		8.00	99.00	.87
Cut & Restore Concrete	13.14		7.00	99.00	.91
Cut & Restore Sod	8.28		10.00	99.00	.82
			100%		$9.99

BellSouth's Territory - Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		27.00	99.00	$2.00
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		30.00	99.00	2.22
Hand Dig Trench	7.47		6.00	99.00	.44
Boring	53.94		2.00	99.00	1.07
Cut & Restore Asphalt	10.97		13.00	99.00	1.41
Cut & Restore Concrete	13.14		12.00	99.00	1.56
Cut & Restore Sod	8.28		10.00	99.00	.82
			100%		$9.52

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-1000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		5.00	99.00	$.37
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		20.00	99.00	1.48
Hand Dig Trench	7.47		8.00	99.00	.59
Boring	53.94		15.00	99.00	8.01
Cut & Restore Asphalt	10.97		25.00	99.00	2.71
Cut & Restore Concrete	13.14		20.00	99.00	2.60
Cut & Restore Sod	8.28		7.00	99.00	.57
			100%		$16.34

BellSouth's Territory - Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		3.00	99.00	$.22
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		15.00	99.00	1.11
Hand Dig Trench	7.47		8.00	99.00	.59
Boring	53.94		10.00	99.00	5.34
Cut & Restore Asphalt	10.97		33.00	99.00	3.58
Cut & Restore Concrete	13.14		28.00	99.00	3.64
Cut & Restore Sod	8.28		3.00	99.00	.25
			100%		$14.74

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		87.00	99.00	$6.44
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		5.00	99.00	.37
Hand Dig Trench	7.47		2.00	99.00	.15
Boring	53.94		2.00	99.00	1.07
Cut & Restore Asphalt	10.97		1.00	99.00	.11
Cut & Restore Concrete	13.14		1.00	99.00	.13
Cut & Restore Sod	8.28		2.00	99.00	.16
			100%		$8.42

BellSouth's Territory - Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		71.00	99.00	$5.25
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		19.00	99.00	1.41
Hand Dig Trench	7.47		2.00	99.00	.15
Boring	53.94		2.00	99.00	1.07
Cut & Restore Asphalt	10.97		2.00	99.00	.22
Cut & Restore Concrete	13.14		2.00	99.00	.26
Cut & Restore Sod	8.28		2.00	99.00	.16
			100%		$8.51

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		60.00	99.00	$4.44
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		18.00	99.00	1.33
Hand Dig Trench	7.47		5.00	99.00	.37
Boring	53.94		2.00	99.00	1.07
Cut & Restore Asphalt	10.97		5.00	99.00	.54
Cut & Restore Concrete	13.14		4.00	99.00	.52
Cut & Restore Sod	8.28		6.00	99.00	.49
			100%		$8.76

BellSouth's Territory - Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		45.00	99.00	$3.33
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		23.00	99.00	1.70
Hand Dig Trench	7.47		3.00	99.00	.22
Boring	53.94		4.00	99.00	2.14
Cut & Restore Asphalt	10.97		8.00	99.00	.87
Cut & Restore Concrete	13.14		7.00	99.00	.91
Cut & Restore Sod	8.28		10.00	99.00	.82
			100%		$9.99

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		40.00	99.00	$2.96
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		7.00	99.00	.52
Hand Dig Trench	7.47		6.00	99.00	.44
Boring	53.94		2.00	99.00	1.07
Cut & Restore Asphalt	10.97		13.00	99.00	1.41
Cut & Restore Concrete	13.14		12.00	99.00	1.56
Cut & Restore Sod	8.28		20.00	99.00	1.64
			100%		$9.50

BellSouth's Territory - Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		5.00	99.00	$.37
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		19.00	99.00	1.41
Hand Dig Trench	7.47		8.00	99.00	.59
Boring	53.94		15.00	99.00	8.01
Cut & Restore Asphalt	10.97		25.00	99.00	2.71
Cut & Restore Concrete	13.14		20.00	99.00	2.60
Cut & Restore Sod	8.28		8.00	99.00	.66
			100%		$16.35

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		3.00	99.00	$.22
Rocky Trench	7.47		0	99.00	0
Backhoe Trench	7.47		15.00	99.00	1.11
Hand Dig Trench	7.47		8.00	99.00	.59
Boring	53.94		10.00	99.00	5.34
Cut & Restore Asphalt	10.97		33.00	99.00	3.58
Cut & Restore Concrete	13.14		28.00	99.00	3.64
Cut & Restore Sod	8.28		3.00	99.00	.25
			100%		$14.74

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		96.00	99.00	$2.91
Rocky Plow	3.06		0	99.00	0
Trench & Backfill	3.06		0	99.00	0
Rocky Trench	3.06		0	99.00	0
Backhoe Trench	3.06		0	99.00	0
Hand Dig Trench	3.06		0	99.00	0
Bore Cable	23.50		0	99.00	0
Push Pipe & Pull Cable	26.96		0	99.00	0
Cut & Restore Asphalt	6.01		1.00	99.00	.06
Cut & Restore Concrete	8.90		1.00	99.00	.09
Cut & Restore Sod	4.80		2.00	99.00	.10
			100%		$3.51

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		78.00	99.00	$2.37
Rocky Plow	3.06		0.00	99.00	0
Trench & Backfill	3.06		10.00	99.00	.30
Rocky Trench	3.06		0.00	99.00	0
Backhoe Trench	3.06		5.00	99.00	.15
Hand Dig Trench	3.06		1.00	99.00	.03
Bore Cable	23.50		0.00	99.00	0
Push Pipe & Pull Cable	26.96		0.00	99.00	0
Cut & Restore Asphalt	6.01		2.00	99.00	.12
Cut & Restore Concrete	8.90		2.00	99.00	.18
Cut & Restore Sod	4.80		2.00	99.00	.10
			100%		$3.24

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		60.00	99.00	$1.82
Rocky Plow	3.06		0.00	99.00	0
Trench & Backfill	3.06		10.00	99.00	.30
Rocky Trench	3.06		0.00	99.00	0
Backhoe Trench	3.06		6.00	99.00	.18
Hand Dig Trench	3.06		5.00	99.00	.15
Bore Cable	23.50		3.00	99.00	.70
Push Pipe & Pull Cable	26.96		1.00	99.00	.27
Cut & Restore Asphalt	6.01		5.00	99.00	.30
Cut & Restore Concrete	8.90		4.00	99.00	.35
Cut & Restore Sod	4.80		6.00	99.00	.29
			100%		$4.36

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		33.00	99.00	$1.00
Rocky Plow	3.06		0.00	99.00	0
Trench & Backfill	3.06		20.00	99.00	.61
Rocky Trench	3.06		0.00	99.00	0
Backhoe Trench	3.06		10.00	99.00	.30
Hand Dig Trench	3.06		3.00	99.00	.09
Bore Cable	23.50		4.00	99.00	.93
Push Pipe & Pull Cable	26.96		5.00	99.00	1.33
Cut & Restore Asphalt	6.01		8.00	99.00	.48
Cut & Restore Concrete	8.90		7.00	99.00	.62
Cut & Restore Sod	4.80		10.00	99.00	.48
			100%		$5.83

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		15.00	99.00	$.45
Rocky Plow	3.06		0.00	99.00	0
Trench & Backfill	3.06		26.00	99.00	.79
Rocky Trench	3.06		0.00	99.00	0
Backhoe Trench	3.06		11.00	99.00	.33
Hand Dig Trench	3.06		6.00	99.00	.18
Bore Cable	23.50		2.00	99.00	.47
Push Pipe & Pull Cable	26.96		5.00	99.00	1.33
Cut & Restore Asphalt	6.01		13.00	99.00	.77
Cut & Restore Concrete	8.90		12.00	99.00	1.06
Cut & Restore Sod	4.80		10.00	95.00	.48
			100%		$5.87

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0%	99.00%	$0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		5	99.00%	.15
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		20	99.00%	.61
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		15	99.00%	3.49
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		25	99.00%	1.49
Cut & Restore Concrete	8.90		20	99.00%	1.76
Cut & Restore Sod	4.80		7	99.00%	.33
			100%		$8.07

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0%	99.00%	$0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		3	99.00%	.05
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		15	99.00%	.45
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		10	99.00%	2.33
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		33	99.00%	1.96
Cut & Restore Concrete	8.90		28	99.00%	2.47
Cut & Restore Sod	4.80		3	99.00%	.14
			100%		$7.69

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		86.00%	99.00%	$2.53
Rocky Plow	3.06		0.00	99.00%	0
Trench & Backfill	3.06		10.00	99.00%	.29
Rocky Trench	3.06		0.00	99.00%	0
Backhoe Trench	3.06		0.00	99.00%	0
Hand Dig Trench	3.06		0.00	99.00%	0
Bore Cable	23.50		0.00	99.00%	0
Push Pipe & Pull Cable	26.96		0.00	99.00%	0
Cut & Restore Asphalt	6.01		1.00	99.00%	.06
Cut & Restore Concrete	8.90		1.00	99.00%	.09
Cut & Restore Sod	4.80		2.00	99.00%	.09
			100%		$3.06

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		80.00%	99.00%	$2.35
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		11	99.00%	.32
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		3	99.00%	.09
Hand Dig Trench	3.06		0	99.00%	0
Bore Cable	23.50		0	99.00%	0
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		2	99.00%	.12
Cut & Restore Concrete	8.90		2	99.00%	.17
Cut & Restore Sod	4.80		2	99.00%	.09
			100%		$3.14

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		69.00%	99.00%	$2.03
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		11	99.00%	.32
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		3	99.00%	.09
Hand Dig Trench	3.06		0	99.00%	0
Bore Cable	23.50		1	99.00%	.23
Push Pipe & Pull Cable	26.96		1	99.00%	.26
Cut & Restore Asphalt	6.01		5	99.00%	.29
Cut & Restore Concrete	8.90		4	99.00%	.34
Cut & Restore Sod	4.80		6	99.00%	.28
			100%		$3.83

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		21.00%	99.00%	$.62
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		30	99.00%	.88
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		12	99.00%	.35
Hand Dig Trench	3.06		3	99.00%	.09
Bore Cable	23.50		4	99.00%	.90
Push Pipe & Pull Cable	26.96		5	99.00%	1.29
Cut & Restore Asphalt	6.01		8	99.00%	.46
Cut & Restore Concrete	8.90		7	99.00%	..60
Cut & Restore Sod	4.80		10	99.00%	.46
			100%		$5.66

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		20.00%	99.00%	$.59
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		20	99.00%	.59
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		2	99.00%	.06
Hand Dig Trench	3.06		6	99.00%	.18
Bore Cable	23.50		2	99.00%	.45
Push Pipe & Pull Cable	26.96		5	99.00%	1.29
Cut & Restore Asphalt	6.01		13	99.00%	.75
Cut & Restore Concrete	8.90		12	99.00%	1.03
Cut & Restore Sod	4.80		23	99.00%	.92
			100%		$5.85

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0	99.00%	$.0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		5	99.00%	.15
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		19	99.00%	.56
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		15	99.00%	3.38
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		25	99.00%	.1.44
Cut & Restore Concrete	8.90		20	99.00%	1.71
Cut & Restore Sod	4.80		8	99.00%	.37
			100%		$7.84

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0%	99.00%	$0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		3	99.00%	.09
Rocky Trench	3.06		0	99.00%	0
Backhoe Trench	3.06		15	99.00%	44
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		10	99.00%	2.26
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		33	99.00%	1.90
Cut & Restore Concrete	8.90		28	99.00%	2.39
Cut & Restore Sod	4.80		3	99.00%	.14
			100%		$7.46

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		5.00%	99.00%	$.37
Rocky Trench	7.47		29.00%	99.00%	2.15
Backhoe Trench	7.47		52.00%	99.00%	3.85
Hand Dig Trench	7.47		5.00%	99.00%	.37
Boring	53.94		5.00%	99.00%	2.67
Cut & Restore Asphalt	10.97		1.00%	99.00%	.11
Cut & Restore Concrete	13.14		1.00%	99.00%	.13
Cut & Restore Sod	8.28		2.00%	99.00%	.16
			100%		$9.80

BellSouth's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		5.00%	99.00%	$.37
Rocky Trench	7.47		37.00%	99.00%	2.74
Backhoe Trench	7.47		45.00%	99.00%	3.33
Hand Dig Trench	7.47		4.00%	99.00%	.30
Boring	53.94		3.00%	99.00%	1.60
Cut & Restore Asphalt	10.97		2.00%	99.00%	.22
Cut & Restore Concrete	13.14		2.00%	99.00%	.26
Cut & Restore Sod	8.28		.00%	99.00%	.16
			100%		$8.97

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		5.00%	99.00%	$.37
Rocky Trench	7.47		35.00%	99.00%	2.59
Backhoe Trench	7.47		38.00%	99.00%	2.81
Hand Dig Trench	7.47		4.00%	99.00%	.30
Boring	53.94		3.00%	99.00%	1.60
Cut & Restore Asphalt	10.97		5.00%	99.00%	.54
Cut & Restore Concrete	13.14		4.00%	99.00%	.52
Cut & Restore Sod	8.28		6.00%	99.00%	.49
			100%		$9.22

BellSouth's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		15.00%	99.00%	$1.11
Rocky Trench	7.47		33.00%	99.00%	2.44
Backhoe Trench	7.47		20.00%	99.00%	1.48
Hand Dig Trench	7.47		3.00%	99.00%	.22
Boring	53.94		4.00%	99.00%	2.14
Cut & Restore Asphalt	10.97		8.00%	99.00%	.87
Cut & Restore Concrete	13.14		7.00%	99.00%	.91
Cut & Restore Sod	8.28		10.00%	99.00%	.82
			100%		$9.99

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-255			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		9.00%	99.00%	$.67
Rocky Trench	7.47		28.00%	99.00%	2.07
Backhoe Trench	7.47		20.00%	99.00%	1.48
Hand Dig Trench	7.47		6.00%	99.00%	.44
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	10.97		13.00%	99.00%	1.41
Cut & Restore Concrete	13.14		12.00%	99.00%	1.56
Cut & Restore Sod	8.28		10.00%	99.00%	.82
			100%		$9.52

BellSouth's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		2.00%	99.00%	$15
Rocky Trench	7.47		5.00%	99.00%	.37
Backhoe Trench	7.47		18.00%	99.00%	1.33
Hand Dig Trench	7.47		8.00%	99.00%	.59
Boring	53.94		15.00%	99.00%	8.01
Cut & Restore Asphalt	10.97		25.00%	99.00%	2.71
Cut & Restore Concrete	13.14		20.00%	99.00%	2.60
Cut & Restore Sod	8.28		7.00%	99.00%	.57
			100%		$16.34

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		0%	99.00%	$0
Rocky Trench	7.47		6.00%	99.00%	.44
Backhoe Trench	7.47		12.00%	99.00%	.89
Hand Dig Trench	7.47		8.00%	99.00%	.59
Boring	53.94		10.00%	99.00%	5.34
Cut & Restore Asphalt	10.97		33.00%	99.00%	3.58
Cut & Restore Concrete	13.14		28.00%	99.00%	3.64
Cut & Restore Sod	8.28		3.00%	99.00%	.25
			100%		$14.74

BellSouth's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		8.00%	99.00%	$.59
Rocky Trench	7.47		46.00%	99.00%	3.40
Backhoe Trench	7.47		32.00%	99.00%	2.37
Hand Dig Trench	7.47		5.00%	99.00%	.37
Boring	53.94		5.00%	99.00%	2.67
Cut & Restore Asphalt	10.97		1.00%	99.00%	.11
Cut & Restore Concrete	13.14		1.00%	99.00%	.13
Cut & Restore Sod	8.28		2.00%	99.00%	.16
			100%		$9.80

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		8.00%	99.00%	$.59
Rocky Trench	7.47		51.00%	99.00%	3.77
Backhoe Trench	7.47		27.00%	99.00%	2.00
Hand Dig Trench	7.47		5.00%	99.00%	.37
Boring	53.94		3.00%	99.00%	1.60
Cut & Restore Asphalt	10.97		2.00%	99.00%	.22
Cut & Restore Concrete	13.14		2.00%	99.00%	.26
Cut & Restore Sod	8.28		2.00%	99.00%	.16
			100%		$8.97

BellSouth's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		8.00%	99.00%	$.59
Rocky Trench	7.47		48.00%	99.00%	3.55
Backhoe Trench	7.47		21.00%	99.00%	1.55
Hand Dig Trench	7.47		5.00%	99.00%	.37
Boring	53.94		3.00%	99.00%	1.60
Cut & Restore Asphalt	10.97		5.00%	99.00%	.54
Cut & Restore Concrete	13.14		4.00%	99.00%	.52
Cut & Restore Sod	8.28		6.00%	99.00%	.49
			100%		$9.22

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		15.00%	99.00%	$1.11
Rocky Trench	7.47		32.00%	99.00%	2.37
Backhoe Trench	7.47		21.00%	99.00%	1.55
Hand Dig Trench	7.47		3.00%	99.00%	.22
Boring	53.94		4.00%	99.00%	2.14
Cut & Restore Asphalt	10.97		8.00%	99.00%	.87
Cut & Restore Concrete	13.14		7.00%	99.00%	.91
Cut & Restore Sod	8.28		10.00%	99.00%	.82
			100%		$9.99

BellSouth's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		8.00%	99.00%	$.59
Rocky Trench	7.47		30.00%	99.00%	2.22
Backhoe Trench	7.47		9.00%	99.00%	.67
Hand Dig Trench	7.47		6.00%	99.00%	.44
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	10.97		13.00%	99.00%	1.41
Cut & Restore Concrete	13.14		12.00%	99.00%	1.56
Cut & Restore Sod	8.28		20.00%	99.00%	1.64
			100%		$9.60

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		2.00%	99.00%	$.15
Rocky Trench	7.47		5.00%	99.00%	.37
Backhoe Trench	7.47		17.00%	99.00%	1.26
Hand Dig Trench	7.47		8.00%	99.00%	.59
Boring	53.94		15.00%	99.00%	8.01
Cut & Restore Asphalt	10.97		25.00%	99.00%	2.71
Cut & Restore Concrete	13.14		20.00%	99.00%	2.60
Cut & Restore Sod	8.28		8.00%	99.00%	.66
			100%		$16.35

BellSouth's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone>10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$7.47		0%	99.00%	$.0
Rocky Trench	7.47		6.00%	99.00%	.44
Backhoe Trench	7.47		12.00%	99.00%	.89
Hand Dig Trench	7.47		8.00%	99.00%	.59
Boring	53.94		10.00%	99.00%	5.34
Cut & Restore Asphalt	10.97		33.00%	99.00%	3.58
Cut & Restore Concrete	13.14		28.00%	99.00%	3.64
Cut & Restore Sod	8.28		3.00%	99.00%	.25
			100%		$14.74

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		44.00%	99.00%	$1.33
Rocky Plow	3.06		34	99.00%	1.03
Trench & Backfill	3.06		5	99.00%	.15
Rocky Trench	3.06		5	99.00%	.15
Backhoe Trench	3.06		2	99.00%	.06
Hand Dig Trench	3.06		3	99.00%	.09
Bore Cable	23.50		1	99.00%	.23
Push Pipe & Pull Cable	26.96		2	99.00%	.53
Cut & Restore Asphalt	6.01		1	99.00%	..06
Cut & Restore Concrete	8.90		1	99.00%	.09
Cut & Restore Sod	4.80		2	99.00%	.10
			100%		$3.83

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		35.00%	99.00%	$1.06
Rocky Plow	3.06		28	99.00%	.85
Trench & Backfill	3.06		10	99.00%	.30
Rocky Trench	3.06		5	99.00%	.15
Backhoe Trench	3.06		12	99.00%	.36
Hand Dig Trench	3.06		3	99.00%	.09
Bore Cable	23.50		1	99.00%	.23
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		2	99.00%	.12
Cut & Restore Concrete	8.90		2	99.00%	.18
Cut & Restore Sod	4.80		2	99.00%	.10
			100%		$3.44

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		20.00%	99.00%	$.61
Rocky Plow	3.06		30	99.00%	.91
Trench & Backfill	3.06		10	99.00%	.30
Rocky Trench	3.06		8	99.00%	.24
Backhoe Trench	3.06		10	99.00%	.30
Hand Dig Trench	3.06		5	99.00%	.15
Bore Cable	23.50		1	99.00%	.23
Push Pipe & Pull Cable	26.96		1	99.00%	.27
Cut & Restore Asphalt	6.01		5	99.00%	.30
Cut & Restore Concrete	8.90		4	99.00%	.35
Cut & Restore Sod	4.80		6	99.00%	.29
			100%		$3.95

