Before The
Federal Communications Commission
Washington, D.C. 20554

In the Matter of		
Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers	))))))	WC Docket No. 03-173

Declaration of

Richard B. Lee

On Behalf of

AT&T Corp.

December 16, 2003

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I. INTRODUCTION AND QUALIFICATIONS

1. My name is Richard B. Lee. I am Vice President of the economic consulting firm of Snavely King Majoros O'Connor & Lee, Inc. ("Snavely King"). My business address is 1220 L Street, N.W., Suite 410, Washington, D.C. 20005.

2. I earned a Bachelor of Science degree in Industrial Administration with High Honors from Yale University in 1961. I earned a Master of Business Administration degree with Distinction from the Harvard Business School in 1963.

3. Snavely King, formerly Snavely, King & Associates, Inc., was founded in 1970 to conduct research on a consulting basis into the rates, revenues, costs and economic performance of regulated firms and industries. The firm has a professional staff of 14 economists, accountants, engineers and cost analysts. Most of its work involves the development, preparation and presentation of expert witness testimony before Federal and state regulatory agencies. Over the course of its 30-year history, members of the firm have participated in over 500 proceedings before almost all of the state commissions and all Federal commissions that regulate utilities or transportation industries.

4. Since joining Snavely King in 1991, I have assisted clients in proceedings before the Federal Communications Commission ("FCC") related to a variety of matters. Attachment 1 is a list of the FCC filings I have prepared on behalf of the General Services Administration ("GSA"). The GSA represents the customer interests of

the Federal Executive Agencies in matters before the FCC. I have also assisted clients in proceedings before twenty-eight state commissions related to the telephone, cellular telephone and electric industries. Attachment 2 is a list of my appearances before regulatory agencies on behalf of various clients.

5. From 1980 to 1990, I was employed by the American Telephone and Telegraph Company ("AT&T") in its Federal Regulatory Affairs Division. As Regulatory Vice President - Financial and Accounting Matters, I represented AT&T before the FCC in all financial and accounting matters. In that capacity, I directed the preparation and presentation of all AT&T Communications depreciation represcription filings before the FCC. I also conceived and developed a methodology which reduced the administrative burden of AT&T's depreciation filings by over 90 percent. Prior to divestiture, I directed the preparation and presentation of all Bell Operating Company ("BOC") depreciation filings before the FCC.

6. From 1963 to 1980, I was employed by the New York Telephone Company. I held a variety of progressively responsible positions leading to a position representing the Company in accounting matters before the New York Public Service Commission. In this capacity, I participated in a number of general rate cases and related proceedings. My complete resume is attached as Attachment 3.

II. SUMMARY OF DECLARATION

7. In this declaration, I respond to the questions raised by the Commission's Notice

of Proposed Rulemaking ("NPRM") in WC Docket No. 03-173 concerning the depreciation lives and methods appropriate for estimating the Total Element Long-Run Incremental Costs ("TELRIC") of unbundled network elements ("UNEs").[1]

8. Section III of this declaration demonstrates that the lives and life ranges prescribed by the FCC, and adopted by most state commissions in UNE cases in recent years, are forward-looking and appropriate for use in TELRIC calculations. This section also explains why financial book lives, and lives used in the planning of capital expenditures, are inappropriate for use in TELRIC calculations.

9. Section IV of this declaration examines the FCC's suggestion that acceleration or deceleration of the rate of depreciation, or adjustments to TELRIC-based prices, might be appropriate for assets whose prices are expected to rise or fall over time. No adjustments of this kind is warranted. First, the lives prescribed by the FCC and adopted by state commissions generate annual depreciation charges that are ample to cover foreseeable declines in the prices of assets over their lives. In effect, overlaying an additional adjustment would represent a double-count of depreciation. Second, explicit adjustments for expected changes in the prices of assets over their service lives would necessarily be in both directions: for many assets, particularly those relating to loops, the required UNE price adjustment would be downward, not upward. Third, and in any event, any such adjustments would be complex, controversial and unlikely to significantly affect

[1] Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, WC Docket No. 03-173, Notice of Proposed Rulemaking ("NPRM"), FCC 03-224, released September 15, 2003, at 33-38.

overall depreciation costs. I recommend, therefore, that the FCC merely encourage state commissions to continue considering expected future changes in initial investment costs when adopting lives from the FCC's prescribed range.