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		5.00%	99.00%	$.15
Rocky Plow	3.06		13	99.00%	.39
Trench & Backfill	3.06		5	99.00%	.15
Rocky Trench	3.06		25	99.00%	.76
Backhoe Trench	3.06		15	99.00%	.45
Hand Dig Trench	3.06		3	99.00%	.09
Bore Cable	23.50		4	99.00%	.93
Push Pipe & Pull Cable	26.96		5	99.00%	1.33
Cut & Restore Asphalt	6.01		8	99.00%	.48
Cut & Restore Concrete	8.90		7	99.00%	.62
Cut & Restore Sod	4.80		10	99.00%	.48
			100%		$5.83

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		3.00%	99.00%	$.09
Rocky Plow	3.06		3	99.00%	.09
Trench & Backfill	3.06		15	99.00%	.45
Rocky Trench	3.06		25	99.00%	.76
Backhoe Trench	3.06		6	99.00%	.18
Hand Dig Trench	3.06		6	99.00%	.18
Bore Cable	23.50		2	99.00%	.47
Push Pipe & Pull Cable	26.96		5	99.00%	1.33
Cut & Restore Asphalt	6.01		13	99.00%	.77
Cut & Restore Concrete	8.90		12	99.00%	1.06
Cut & Restore Sod	4.80		10	99.00%	.48
			100%		$5.87

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0%	99.00%	$0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		2	99.00%	.06
Rocky Trench	3.06		5	99.00%	.15
Backhoe Trench	3.06		18	99.00%	.55
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		15	99.00%	3.49
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		25	99.00%	1.49
Cut & Restore Concrete	8.90		20	99.00%	1.76
Cut & Restore Sod	4.80		7	99.00%	.33
			100%		$8.07

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone>10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0%	99.00%	$0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		0	99.00%	0
Rocky Trench	3.06		6	99.00%	.18
Backhoe Trench	3.06		12	99.00%	.36
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		10	99.00%	2.33
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		33	99.00%	1.96
Cut & Restore Concrete	8.90		28	99.00%	2.47
Cut & Restore Sod	4.80		3	99.00%	.14
			100%		$7.69

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		47.00%	99.00%	$1.30
Rocky Plow	3.06		29	99.00%	.85
Trench & Backfill	3.06		5	99.00%	.15
Rocky Trench	3.06		4	99.00%	.12
Backhoe Trench	3.06		2	99.00%	.06
Hand Dig Trench	3.06		3	99.00%	.09
Bore Cable	23.50		1	99.00%	.23
Push Pipe & Pull Cable	26.96		5	99.00%	1.29
Cut & Restore Asphalt	6.01		1	99.00%	.06
Cut & Restore Concrete	8.90		1	99.00%	.09
Cut & Restore Sod	4.80		2	99.00%	.09
			100%		$4.40

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory - Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		46.00%	99.00%	$1.35
Rocky Plow	3.06		28	99.00%	.82
Trench & Backfill	3.06		10	99.00%	.29
Rocky Trench	3.06		4	99.00%	.12
Backhoe Trench	3.06		2	99.00%	.06
Hand Dig Trench	3.06		3	99.00%	.09
Bore Cable	23.50		1	99.00%	.23
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		2	99.00%	.12
Cut & Restore Concrete	8.90		2	99.00%	.17
Cut & Restore Sod	4.80		2	99.00%	.09
			100%		$3.34

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		29.00%	99.00%	$.85
Rocky Plow	3.06		30	99.00%	.88
Trench & Backfill	3.06		12	99.00%	.35
Rocky Trench	3.06		8	99.00%	.24
Backhoe Trench	3.06		2	99.00%	.06
Hand Dig Trench	3.06		2	99.00%	.06
Bore Cable	23.50		1	99.00%	.23
Push Pipe & Pull Cable	26.96		1	99.00%	.26
Cut & Restore Asphalt	6.01		5	99.00%	.29
Cut & Restore Concrete	8.90		4	99.00%	.34
Cut & Restore Sod	4.80		6	99.00%	.28
			100%		$3.83

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		3.00%	99.00%	$.09
Rocky Plow	3.06		12	99.00%	.35
Trench & Backfill	3.06		5	99.00%	.15
Rocky Trench	3.06		27	99.00%	.79
Backhoe Trench	3.06		16	99.00%	.47
Hand Dig Trench	3.06		3	99.00%	.09
Bore Cable	23.50		4	99.00%	.90
Push Pipe & Pull Cable	26.96		5	99.00%	1.29
Cut & Restore Asphalt	6.01		8	99.00%	.46
Cut & Restore Concrete	8.90		7	99.00%	.60
Cut & Restore Sod	4.80		10	99.00%	.46
			100%		$5.66

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		2.00%	99.00%	$.06
Rocky Plow	3.06		2	99.00%	.06
Trench & Backfill	3.06		5	99.00%	.15
Rocky Trench	3.06		25	99.00%	.74
Backhoe Trench	3.06		8	99.00%	.24
Hand Dig Trench	3.06		6	99.00%	.18
Bore Cable	23.50		2	99.00%	.45
Push Pipe & Pull Cable	26.96		5	99.00%	1.29
Cut & Restore Asphalt	6.01		13	99.00%	.75
Cut & Restore Concrete	8.90		12	99.00%	1.03
Cut & Restore Sod	4.80		20	99.00%	.92
			100%		$5.85

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0%	99.00%	$0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		2	99.00%	.06
Rocky Trench	3.06		5	99.00%	.15
Backhoe Trench	3.06		17	99.00%	.50
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		15	99.00%	3.38
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		25	99.00%	1.44
Cut & Restore Concrete	8.90		20	99.00%	1.71
Cut & Restore Sod	4.80		8	99.00%	.37
			100%		$7.84

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0%	99.00%	$0
Rocky Plow	3.06		0	99.00%	0
Trench & Backfill	3.06		0	99.00%	0
Rocky Trench	3.06		6	99.00%	.18
Backhoe Trench	3.06		12	99.00%	.35
Hand Dig Trench	3.06		8	99.00%	.24
Bore Cable	23.50		10	99.00%	2.26
Push Pipe & Pull Cable	26.96		0	99.00%	0
Cut & Restore Asphalt	6.01		33	99.00%	1.90
Cut & Restore Concrete	8.90		28	99.00%	2.39
Cut & Restore Sod	4.80		3	99.00%	.14
			100%		$7.46

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		55.00%	99.00%	33.21
Backhoe Trench	60.98		34.00%	99.00%	20.53
Hand Dig Trench	60.98		5.00%	99.00%	3.02
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	64.48		1.00%	99.00%	.64
Cut & Restore Concrete	66.65		1.00%	99.00%	.66
Cut & Restore Sod	61.79		2.00%	99.00%	1.22
			100%		$60.34

BellSouth's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		55.00%	99.00%	33.21
Backhoe Trench	60.98		32.00%	99.00%	19.32
Hand Dig Trench	60.98		4.00%	99.00%	2.41
Boring	53.94		3.00%	99.00%	1.60
Cut & Restore Asphalt	64.48		2.00%	99.00%	1.28
Cut & Restore Concrete	66.65		2.00%	99.00%	1.32
Cut & Restore Sod	61.79		2.00%	99.00%	1.22
			100%		$60.36

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		53.00%	99.00%	32.00
Backhoe Trench	60.98		25.00%	99.00%	15.09
Hand Dig Trench	60.98		4.00%	99.00%	2.41
Boring	53.94		3.00%	99.00%	1.60
Cut & Restore Asphalt	64.48		5.00%	99.00%	3.19
Cut & Restore Concrete	66.65		4.00%	99.00%	2.64
Cut & Restore Sod	61.79		6.00%	99.00%	3.67
			100%		$60.61

BellSouth's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		50.00%	99.00%	30.19
Backhoe Trench	60.98		18.00%	99.00%	10.87
Hand Dig Trench	60.98		3.00%	99.00%	1.81
Boring	53.94		4.00%	99.00%	2.14
Cut & Restore Asphalt	64.48		8.00%	99.00%	5.11
Cut & Restore Concrete	66.65		7.00%	99.00%	4.62
Cut & Restore Sod	61.79		10.00%	99.00%	6.12
			100%		$60.84

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		45.00%	99.00%	27.17
Backhoe Trench	60.98		12.00%	99.00%	7.42
Hand Dig Trench	60.98		6.00%	99.00%	3.62
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	64.48		13.00%	99.00%	8.30
Cut & Restore Concrete	66.65		12.00%	99.00%	7.92
Cut & Restore Sod	61.79		10.00%	99.00%	6.12
			100%		$61.44

BellSouth's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		15.00%	99.00%	9.60
Backhoe Trench	60.98		10.00%	99.00%	6.04
Hand Dig Trench	60.98		8.00%	99.00%	4.83
Boring	53.94		15.00%	99.00%	8.01
Cut & Restore Asphalt	64.48		25.00%	99.00%	15.96
Cut & Restore Concrete	66.65		20.00%	99.00%	13.20
Cut & Restore Sod	61.79		7.00%	99.00%	4.28
			100%		$61.37

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		10.00%	99.00%	6.04
Backhoe Trench	60.98		8.00%	99.00%	4.83
Hand Dig Trench	60.98		8.00%	99.00%	4.83
Boring	53.94		10.00%	99.00%	5.34
Cut & Restore Asphalt	64.48		33.00%	99.00%	21.07
Cut & Restore Concrete	66.65		28.00%	99.00%	18.48
Cut & Restore Sod	61.79		3.00%	99.00%	1.84
			100%		$62.41

BellSouth's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		50.00%	99.00%	30.19
Backhoe Trench	60.98		39.00%	99.00%	23.55
Hand Dig Trench	60.98		5.00%	99.00%	3.02
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	64.48		1.00%	99.00%	.64
Cut & Restore Concrete	66.65		1.00%	99.00%	.66
Cut & Restore Sod	61.79		2.00%	99.00%	1.22
			100%		$60.34

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		50.00%	99.00%	30.19
Backhoe Trench	60.98		37.00%	99.00%	22.34
Hand Dig Trench	60.98		5.00%	99.00%	3.02
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	64.48		2.00%	99.00%	1.28
Cut & Restore Concrete	66.65		2.00%	99.00%	1.32
Cut & Restore Sod	61.79		2.00%	99.00%	1.22
			100%		$60.43

BellSouth's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		47.00%	99.00%	28.38
Backhoe Trench	60.98		31.00%	99.00%	18.72
Hand Dig Trench	60.98		5.00%	99.00%	3.02
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	64.48		5.00%	99.00%	3.19
Cut & Restore Concrete	66.65		4.00%	99.00%	2.64
Cut & Restore Sod	61.79		6.00%	99.00%	3.67
			100%		$60.68

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		50.00%	99.00%	30.19
Backhoe Trench	60.98		18.00%	99.00%	10.87
Hand Dig Trench	60.98		3.00%	99.00%	1.81
Boring	53.94		4.00%	99.00%	2.14
Cut & Restore Asphalt	64.48		8.00%	99.00%	5.11
Cut & Restore Concrete	66.65		7.00%	99.00%	4.62
Cut & Restore Sod	61.79		10.00%	99.00%	6.12
			100%		$60.84

BellSouth's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		5.00%	99.00%	$3.02
Rocky Trench	60.98		32.00%	99.00%	19.32
Backhoe Trench	60.98		10.00%	99.00%	6.04
Hand Dig Trench	60.98		6.00%	99.00%	3.62
Boring	53.94		2.00%	99.00%	1.07
Cut & Restore Asphalt	64.48		13.00%	99.00%	8.30
Cut & Restore Concrete	66.65		12.00%	99.00%	7.92
Cut & Restore Sod	61.79		20.00%	99.00%	12.23
			100%		$61.52

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		14.00%	99.00%	8.45
Backhoe Trench	60.98		10.00%	99.00%	6.04
Hand Dig Trench	60.98		8.00%	99.00%	4.83
Boring	53.94		15.00%	99.00%	8.01
Cut & Restore Asphalt	64.48		25.00%	99.00%	15.96
Cut & Restore Concrete	66.65		20.00%	99.00%	13.20
Cut & Restore Sod	61.79		8.00%	99.00%	4.89
			100%		$61.38

BellSouth's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$60.98		0.00%	99.00%	$0
Rocky Trench	60.98		10.00%	99.00%	6.04
Backhoe Trench	60.98		8.00%	99.00%	4.83
Hand Dig Trench	60.98		8.00%	99.00%	4.83
Boring	53.94		10.00%	99.00%	5.34
Cut & Restore Asphalt	64.48		33.00%	99.00%	21.07
Cut & Restore Concrete	66.65		28.00%	99.00%	18.48
Cut & Restore Sod	61.79		3.00%	99.00%	1.84
			100%		$62.41

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		55.00%	99.00%	1.67
Trench & Backfill	3.06		5.00%	99.00%	.15
Rocky Trench	3.06		29.00%	99.00%	.88
Backhoe Trench	3.06		4.00%	99.00%	.12
Hand Dig Trench	3.06		1.00%	99.00%	.03
Bore Cable	23.50		1.00%	99.00%	.23
Push Pipe & Pull Cable	26.96		1.00%	99.00%	.27
Cut & Restore Asphalt	6.01		1.00%	99.00%	.06
Cut & Restore Concrete	8.90		1.00%	99.00%	.09
Cut & Restore Sod	4.80		2.00%	99.00%	.08
			100%		$3.58

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		48.00%	99.00%	1.46
Trench & Backfill	3.06		10.00%	99.00%	.30
Rocky Trench	3.06		31.00%	99.00%	.94
Backhoe Trench	3.06		2.00%	99.00%	.06
Hand Dig Trench	3.06		1.00%	99.00%	.03
Bore Cable	23.50		1.00%	99.00%	.23
Push Pipe & Pull Cable	26.96		1.00%	99.00%	.27
Cut & Restore Asphalt	6.01		2.00%	99.00%	.13
Cut & Restore Concrete	8.90		2.00%	99.00%	.17
Cut & Restore Sod	4.80		2.00%	99.00%	.08
			100%		$3.67

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		45.00%	99.00%	1.36
Trench & Backfill	3.06		3.00%	99.00%	.09
Rocky Trench	3.06		28.00%	99.00%	.85
Backhoe Trench	3.06		2.00%	99.00%	.06
Hand Dig Trench	3.06		5.00%	99.00%	.15
Bore Cable	23.50		1.00%	99.00%	.23
Push Pipe & Pull Cable	26.96		1.00%	99.00%	.27
Cut & Restore Asphalt	6.01		5.00%	99.00%	.32
Cut & Restore Concrete	8.90		4.00%	99.00%	.35
Cut & Restore Sod	4.80		6.00%	99.00%	.23
			100%		$3.92

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		13.00%	99.00%	.39
Trench & Backfill	3.06		0.00%	99.00%	0
Rocky Trench	3.06		40.00%	99.00%	1.21
Backhoe Trench	3.06		10.00%	99.00%	.30
Hand Dig Trench	3.06		3.00%	99.00%	.09
Bore Cable	23.50		4.00%	99.00%	.93
Push Pipe & Pull Cable	26.96		5.00%	99.00%	1.33
Cut & Restore Asphalt	6.01		8.00%	99.00%	.52
Cut & Restore Concrete	8.90		7.00%	99.00%	.61
Cut & Restore Sod	4.80		10.00%	99.00%	.38
			100%		$5.77

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		3.00%	99.00%	.09
Trench & Backfill	3.06		0.00%	99.00%	0
Rocky Trench	3.06		35.00%	99.00%	1.06
Backhoe Trench	3.06		14.00%	99.00%	.42
Hand Dig Trench	3.06		6.00%	99.00%	.18
Bore Cable	23.50		2.00%	99.00%	.47
Push Pipe & Pull Cable	26.96		5.00%	99.00%	1.33
Cut & Restore Asphalt	6.01		13.00%	99.00%	.84
Cut & Restore Concrete	8.90		12.00%	99.00%	1.04
Cut & Restore Sod	4.80		10.00%	99.00%	.38
			100%		$5.82

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		0.00%	99.00%	0
Trench & Backfill	3.06		0.00%	99.00%	0
Rocky Trench	3.06		15.00%	99.00%	.45
Backhoe Trench	3.06		10.00%	99.00%	.30
Hand Dig Trench	3.06		8.00%	99.00%	.24
Bore Cable	23.50		15.00%	99.00%	3.49
Push Pipe & Pull Cable	26.96		0.00%	99.00%	0
Cut & Restore Asphalt	6.01		25.00%	99.00%	1.62
Cut & Restore Concrete	8.90		20.00%	99.00%	1.73
Cut & Restore Sod	4.80		7.00%	99.00%	.27
			100%		$8.11

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		0.00%	99.00%	0
Trench & Backfill	3.06		0.00%	99.00%	0
Rocky Trench	3.06		10.00%	99.00%	.30
Backhoe Trench	3.06		8.00%	99.00%	.24
Hand Dig Trench	3.06		8.00%	99.00%	.24
Bore Cable	23.50		10.00%	99.00%	2.33
Push Pipe & Pull Cable	26.96		0.00%	99.00%	0
Cut & Restore Asphalt	6.01		33.00%	99.00%	2.14
Cut & Restore Concrete	8.90		28.00%	99.00%	2.42
Cut & Restore Sod	4.80		3.00%	99.00%	.11
			100%		$7.79

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		48.00%	99.00%	1.41
Trench & Backfill	3.06		5.00%	99.00%	.15
Rocky Trench	3.06		38.00%	99.00%	1.12
Backhoe Trench	3.06		2.00%	99.00%	.06
Hand Dig Trench	3.06		1.00%	99.00%	.03
Bore Cable	23.50		1.00%	99.00%	.23
Push Pipe & Pull Cable	26.96		1.00%	99.00%	.26
Cut & Restore Asphalt	6.01		1.00%	99.00%	.06
Cut & Restore Concrete	8.90		1.00%	99.00%	.08
Cut & Restore Sod	4.80		2.00%	99.00%	.07
			100%		$3.47

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		47.00%	99.00%	1.38
Trench & Backfill	3.06		10.00%	99.00%	.29
Rocky Trench	3.06		29.00%	99.00%	.85
Backhoe Trench	3.06		5.00%	99.00%	.15
Hand Dig Trench	3.06		1.00%	99.00%	.03
Bore Cable	23.50		1.00%	99.00%	.23
Push Pipe & Pull Cable	26.96		1.00%	99.00%	.26
Cut & Restore Asphalt	6.01		2.00%	99.00%	.13
Cut & Restore Concrete	8.90		2.00%	99.00%	.17
Cut & Restore Sod	4.80		2.00%	99.00%	.07
			100%		$3.56

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Distribution Cable					
Activity	Jase Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		40.00%	99.00%	1.18
Trench & Backfill	3.06		7.00%	99.00%	.21
Rocky Trench	3.06		32.00%	99.00%	.94
Backhoe Trench	3.06		2.00%	99.00%	.06
Hand Dig Trench	3.06		2.00%	99.00%	.06
Bore Cable	23.50		1.00%	99.00%	.23
Push Pipe & Pull Cable	26.96		1.00%	99.00%	.26
Cut & Restore Asphalt	6.01		5.00%	99.00%	.31
Cut & Restore Concrete	8.90		4.00%	99.00%	.34
Cut & Restore Sod	4.80		6.00%	99.00%	.22
			100%		$3.80

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		13.00%	99.00%	.38
Trench & Backfill	3.06		8.00%	99.00%	.24
Rocky Trench	3.06		30.00%	99.00%	.88
Backhoe Trench	3.06		12.00%	99.00%	.35
Hand Dig Trench	3.06		3.00%	99.00%	.09
Bore Cable	21.50		4.00%	99.00%	.90
Push Pipe & Pull Cable	26.96		5.00%	99.00%	1.29
Cut & Restore Asphalt	6.01		8.00%	99.00%	.50
Cut & Restore Concrete	8.90		7.00%	99.00%	.59
Cut & Restore Sod	4.80		10.00%	99.00%	.37
			100%		$5.60

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zones 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		3.00%	99.00%	.09
Trench & Backfill	3.06		0.00%	99.00%	0
Rocky Trench	3.06		27.00%	99.00%	.79
Backhoe Trench	3.06		12.00%	99.00%	.35
Hand Dig Trench	3.06		6.00%	99.00%	.18
Bore Cable	23.50		2.00%	99.00%	.45
Push Pipe & Pull Cable	26.96		5.00%	99.00%	1.29
Cut & Restore Asphalt	6.01		13.00%	99.00%	.82
Cut & Restore Concrete	8.90		12.00%	99.00%	1.01
Cut & Restore Sod	4.80		20.00%	99.00%	.74
			100%		$5.72