III. ASSET LIVES

10. The first component of depreciation raised by the NPRM is the useful life of assets.[2] This section of my declaration explains why FCC projection lives should be used in TELRIC calculations, and why financial book and capital planning lives should not be used.

A. FCC PROJECTION LIVES SHOULD BE USED IN TELRIC CALCULATIONS

11. The FCC's rules require that only forward-looking costs be used in the setting of interconnection prices.[3] This requirement dictates the use of economic depreciation rates.[4] To comply with this guideline, the plant lives used must be based upon the expected economic lives of newly placed plant.[5] In depreciation proceedings, such plant lives are termed "projection lives" to differentiate them from "remaining lives" and "average service lives," which reflect past plant placements.

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[2] *Id*., ¶. 94-101.

[3] FCC, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order, FCC 96-325, released August 8, 1996 ("*Local Competition Order*"), Appendix B ("Rules"), §51.505 (a).

[4] Rules, §51.505 (b) (3).

[5] The economic life of an asset is its total revenue producing life. Public Utility Depreciation Practices, National Association of Regulatory Utility Commissioners, August 1996 ("NARUC Manual"), at 318.

12. In general, I believe the projection lives prescribed by the FCC to be the most realistic estimates of plant projection lives. Pursuant to statutory responsibility, the FCC has been prescribing depreciation parameters for telephone companies for over 50 years.[6] Until recently, the FCC reviewed full studies submitted by the largest companies on a triennial basis.[7] The projection lives prescribed by the FCC are the result of its analysis of depreciation studies filed by carriers and performed in consultation with state regulatory commission staffs.

13. The lives prescribed by the FCC are forward-looking. As the FCC recently noted, in 1980 it "departed from its previous practice of relying largely on historical experience to project equipment lives and began to rely on analysis of company plans, technological developments, and other future-oriented studies."[8] As the FCC has stated, its "prescribed lives are not based solely on the engineered life of an asset, but also consider the impacts of technological change and obsolescence."[9]

14. In 1995, the FCC reaffirmed its forward-looking orientation in connection with the simplification of its depreciation represcription practices. The FCC prescribed a range of projection lives that could be selected by carriers for prescription on a

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[6] 47 U.S.C. §220 (b).

[7] Interim updates are also performed.

[8] FCC, *1998 Biennial Regulatory Review-Review of Depreciation Requirements for Incumbent Local Exchange Carriers*, CC Docket 98-137, Report and Order, FCC 99-397, released December 30, 1999 ("*1999 Update*"), ¶ 5.

[9] *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45; *Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, CC Docket No. 97-160; Tenth Report and Order, FCC 99-304, released November 2, 1999 ("*Universal Service Inputs Order*"), at 427.

streamlined basis. The FCC stated that these ranges were based upon "statistical studies of the most recently prescribed factors. These statistical studies required detailed analysis of each carrier's most recent retirement patterns, the carriers' plans, and the current technological developments and trends."[10] In 1999, the FCC completed a review of these ranges and updated them as appropriate.[11] The FCC stated:

> These ranges can be relied upon by Federal and state regulatory commissions for determining the appropriate depreciation factors for use in establishing high cost support and interconnection and UNE prices.[12]

Indeed, the FCC further stated:

> In adopting a forward-looking mechanism for high-cost support, we found that depreciation expense calculations based on the Commission's prescribed projection lives and salvage factors represent the *best forward-looking estimates* of depreciation lives and net salvage percentages.[13]

15. Recent trends in depreciation reserve levels in the telephone industry and for the BOCs provide empirical evidence that the projection lives prescribed by the FCC

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[10] FCC, *Simplification of the Depreciation Prescription Process*, CC Docket No. 92-296 ("*Prescription Simplification proceeding*), Third Report and Order, FCC 95-181, released May 4, 1995, ¶ 11.

[11] *1999 Update*, ¶ 14.

[12] *Id.*, ¶ 34.