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		0.00%	99.00%	0
Trench & Backfill	3.06		0.00%	99.00%	0
Rocky Trench	3.06		14.00%	99.00%	.41
Backhoe Trench	3.06		10.00%	99.00%	.29
Hand Dig Trench	3.06		8.00%	99.00%	.24
Bore Cable	23.50		15.00%	99.00%	3.38
Push Pipe & Pull Cable	26.96		0.00%	99.00%	0
Cut & Restore Asphalt	6.01		25.00%	99.00%	1.57
Cut & Restore Concrete	8.90		20.00%	99.00%	1.68
Cut & Restore Sod	4.80		8.00%	99.00%	.30
			100%		$7.87

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

BellSouth's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$3.06		0.00%	99.00%	$0
Rocky Plow	3.06		0.00%	99.00%	0
Trench & Backfill	3.06		0.00%	99.00%	0
Rocky Trench	3.06		10.00%	99.00%	.29
Backhoe Trench	3.06		8.00%	99.00%	.24
Hand Dig Trench	3.06		8.00%	99.00%	.24
Bore Cable	23.50		10.00%	99.00%	2.26
Push Pipe & Pull Cable	26.96		0.00%	99.00%	0
Cut & Restore Asphalt	6.01		33.00%	99.00%	2.08
Cut & Restore Concrete	8.90		28.00%	99.00%	2.35
Cut & Restore Sod	4.80		3.00%	99.00%	.11
			100%		$7.56

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.27		75.00%	97.18%	$1.65
Rocky Trench	4.22		0.00%	97.18%	-
Backhoe Trench	2.7		17.00%	97.18%	0.45
Hand Dig Trench	4.99		2.00%	97.18%	0.10
Boring	11.80		2.00%	97.18%	0.23
Cut & Restore Asphalt	8.72		1.00%	97.18%	0.08
Cut & Restore Concrete	9.63		1.00%	97.18%	0.09
Cut & Restore Sod	3.75		2.00%	97.18%	0.07
			100.00%		$2.68

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.27	0.11	71.00	97.18%	$1.64
Rocky Trench	4.22	0.15	0.00	97.18%	
Backhoe Trench	2.70	0.17	19.00	97.18%	0.53
Hand Dig Trench	4.99	0.25	2.00	97.18%	0.10
Boring	11.80	0.37	2.00	97.18%	0.24
Cut & Restore Asphalt	8.72	0.18	2.00	97.18%	0.17
Cut & Restore Concrete	9.63	0.16	2.00	97.18%	0.19
Cut & Restore Sod	3.75	0.17	2.00	97.18%	0.08
			100.00%		$2.95

GTE Territory-Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.27		87.00	97.18	$1.92
Rocky Trench	4.22		0.00	97.18	
Backhoe Trench	2.70		5.00	97.18	0.13
Hand Dig Trench	4.99		2.00	97.18	0.10
Boring	11.80		2.00	97.18	0.23
Cut & Restore Asphalt	8.72		1.00	97.18	0.08
Cut & Restore Concrete	9.63		1.00	97.18	0.09
Cut & Restore Sod	3.75		2.00	97.18	0.07
			100%		$2.63

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.27	0.11	71.00	97.18	$1.64
Rocky Trench	4.22	0.15	0.00	97.18	
Backhoe Trench	2.70	0.17	19.00	97.18	0.53
Hand Dig Trench	4.99	0.25	2.00	97.18	0.10
Boring	11.80	0.37	2.00	97.18	0.24
Cut & Restore Asphalt	8.72	0.18	2.00	97.18	0.17
Cut & Restore Concrete	9.63	0.16	2.00	97.18	0.19
Cut & Restore Sod	3.75	0.17	2.00	97.18	0.08
			100.00%		$2.95

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.14		96.00%	100	$1.09
Rocky Plow	1.37		0.00%	100	-
Trench & Backfill	2.27		0	100	-
Rocky Trench	4.22		0	100	-
Backhoe Trench	2.70		0	100	-
Hand Dig Trench	4.99		0	100	-
Bore Cable	11.80		0	100	-
Push Pipe & Pull Cable	6.80		0	100	-
Cut & Restore Asphalt	8.72		1	100	0.09
Cut & Restore Concrete	9.63		1	100	0.10
Cut & Restore Sod	3.75		2	100	0.08
			100%		$1.35

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.14	0.02	78	100	$0.90
Rocky Plow	1.37	0.03	0	100	-
Trench & Backfill	2.27	0.11	10	100	0.24
Rocky Trench	4.22	0.15	0	100	-
Backhoe Trench	2.70	0.17	5	100	0.14
Hand Dig Trench	4.99	0.25	1	100	0.05
Bore Cable	11.80	0.37	0	100	-
Push Pipe & Pull Cable	6.80	0.30	0	100	-
Cut & Restore Asphalt	8.72	0.18	2	100	0.18
Cut & Restore Concrete	9.63	0.16	2	100	0.20
Cut & Restore Sod	3.75	0.17	2	100	0.08
			100%		$1.79

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Feeder Conduit				
Activity	Density Zone 101-200			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.21	46	97.18	$1.11
Rocky Trench	0.30	0	97.18	-
Backhoe Trench	0.34	30	97.18	0.89
Hand Dig Trench	0.50	5	97.18	0.27
Boring	0.73	4	97.18	0.49
Cut & Restore Asphalt	0.37	5	97.18	0.44
Cut & Restore Concrete	0.33	4	97.18	0.39
Cut & Restore Sod	0.33	6	97.18	0.24
		100%		$3.82

GTE Territory-Normal Feeder Conduit				
Activity	Density Zone 201-650			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.32	35	97.18	$0.88
Rocky Trench	0.45	0	97.18	-
Backhoe Trench	0.51	33	97.18	1.03
Hand Dig Trench	0.75	3	97.18	0.17
Boring	1.10	4	97.18	0.50
Cut & Restore Asphalt	0.55	8	97.18	0.72
Cut & Restore Concrete	0.50	7	97.18	0.69
Cut & Restore Sod	0.51	10	97.18	0.41
		100%		$4.40

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Distribution Conduit				
Activity	Density Zone 101-200			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.21	60	97.18	$1.45
Rocky Trench	0.30	0	97.18	-
Backhoe Trench	0.34	18	97.18	0.53
Hand Dig Trench	0.50	5	97.18	0.27
Boring	0.73	2	97.18	0.24
Cut & Restore Asphalt	0.37	5	97.18	0.44
Cut & Restore Concrete	0.33	4	97.18	0.39
Cut & Restore Sod	0.33	6	97.18	0.24
		100%		$3.55

GTE Territory-Normal Distribution Conduit				
Activity	Density Zone 201-650			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.32	45	97.18	$1.13
Rocky Trench	0.45	0	97.18	-
Backhoe Trench	0.51	23	97.18	0.72
Hand Dig Trench	0.75	3	97.18	0.17
Boring	1.10	4	97.18	0.50
Cut & Restore Asphalt	0.55	8	97.18	0.72
Cut & Restore Concrete	0.50	7	97.18	0.69
Cut & Restore Sod	0.50	10	97.18	0.41
		100%		$4.34

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable				
Activity	Density Zone 101-200			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.04	60	100	$0.71
Rocky Plow	0.07	0	100	-
Trench & Backfill	0.21	10	100	0.25
Rocky Trench	0.30	0	100	-
Backhoe Trench	0.34	6	100	0.18
Hand Dig Trench	0.50	5	100	0.27
Bore Cable	0.73	3	100	0.38
Push Pipe & Pull Cable	0.59	1	100	0.07
Cut & Restore Asphalt	0.37	5	100	0.45
Cut & Restore Concrete	0.33	4	100	0.40
Cut & Restore Sod	0.33	6	100	0.24
		100%		$2.96

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable				
Activity	Density Zone 201-650			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.06	33	100	$0.40
Rocky Plow	0.10	0	100	-
Trench & Backfill	0.32	20	100	0.52
Rocky Trench	0.45	0	100	-
Backhoe Trench	0.51	10	100	0.32
Hand Dig Trench	0.75	3	100	0.17
Bore Cable	1.10	4	100	0.52
Push Pipe & Pull Cable	0.89	5	100	0.38
Cut & Restore Asphalt	0.55	8	100	0.74
Cut & Restore Concrete	0.50	7	100	0.71
Cut & Restore Sod	0.50	10	100	0.43
		100%		$4.18

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Feeder Conduit				
Activity	Density Zone 651-850			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.42	27	97.18	$0.71
Rocky Trench	0.61	0	97.18	-
Backhoe Trench	0.68	30	97.18	0.99
Hand Dig Trench	1.01	6	97.18	0.35
Boring	1.46	2	97.18	0.26
Cut & Restore Asphalt	0.73	13	97.18	1.19
Cut & Restore Concrete	0.67	12	97.18	1.20
Cut & Restore Sod	0.66	10	97.18	0.43
		100%		$5.12

GTE Territory-Normal Feeder Conduit				
Activity	Density Zone 851-2550			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.42	27	97.18	$0.71
Rocky Trench	0.61	0	97.18	-
Backhoe Trench	0.68	30	97.18	0.99
Hand Dig Trench	1.01	6	97.18	0.35
Boring	1.46	2	97.18	0.26
Cut & Restore Asphalt	0.73	13	97.18	1.19
Cut & Restore Concrete	0.67	12	97.18	1.20
Cut & Restore Sod	0.66	10	97.18	0.43
		100%		$5.12

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Distribution Conduit				
Activity	Density Zone 651-850			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.42	40	97.18	$1.05
Rocky Trench	0.61	0	97.18	-
Backhoe Trench	0.68	7	97.18	0.23
Hand Dig Trench	1.01	6	97.18	0.35
Boring	1.46	2	97.18	0.26
Cut & Restore Asphalt	0.73	13	97.18	1.19
Cut & Restore Concrete	0.67	12	97.18	1.20
Cut & Restore Sod	0.66	20	97.18	0.86
		100%		$5.14

GTE Territory-Normal Distribution Conduit				
Activity	Density Zone 851-2550			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.42	40	97.18	$1.05
Rocky Trench	0.61	0	97.18	-
Backhoe Trench	0.68	7	97.18	0.23
Hand Dig Trench	1.01	6	97.18	0.35
Boring	1.46	2	97.18	0.26
Cut & Restore Asphalt	0.73	13	97.18	1.19
Cut & Restore Concrete	0.67	12	97.18	1.20
Cut & Restore Sod	0.66	20	97.18	0.86
		100%		$5.14

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable				
Activity	Density Zone 651-850			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.08	15	100	$0.18
Rocky Plow	0.14	0	100	-
Trench & Backfill	0.42	26	100	0.70
Rocky Trench	0.61	0	100	-
Backhoe Trench	0.68	11	100	0.37
Hand Dig Trench	1.01	6	100	0.36
Bore Cable	1.46	2	100	0.27
Push Pipe & Pull Cable	1.18	5	100	0.40
Cut & Restore Asphalt	0.73	13	100	1.23
Cut & Restore Concrete	0.67	12	100	1.24
Cut & Restore Sod	0.66	10	100	0.44
		100%		$5.18

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable				
Activity	Density Zone 851-2550			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.08	15	100	$0.18
Rocky Plow	0.14	0	100	-
Trench & Backfill	0.42	26	100	0.70
Rocky Trench	0.61	0	100	-
Backhoe Trench	0.68	11	100	0.37
Hand Dig Trench	1.01	6	100	0.36
Bore Cable	1.46	2	100	0.27
Push Pipe & Pull Cable	1.18	5	100	0.40
Cut & Restore Asphalt	0.73	13	100	1.23
Cut & Restore Concrete	0.67	12	100	1.24
Cut & Restore Sod	0.66	10	100	0.44
		100%		$5.18

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Feeder Conduit				
Activity	Density Zone 2551-5000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.53	5	97.18	$0.14
Rocky Trench	0.76	0	97.18	-
Backhoe Trench	0.85	20	97.18	0.69
Hand Dig Trench	1.26	8	97.18	0.49
Boring	1.82	15	97.18	1.99
Cut & Restore Asphalt	0.92	25	97.18	2.34
Cut & Restore Concrete	0.83	20	97.18	2.03
Cut & Restore Sod	0.84	7	97.18	0.31
		100%		$7.98

GTE Territory-Normal Feeder Conduit				
Activity	Density Zone 5001-10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.53	5	97.18	$0.14
Rocky Trench	0.76	0	97.18	-
Backhoe Trench	0.85	20	97.18	0.69
Hand Dig Trench	1.26	8	97.18	0.49
Boring	1.82	15	97.18	1.99
Cut & Restore Asphalt	0.92	25	97.18	2.34
Cut & Restore Concrete	0.83	20	97.18	2.03
Cut & Restore Sod	0.84	7	97.18	0.31
		100%		$7.98

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Distribution Conduit				
Activity	Density Zone 2551-5000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.53	5	97.18	$0.14
Rocky Trench	0.76	0	97.18	-
Backhoe Trench	0.85	19	97.18	0.66
Hand Dig Trench	1.26	8	97.18	0.49
Boring	1.82	15	97.18	1.99
Cut & Restore Asphalt	0.92	25	97.18	2.34
Cut & Restore Concrete	0.83	20	97.18	2.03
Cut & Restore Sod	0.84	8	97.18	0.36
		100%		$7.99

GTE Territory-Normal Distribution Conduit				
Activity	Density Zone 5001-10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.53	5	97.18	$0.14
Rocky Trench	0.76	0	97.18	-
Backhoe Trench	0.85	19	97.18	0.66
Hand Dig Trench	1.26	8	97.18	0.49
Boring	1.82	15	97.18	1.99
Cut & Restore Asphalt	0.92	25	97.18	2.34
Cut & Restore Concrete	0.83	20	97.18	2.03
Cut & Restore Sod	0.84	8	97.18	0.36
		100%		$7.99

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable				
Activity	Density Zone 2551-5000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.10	0	100	$0
Rocky Plow	0.17	0	100	-
Trench & Backfill	0.53	5	100	0.14
Rocky Trench	0.76	0	100	-
Backhoe Trench	0.85	20	100	0.71
Hand Dig Trench	1.26	8	100	0.50
Bore Cable	1.82	15	100	2.04
Push Pipe & Pull Cable	1.47	0	100	-
Cut & Restore Asphalt	0.92	25	100	2.41
Cut & Restore Concrete	0.83	20	100	2.09
Cut & Restore Sod	0.84	7	100	0.32
		100%		$8.22

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable				
Activity	Density Zone 5001-10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.10	0	100	50
Rocky Plow	0.17	0	100	-
Trench & Backfill	0.53	5	100	0.14
Rocky Trench	0.76	0	100	-
Backhoe Trench	0.85	20	100	0.71
Hand Dig Trench	1.26	8	100	0.50
Bore Cable	1.82	15	100	2.04
Push Pipe & Pull Cable	1.47	0	100	-
Cut & Restore Asphalt	0.92	25	100	2.41
Cut & Restore Concrete	0.83	20	100	2.09
Cut & Restore Sod	0.84	7	100	0.32
		100%		58.22

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Feeder Conduit				
Activity	Density Zone >10001			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.59	3	97.18	$0.08
Rocky Trench	0.84	0	97.18	-
Backhoe Trench	0.94	15	97.18	0.53
Hand Dig Trench	1.40	8	97.18	0.50
Boring	2.02	10	97.18	1.34
Cut & Restore Asphalt	1.02	33	97.18	3.12
Cut & Restore Concrete	0.93	28	97.18	2.87
Cut & Restore Sod	0.93	3	97.18	0.14
		100%		$8.59

GTE Territory-Normal Distribution Conduit				
Activity	Density Zone >10001			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.59	3	97.18	$0.08
Rocky Trench	0.84	0	97.18	-
Backhoe Trench	0.94	15	97.18	0.53
Hand Dig Trench	1.40	8	97.18	0.50
Boring	2.02	10	97.18	1.34
Cut & Restore Asphalt	1.02	33	97.18	3.12
Cut & Restore Concrete	0.93	28	97.18	2.87
Cut & Restore Sod	0.93	3	97.18	0.14
		100%		$8.59

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Feeder Cable				
Activity	Density Zone >10001			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.11	0	100	$0
Rocky Plow	0.19	0	100	-
Trench & Backfill	0.59	3	100	0.09
Rocky Trench	0.84	0	100	-
Backhoe Trench	0.94	15	100	0.55
Hand Dig Trench	1.40	8	100	0.51
Bore Cable	2.02	10	100	1.38
Push Pipe & Pull Cable	1.64	0	100	-
Cut & Restore Asphalt	1.02	33	100	3.21
Cut & Restore Concrete	0.93	28	100	2.96
Cut & Restore Sod	0.93	3	100	0.14
		100%		$8.84

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.14	-	86.00%	100	$0.98
Rocky Plow	1.37	-	0.00%	100	-
Trench & Backfill	2.27	-	10	100	0.23
Rocky Trench	4.22	-	0	100	-
Backhoe Trench	2.70	-	0	100	-
Hand Dig Trench	4.99	-	0	100	-
Bore Cable	11.80	-	0	100	-
Push Pipe & Pull Cable	6.80	-	0	100	-
Cut & Restore Asphalt	8.72	-	1	100	0.09
Cut & Restore Concrete	9.63	-	1	100	0.10
Cut & Restore Sod	3.75	-	2	100	0.08
			100%		$1.47

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.14	0.02	80.00%	100.00%	$0.93
Rocky Plow	1.37	0.03	0.00%	100.00%	-
Trench & Backfill	2.27	0.11	11.00%	100.00%	0.26
Rocky Trench	4.22	0.15	0.00%	100.00%	-
Backhoe Trench	2.70	0.17	3.00%	100.00%	0.09
Hand Dig Trench	4.99	0.25	0.00%	100.00%	-
Bore Cable	11.80	0.37	0.00%	100.00%	-
Push Pipe & Pull Cable	6.80	0.30	0.00%	100.00%	-
Cut & Restore Asphalt	8.72	0.18	2.00%	100.00%	0.18
Cut & Restore Concrete	9.63	0.16	2.00%	100.00%	0.20
Cut & Restore Sod	3.75	0.17	2.00%	100.00%	0.08
			100.00%		$1.73

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Dist 'bution Cable				
Activity	Density Zone 101-200			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.04	69	100	$0.81
Rocky Plow	0.07	0	100	-
Trench & Backfill	0.21	11	100	0.27
Rocky Trench	0.30	0	100	-
Backhoe Trench	0.34	3	100	0.09
Hand Dig Trench	0.50	0	100	-
Bore Cable	0.73	1	100	0.13
Push Pipe & Pull Cable	0.59	1	100	0.07
Cut & Restore Asphalt	0.37	5	100	0.45
Cut & Restore Concrete	0.33	4	100	0.40
Cut & Restore Sod	0.33	6	100	0.24
		100%		$2.48

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Distribution				
Activity	Density Zone 201-650			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.06	21	100	$.25
Rocky Plow	0.10	0	100	-
Trench & Backfill	0.32	30	100	.78
Rocky Trench	0.45	0	100	-
Backhoe Trench	0.51	12	100	.39
Hand Dig Trench	0.75	3	100	.17
Bore Cable	1.10	4	100	.52
Push Pipe & Pull Cable	0.89	5	100	.38
Cut & Restore Asphalt	0.55	8	100	.74
Cut & Restore Concrete	0.50	7	100	.71
Cut & Restore Sod	0.50	10	100	.43
		100%		$4.36

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Distribution				
Activity	Density Zone 651-2550			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.08	20	100	$0.24
Rocky Plow	0.14	0	100	-
Trench & Backfill	0.42	20	100	0.54
Rocky Trench	0.61	0	[illegible]	-
Backhoe Trench	0.68	2	[illegible]	0.07
Hand Dig Trench	1.01	6	100	0.36
Bore Cable	1.46	2	100	0.37
Push Pipe & Pull Cable	1.18	5	100	0.40
Cut & Restore Asphalt	0.73	13	100	1.23
Cut & Restore Concrete	0.67	12	100	1.24
Cut & Restore Sod	0.66	20	100	0.88
		100%		$5.22

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Distribution Cable				
Activity	Density Zone 2551-10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.10	0	100	$0
Rocky Plow	0.17	0	100	-
Trench & Backfill	0.53	5	100	0.14
Rocky Trench	0.76	0	100	-
Backhoe Trench	0.85	19	100	0.67
Hand Dig Trench	1.26	8	100	0.50
Bore Cable	1.82	15	100	2.04
Push Pipe & Pull Cable	1.47	0	100	-
Cut & Restore Asphalt	0.92	25	100	2.41
Cut & Restore Concrete	0.83	20	100	2.09
Cut & Restore Sod	0.84	8	100	0.37
		100%		$8.23

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Normal Buried Distribution Cable				
Activity	Density Zone >10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.11	0	100	$0
Rocky Plow	0.19	0	100	-
Trench & Backfill	0.59	3	100	0.09
Rocky Trench	0.84	0	100	-
Backhoe Trench	0.94	15	100	0.55
Hand Dig Trench	1.40	6	100	0.51
Bore Cable	2.02	10	100	1.38
Push Pipe & Pull Cable	1.64	0	100	-
Cut & Restore Asphalt	1.02	33	100	3.21
Cut & Restore Concrete	0.93	28	100	2.96
Cut & Restore Sod	0.93	3	100	.014
		100%		$8.84

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0 -5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.34		5	97.18%	$0.11
Rocky Trench	4.32		29	97.18%	1.22
Backhoe Trench	2.81		52	97.18%	1.42
Hand Dig Trench	5.15		5	97.18%	.025
Boring	12.05		5	97.18%	0.59
Cut & Restore Asphalt	10.84		1	97.18%	0.11
Cut & Restore Concrete	11.70		1	97.18%	0.11
Cut & Restore Sod	4.54		2	97.18%	0.19
			100%		$3.89

GTE Territory-Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6 -100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.34	0.12	5	97.18%	$0.12
Rocky Trench	4.32	0.17	37	97.18%	1.61
Backhoe Trench	2.81	0.19	45	97.18%	1.31
Hand Dig Trench	5.15	0.28	4	97.18%	0.21
Boring	12.05	0.40	3	97.18%	0.36
Cut & Restore Asphalt	10.84	0.21	2	97.18%	0.21
Cut & Restore Concrete	11.70	0.22	2	97.18%	0.23
Cut & Restore Sod	4.54	0.19	2	97.18%	0.09
			100%		$4.16

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0 -5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.34	-	8	97.18%	$0.18
Rocky Trench	4.32	-	46	97.18%	1.93
Backhoe Trench	2.81	-	32	97.18%	0.87
Hand Dig Trench	5.15	-	5	97.18%	0.25
Boring	12.05	-	5	97.18%	0.59
Cut & Restore Asphalt	10.84	-	1	97.18%	0.11
Cut & Restore Concrete	11.70	-	1	97.18%	0.11
Cut & Restore Sod	4.54	-	2	97.18%	0.09
			100%		$4.13

GTE Territory-Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$2.34		8	97.18%	$0.19
Rocky Trench	4.32		51	97.18%	2.23
Backhoe Trench	2.81		27	97.18%	0.79
Hand Dig Trench	5.15		5	97.18%	0.26
Boring	12.05		3	97.18%	0.36
Cut & Restore Asphalt	10.84		2	97.18%	0.21
Cut & Restore Concrete	11.70		2	97.18%	0.23
Cut & Restore Sod	4.54		2	97.18%	0.09
			100%		$4.37

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15		44.00%	100.00%	$0.51
Rocky Plow	1.39		34.00%	100.00%	0.47
Trench & Backfill	2.34		5.00%	100.00%	0.12
Rocky Trench	4.32		5.00%	100.00%	0.22
Backhoe Trench	2.81		2.00%	100.00%	0.06
Hand Dig Trench	5.15		3.00%	100.00%	0.15
Bore Cable	12.05		1.00%	100.00%	0.12
Push Pipe & Pull Cable	7.00		2.00%	100.00%	0.14
Cut & Restore Asphalt	10.84		1.00%	100.00%	0.11
Cut & Restore Concrete	11.74		1.00%	100.00%	0.12
Cut & Restore Sod	4.54		2.00%	100.00%	0.09
			100.00%		$2.10

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15	0.02	44.00%	100.00%	$0.51
Rocky Plow	1.39	0.04	34.00%	100.00%	0.47
Trench & Backfill	2.34	0.12	5.00%	100.00%	0.12
Rocky Trench	4.32	0.17	5.00%	100.00%	0.22
Backhoe Trench	2.81	0.19	2.00%	100.00%	0.06
Hand Dig Trench	5.15	0.28	3.00%	100.00%	0.15
Bore Cable	12.05	0.40	1.00%	100.00%	0.12
Push Pipe & Pull Cable	7.00	0.33	2.00%	100.00%	0.14
Cut & Restore Asphalt	10.84	0.21	1.00%	100.00%	0.11
Cut & Restore Concrete	11.74	0.18	1.00%	100.00%	0.12
Cut & Restore Sod	4.54	0.19	2.00%	100.00%	0.09
			100.00%		$2.48

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Feeder Conduit				
Activity	Density Zone 101-200			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.24	5	97.18%	$0.13
Rocky Trench	0.34	35	97.18%	1.59
Backhoe Trench	0.38	38	97.18%	1.18
Hand Dig Trench	0.57	4	97.18%	0.22
Boring	0.81	3	97.18%	0.37
Cut & Restore Asphalt	0.41	5	97.18%	0.55
Cut & Restore Concrete	0.41	4	97.18%	0.47
Cut & Restore Sod	0.38	6	97.18%	0.29
		100%		$4.79

GTE Territory-Soft Rock Feeder Conduit				
Activity	Density Zone 201-650			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.35	15	97.18%	$0.39
Rocky Trench	0.51	33	97.18%	1.55
Backhoe Trench	0.57	20	97.18%	0.66
Hand Dig Trench	0.85	3	97.18%	0.17
Boring	1.21	4	97.18%	0.52
Cut & Restore Asphalt	0.61	8	97.18%	0.89
Cut & Restore Concrete	0.60	7	97.18%	0.84
Cut & Restore Sod	0.55	10	97.18%	0.48
		100%		$5.51

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Distribution Conduit				
Activity	Density Zone 101-200			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.24	8	97.18%	$0.20
Rocky Trench	0.34	48	97.18%	2.17
Backhoe Trench	0.38	21	97.18%	0.65
Hand Dig Trench	0.57	5	97.18%	0.28
Boring	0.81	3	97.18%	0.37
Cut & Restore Asphalt	0.41	5	97.18%	0.55
Cut & Restore Concrete	0.41	4	97.18%	0.47
Cut & Restore Sod	0.38	6	97.18%	0.29
		100%		$4.98

GTE Territory-Soft Rock Distribution Conduit				
Activity	Density Zone 201-650			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.35	15	97.18%	$0.39
Rocky Trench	0.51	32	97.18%	1.50
Backhoe Trench	0.57	21	97.18%	0.69
Hand Dig Trench	0.85	3	97.18%	0.17
Boring	1.21	4	97.18%	0.52
Cut & Restore Asphalt	0.61	8	97.18%	0.89
Cut & Restore Concrete	0.60	7	97.18%	0.84
Cut & Restore Sod	0.55	10	97.18%	0.49
		100%		$5.50

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Buried Feeder Cable				
Activity	Density Zone 101-200			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.05	20.00%	100.00%	$0.24
Rocky Plow	0.08	30.00%	100.00%	0.44
Trench & Backfill	0.24	10.00%	100.00%	0.26
Rocky Trench	0.34	8.00%	100.00%	0.37
Backhoe Trench	0.38	10.00%	100.00%	0.32
Hand Dig Trench	0.57	5.00%	100.00%	0.29
Bore Cable	0.81	1.00%	100.00%	0.13
Push Pipe & Pull Cable	0.65	1.00%	100.00%	0.08
Cut & Restore Asphalt	0.41	5.00%	100.00%	0.56
Cut & Restore Concrete	0.37	4.00%	100.00%	0.48
Cut & Restore Sod	0.38	6.00%	100.00%	0.30
		100.00%		$3.46

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Buried Feeder Cable				
Activity	Density Zone 201-650			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.07	5.00%	100.00%	$0.06
Rocky Plow	0.12	13.00%	100.00%	0.20
Trench & Backfill	0.35	5.00%	100.00%	0.13
Rocky Trench	0.51	25.00%	100.00%	1.21
Backhoe Trench	0.57	15.00%	100.00%	0.51
Hand Dig Trench	0.85	3.00%	100.00%	0.18
Bore Cable	1.21	4.00%	100.00%	0.53
Push Pipe & Pull Cable	0.98	5.00%	100.00%	0.40
Cut & Restore Asphalt	0.61	8.00%	100.00%	0.92
Cut & Restore Concrete	0.56	7.00%	100.00%	0.86
Cut & Restore Sod	0.55	10.00%	100.00%	0.51
		100.00%		$5.50

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Feeder Conduit				
Activity	Density Zone 651-2550			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.47	9.00%	97.18%	$0.25
Rocky Trench	0.67	28.00%	97.18%	1.36
Backhoe Trench	0.76	20.00%	97.18%	0.69
Hand Dig Trench	1.13	6.00%	97.18%	0.37
Boring	1.61	2.00%	97.18%	0.27
Cut & Restore Asphalt	1.82	13.00%	97.18%	1.47
Cut & Restore Concrete	0.78	12.00%	97.18%	1.46
Cut & Restore Sod	0.74	10.00%	97.18%	0.51
		100.00%		$6.37

GTE Territory-Soft Rock Distribution Conduit				
Activity	Density Zone 651-2550			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.47	8.00%	97.18%	$0.22
Rocky Trench	0.67	30.00%	97.18%	1.45
Backhoe Trench	0.76	9.00%	97.18%	0.31
Hand Dig Trench	1.13	6.00%	97.18%	0.37
Boring	1.61	2.00%	97.18%	0.27
Cut & Restore Asphalt	0.82	13.00%	97.18%	1.47
Cut & Restore Concrete	0.78	12.00%	97.18%	1.46
Cut & Restore Sod	0.74	20.00%	97.18%	1.03
		100.00%		$6.57

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Buried Feeder Cable				
Activity	Density Zone 651-2550			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.09	3.00%	100.00%	$0.04
Rocky Plow	0.15	3.00%	100.00%	0.05
Trench & Backfill	0.47	15.00%	100.00%	0.42
Rocky Trench	0.67	25.00%	100.00%	1.25
Backhoe Trench	0.76	6.00%	100.00%	0.21
Hand Dig Trench	1.13	6.00%	100.00%	0.38
Bore Cable	1.61	2.00%	100.00%	0.27
Push Pipe & Pull Cable	1.31	5.00%	100.00%	0.42
Cut & Restore Asphalt	0.82	13.00%	100.00%	1.52
Cut & Restore Concrete	0.74	12.00%	100.00%	1.50
Cut & Restore Sod	0.74	10.00%	100.00%	0.53
		100.00%		$6.57

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Feeder Conduit				
Activity	Density Zone 2551-10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.59	2.00%	97.18%	$0.06
Rocky Trench	0.84	5.00%	97.18%	0.25
Backhoe Trench	0.95	18.00%	97.18%	0.66
Hand Dig Trench	1.41	8.00%	97.18%	0.51
Boring	2.02	15.00%	97.18%	2.05
Cut & Restore Asphalt	1.02	25.00%	97.18%	2.88
Cut & Restore Concrete	0.97	20.00%	97.18%	2.46
Cut & Restore Sod	0.93	7.00%	97.18%	0.37
		100.00%		$9.24

GTE Territory-Soft Rock Distribution Conduit				
Activity	Density Zone 2551-10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.59	2.00%	97.18%	$0.06
Rocky Trench	0.84	5.00%	97.18%	0.25
Backhoe Trench	0.95	17.00%	97.18%	0.62
Hand Dig Trench	1.41	8.00%	97.18%	0.51
Boring	2.02	15.00%	97.18%	2.05
Cut & Restore Asphalt	1.02	25.00%	97.18%	2.88
Cut & Restore Concrete	0.97	20.00%	97.18%	2.46
Cut & Restore Sod	0.93	8.00%	97.18%	0.43
		100.00%		$9.26

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Buried Feeder Cable				
Activity	Density Zone 2551-10000			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.12	0.00%	100.00%	$0
Rocky Plow	0.19	0.00%	100.00%	-
Trench & Backfill	0.59	2.00%	100.00%	0.06
Rocky Trench	0.84	5.00%	100.00%	0.26
Backhoe Trench	0.95	18.00%	100.00%	0.68
Hand Dig Trench	1.41	8.00%	100.00%	0.52
Bore Cable	2.02	15.00%	100.00%	2.11
Push Pipe & Pull Cable	1.63	0.00%	100.00%	-
Cut & Restore Asphalt	1.02	25.00%	100.00%	2.97
Cut & Restore Concrete	0.93	20.00%	100.00%	2.53
Cut & Restore Sod	0.93	7.00%	100.00%	0.38
		100.00%		$9.51

GTE Territory-Soft Rock Feeder Conduit				
Activity	Density Zone >10001			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.65	0.00%	97.18%	$0
Rocky Trench	0.93	6.00%	97.18%	0.31
Backhoe Trench	1.04	12.00%	97.18%	0.45
Hand Dig Trench	1.55	8.00%	97.18%	0.52
Boring	2.22	10.00%	97.18%	1.39
Cut & Restore Asphalt	1.06	33.00%	97.18%	3.84
Cut & Restore Concrete	1.03	28.00%	97.18%	3.47
Cut & Restore Sod		3.00%	97.18%	0.16
		100.00%		$10.13

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTE Territory-Soft Rock Distribution Conduit				
Activity	Density Zone >10001			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$0.65	0.00%	97.18%	$0
Rocky Trench	0.93	6.00%	97.18%	0.31
Backhoe Trench	1.04	12.00%	97.18%	0.45
Hand Dig Trench	1.55	8.00%	97.18%	0.52
Boring	2.22	10.00%	97.18%	1.39
Cut & Restore Asphalt	1.06	33.00%	97.18%	3.84
Cut & Restore Concrete	1.03	28.00%	97.18%	3.47
Cut & Restore Sod		3.00%	97.18%	0.16
		100.00%		$10.13

GTE Territory-Soft Rock Buried Feeder Cable				
Activity	Density Zone >10001			
	Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$0.13	0.00%	100.00%	$0
Rocky Plow	0.21	0.00%	100.00%	-
Trench & Backfill	0.65	0.00%	100.00%	-
Rocky Trench	0.93	6.00%	100.00%	0.32
Backhoe Trench	1.04	12.00%	100.00%	0.46
Hand Dig Trench	1.55	8.00%	100.00%	0.54
Bore Cable	2.22	10.00%	100.00%	1.43
Push Pipe & Pull Cable	1.80	0.00%	100.00%	-
Cut & Restore Asphalt	1.12	33.00%	100.00%	3.95
Cut & Restore Concrete	1.02	28.00%	100.00%	3.57
Cut & Restore Sod	1.03	3.00%	100.00%	0.17
		100.00%		$10.43

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15		47.00%	100%	$.54
Rocky Plow	1.39		29.00%	100%	.40
Trench & Backfill	2.34		5.00%	100%	.12
Rocky Trench	4.32		4.00%	100%	.17
Backhoe Trench	2.81		2.00%	100%	.06
Hand Dig Trench	5.15		3.00%	100%	.15
Bore Cable	12.05		1.00%	100%	.12
Push Pipe & Pull Cable	7.00		5.00%	100%	.35
Cut & Restore Asphalt	10.84		1.00%	100%	.11
Cut & Restore Concrete	11.74		1.00%	100%	.12
Cut & Restore Sod	4.54		2.00%	100%	.09
			100%		$2.23

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15	.02	46.00%	100%	$.54
Rocky Plow	1.39	.04	28.00%	100%	.40
Trench & Backfill	2.34	.12	10.00%	100%	.25
Rocky Trench	4.32	.17	4.00%	100%	.18
Backhoe Trench	2.81	.19	2.00%	100%	.06
Hand Dig Trench	5.15	.28	3.00%	100%	.16
Bore Cable	12.05	.40	1.00%	100%	.12
Push Pipe & Pull Cable	7.00	.33	0.00%	100%	0
Cut & Restore Asphalt	10.84	.21	2.00%	100%	.22
Cut & Restore Concrete	11.74	.18	2.00%	100%	.24
Cut & Restore Sod	4.54	.19	2.00%	100%	.09
			100%		$2.27

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15	.05	29.00%	100%	$.35
Rocky Plow	1.39	.08	30.00%	100%	.44
Trench & Backfill	2.34	.24	12.00%	100%	.31
Rocky Trench	4.32	.34	8.00%	100%	.37
Backhoe Trench	2.81	.38	2.00%	100%	.06
Hand Dig Trench	5.15	.57	2.00%	100%	.11
Bore Cable	12.05	.81	1.00%	100%	.13
Push Pipe & Pull Cable	7.00	.65	1.00%	100%	.08
Cut & Restore Asphalt	10.84	.41	5.00%	100%	.56
Cut & Restore Concrete	11.74	.37	4.00%	100%	.48
Cut & Restore Sod	4.54	.38	6.00%	100%	.30
			100%		$3.20

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15	$.07	3.00%	100%	$..04
Rocky Plow	1.39	.12	12.00%	100%	.18
Trench & Backfill	2.34	.35	5.00%	100%	.13
Rocky Trench	4.32	.51	27.00%	100%	1.30
Backhoe Trench	2.81	.57	16.00%	100%	.54
Hand Dig Trench	5.15	.85	3.00%	100%	.18
Bore Cable	12.05	1.21	4.00%	100%	.53
Push Pipe & Pull Cable	7.00	.98	5.00%	100%	.40
Cut & Restore Asphalt	10.84	.61	8.00%	100%	.92
Cut & Restore Concrete	11.74	.56	7.00%	100%	.86
Cut & Restore Sod	4.54	.55	10.00%	100%	.51
			100%		$5.59

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15	$.09	2.00%	100%	$..02
Rocky Plow	1.39	.15	2.00%	100%	.40
Trench & Backfill	2.34	.47	5.00%	100%	.12
Rocky Trench	4.32	.67	25.00%	100%	.17
Backhoe Trench	2.81	.76	8.00%	100%	.06
Hand Dig Trench	5.15	1.13	6.00%	100%	.15
Bore Cable	12.05	1.61	2.00%	100%	.12
Push Pipe & Pull Cable	7.00	1.31	5.00%	100%	.35
Cut & Restore Asphalt	10.84	.82	13.00%	100%	.11
Cut & Restore Concrete	11.74	.74	12.00%	100%	.12
Cut & Restore Sod	4.54	.74	20.00%	100%	.09
			100%		$6.86

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15	.12	0.00%	100%	$0
Rocky Plow	1.39	.19	0.00%	100%	0
Trench & Backfill	2.34	.59	2.00%	100%	.06
Rocky Trench	4.32	.84	5.00%	100%	.26
Backhoe Trench	2.81	.95	17.00%	100%	.64
Hand Dig Trench	5.15	1.41	8.00%	100%	.52
Bore Cable	12.05	2.02	15.00%	100%	2.11
Push Pipe & Pull Cable	7.00	1.63	0.00%	100%	0
Cut & Restore Asphalt	10.84	1.02	25.00%	100%	2.97
Cut & Restore Concrete	11.74	.93	20.00%	100%	2.53
Cut & Restore Sod	4.54	.93	8.00%	100%	.44
			100%		$9.53

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.15	$.13	0.00%	100%	$0
Rocky Plow	1.39	.21	0.[illegible]0%	100%	0
Trench & Backfill	2.34	.65	0.00%	100%	0
Rocky Trench	4.32	.93	6.00%	100%	.32
Backhoe Trench	2.81	1.04	12.00%	100%	.46
Hand Dig Trench	5.15	1.55	8.00%	100%	.54
Bore Cable	12.05	2.22	10.00%	100%	1.43
Push Pipe & Pull Cable	7.00	1.80	0.00%	100%	0
Cut & Restore Asphalt	10.84	1.12	33.00%	100%	3.95
Cut & Restore Concrete	11.74	1.02	28.00%	100%	3.57
Cut & Restore Sod	4.54	1.03	3.00%	100%	.17
			100%		$10.43

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04		0.00%	97.18%	$0
Rocky Trench	5.33		55.00%	97.18%	2.85
Backhoe Trench	3.95		34.00%	97.18%	1.31
Hand Dig Trench	6.84		5.00%	97.18%	.33
Boring	14.47		2.00%	97.18%	.28
Cut & Restore Asphalt	12.06		1.00%	97.18%	.12
Cut & Restore Concrete	12.86		1.00%	97.18%	.12
Cut & Restore Sod	5.65		2.00%	97.18%	.11
			100%		$5.12

GTEFL's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.24	0.00%	97%	$0
Rocky Trench	5.33	.34	55.00%	97%	3.03
Backhoe Trench	3.95	.37	32.00%	97%	1.34
Hand Dig Trench	6.84	56	4.00%	97%	.29
Boring	14.47	.81	3.00%	97%	.45
Cut & Restore Asphalt	12.06	.41	2.00%	97%	.24
Cut & Restore Concrete	12.86	.37	2.00%	97%	.26
Cut & Restore Sod	5.65	.38	2.00%	97%	.12
			100%		$5.72