[13] FCC, *United States Telephone Association's Petition for Forbearance from Depreciation Regulation of Price Cap Local Exchange Carriers*, ASD 98-91, Memorandum Opinion and Order, FCC 99-397, released December 30, 1999 ("USTA Order"), ¶ 61 (emphasis added).

have been forward-looking. As the FCC has recognized, "[t]he depreciation reserve is an extremely important indicator of the depreciation process because it is the accumulation of all past depreciation accruals net of plant retirements. As such, it represents the amount of a carrier's original investment that has already been returned to the carrier by its customers."[14]

16. The FCC's recognition of the reserve level as an indicator of the depreciation process can best be understood by examining a steady state example. Assume that we start with a stable environment in which the average age of plant is 9 years and the expected life of plant is 27 years. In this case, the add rate, retirement rate and straight-line accrual rate are all 3.7 percent (1/27), and the reserve level is stable at 33 percent of plant in service (9 years/27 years).[15] As we vary these factors, we can see the effect on the reserve level. For example:

- If the add rate were to increase above 3.7 percent, the reserve level would go down. This would not be a cause for concern, since the average age of plant would similarly represent a lower percentage of its expected life.
- If the retirement rate were to increase above 3.7 percent, the reserve level would go down. This would be a cause for concern, since it would

[14] FCC, Report on Telephone Industry Depreciation, Tax and Capital/Expense Policy, Accounting and Audits Division, April 15, 1987 ("AAD Report"), at 5-6.

[15] Depreciation Reserve will stabilize at 33 percent assuming a triangular (straight-line) mortality curve. See Notes for Engineering Economics Courses, American Telephone and Telegraph Company, Engineering Department, 1966, at 121.

indicate that the expected life of plant is shorter than previously expected. If the expected life is shorter, the average age of plant would represent a higher percent of its expected life, and the reserve should be higher, not lower than 33 percent.

- If the accrual rate were to increase above 3.7 percent, the reserve level would go up. This would not be appropriate absent a reduction in the expected life of the plant, since it would indicate that the age of plant is higher than 33 percent of its expected life.

17. In summary, a declining reserve percent would be a reason for concern absent indications that it is merely the result of accelerating growth in plant. On the other hand, a rising reserve percent is generally a positive sign that the depreciation process is working well. Indeed, absent indications that the expected life of plant is decreasing, it might be a sign that accrual rates are too high.

18. Attachment 4 to this declaration displays reserve levels and other plant rates since 1946 for all local exchange carriers ("LECs") providing full financial reports to the FCC. As shown on Page 1 of Attachment 4, reserve percentages decreased steadily following World War II due to industry growth. These declines continued through the 1970's due in part to accrual rates that were too

low.[16]

19. As shown on Page 1 of Attachment 4, however, the FCC's change to forward-looking depreciation practices in the early 1980s resulted in a dramatic rise in reserve levels after 1980. The composite reserve level rose from 18.7 percent in 1980 to an historic high of 53.8 percent in 2001. This track record indicates that the depreciation process is resulting in more than adequate depreciation accruals, and that the FCC's projection life estimates have reflected the forward-looking assumption that future plant lives will be shorter than those in the past.

20. Confirmation of the forward-looking nature of current FCC prescriptions can be gained by comparing the 2001 accrual rate of 6.8 percent (Attachment 4, Page 4, Column l) with the 2001 retirement rate of 2.7 percent (Attachment 4, Page 4, Column k). The prescription of an accrual rate much higher than the current retirement rate indicates an expectation that the retirement rate will be much higher in the future. If the FCC were prescribing depreciation rates based upon historical indicators, it would be prescribing depreciation rates in the range of 3 to 5 percent.

21. Attachment 5 confirms that these industry trends apply also to the BOCs. The depreciation reserve level for the BOCs has risen from 38.9 percent in 1992 to 56.9 percent in 2002, despite a growth in plant of over 40 percent.

22. Further empirical evidence that the FCC's prescribed ranges remain appropriate can be gained by comparing them to the current life indications for the BOCs' major accounts. Attachment 6 makes this comparison based upon a series of

[16] AAD Report, at 7.

Geometric Mean Turnover ("GMT") studies.

23. A GMT study is one of the "turnover" methods of life analysis, which in turn study plant additions and retirements, regardless of their age, in relation to plant balances. The methods, which provides average life indications, assume the account balance is growing uniformly and the dispersion [pattern] of retirements is the same for each vintage. Turnover analysis is based upon the general theory that the time it takes the plant to turn over (i.e., the time it takes retirements to exhaust a previous plant balance) is a measure of its service life.