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.47	0.00%	97.18%	$0
Rocky Trench	5.33	.67	53.00%	97.18%	3.09
Backhoe Trench	3.95	.75	25.00%	97.18%	1.14
Hand Dig Trench	6.84	1.12	4.00%	97.18%	.31
Boring	14.47	1.62	3.00%	97.18%	.47
Cut & Restore Asphalt	12.06	.82	5.00%	97.18%	.63
Cut & Restore Concrete	12.86	.74	4.00%	97.18%	.53
Cut & Restore Sod	5.65	.75	6.00%	97.18%	.37
			100%		$6.54

GTEFL's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.70	0.00%	97.18%	$0
Rocky Trench	5.33	1.01	50.00%	97.18%	3.08
Backhoe Trench	3.95	1.13	18.00%	97.18%	.89
Hand Dig Trench	6.84	1.68	3.00%	97.18%	.25
Boring	14.47	2.43	4.00%	97.18%	.66
Cut & Restore Asphalt	12.06	1.22	8.00%	97.18%	1.03
Cut & Restore Concrete	12.86	1.11	7.00%	97.18%	.95
Cut & Restore Sod	5.65	1.11	10.00%	97.18%	.66
			100%		$7.51

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.94	0.00%	97.18%	$0
Rocky Trench	5.33	1.35	45.00%	97.18%	2.92
Backhoe Trench	3.95	1.51	12.00%	97.18%	.64
Hand Dig Trench	6.84	2.24	6.00%	97.18%	.53
Boring	14.47	3.23	2.00%	97.18%	.34
Cut & Restore Asphalt	12.06	1.63	13.00%	97.18%	1.73
Cut & Restore Concrete	12.86	1.49	12.00%	97.18%	1.67
Cut & Restore Sod	5.65	1.49	10.00%	97.18%	.65
			100%		$8.53

GTEFL's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$1.17	0.00%	97.18%	$0
Rocky Trench	5.33	1.68	15.00%	97.18%	1.02
Backhoe Trench	3.95	1.89	10.00%	97.18%	.57
Hand Dig Trench	6.84	2.80	8.00%	97.18%	.75
Boring	14.47	4.04	15.00%	97.18%	2.70
Cut & Restore Asphalt	12.06	2.04	25.00%	97.18%	3.43
Cut & Restore Concrete	12.86	1.86	20.00%	97.18%	2.86
Cut & Restore Sod	5.65	1.85	7.00%	97.18%	.51
			100%		$11.83

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone >10001			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$1.29	0.00%	97.18%	$0
Rocky Trench	5.33	1.85	10.00%	97.18%	.70
Backhoe Trench	3.95	2.08	8.00%	97.18%	.47
Hand Dig Trench	6.84	3.09	8.00%	97.18%	.77
Boring	14.47	4.45	10.00%	97.18%	1.84
Cut & Restore Asphalt	12.06	2.24	33.00%	97.18%	4.59
Cut & Restore Concrete	12.86	2.05	28.00%	97.18%	4.06
Cut & Restore Sod	5.65	.75	3.00%	97.18%	.22
			100%		$12.64

GTEFL's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04		0.00%	97.18%	$0
Rocky Trench	5.33		50.00%	97.18%	2.59
Backhoe Trench	3.95		39.00%	97.18%	1.50
Hand Dig Trench	6.84		5.00%	97.18%	.33
Boring	14.47		2.00%	97.18%	.28
Cut & Restore Asphalt	12.06		1.00%	97.18%	.12
Cut & Restore Concrete	12.86		1.00%	97.18%	.12
Cut & Restore Sod	5.65		2.00%	97.18%	.11
			100%		$5.05

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.24	0.00%	97%	$0
Rocky Trench	5.33	.34	50.00%	97%	2.76
Backhoe Trench	3.95	.37	37.00%	97%	1.55
Hand Dig Trench	6.84	.56	5.00%	97%	.36
Boring	14.47	.81	2.00%	97%	.30
Cut & Restore Asphalt	12.06	.41	200%	97%	.24
Cut & Restore Concrete	12.86	.37	2.00%	97%	.26
Cut & Restore Sod	5.65	.38	2.00%	97%	12
			100%		$5.58

GTEFL's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.47	0.00%	97.18%	$0
Rocky Trench	5.33	.67	47.00%	97.18%	2.74
Backhoe Trench	3.95	.75	31.00%	97.18%	1.42
Hand Dig Trench	6.84	1.12	5.00%	97.18%	.39
Boring	14.47	1.62	2.00%	97.18%	.31
Cut & Restore Asphalt	12.06	.82	5.00%	97.18%	.63
Cut & Restore Concrete	12.86	.74	4.00%	97.18%	.53
Cut & Restore Sod	5.65	.75	6.00%	97.18%	.37
			100%		$6.39

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.70	0.00%	97.18%	$0
Rocky Trench	5.33	1.01	50.00%	97.18%	3.08
Backhoe Trench	3.95	1.13	18.00%	97.18%	.89
Hand Dig Trench	6.84	1.68	3.00%	97.18%	.25
Boring	14.47	2.43	4.00%	97.18%	.66
Cut & Restore Asphalt	12.06	1.22	8.00%	97.18%	1.03
Cut & Restore Concrete	12.86	1.11	7.00%	97.18%	.95
Cut & Restore Sod	5.65	1.11	10.00%	97.18%	.66
			100%		$7.51

GTEFL's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$.94	5.00%	97.18%	$.19
Rocky Trench	5.33	1.35	32.00%	97.18%	2.08
Backhoe Trench	3.95	1.51	10.00%	97.18%	.53
Hand Dig Trench	6.84	2.24	6.00%	97.18%	.53
Boring	14.47	3.23	2.00%	97.18%	.34
Cut & Restore Asphalt	12.06	1.63	13.00%	97.18%	1.73
Cut & Restore Concrete	12.86	1.49	12.00%	97.18%	1.67
Cut & Restore Sod	5.65	1.49	20.00%	97.18%	1.39
			100%		$8.47

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$1.17	0.00%	97.18%	$0
Rocky Trench	5.33	1.68	15.00%	97.18%	1.02
Backhoe Trench	3.95	1.89	10.00%	97.18%	.57
Hand Dig Trench	6.84	2.80	8.00%	97.18%	.75
Boring	14.47	4.04	15.00%	97.18%	2.70
Cut & Restore Asphalt	12.06	2.04	25.00%	97.18%	3.43
Cut & Restore Concrete	12.86	1.86	20.00%	97.18%	2.86
Cut & Restore Sod	5.65	1.85	7.00%	97.18%	.51
			100%		$11.84

GTEFL's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone >10001			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$3.04	$1.29	0.00%	97.18%	$0
Rocky Trench	5.33	1.85	10.00%	97.18%	.70
Backhoe Trench	3.95	2.08	8.00%	97.18%	.47
Hand Dig Trench	6.84	3.09	8.00%	97.18%	.77
Boring	14.47	4.45	10.00%	97.18%	1.84
Cut & Restore Asphalt	12.06	2.24	33.00%	97.18%	4.59
Cut & Restore Concrete	12.86	2.05	28.00%	97.18%	4.06
Cut & Restore Sod	5.65	2.05	3.00%	97.18%	.22
			100%		$12.64

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29		0.00%	100%	$0
Rocky Plow	1.62		55.00%	100%	.89
Trench & Backfill	3.04		5.00%	100%	.15
Rocky Trench	5.33		29.00%	100%	1.55
Backhoe Trench	3.95		4.00%	100%	.16
Hand Dig Trench	6.89		1.00%	100%	.07
Bore Cable	14.47		1.00%	100%	.14
Push Pipe & Pull Cable	8.96		1.00%	100%	.09
Cut & Restore Asphalt	12.06		1.00%	100%	.12
Cut & Restore Concrete	12.86		1.00%	100%	.13
Cut & Restore Sod	5.65		2.00%	100%	.11
			100%		$3.41

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.37	0.00%	100%	$0
Rocky Plow	1.62	.09	48.00%	100%	.82
Trench & Backfill	3.04	.24	10.00%	100%	.33
Rocky Trench	5.33	.34	31.00%	100%	1.76
Backhoe Trench	3.95	.37	2.00%	100%	.09
Hand Dig Trench	6.89	.51	1.00%	100%	.07
Bore Cable	14.47	.81	1.00%	100%	.15
Push Pipe & Pull Cable	8.96	.65	1.00%	100%	.10
Cut & Restore Asphalt	12.06	.41	2.00%	100%	.25
Cut & Restore Concrete	12.86	.37	2.00%	100%	.26
Cut & Restore Sod	5.65	.38	2.00%	100%	.12
			100%		$3.95

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.09	0.00%	100%	$0
Rocky Plow	1.62	.15	45.00%	100%	.80
Trench & Backfill	3.04	.47	3.00%	100%	.11
Rocky Trench	5.33	.67	28.00%	100%	1.68
Backhoe Trench	3.95	.75	2.00%	100%	.09
Hand Dig Trench	6.89	1.07	5.00%	100%	.40
Bore Cable	14.47	1.62	1.00%	100%	.16
Push Pipe & Pull Cable	8.96	1.31	1.00%	100%	.10
Cut & Restore Asphalt	12.06	.82	5.00%	100%	.64
Cut & Restore Concrete	12.86	.74	4.00%	100%	.54
Cut & Restore Sod	5.65	.75	6.00%	100%	.38
			100%		$4.91

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.14	0.00%	100%	$0
Rocky Plow	1.62	.23	13.00%	100%	.24
Trench & Backfill	3.04	.70	0.00%	100%	0
Rocky Trench	5.33	1.01	40.00%	100%	2.54
Backhoe Trench	3.95	1.13	10.00%	100%	.51
Hand Dig Trench	6.89	1.63	3.00%	100%	.26
Bore Cable	14.47	2.43	4.00%	100%	.68
Push Pipe & Pull Cable	8.96	1.96	5.00%	100%	.55
Cut & Restore Asphalt	12.06	1.22	8.00%	100%	1.06
Cut & Restore Concrete	12.86	1.11	7.00%	100%	.99
Cut & Restore Sod	5.65	1.11	10.00%	100%	.68
			100%		$7.48

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.19	0.00%	100%	$0
Rocky Plow	1.62	.31	3.00%	100%	.06
Trench & Backfill	3.04	.94	0.00%	100%	0
Rocky Trench	5.33	1.35	35.00%	100%	2.34
Backhoe Trench	3.95	1.51	14.00%	100%	.76
Hand Dig Trench	6.89	2.19	6.00%	100%	.54
Bore Cable	14.47	3.23	2.00%	100%	.35
Push Pipe & Pull Cable	8.96	2.61	5.00%	100%	.58
Cut & Restore Asphalt	12.06	1.63	13.00%	100%	1.78
Cut & Restore Concrete	12.86	1.49	12.00%	100%	1.72
Cut & Restore Sod	5.65	1.49	10.00%	100%	.71
			100%		$8.85

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.23	0.00%	100%	$0
Rocky Plow	1.62	.38	0.00%	100%	0
Trench & Backfill	3.04	1.17	0.00%	100%	0
Rocky Trench	5.33	1.68	15.00%	100%	1.05
Backhoe Trench	3.95	1.89	10.00%	100%	.58
Hand Dig Trench	6.89	2.75	8.00%	100%	.77
Bore Cable	14.47	4.04	15.00%	100%	2.78
Push Pipe & Pull Cable	8.96	3.27	0.00%	100%	0
Cut & Restore Asphalt	12.06	2.04	25.00%	100%	3.53
Cut & Restore Concrete	12.86	1.86	20.00%	100%	2.94
Cut & Restore Sod	5.65	1.85	7.00%	100%	.53
			100%		$12.18

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.26	0.00%	100%	$0
Rocky Plow	1.62	.42	0.00%	100%	0
Trench & Backfill	3.04	1.29	0.00%	100%	0
Rocky Trench	5.33	1.85	10.00%	100%	.72
Backhoe Trench	3.95	2.08	8.00%	100%	.48
Hand Dig Trench	6.89	3.04	8.00%	100%	.79
Bore Cable	14.47	4.45	10.00%	100%	1.69
Push Pipe & Pull Cable	8.96	3.59	0.00%	100%	0
Cut & Restore Asphalt	12.06	2.24	33.00%	100%	4.72
Cut & Restore Concrete	12.86	2.05	28.00%	100%	4.17
Cut & Restore Sod	5.65	2.05	3.00%	100%	.23
			100%		$13.01

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29		0.00%	100%	$0
Rocky Plow	1.62		48.00%	100%	.78
Trench & Backfill	3.04		5.00%	100%	.15
Rocky Trench	5.33		38.00%	100%	2.03
Backhoe Trench	3.95		2.00%	100%	.08
Hand Dig Trench	6.89		1.00%	100%	.07
Bore Cable	14.47		1.00%	100%	.14
Push Pipe & Pull Cable	8.96		1.00%	100%	.09
Cut & Restore Asphalt	12.06		1.00%	100%	.1[illegible]
Cut & Restore Concrete	12.86		1.00%	100%	.13
Cut & Restore Sod	5.65		2.00%	100%	.11
			100%		$3.70

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.37	0.00%	100%	$0
Rocky Plow	1.67	.09	47.00%	100%	.80
Trench & Backfill	3.04	.24	10.00%	100%	.33
Rocky Trench	5.33	.34	29.00%	100%	1.64
Backhoe Trench	3.95	.37	5.00%	100%	.22
Hand Dig Trench	6.89	.51	1.00%	100%	.07
Bore Cable	14.47	.81	1.00%	100%	.15
Push Pipe & Pull Cable	8.96	.65	1.00%	100%	.10
Cut & Restore Asphalt	12.06	.41	2.00%	100%	.25
Cut & Restore Concrete	12.86	.37	2.00%	100%	.26
Cut & Restore Sod	5.65	.38	2.00%	100%	.12
			100%		$3.95

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.09	0.00%	100%	$0
Rocky Plow	1.62	.15	40.00%	100%	.71
Trench & Backfill	3.04	.47	7.00%	100%	.25
Rocky Trench	5.33	.67	32.00%	100%	1.92
Backhoe Trench	3.95	.75	2.00%	100%	.09
Hand Dig Trench	6.89	1.07	2.00%	100%	.16
Bore Cable	14.47	1.62	1.00%	100%	.16
Push Pipe & Pull Cable	8.96	1.31	1.00%	100%	.10
Cut & Restore Asphalt	12.06	.82	5.00%	100%	.64
Cut & Restore Concrete	12.86	.74	4.00%	100%	.54
Cut & Restore Sod	5.65	.75	6.00%	100%	.38
			100%		$4.96

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.14	0.00%	100%	$0
Rocky Plow	1.62	.23	13.00%	100%	.24
Trench & Backfill	3.04	.70	8.00%	100%	.30
Rocky Trench	5.33	1.01	30.00%	100%	1.90
Backhoe Trench	3.95	1.13	12.00%	100%	.61
Hand Dig Trench	6.89	2.43	3.00%	100%	.26
Bore Cable	14.47	1.96	4.00%	100%	.68
Push Pipe & Pull Cable	8.96	1.22	5.00%	100%	.55
Cut & Restore Asphalt	12.06	1.11	8.00%	100%	1.06
Cut & Restore Concrete	12.86	1.11	7.00%	100%	.98
Cut & Restore Sod	5.65		10.00%	100%	.68
			100%		$7.25

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Inst lled	Density Zones 651-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.19	0.00%	100%	$0
Rocky Plow	1.62	.31	3.00%	100%	.06
Trench & Backfill	3.04	.94	0.00%	100%	0
Rocky Trench	5.33	1.35	27.00%	100%	180
Backhoe Trench	3.95	1.51	12.00%	100%	.66
Hand Dig Trench	6.89	2.19	6.00%	100%	.54
Bore Cable	14.47	3.23	2.00%	100%	.35
Push Pipe & Pull Cable	8.96	2.61	5.00%	100%	.58
Cut & Restore Asphalt	12.06	1.63	13.00%	100%	1.78
Cut & Restore Concrete	12.86	1.49	12.00%	100%	1.72
Cut & Restore Sod	5.65	1.49	20.00%	100%	1.43
			100%		$8.92

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zones 2551-10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.23	0.00%	100%	$0
Rocky Plow	1.62	.38	0.00%	100%	0
Trench & Backfill	3.04	1.17	0.00%	100%	0
Rocky Trench	5.33	1.68	14.00%	100%	.98
Backhoe Trench	3.95	1.89	10.00%	100%	.58
Hand Dig Trench	6.89	2.75	8.00%	100%	.77
Bore Cable	14.47	4.04	15.00%	100%	2.78
Push Pipe & Pull Cable	8.96	3.27	0.00%	100%	0
Cut & Restore Asphalt	12.06	2.04	25.00%	100%	3.53
Cut & Restore Concrete	12.86	1.86	20.00%	100%	2.94
Cut & Restore Sod	5.65	1.85	8.00%	100%	.60
			100%		$12.18

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

GTEFL's Territory-Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone >10001			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.29	$.26	0.00%	100%	$0
Rocky Plow	1.62	.42	0.00%	100%	0
Trench & Backfill	3.04	1.29	0.00%	100%	0
Rocky Trench	5.33	1.85	10.00%	100%	.72
Backhoe Trench	3.95	2.08	8.00%	100%	.48
Hand Dig Trench	6.89	3.04	8.00%	100%	.79
Bore Cable	14.47	4.45	10.00%	100%	1.89
Push Pipe & Pull Cable	8.96	3.59	0.00%	100%	0
Cut & Restore Asphalt	12.06	2.24	33..00%	100%	4.72
Cut & Restore Concrete	12.86	2.05	28.00%	100%	4.17
Cut & Restore Sod	5.65	2.05	3.00%	100%	.23
			100%		$13.01

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.68%	100.00%	$1.84
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		0.19%	100.00%	0.03
Cut & Restore Asphalt	12.63		0.60%	100.00%	0.08
Cut & Restore Concrete	15.37		0.00%	100.00%	0.00
Cut & Restore Sod	3.00		2.53%	100.00%	0.08
			10[illegible]		$2.02

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	D[illegible] Zone 6-100			
		C[illegible]t Adjustment	% Activity	% [illegible]ned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.39%	100.00%	$1.79
Rocky Trench	1.90		0	100.00%	0.00
Backhoe Trench	1.90		0	100.00%	0.00
Hand Dig Trench	1.90		0	100.00%	0.00
Boring	15.15		.43	100.00%	0.06
Cut & Restore Asphalt	12.63		.67	100.00%	0.08
Cut & Restore Concrete	15.37		.13	100.00%	0.02
Cut & Restore Sod	3.00		2.38	100.00%	0.07
			100%		$2.02

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.88%	100.00%	$1.73
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		0.68%	100.00%	0.10
Cut & Restore Asphalt	12.63		0.73%	100.00%	0.09
Cut & Restore Concrete	15.37		0.48%	100.00%	0.07
Cut & Restore Sod	3.00		2.23%	100.00%	0.06
			100%		$2.05

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.36%	100.00%	$1.72
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		0.92%	100.00%	..13
Cut & Restore Asphalt	12.63		0.80%	100.00%	0.10
Cut & Restore Concrete	15.37		0.83%	100.00%	0.12
Cut & Restore Sod	3.00		2.08%	100.00%	0.06
			100%		$2.13

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.85%	100.00%	$1.71
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		1.17%	100.00%	0.17
Cut & Restore Asphalt	12.63		0.87%	100.00%	0.10
Cut & Restore Concrete	15.37		1.18%	100.00%	0.17
Cut & Restore Sod	3.00		1.94%	100.00%	0.06
			100%		$2.21

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.33%	100.00%	$1.70
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		1.41%	100.00%	0.20
Cut & Restore Asphalt	12.63		0.93%	100.00%	0.11
Cut & Restore Concrete	15.37		1.53%	100.00%	0.22
Cut & Restore Sod	3.00		1.79%	100.00%	0.05
			99.99%		$2.29

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.82%	100.00%	$1.69
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		1.66%	100.00%	0.24
Cut & Restore Asphalt	12.63		1.00%	100.00%	0.12
Cut & Restore Concrete	15.37		1.08%	100.00%	0.27
Cut & Restore Sod	3.00		1.64%	100.00%	0.05
			100%		$2.37

Sprint's Territory- Normal Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.30%	100.00%	$1.68
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		1.90%	100.00%	0.27
Cut & Restore Asphalt	12.63		1.07%	100.00%	0.13
Cut & Restore Concrete	15.37		2.23%	100.00%	0.33
Cut & Restore Sod	3.00		1.50%	100.00%	0.04
			100%		$2.45

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.68%	100.00%	$1.84
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		0.19%	100.00%	0.03
Cut & Restore Asphalt	12.63		0.60%	100.00%	0.08
Cut & Restore Concrete	15.37		0.00%	100.00%	0.00
Cut & Restore Sod	3.00		2.53%	100.00%	0.08
			100%		$2.02

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.39%	100.00%	$1.74
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		0.43%	100.00%	0.06
Cut & Restore Asphalt	12.63		6.69e-03	100.00%	0.08
Cut & Restore Concrete	15.37		1.25e-03	100.00%	0.02
Cut & Restore Sod	3.00		238.00%	100.00%	0.07
			100%		$1.97

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.88%	100.00%	$1.64
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		6.78e-03	100.00%	0.09
Cut & Restore Asphalt	12.63		7.35e-03	100.00%	0.08
Cut & Restore Concrete	15.37		4.76e-03	100.00%	0.07
Cut & Restore Sod	3.00		2.23e-02	100.00%	0.06
			100%		$1.54

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.36%	100.00%	$1.63
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		9.32e-03	100.00%	0.13
Cut & Restore Asphalt	12.63		8.02e-03	100.00%	0.09
Cut & Restore Concrete	15.37		8.28e-03	100.00%	0.11
Cut & Restore Sod	3.00		2.08e-02	100.00%	0.06
			100%		$2.02

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.85%	100.00%	$1.62
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		1.17e-03	100.00%	0.16
Cut & Restore Asphalt	12.63		8.68e-03	100.00%	0.10
Cut & Restore Concrete	15.37		1.18e-03	100.00%	0.16
Cut & Restore Sod	3.00		1.94e-02	100.00%	0.05
			100%		$2.10

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.33%	100.00%	$1.61
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		1.41e-02	100.00%	0.19
Cut & Restore Asphalt	12.63		9.35e-03	100.00%	0.11
Cut & Restore Concrete	15.37		1.53e-02	100.00%	0.21
Cut & Restore Sod	3.00		1.79e-02	100.00%	0.05
			100%		$2.17

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.82%	100.00%	$1.60
Rocky Trench	1.90		0.00%	100.00%	0.00
Backhoe Trench	1.90		0.00%	100.00%	0.00
Hand Dig Trench	1.90		0.00%	100.00%	0.00
Boring	15.15		1.66%	100.00%	0.23
Cut & Restore Asphalt	12.63		1.00%	100.00%	0.11
Cut & Restore Concrete	15.37		1.88%	100.00%	0.26
Cut & Restore Sod	3.00		1.64%	100.00%	0.04
			100%		$2.25

Sprint's Territory- Normal Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 5001->10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.30%	100.00%	$1.60
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		1.90e-02	100.00%	$0.26
Cut & Restore Asphalt	12.63		1.07%	100.00%	$0.12
Cut & Restore Concrete	15.37		2.23e-02	100.00%	$0.31
Cut & Restore Sod	3.00		1.50e-02	100.00%	$0.04
			100%		$2.33

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Activi y	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		93.19%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.19%	100.00%	$0.03
Push Pipe & Pull Cable	10.12		3.58%	100.00%	$0.36
Cut & Restore Asphalt	12.63		0.58%	100.00%	$0.07
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.45%	100.00%	$0.07
			100%		$2.31

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Act'vity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.91%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		4.23e-03	100.00%	$0.06
Push Pipe & Pull Cable	10.12		3.59e-02	100.00%	$0.35
Cut & Restore Asphalt	12.63		6.41e-03	100.00%	$0.08
Cut & Restore Concrete	15.37		1.19e-03	100.00%	$0.02
Cut & Restore Sod	3.00		2.31e-02	100.00%	$0.07
			100%		$2.35

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 100-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.42%	100.00%	$1.76
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		6.58e-03	100.00%	$0.09
Push Pipe & Pull Cable	10.12		3.59e-02	100.00%.	$0.35
Cut & Restore Asphalt	12.63		7.05e-03	100.00%	$0.08
Cut & Restore Concrete	15.37		4.56e-03	100.00%	$0.07
Cut & Restore Sod	3.00		2.17e-02	100.00%	$0.06
			100%		$2.41

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.92%	100.00%	$1.75
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.89%	100.00%	$0.13
Push Pipe & Pull Cable	10.12		3.60%	100.00%	$0.35
Cut & Restore Asphalt	12.63		0.77%	100.00%	$0.09
Cut & Restore Concrete	15.37		0.79%	100.00%	$0.12
Cut & Restore Sod	3.00		2.02%	100.00%	$0.06
			99.99%		$2.49

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.43%	100.00%	$1.74
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.13e-02	100.00%	$0.16
Push Pipe & Pull Cable	10.12		3.60e-02	100.00%	$0.35
Cut & Restore Asphalt	12.63		8.33e-03	100.00%	$0.10
Cut & Restore Concrete	15.37		1.13e-02	100.00%	$0.17
Cut & Restore Sod	3.00		1.88e-02	100.00%	$0.05
			100%		$2.56

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.94%	100.00%	$1.73
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.36e-02	100.00%	$0.20
Push Pipe & Pull Cable	10.12		3.61e-02	100.00%	$0.35
Cut & Restore Asphalt	12.63		8.97e-03	100.00%	$0.11
Cut & Restore Concrete	15.37		147.00%	100.00%	$0.21
Cut & Restore Sod	3.00		1.73e-02	100.00%	$0.05
			100%		$2.64

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.44%	100.00%	$1.72
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.60e-02	100.00%	$0.23
Push Pipe & Pull Cable	10.12		3.61e-02	100.00%	$0.35
Cut & Restore Asphalt	12.63		9.60e-03	100.00%	$0.12
Cut & Restore Concrete	15.37		1.81e-02	100.00%	$0.26
Cut & Restore Sod	3.00		1.58e-02	100.00%	$0.05
			100%		$2.72

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		89.95%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.83e-02	100.00%	$0.03
Push Pipe & Pull Cable	10.12		3.62e-02	100.00%	$0.36
Cut & Restore Asphalt	12.63		1.02e-02	100.00%	$0.07
Cut & Restore Concrete	15.37		2.14e-02	100.00%	$0.00
Cut & Restore Sod	3.00		1.44e-02	100.00%	$0.07
			100%		$2.31

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		93.19%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.19%	100.00%	$0.03
Push Pipe & Pull Cable	10.12		3.58%	100.00%	$0.36
Cut & Restore Asphalt	12.63		0.58%	100.00%	$0.07
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.46%	100.00%	$0.07
			100%		$2.31

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.91%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.42%	100.00%	$0.06
Push Pipe & Pull Cable	10.12		3.59%	100.00%	$0.35
Cut & Restore Asphalt	12.63		0.64%	100.00%	$0.08
Cut & Restore Concrete	15.37		0.12%	100.00%	$0.02
Cut & Restore Sod	3.00		2.31%	100.00%	$0.07
			99.99%		$2.33

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.42%	100.00%	$1.76
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.66%	100.00%	$0.09
Push Pipe & Pull Cable	10.12		3.59%	100.00%	$0.33
Cut & Restore Asphalt	12.63		0.71%	100.00%	$0.08
Cut & Restore Concrete	15.37		0.46%	100.00%	$0.06
Cut & Restore Sod	3.00		2.17%	100.00%	$0.06
			100%		$2.38

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.92%	100.00%	$1.75
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.89%	100.00%	$0.12
Push Pipe & Pull Cable	10.12		3.60%	100.00%	$0.33
Cut & Restore Asphalt	12.63		0.77%	100.00%	$0.09
Cut & Restore Concrete	15.37		0.79%	100.00%	$0.11
Cut & Restore Sod	3.00		2.02%	100.00%	$0.05
			100%		$2.45

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Burie. Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.43%	100.00%	$1.74
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.13%	100.00%	$0.15
Push Pipe & Pull Cable	10.12		3.60%	100.00%	$0.33
Cut & Restore Asphalt	12.63		0.83%	100 00%	$0.09
Cut & Restore Concrete	15.37		1.13%	100.00%	$0.16
Cut & Restore Sod	3.00		1.88%	100.00%	$0.05
			100%		$2.52

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adj.	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.94%	100.00%	$1.73
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.36%	100.00%	$0.19
Push Pipe & Pull Cable	10.12		3.61%	100.00%	$0.33
Cut & Restore Asphalt	12.63		0.90%	100.00%	$0.10
Cut & Restore Concrete	15.37		1.47%	100.00%	$0.20
Cut & Restore Sod	3.00		1.73%	100.00%	$0.05
			100%		$2.59

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adj.	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.44%	100.00%	$1.72
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.60%	100.00%	$0.22
Push Pipe & Pull Cable	10.12		3.61%	100.00%	$0.33
Cut & Restore Asphalt	12.63		0.96%	100.00%	$0.11
Cut & Restore Concrete	15.37		1.81%	100.00%	$0.25
Cut & Restore Sod	3.00		1.58%	100.00%	$0.04
			100%		$2.67

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Normal Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		89.95%	100.00%	$1.71
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		1.83%	100.00%	$0.25
Push Pipe & Pull Cable	10.12		3.62%	100.00%	$0.33
Cut & Restore Asphalt	12.63		1.02%	100.00%	$0.12
Cut & Restore Concrete	15.37		2.14%	100.00%	$0.30
Cut & Restore Sod	3.00		1.44%	100.00%	$0.04
			100.00%		$2.74

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.68%	100.00%	$1.84
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		0.19%	100.00%	$0.03
Cut & Restore Asphalt	12.63		0.60%	100.00%	$0.08
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.53%	100.00%	$0.08
			100%		$2.02

Sprint's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.39%	100.00%	$1.79
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		0.43%	100.00%	$0.06
Cut & Restore Asphalt	12.63		0.67%	100.00%	$0.08
Cut & Restore Concrete	15.37		0.13%	100.00%	$0.02
Cut & Restore Sod	3.00		2.38%	100.00%	$0.07
			100%		$2.02

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.89%	97.50%	$1.73
Rocky Trench	1.90		0.00%	97.50%	$0.00
Backhoe Trench	1.90		0.00%	97.50%	$0.00
Hand Dig Trench	1.90		0.00%	97.50%	$0.00
Boring	15.15		0.68%	97.50%	$0.10
Cut & Restore Asphalt	12.63		0.73%	97.50%	$0.09
Cut & Restore Concrete	15.37		0.48%	97.50%	$0.07
Cut & Restore Sod	3.00		2.53%	97.50%	$0.06
			100%		$2.05

Sprint's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.36%	95.00%	$1.72
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		0.92%	95.00%	$0.13
Cut & Restore Asphalt	12.63		0.80%	95.00%	$0.10
Cut & Restore Concrete	15.37		0.83%	95.00%	$0.12
Cut & Restore Sod	3.00		2.08%	95.00%	$0.06
			100%		$2.13

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.85%	95.00%	$1.72
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		1.17%	95.00%	$0.13
Cut & Restore Asphalt	12.63		0.87%	95.00%	$0.10
Cut & Restore Concrete	15.37		1.18%	95.00%	$0.12
Cut & Restore Sod	3.00		1.94%	95.00%	$0.06
			100.01%		$2.13

Sprint's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.33%	95.00%	$1.70
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		1.41%	95.00%	$0.20
Cut & Restore Asphalt	12.63		0.93%	95.00%	$0.11
Cut & Restore Concrete	15.37		1.53%	95.00%	$0.22
Cut & Restore Sod	3.00		1.79%	95.00%	$0.05
			100%		$2.29

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Feeder C nduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.82%	100.00%	$1.69
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		1.66%	100.00%	$0.24
Cut & Restore Asphalt	12.63		1.00%	100.00%	$0.12
Cut & Restore Concrete	15.37		1.88%	100.00%	$0.27
Cut & Restore Sod	3.00		1.64%	100.00%	$0.05
			100%		$2.37

Sprint's Territory- Soft Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10001			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.30%	100.00%	$1.68
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		1.90%	100.00%	$0.27
Cut & Restore Asphalt	12.63		1.07%	100.00%	$0.13
Cut & Restore Concrete	15.37		2.23%	100.00%	$0.33
Cut & Restore Sod	3.00		1.50%	100.00%	$0.04
			100%		$2.45

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.68%	100.00%	$1.84
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		0.19%	100.00%	$0.03
Cut & Restore Asphalt	12.63		0.60%	100.00%	$0.08
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.53%	100.00%	$0.08
			100%		$2.02

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.39%	95.00%	$1.74
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		0.43%	95.00%	$0.06
Cut & Restore Asphalt	12.63		0.67%	95.00%	$0.08
Cut & Restore Concrete	15.37		0.13%	95.00%	$0.02
Cut & Restore Sod	3.00		2.38%	95.00%	$0.07
			100%		$1.97

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.88%	90.00%	$1.64
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		0.68%	90.00%	$0.09
Cut & Restore Asphalt	12.63		0.73%	90.00%	$0.08
Cut & Restore Concrete	15.37		0.48%	90.00%	$0.07
Cut & Restore Sod	3.00		2.23%	90.00%	$0.06
			100%		$1.94

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.36%	90.00%	$1.63
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		0.92%	90.00%	$0.13
Cut & Restore Asphalt	12.63		0.80%	90.00%	$0.09
Cut & Restore Concrete	15.37		0.83%	90.00%	$0.11
Cut & Restore Sod	3.00		2.08%	90.00%	$0.06
			99.00%		$2.02

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.85%	90.00%	$1.62
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.17%	90.00%	$0.16
Cut & Restore Asphalt	12.63		0.87%	90.00%	$0.10
Cut & Restore Concrete	15.37		1.18%	90.00%	$0.16
Cut & Restore Sod	3.00		1.94%	90.00%	$0.05
			100.01%		$2.10

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.33%	90.00%	$1.61
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.41%	90.00%	$0.19
Cut & Restore Asphalt	12.63		0.93%	90.00%	$0.11
Cut & Restore Concrete	15.37		1.53%	90.00%	$0.21
Cut & Restore Sod	3.00		1.79%	90.00%	$0.05
			99.99%		$2.17

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.82%	90.00%	$1.60
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.66%	90.00%	$0.23
Cut & Restore Asphalt	12.63		1.00%	90.00%	$0.11
Cut & Restore Concrete	15.37		1.88%	90.00%	$0.26
Cut & Restore Sod	3.00		1.64%	90.00%	$0.04
			100.00%		$2.25

Sprint's Territory- Soft Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10001			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.30%	90.00%	$1.60
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.90%	90.00%	$0.26
Cut & Restore Asphalt	12.63		1.07%	90.00%	$0.12
Cut & Restore Concrete	15.37		2.23%	90.00%	$0.31
Cut & Restore Sod	3.00		1.50%	90.00%	$0.04
			100%		$2.33

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		93.19%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.19%	100.00%	$0.03
Push Pipe & Pull Cable	10.12		3.58%	100.00%	$0.36
Cut & Restore Asphalt	12.63		0.58%	100.00%	$0.07
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.46%	100.00%	$0.07
			100%		$2.31

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.91%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	97.50%	$0.00
Rocky Trench	1.90		0.00%	97.50%	$0.00
Backhoe Trench	1.90		0.00%	97.50%	$0.00
Hand Dig Trench	1.90		0.00%	97.50%	$0.00
Bore Cable	15.15		0.42%	97.50%	$0.06
Push Pipe & Pull Cable	10.12		3.59%	97.50%	$0.35
Cut & Restore Asphalt	12.63		0.64%	97.50%	$0.08
Cut & Restore Concrete	15.37		0.12%	97.50%	$0.02
Cut & Restore Sod	3.00		2.31%	97.50%	$0.07
			100%		$2.35

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.42%	100.00%	$1.76
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		0.66%	95.00%	$0.09
Push Pipe & Pull Cable	10.12		3.59%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.71%	95.00%	$0.09
Cut & Restore Concrete	15.37		0.46%	95.00%	$0.07
Cut & Restore Sod	3.00		2.17%	95.00%	$0.06
			100%		$2.41

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.92%	100.00%	$1.75
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		0.89%	95.00%	$0.13
Push Pipe & Pull Cable	10.12		3.60%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.77%	95.00%	$0.09
Cut & Restore Concrete	15.37		0.79%	95.00%	$0.12
Cut & Restore Sod	3.00		2.02%	95.00%	$0.06
			100%		$2.49

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.43%	100.00%	$1.74
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.13%	95.00%	$0.16
Push Pipe & Pull Cable	10.12		3.60%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.83%	95.00%	$0.10
Cut & Restore Concrete	15.37		1.13%	95.00%	$0.16
Cut & Restore Sod	3.00		1.88%	95.00%	.05
			100%		$2.56

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.94%	100.00%	$1.73
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.36%	95.00%	$0.20
Push Pipe & Pull Cable	10.12		3.61%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.90%	95.00%	$0.11
Cut & Restore Concrete	15.37		1.47%	95.00%	$0.21
Cut & Restore Sod	3.00		1.73%	95.00%	$0.05
			100%		$2.64

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.44%	100.00%	$1.72
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.60%	95.00%	$0.23
Push Pipe & Pull Cable	10.12		3.61%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.96%	95.00%	$0.12
Cut & Restore Concrete	15.37		1.81%	95.00%	$0.26
Cut & Restore Sod	3.00		1.58%	95.00%	$0.05
			100%		$2.72

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10001			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		89.95%	100.00%	$1.71
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.83%	95.00%	$0.26
Push Pipe & Pull Cable	10.12		3.62%	95.00%	$0.35
Cut & Restore Asphalt	12.63		1.02%	95.00%	$0.12
Cut & Restore Concrete	15.37		2.14%	95.00%	$0.31
Cut & Restore Sod	3.00		1.44%	95.00%	$0.04
			100%		$2.80

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		93.19%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.19%	100.00%	$0.03
Push Pipe & Pull Cable	10.12		3.58%	100.00%	$0.36
Cut & Restore Asphalt	12.63		0.58%	100.00%	$0.07
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.46%	100.00%	$0.07
			100%		$2.31

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.91%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		0.42%	95.00%	$0.06
Push Pipe & Pull Cable	10.12		3.59%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.64%	95.00%	$0.08
Cut & Restore Concrete	15.37		0.12%	95.00%	$0.02
Cut & Restore Sod	3.00		2.31%	95.00%	$0.07
			100%		$2.33

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density [illegible]e 101-200			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.42%	100.00%	$1.76
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		0.66%	90.00%	$0.09
Push Pipe & Pull Cable	10.12		3.59%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.71%	90.00%	$0.08
Cut & Restore Concrete	15.37		0.46%	90.00%	$0.06
Cut & Restore Sod	3.00		2.17%	90.00%	$0.06
			100%		$2.38

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.92%	100.00%	$1.75
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		0.89%	90.00%	$0.12
Push Pipe & Pull Cable	10.12		3.60%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.77%	90.00%	$0.09
Cut & Restore Concrete	15.37		0.79%	90.00%	$0.11
Cut & Restore Sod	3.00		2.02%	90.00%	$0.05
			100%		$2.45

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.43%	100.00%	$1.74
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		1.13%	90.00%	$0.15
Push Pipe & Pull Cable	10.12		3.60%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.83%	90.00%	$0.09
Cut & Restore Concrete	15.37		1.13%	90.00%	$0.16
Cut & Restore Sod	3.00		1.88%	90.00%	$0.05
			100%		$2.52

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.94%	100.00%	$1.73
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		1.36%	90.00%	$0.19
Push Pipe & Pull Cable	10.12		3.61%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.90%	90.00%	$0.10
Cut & Restore Concrete	15.37		1.47%	90.00%	$0.20
Cut & Restore Sod	3.00		1.73%	90.00%	$0.05
			100%		$2.59

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Soft Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adjustment	% Activity	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.44%	100.00%	$1.72
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		1.60%	90.00%	$0.22
Push Pipe & Pull Cable	10.12		3.61%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.96%	90.00%	$0.11
Cut & Restore Concrete	15.37		1.81%	90.00%	$0.25
Cut & Restore Sod	3.00		1.58%	90.00%	$0.04
			100%		$2.67

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adj.	%Activity	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.68%	100.00%	$1.84
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		0.19%	100.00%	$0.03
Cut & Restore Asphalt	12.63		0.60%	100.00%	$0.08
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.53%	100.00%	$0.08
			100%		$2.02

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.00%	98.00%	$1.79
Rocky Trench	1.90		0.00%	98.00%	$0.00
Backhoe Trench	1.90		0.00%	98.00%	$0.00
Hand Dig Trench	1.90		0.00%	98.00%	$0.00
Boring	15.15		0.00%	98.00%	$0.07
Cut & Restore Asphalt	12.63		1.00%	98.00%	$0.08
Cut & Restore Concrete	15.37		0.00%	98.00%	$0.03
Cut & Restore Sod	3.00		2.00%	98.00%	$0.07
			100%		$2.04

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.88%	95.00%	$1.73
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		0.68%	95.00%	$0.10
Cut & Restore Asphalt	12.63		0.73%	95.00%	$0.09
Cut & Restore Concrete	15.37		0.48%	95.00%	$0.07
Cut & Restore Sod	3.00		2.23%	95.00%	$0.06
			100%		$2.05

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.36%	95.00%	$1.72
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		0.92%	95.00%	$0.13
Cut & Restore Asphalt	12.63		0.80%	95.00%	$0.10
Cut & Restore Concrete	15.37		0.83%	95.00%	$0.12
Cut & Restore Sod	3.00		2.08%	95.00%	$0.06
			100%		$2.13

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.85%	95.00%	$1.71
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		1.17%	95.00%	$0.17
Cut & Restore Asphalt	12.63		0.87%	95.00%	$0.10
Cut & Restore Concrete	15.37		1.18%	95.00%	$0.17
Cut & Restore Sod	3.00		1.94%	95.00%	$0.06
			100%		$2.21

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.30%	95.00%	$1.70
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		1.40%	95.00%	$0.20
Cut & Restore Asphalt	12.63		0.90%	95.00%	$0.11
Cut & Restore Concrete	15.37		1.50%	95.00%	$0.22
Cut & Restore Sod	3.00		1.80%	95.00%	$0.05
			99.90%		$2.28

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.82%	95.00%	$1.69
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		1.66%	95.00%	$0.24
Cut & Restore Asphalt	12.63		1.00%	95.00%	$0.12
Cut & Restore Concrete	15.37		1.88%	95.00%	$0.27
Cut & Restore Sod	3.00		1.64%	95.00%	$0.05
			100%		$2.37

Sprint's Territory- Hard Rock Feeder Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10001			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.30%	95.00%	$1.68
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		1.90%	95.00%	$0.27
Cut & Restore Asphalt	12.63		1.07%	95.00%	$0.13
Cut & Restore Concrete	15.37		2.23%	95.00%	$0.33
Cut & Restore Sod	3.00		1.50%	95.00%	$0.04
			100%		$2.45

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.68%	100.00%	$1.84
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Boring	15.15		0.19%	100.00%	$0.03
Cut & Restore Asphalt	12.63		0.60%	100.00%	$0.08
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.53%	100.00%	$0.08
			100%		$2.02

Sprint's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		96.00%	95.00%	$1.73
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Boring	15.15		0.00%	95.00%	$0.06
Cut & Restore Asphalt	12.63		1.00%	95.00%	$0.07
Cut & Restore Concrete	15.37		0.00%	95.00%	$0.02
Cut & Restore Sod	3.00		2.00%	95.00%	$0.07
			100%		$1.96

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.88%	90.00%	$1.64
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		0.68%	90.00%	$0.09
Cut & Restore Asphalt	12.63		0.73%	90.00%	$0.08
Cut & Restore Concrete	15.37		0.48%	90.00%	$0.07
Cut & Restore Sod	3.00		2.23%	90.00%	$0.06
			100%		$1.94

Sprint's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		95.36%	90.00%	$1.63
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		0.92%	90.00%	$0.13
Cut & Restore Asphalt	12.63		0.80%	90.00%	$0.09
Cut & Restore Concrete	15.37		0.83%	90.00%	$0.11
Cut & Restore Sod	3.00		2.08%	90.00%	$0.06
			100%		$2.02

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.85%	90.00%	$1.62
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.17%	90.00%	$0.16
Cut & Restore Asphalt	12.63		0.87%	90.00%	$0.10
Cut & Restore Concrete	15.37		1.18%	90.00%	$0.16
Cut & Restore Sod	3.00		1.94%	90.00%	$0.05
			100%		$2.10

Sprint's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		94.33%	90.00%	$1.61
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.41%	90.00%	$0.19
Cut & Restore Asphalt	12.63		0.93%	90.00%	$0.11
Cut & Restore Concrete	15.37		1.53%	90.00%	$0.21
Cut & Restore Sod	3.00		1.79%	90.00%	$0.05
			99.99%		$2.17

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Terr'tory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.82%	90.00%	$1.60
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.66%	90.00%	$0.23
Cut & Restore Asphalt	12.63		1.00%	90.00%	$0.11
Cut & Restore Concrete	15.37		1.88%	90.00%	$0.26
Cut & Restore Sod	3.00		1.64%	90.00%	$0.04
			100.00%		$2.25

Sprint's Territory- Hard Rock Distribution Conduit					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10001			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Trench & Backfill	$1.90		93.30%	90.00%	$1.60
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Boring	15.15		1.90%	90.00%	$0.26
Cut & Restore Asphalt	12.63		1.07%	90.00%	$0.12
Cut & Restore Concrete	15.37		2.23%	90.00%	$0.31
Cut & Restore Sod	3.00		1.50%	90.00%	$0.04
			100.00%		$2.33

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		93.16%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.19%	100.00%	$0.03
Push Pipe & Pull Cable	10.12		3.58%	100.00%	$0.36
Cut & Restore Asphalt	12.63		0.58%	100.00%	$0.07
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.46%	100.00%	$0.07
			100%		$2.31

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.91%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	97.50%	$0.00
Rocky Trench	1.90		0.00%	97.50%	$0.00
Backhoe Trench	1.90		0.00%	97.50%	$0.00
Hand Dig Trench	1.90		0.00%	97.50%	$0.00
Bore Cable	15.15		0.42%	97.50%	$0.06
Push Pipe & Pull Cable	10.12		3.59%	97.50%	$0.35
Cut & Restore Asphalt	12.63		0.64%	97.50%	$0.08
Cut & Restore Concrete	15.37		0.12%	97.50%	$0.02
Cut & Restore Sod	3.00		2.31%	97.50%	$0.07
			100%		$2.35

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.42%	100.00%	$1.76
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		0.66%	95.00%	$0.09
Push Pipe & Pull Cable	10.12		3.59%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.71%	95.00%	$0.09
Cut & Restore Concrete	15.37		0.46%	95.00%	$0.07
Cut & Restore Sod	3.00		2.17%	95.00%	$0.06
			100%		$2.41

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.92%	100.00%	$1.75
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		0.89%	95.00%	$0.13
Push Pipe & Pull Cable	10.12		3.60%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.77%	95.00%	$0.09
Cut & Restore Concrete	15.37		0.79%	95.00%	$0.12
Cut & Restore Sod	3.00		2.02%	95.00%	$0.06
			100%		$2.49

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.43%	100.00%	$1.74
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.13%	95.00%	$0.16
Push Pipe & Pull Cable	10.12		3.60%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.83%	95.00%	$0.10
Cut & Restore Concrete	15.37		1.13%	95.00%	$0.16
Cut & Restore Sod	3.00		1.88%	95.00%	$0.05
			100%		$2.56

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.94%	100.00%	$1.73
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.36%	95.00%	$0.20
Push Pipe & Pull Cable	10.12		3.61%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.90%	95.00%	$0.11
Cut & Restore Concrete	15.37		1.47%	95.00%	$0.21
Cut & Restore Sod	3.00		1.73%	95.00%	$0.05
			100%		$2.64

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.44%	100.00%	$1.72
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.60%	95.00%	$0.23
Push Pipe & Pull Cable	10.12		3.61%	95.00%	$0.35
Cut & Restore Asphalt	12.63		96.00%	95.00%	$0.12
Cut & Restore Concrete	15.37		1.81%	95.00%	$0.26
Cut & Restore Sod	3.00		1.58%	95.00%	$0.05
			100%		$2.72

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Feeder Cable					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10001			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		98.95%	100.00%	$1.71
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		1.83%	95.00%	$0.26
Push Pipe & Pull Cable	10.12		3.62%	95.00%	$0.35
Cut & Restore Asphalt	12.63		1.02%	95.00%	$0.12
Cut & Restore Concrete	15.37		2.14%	95.00%	$0.31
Cut & Restore Sod	3.00		1.44%	95.00%	$0.04
			100%		$2.80

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 0-5			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		93.19%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	100.00%	$0.00
Rocky Trench	1.90		0.00%	100.00%	$0.00
Backhoe Trench	1.90		0.00%	100.00%	$0.00
Hand Dig Trench	1.90		0.00%	100.00%	$0.00
Bore Cable	15.15		0.19%	100.00%	$0.03
Push Pipe & Pull Cable	10.12		3.58%	100.00%	$0.36
Cut & Restore Asphalt	12.63		0.58%	100.00%	$0.07
Cut & Restore Concrete	15.37		0.00%	100.00%	$0.00
Cut & Restore Sod	3.00		2.46%	100.00%	$0.07
			100%		$2.31

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 6-100			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.91%	100.00%	$1.77
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	95.00%	$0.00
Rocky Trench	1.90		0.00%	95.00%	$0.00
Backhoe Trench	1.90		0.00%	95.00%	$0.00
Hand Dig Trench	1.90		0.00%	95.00%	$0.00
Bore Cable	15.15		0.42%	95.00%	$0.06
Push Pipe & Pull Cable	10.12		3.59%	95.00%	$0.35
Cut & Restore Asphalt	12.63		0.64%	95.00%	$0.08
Cut & Restore Concrete	15.37		0.12%	95.00%	$0.02
Cut & Restore Sod	3.00		2.31%	95.00%	$0.07
			100%		$2.33

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 101-200			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.42%	100.00%	$1.76
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		0.66%	90.00%	$0.09
Push Pipe & Pull Cable	10.12		3.59%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.71%	90.00%	$0.08
Cut & Restore Concrete	15.37		0.46%	90.00%	$0.06
Cut & Restore Sod	3.00		2.17%	90.00%	$0.06
			100%		$2.38

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 201-650			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		91.92%	100.00%	$1.75
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		0.89%	90.00%	$0.12
Push Pipe & Pull Cable	10.12		3.60%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.77%	90.00%	$0.09
Cut & Restore Concrete	15.37		0.79%	90.00%	$0.11
Cut & Restore Sod	3.00		2.02%	90.00%	$0.05
			100%		$2.45

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 651-850			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		92.00%	100.00%	$1.75
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		1.13%	90.00%	$0.15
Push Pipe & Pull Cable	10.12		3.60%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.83%	90.00%	$0.09
Cut & Restore Concrete	15.37		1.13%	90.00%	$0.16
Cut & Restore Sod	3.00		1.88%	90.00%	$0.05
			100%		$2.53

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 851-2550			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.94%	100.00%	$1.73
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		1.36%	90.00%	$0.19
Push Pipe & Pull Cable	10.12		3.61%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.90%	90.00%	$0.10
Cut & Restore Concrete	15.37		1.47%	90.00%	$0.20
Cut & Restore Sod	3.00		1.73%	90.03%	$0.05
			100%		$2.59

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zone 2551-5000			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		90.44%	100.00%	$1.72
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		1.60%	90.00%	$0.22
Push Pipe & Pull Cable	10.12		3.61%	90.00%	$0.33
Cut & Restore Asphalt	12.63		0.96%	90.00%	$0.11
Cut & Restore Concrete	15.37		1.81%	90.00%	$0.25
Cut & Restore Sod	3.00		1.58%	90.00%	$0.04
			100%		$2.67

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Sprint's Territory- Hard Rock Buried Distribution Cable					
Activity	Base Cost Per Foot Installed	Density Zones 5001->10001			
		Cost Adj.	% Act.	% Assigned Telephone	Weighted Amount
Plow	$1.90		89.95%	100.00%	$1.71
Rocky Plow	1.90		0.00%	100.00%	$0.00
Trench & Backfill	1.90		0.00%	90.00%	$0.00
Rocky Trench	1.90		0.00%	90.00%	$0.00
Backhoe Trench	1.90		0.00%	90.00%	$0.00
Hand Dig Trench	1.90		0.00%	90.00%	$0.00
Bore Cable	15.15		1.83%	90.00%	$0.25
Push Pipe & Pull Cable	10.12		3.62%	90.00%	$0.33
Cut & Restore Asphalt	12.63		1.02%	90.00%	$0.12
Cut & Restore Concrete	15.37		2.14%	90.00%	$0.30
Cut & Restore Sod	3.00		1.44%	90.00%	$0.04
			100%		$2.74

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-E: Structure Sharing Factors

Feeder Conduit (Normal and Soft Rock)

Density	BellSouth	GTEFL	Sprint
0-5	99%	97.18%	100%
6-100	99%	97.18%	97.5%/98%*
101-200	99%	97.18%	95%
201-650	99%	97.18%	95%
651-850	99%	97.18%	95%
851-2550	99%	97.18%	95%
2551-5000	99%	97.18%	95%
5001-10000	99%	97.18%	95%
>10001	99%	97.18%	95%

*98% for Hard Rock

Distribution Conduit (Normal and Soft Rock)

Density	BellSouth	GTEFL	Sprint
0-5	99%	97.18%	100%
6-100	99%	97.18%	95%
101-200	99%	97.18%	90%
201-650	99%	97.18%	90%
651-850	99%	97.18%	90%
851-2550	99%	97.18%	90%
2551-5000	99%	97.18%	90%
5001-10000	99%	97.18%	90%
>10001	99%	97.18%	90%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Buried Feeder Cable (Normal and Soft Rock)

Density	BellSouth	GTEFL	Sprint*
0-5	99%	100%	100%
6-100	99%	100%	100%/97.5%*
101-200	99%	100%	100%/95%*
201-650	99%	100%	100%/95%*
651-850	99%	100%	100%/95%*
851-2550	99%	100%	100%/95%*
2551-5000	99%	100%	100%/95%*
5001-10000	99%	100%	100%/95%*
>10001	99%	100%	100%/95%*

*100% for Plow and Rocky Plow, 97.5% and 95% for Other Activities, depending on density zone.

Buried Distribution Cable (Normal and Soft Rock)

Density	BellSouth	GTEFL	Sprint
0-5	96%	100%	100%
6-100	96%	100%	100%/95%*
101-200	96%	100%	100%/90%*
201-650	96%	100%	100%/90%*
651-850	96%	100%	100%/90%*
851-2550	96%	100%	100%/90%*
2551-5000	96%	100%	100%/90%*
5001-10000	96%	100%	100%/90%*
>10001	96%	100%	100%/90%*

*100% for Plow and Rocky Plow, 95% and 90% for Other Activities, depending on density zone.

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Aerial Feeder Cable (Normal and Soft Rock)

Density	BellSouth	GTEFL	Sprint
0-5	39.88%	53.58%/55.00%*	30%
6-100	39.88%	53.58%/55.00%*	30%
101-200	39.88%	53.58%/55.00%*	30%
201-650	39.88%	53.58%/55.00%*	30%
651-850	39.88%	53.58%/55.00%*	30%
851-2550	39.88%	53.58%/55.00%*	30%
2551-5000	39.88%	53.58%/55.00%*	30%
5001-10000	39.88%	53.58%/55.00%*	30%
>10001	39.88%	53.58%/55.00%*	30%

*55.00% is for Hard Rock

Aerial Feeder Cable - Anchors and Guys

Density	BellSouth	GTEFL	Sprint
0-5	100%	100%	100%
6-100	100%	100%	100%
101-200	100%	100%	100%
201-650	100%	100%	100%
651-850	100%	100%	100%
851-2550	100%	100%	100%
2551-5000	100%	100%	100%
5001-10000	100%	100%	100%
>10001	100%	100%	100%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Aerial Distribution Cable

Density	BellSouth	GTEFL	Sprint
0-5	39.88%	53.58%/55.00%*	30%
6-100	39.88%	53.58%/55.00%*	30%
101-200	39.88%	53.58%/55.00%*	30%
201-650	39.88%	53.58%/55.00%*	30%
651-850	39.88%	53.58%/55.00%*	30%
851-2550	39.88%	53.58%/55.00%*	30%
2551-5000	39.88%	53.58%/55.00%*	30%
5001-10000	39.88%	53.58%/55.00%*	30%
>10001	39.88%	53.58%/55.00%*	30%

*55.00% is for Hard Rock

Aerial Distribution - Anchors and Guys

Density	BellSouth	GTEFL	Sprint
0-5	100%	100%	100%
6-100	100%	100%	100%
101-200	100%	100%	100%
201-650	100%	100%	100%
651-850	100%	100%	100%
851-2550	100%	100%	100%
2551-5000	100%	100%	100%
5001-10000	100%	100%	100%
>10001	100%	100%	100%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-F: Fill Factors	
Distribution Fill Factors	1.5 pairs per housing unit 3 pairs per business location 90% cable sizing factor
Feeder Fill Factors	68% in lowest density zone (0-5) 72% in next lowest density zone (6-100) 75% in remaining zones

Section V-G: Manholes, Handholes, Adders and Conduit				
	Material Cost	Installation	% Assigned Telephone	Recommended Input
Handhole - 3*5 or 4*6 -Normal -Soft Rock -Hard Rock	$951.64 951.64 951.64	$437.30 437.30 841.22	98% 98% 98%	$1,361.16 1,361.16 1,757.00
Manhole - 4*6*7 -Normal -Soft Rock -Hard Rock	$6,384.00 6,384.00 6,384.00	$0 0 3,231.36	98% 98% 98%	$6,256.[illegible]2 6,256.32 9,423.05
Manhole - 12*6*7 -Normal -Soft Rock -Hard Rock	$9,480.24 9,480.24 9,480.24	$0 0 8482.32	98% 98% 98%	$9,290.64 9,290.64 17,603.31
Adder -12*6*7 -Normal -Soft Rock -Hard Rock	$2,800.00 2,800.00 2,800.00	$500.00 700.00 900.00	98% 98% 98%	$3,234.00 3,430.00 3,626.00
Conduit per Duct Foot			98%	$.91

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-H: Fiber cable costs

Underground Fiber Cable

Size	Total Cost
288	$15.01
144	$9.41
96	$7.51
72	$6.55
60	$6.07
48	$5.51
36	$4.91
24	$4.58
18	$4.43
12	$4.23

Buried Fiber Cable

Size	Total Cost
288	$14.26
144	$8.28
96	$6.23
72	$5.16
60	$4.64
48	$4.07
36	$3.42
24	$3.06
18	$2.90
12	$2.68

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Aerial Fiber Cable

Size	Total Cost
288	$13.90
144	$7.82
96	$5.96
72	$5.33
60	$4.68
48	$4.15
36	$3.70
24	$3.22
18	$3.03
12	$2.83

Section V-I: Copper cable costs

24-Gauge Underground Copper Cable

Size	Total Cost
4200	$61.69
3600	$50.61
3000	$43.65
2400	$31.51
2100	$27.68
1800	$23.80
1200	$14.21
900	$12.39
600	$8.95
400	$8.51
300	$7.10
200	$5.47
100	$4.03
50	$3.51

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Size	Total Cost
25	$3.23
18	$2.83
12	$2.54

24-Gauge Buried Copper Cable

Size	Total Cost
4200	$53.39
3600	$43.21
3000	$37.45
2400	$26.18
2100	$23.18
1800	$19.83
1200	$11.46
900	$10.24
600	$7.55
400	$6.30
300	$5.27
200	$4.51
100	$3.07
50	$2.55
25	$2.27
18	$1.98
12	$1.73

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

24-Gauge Aerial Copper Cable

Size	Total Cost
4200	$45.14
3600	$36.81
3000	$32.03
2400	$22.82
2100	$20.47
1800	$17.68
1200	$10.89
900	$9.79
600	$7.63
400	$5.78
300	$4.80
200	$4.23
100	$2.97
50	$2.51
25	$2.28
18	$1.90
12	$1.64

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

26-Gauge Underground Copper Cable

Size	Total Cost
4200	$61.69
3600	$50.61
3000	$43.65
2400	$26.53
2100	$23.32
1800	$20.05
1200	$11.71
900	$10.51
600	$7.70
400	$7.69
300	$6.48
200	$5.06
100	$3.82
50	$3.40
25	$3.18
18	$2.78
12	$2.51

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

26-Gauge Buried Copper Cable

Size	Total Cost
4200	$53.39
3600	$43.21
3000	$37.45
2400	$20.86
2100	$18.53
1800	$15.83
1200	$8.80
900	$8.24
600	$6.21
400	$5.42
300	$4.61
200	$4.07
100	$2.85
50	$2.44
25	$2.22
18	$1.94
12	$1.70

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

26-Gauge Aerial Copper Cable

Size	Total Cost
4200	$45.14
3600	$36.81
3000	$32.03
2400	$18.54
2100	$16.72
1800	$14.47
1200	$8.75
900	$8.18
600	$6.55
400	$5.07
300	$4.27
200	$3.87
100	$2.79
50	$2.42
25	$2.23
18	$1.86
12	$1.62

Section V-J: Drops	
Buried Aerial	$.69 per foot $.29 per foot

Section V-K: Network Interface Devices	
Business Residential	$50.00 $30.00

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-L: Outside plant mix

Distribution Plant Mix (Normal and Soft Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	0	.27%	.8%
6-100	2%	.27%	1.0%
101-200	5%	.38%	1.1%
201-650	8%	.82%	1.2%
651-850	15%	.87%	1.2%
851-2550	25%	.96%	1.3%
2551-5000	40%	.53%	1.4%
5001-10000	60%	1.95%	1.4%
>10001	90%	1.95%	1.5%

Distribution Plant Mix (Hard Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	0.0%	.27%	.8%
6-100	2.0%	.27%	1.0%
101-200	5.0%	.38%	1.1%
201-650	8.0%	.82%	1.2%
651-850	15.0%	.87%	1.2%
851-2550	18.0%	.96%	1.3%
2551-5000	20.0%	.53%	1.4%
5001-10000	45.0%	1.95%	1.4%
>10001	90.0%	1.95%	1.5%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Distribution Plant Mix (Normal and Soft Rock) - Buried

Density	BellSouth	GTEFL	Sprint
0-5	60%	78.11%	87.5%
6-100	61%	78.11%	87.1%
101-200	62%	73.91%	86.7%
201-650	62%	77.42%	86.4%
651-850	65%	79.52%	86.1%
851-2550	65%	69.36%	85.9%
2551-5000	55%	64.88%	85.6%
5001-10000	35%	24.14%	85.5%
>10001	10%	24.14%	85.3%

Distribution Plant Mix (Hard Rock)- Buried

Density	BellSouth	GTEFL	Sprint
0-5	50%	78.11%	87.5%
6-100	51%	78.11%	87.1%
101-200	52%	73.91%	86.7%
201-650	52%	77.42%	86.4%
651-850	60%	79.52%	86.1%
851-2550	62%	69.36%	85.9%
2551-5000	65%	64.88%	85.6%
5001-10000	40%	24.14%	85.5%
>10001	0	24.14%	85.3%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Distribution Plant Mix (Normal and Soft Rock) - Aerial

Density	BellSouth	GTEFL	Sprint
0-5	40%	21.62%	11.7%
6-100	37%	21.62%	11.9%
101-200	33%	25.72%	12.2%
201-650	30%	21.77%	12.4%
651-850	20%	19.61%	12.7%
851-2550	10%	29.68%	12.8%
2551-5000	5%	34.59%	13.0%
5001-10000	5%	73.9%	13.1%
>10001	0	73.9%	13.2%

Distribution Plant Mix (Hard Rock)- Aerial

Density	BellSouth	GTEFL	Sprint Florida
0-5	50%	21.62%	11.7%
6-100	47%	21.62%	11.9%
101-200	43%	25.72%	12.2%
201-650	40%	21.77%	12.4%
651-850	25%	19.61%	12.7%
851-2550	20%	29.68%	12.8%
2551-5000	15%	34.59%	13%
5001-10000	15%	73.9%	13.1%
>10001	10%	73.9%	13.2%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Copper Feeder Plant Mix (Normal and Soft Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	10%	6.2%	12%
6-100	15%	6.2%	14%
101-200	20%	14.4%	15.7%
201-650	25%	24.09%	17.1%
651-850	45%	28.08%	18.3%
851-2550	65%	33.87%	19.4%
2551-5000	80%	31.66%	20.3%
5001-10000	90%	64.22%	21.2%
>10001	95%	64.22%	21.9%

Copper Feeder Plant Mix (Hard Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	5%	6.2%	12%
6-100	10%	6.2%	14%
101-200	15%	14.4%	15.7%
201-650	25%	24.09%	17.10%
651-850	35%	28.08%	18.3%
851-2550	60%	33.87%	19.4%
2551-5000	80%	31.66%	20.3%
5001-10000	85%	64.22%	21.2%
>10001	95%	64.22%	21.9%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Copper Feeder Plant Mix (Normal and Soft Rock) - Buried

Density	BellSouth	GTEFL	Sprint
0-5	50%	82.41%	84.7%
6-100	45%	82.41%	82.9%
101-200	40%	68.36%	81.4%
201-650	35%	59.8%	80.1%
651-850	30%	60.37%	79%
851-2550	25%	50.26%	78.1%
2551-5000	20%	48.32%	77.2%
5001-10000	10%	22.54%	76.5%
>10001	5%	22.54%	75.8%

Copper Feeder Plant Mix (Hard Rock) - Buried

Density	BellSouth	GTEFL	Sprint
0-5	45%	82.41%	84.7%
6-100	40%	82.41%	82.9%
101-200	35%	68.36%	81.4%
201-650	25%	59.8%	80.1%
651-850	25%	60.37%	79%
851-2550	20%	50.26%	78.1%
2551-5000	10%	48.32%	77.2%
5001-10000	5%	22.54%	76.5%
>10001	0%	22.54%	75.8%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Copper Feeder Plant Mix (Normal and Soft Rock) - Aerial

Density	BellSouth	GTEFL	Sprint
0-5	40%	11.39%	3.3%
6-100	40%	11.39%	3.1%
101-200	40%	17.24%	2.9%
201-650	40%	16.12%	2.8%
651-850	25%	11.55%	2.7%
851-2550	10%	15.86%	2.5%
2551-5000	0	20.03%	2.5%
5001-10000	0	13.24%	2.3%
>10001	0	13.24%	2.3%

Copper Feeder Plant Mix (Hard Rock) - Aerial

Density	BellSouth	GTEFL	Sprint
0-5	50%	11.39%	3.3%
6-100	50%	11.39%	3.1%
101-200	50%	17.24%	2.9%
201-650	50%	16.12%	2.8%
651-850	40%	11.55%	2.7%
851-2550	20%	15.86%	2.5%
2551-5000	10%	20.03%	2.5%
5001-10000	10%	13.24%	2.3%
>10001	5%	13.24%	2.3%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Fiber Feeder Plant Mix (Normal and Soft Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	10%	86.91%	23.5%
6-100	15%	86.91%	25.8%
101-200	20%	92.14%	28.6%
201-650	25%	90.78%	31.8%
651-850	45%	93.74%	35.8%
851-2550	65%	90.65%	40.8%
2551-5000	80%	94.7%	47.2%
5001-10000	90%	96.67%	55.8%
>10001	95%	96.67%	67.8%

Fiber Feeder Plant Mix (Hard Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	5%	86.91%	23.5%
6-100	10%	86.91%	25.8%
101-200	15%	92.14%	28.6%
201-650	25%	90.78%	31.8%
651-850	35%	93.74%	35.8%
851-2550	60%	90.65%	40.8%
2551-5000	80%	94.7%	47.2%
5001-10000	85%	96.67%	55.8%
>10001	95%	96.67%	67.8%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Fiber Feeder Plant Mix (Normal and Soft Rock) - Buried

Density	BellSouth	GTEFL	Sprint
0-5	50	12.89	74.4
6-100	45	12.89	72.1
101-200	40	7.63	69.4
201-650	35	8.24	66.2
651-850	30	5.13	62.3
851-2550	25	7.48	57.4
2551-5000	20	2.97	51.1
5001-10000	10	0	42.7
>10001	5	0	30.8

Fiber Feeder Plant Mix (Hard Rock) - Buried

Density	BellSouth	GTEFL	Sprint
0-5	45%	12.89%	74.4%
6-100	40%	12.89%	72.1%
101-200	35%	7.63%	69.4%
201-650	25%	8.24%	66.2%
651-850	25%	5.13%	62.3%
851-2550	20%	7.48%	57.4%
2551-5000%	10%	2.97%	51.1%
5001-10000	5%	0	42.7%
>10001	0	0	30.8%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Fiber Feeder Plant Mix (Normal and Soft Rock) - Aerial

Density	BellSouth	GTEFL	Sprint
0-5	40%	.21%	2.1%
6-100	40%	.21%	2.1%
101-200	40%	.24%	2.0%
201-650	40%	.97%	2.0%
651-850	25%	1.13%	1.9%
851-2550	10%	1.88%	1.8%
2551-5000	0	2.33%	1.7%
5001-10000	0	3.33%	1.5%
>10001	0	3.33%	1.4%

Fiber Feeder Plant Mix (Hard Rock) - Aerial

Density	BellSouth	GTEFL	Sprint
0-5	50%	.21%	2.1%
6-100	50%	.21%	2.1%
101-200	50%	.24%	2%
201-650	50%	.97%	2%
651-850	40%	1.13%	1.9%
851-2550	20%	1.88%	1.8%
2551-5000	10%	2.33%	1.7%
5001-10000	10%	3.33%	1.5%
>10001	5%	3.33%	1.4%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Fiber Transport Plant Mix (Normal and Soft Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	10%	86.91%	23.5%
6-100	15%	86.91%	25.8%
101-200	20%	92.14%	28.6%
201-650	25%	90.78%	31.8%
651-850	50%	93.74%	35.8%
851-2550	75%	90.65%	40.8%
2551-5000	85%	94.7%	47.2%
5001-10000	85%	96.67%	55.8%
>10001	95%	96.67%	67.8%

Fiber Transport Plant Mix (Hard Rock) - Underground

Density	BellSouth	GTEFL	Sprint
0-5	5%	86.91%	23.5%
6-100	10%	86.91%	25.8%
101-200	15%	92.14%	28.6%
201-650	25%	90.78%	31.8%
651-850	35%	93.74%	35.8%
851-2550	60%	90.65%	40.8%
2551-5000	80%	94.7%	47.2%
5001-10000	85%	96.67%	55.8%
>10001	95%	96.67%	67.8%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Fiber Transport Plant Mix (Normal and Soft Rock) - Buried

Density	BellSouth	GTEFL	Sprint
0-5	80%	12.89%	74.4%
6-100	77%	12.89%	72.1%
101-200	74%	7.63%	69.4%
201-650	70%	8.24%	66.2%
651-850	47%	5.13%	62.3%
851-2550	22%	7.48%	57.4%
2551-5000	15%	2.97%	51.1%
5001-10000	15%	0	42.7%
>10001	5%	0	30.8%

Fiber Transport Plant Mix (Hard Rock) - Buried

Density	BellSouth	GTEFL	Sprint
0-5	45%	12.89%	74.4%
6-100	40%	12.89%	72.1%
101-200	35%	7.63%	69.4%
201-650	25%	8.24%	66.2%
651-850	25%	5.13%	62.3%
851-2550	20%	7.48%	57.4%
2551-5000	10%	2.97%	51.1%
5001-10000	5%	0	42.7%
>10001	0	0	30.8%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Fiber Transport Plant Mix (Normal and Soft Rock) - Aerial

Density	BellSouth	GTEFL	Sprint
0-5	10%	.21%	2.1%
6-100	8%	.21%	2.1%
101-200	6%	.24%	2%
201-650	5%	.97%	2%
651-850	3%	1.13%	1.9%
851-2550	3%	1.88%	1.8%
2551-5000	0	2.33%	1.7%
5001-10000	0	3.33%	1.5%
>10001	0	3.33%	1.4%

Fiber Transport Plant Mix (Hard Rock) - Aerial

Density	BellSouth	GTEFL	Sprint
0-5	50%	.21%	2.1%
6-100	50%	.21%	2.1%
101-200	50%	.24%	2%
201-650	50%	.97%	2%
651-850	40%	1.13%	1.9%
851-2550	20%	1.88%	1.8%
2551-5000	10%	2.33%	1.7%
5001-10000	10%	3.33%	1.5%
>10001	5%	3.33%	1.4%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-M: Digital Loop Carrier Costs

DLC Remote Terminal	
Size	Recommended Input
0	$22,011
25	22,039
49	24,824
97	27,038
121	34,889
193	40,263
241	80,189
385	96,131
673	119,518
1345	154,486
Central Office Terminal	
Size	Recommended Input
0	$5,284
25	5,444
49	5,785
97	7,144
121	7,683
193	13,176
241	17,840
385	18,226
673	20,436
1345	25,470

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Non-Extended Range Line Cards	
Size	Recommended Input
0	588
25	88
49	88
97	88
121	88
193	88
241	76
385	76
673	76
1345	74
Extended Range Line Card	
Size	Recommended Input
Large	159
Small	147

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-N: Terminal Costs

Indoor SAI Inputs

SIZE	RECOMMENDED INPUT
100	1,102.64
200	1,979.68
300	2,781.51
400	3,733.75
600	5,412.63
900	8,043.74
1200	10,825.25
1800	13,456.37
2100	18,067.16
2400	21,500.11
3000	26,912.73
3600	32,174.96
4200	37,587.59

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Outdoor SAI Inputs

SIZE	RECOMMENDED INPUT
100	1,197.67
200	1,371.59
300	1,590.54
400	1,794.08
600	2,447.66
900	3,361.55
1200	4,039.73
1800	5,736.78
2100	6,684.45
2400	7,110.22
3000	8,623.59
3600	10,348.31
4200	12,073.03

Aerial Drop Terminal Inputs

SIZE	**RECOMMENDED INPUTS**
6	$138
12	178
25	288

Buried Drop Terminal Inputs

SIZE	**RECOMMENDED INPUTS**
6	$117
12	145
25	220

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-O: Switching costs and associated variables

Standalone Coefficients, Host Coefficients, and Remote Coefficients

Default values accepted.

Global Inputs, Switching Discount Adj. Factor Table, Partitioning Percentages for Small Switches, Vendor Discounts for Small Switches, and Investment Parameters for Small Switches

LECs' proposed inputs for Global Inputs (except for the Excess CCS Option), Switching Discount Adjustment Factor Table, Partitioning Percentages for Small Switches, Vendor Discounts for Small Switches, and Investment Parameters for Small Switches are recommended.

BellSouth and GTEFL should include the Reserve CCS capacity switching investment in the Usage category. Therefore, BellSouth must zero out its dollar amount per line for 5ESS and DMS host/standalone and remote switches. GTEFL did not provide this information, so it should continue to remain blank for GTEFL's inputs.

Vendor Discounts for Small Switched and Investment Parameters for Small Switches that the LECs' input prices for Small Switches, the BCPM defaults, remain as proposed.

State Default Table

BellSouth's optional inputs be zeroed out, as they are not necessary.

GTEFL to use BellSouth's Building Loading factor of 14.73 percent.

GTEFL use BellSouth's Telco E&I and Common Equipment & Power Factors in this table.

GTEFL's input for the Portion of SS7 Usage Attributable to Local Calling be changed to 25 percent.

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Remainder of the State Default Table inputs remain as proposed.

Switch Discount Factor Table

100 percent of lines be considered new. For the discounts as applied to the BCPM default cost curve, the same discount rate of 66 percent for both new and growth switches is recommended. MDF and Protector discount rate of 29 percent.

GTEFL's Use of GTD Switches

GTEFL use the BCPM default values for the placement of 5ESS and DMS switches, in conjunction with switch discounts.

Section V-P: Traffic Data	(See Section V-O)

Section V-Q: Signaling System Costs	
Signaling system costs	Use BCPM 3.1 defaults inputs as proposed by LECs: $5.11 for residence $9.93 for business

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-R: Transport System Costs and Associated Variables

Transport Inputs

	BellSouth	GTEFL	Sprint
1. Maximum number of nodes on a ring	8	8	8
2. Air to Route Factor	1.370	1.410	1.307
3. Access line to DSO trunk factor associated with host remote links	6	6	6
4. Access line to DSO trunk factor associated with host tandem trunks	10	10	10
5. %Special access circuits to the number of exchange access lines	5.0%	5.0%	14.7%
6. Maximum repeater spacing (miles)	40	40	40
7. MOU per DS1	216,000	216,000	216,000
8. Does a 2 point ('folded') ring use separate routing for the two sides	N	N	N
9. Percent of interoffice MOUs that are EAS	25.00%	25.00%	56.77%
10. Used to identify 'like' tandems	11	7	7

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Fiber Factor Inputs

	BellSouth	GTEFL	Sprint
1. Mileage Equipment Aerial Fiber (per fiber mile)	33%	75.00%	75.00%
2. Mileage Equipment Underground Fiber (per fiber mile)	33%	75.00%	75.00%
3. Mileage Equipment Buried Fiber (per fiber mile)	33%	75.00%	75.00%
4. Fiber Pole Factor	0.245	0.245	0.245
5. Fiber Conduit Factor	0.673	0.673	0.673
6. Miscellaneous Equipment & Power Factor	0.06	0.06	0.06
7. Sheath Sharing Factor	0.63	0.63	0.63
8. Two Point Sheath Sharing Factor	0.5	0.5	0.5
9. Fiber Mix - Aerial	9.9%	5.00%	2.00%
10. Fiber Mix - Underground	48.2%	30.00%	36.00%
11. Fiber Mix - Buried	41.9%	65.00%	62.00%

For the Ring Size Table, staff recommends that a planning threshold of 63.0 percent for OC3 be used by BellSouth, GTEFL, and Sprint-Florida. For the remainder of the planning thresholds, staff recommends that GTEFL use 85.0 percent, as BellSouth and Sprint-Florida have done.

For the Equipment Price Table, staff recommends that GTEFL and Sprint-Florida use BellSouth's proposed inputs. BellSouth's proposed inputs are displayed in the table below.

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Equipment Price Inputs - BellSouth

	Material	Other	Discount	Utilization
Fiber Tip Cable per Fiber	$72	$12	31%	85%
Fiber Patch Panel per Fiber	$167	$17	57%	85%
Sonet Terminal Shelf (OC3)	$16,710	$878	41%	NA
-DS3 Card	$3,749	$124	45%	67%
-DS1 Card	$564	$19	45%	100%
Sonet Terminal Shelf (OC12)	$35,656	$1,874	41%	NA
-OC3 Card	$6,418	$235	39%	NA
-3DS3Card (OC12)	$10,670	$346	46%	31.8%
Sonet Terminal Shelf (OC48)	$75,742	$3,982	41%	NA
-OC3 Card	$14,435	$372	57%	NA
-3DS3Card (OC48)	$10,698	$282	56%	22%
DSX3 Cross Connect Shelf	$7,016	$954	38%	27%
-DSX3 Cross Connect Card	$596	$17	53%	27%
DSX1 Cross Connect Jack Field	$1,490	$5,210	50%	85%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

	Material	Other	Discount	Utilization
Channel Bank Shelf	$4,634	$277	33%	85%
-Channel Bank Card	$299	$12	33%	85%
Fiber Repeater (OC3)	$16,710	$878	41%	NA
Fiber Repeater (OC12)	$35,656	$1,874	41%	NA
Fiber Repeater (OC48)	$75,742	$3,982	41%	NA

Section V-S: Expenses

Support Ratios

Account	Support Ratio
Motor Vehicle	0.7957%
Special Purpose Vehicles	0.0003%
Garage Work Equipment	0.0287%
Other Work Equipment	0.7447%
Furniture	0.1833%
Office Support	0.8243%
General Purpose Computers	2.2743%
TOTAL SUPPORT RATIO	4.8513%

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Expense to Investment Ratios

Account	Expense to Investment Ratio
COE Switching	.0866
COE Transmission	.0249
Poles	.0144
Aerial Copper Cable	.0592
Aerial Fiber Cable	.0098
Underground Copper Cable	.0157
Underground Fiber Cable	.0030
Buried Copper Cable	.0413
Buried Fiber Cable	.0052
Conduit	.0119

Monthly Per Line Expenses

Account	Monthly Per Line Expense
Network Support	$0.04
General Support	$0.80
Information Originating/ Terminating	$0.36
Other Property and Plant	$0.01
Network Operations	$1.12
Marketing	$0.75
Services	$1.47
Executive and Planning	$0.07
General and Administrative	$1.64
Uncollectibles	$0.30
TOTAL	$6.56

APPENDIX A - COMMISSION-ORDERED INPUT VALUES

Section V-T: Other Inputs	
Wire Center Line Counts	Use actual wire center line counts as proposed by LECs
Loop Cost Investment Cap	BellSouth, GTEFL, and Sprint-Florida should use $4,350.
White Pages Directory Listing Cost	BellSouth and Sprint-Florida use GTEFL's per line cost of $0.40 per line
Inputs Not Specifically Addressed	Accept each LEC's proposed inputs. BellSouth must first remove the effects of use if TPIs for forward-looking adjustments.

APPENDIX B - BCPM RESULTS WITH COMMISSION-ORDERED INPUTS AND MODIFICATIONS

To be filed with the Commission's Report to the Legislature and incorporated by reference herein.