24. The GMT method is a simplified form of the Asymptotic method.[17] The Asymptotic method proposes that a life estimate may be obtained using the limiting values, or asymptotes, of the additions and retirement ratios. This method assumes that the account has stabilized and the balances are either constant or changing at a constant rate.[18] The life estimate is the reciprocal of the geometric mean of the limiting value of the additions and retirements ratios, as show below:

$$\text{Life estimate} = \frac{1}{\sqrt{ar}}$$

where "a" is the limiting value of the additions ratios (additions ratios = additions/plant balances),

where "r" is the limiting plant value of the retirements ratios (retirements/plant balances).

And the values for a and r are estimated by determining additions and

[17] Both the Asymptotic and GMT methods were developed by Joseph Jeming, NARUC Manual, pages 89-91.

[18] *Id*., p. 89. (footnote deleted.)

retirements ratios each year and fitting each to a curve.[19]

25. The GMT method was developed as a simplification of the Asymptotic method to be applied when the best fit to the ratios is a straight line. The method assumes the growth rate and average life have remained fairly constant for at least one life cycle (roughly twice the average life). The life estimate is the reciprocal of the geometric mean of the additions and retirements ratios over a period of years:

$$\text{Life estimate} = \frac{1}{\sqrt{ar}}$$

where a = the average additions ratio
where r = the average retirements ratio

If the plant is static (i.e., zero growth), a is equal to r and the life indication is the reciprocal of either value.

26. The presence of erratic annual ratios may force the consideration of cumulative data. This modification is also used when r is greater than a. An alternative to using cumulative data over the entire history is to accumulate data over short intervals, e.g., at least ten separate intervals of three to five years each. If the data are highly irregular, this modification may succeed in indicating trends, but not a reliable life indication.[20]

27. Attachment 6 calculates the GMT life indications for a 1990 to 2002 base period and ten consecutive bands, of three years each, within the base period. Both the

[19] *Id.*, pages 89-90.

[20] *Id.*, p. 90-91.

base period indications and the banded indications are plotted on "worm charts" to highlight any trends.[21] The FCC's prescribed ranges are shown on each account worm chart.

28. The following table compares the FCC's prescribed range to the latest GMT life indications for the major accounts of the BOCs:

	FCC RANGE		**LATEST**
	Low	**High**	**GMT LIFE**
All Accounts	N/A	N/A	18
Digital Switching	12	18	17
Circuit	11	13	15
Aerial Cable	20	30	32
Underground Cable	25	30	48
Buried Cable	20	30	29

Current life indications all are near or above the high point of the FCC's range, indicating that the FCC expects future service lives to be shorter than those of plant retired since 1990.

B. OTHER STATE TELRIC DECISIONS SUPPORT FCC PROJECTION LIVES

29. In 1996, Texas[22] and Massachusetts[23] adopted FCC lives in UNE proceedings. The Massachusetts Department of Public Utilities stated:

> As noted by Mr. Lee, the FCC's represcription process is based on a forward-looking orientation, including current technological

[21] Worm Chart is a term of art for a table plotting consecutive life indications.

[22] Public Utility Commission ("PUC") of Texas, Docket 16189, et al. (Nov. 8, 1996).

[23] Massachusetts Department of Public Utilities, DPU 96-73/74, et al. (Dec. 4, 1996).

> developments and trends. He notes that this has been made evident in increasing depreciation reserve levels for NYNEX. He also states that the FCC projection lives result in a composite 7.4 percent depreciation rate, despite an average retirement rate of only 3.3 percent. This, he assets, is a clear indication that the FCC's projection lives are forward-looking, because, if it were using a historical approach, the composite rate would be in the 3 to 4 percent range (AT&T Unmarked Exh. at 6-4).
>
> Under the terms of the Local Competition Order, it is NYNEX's burden to prove the reasonableness of its proposed depreciation rates. Dr. Vanston's testimony does not effectively rebut Mr. Lee's characterization of the FCC process, and although he has offered general opinions about the degree of technological change that might occur in the industry, he has presented no NYNEX-specific analysis that might cause us to think that the FCC lives are not appropriate.
>
> We find, based on this record, that the projection lives prescribed by the FCC in its last represcription of NYNEX's depreciation rates are the kind of forward-looking projection lives required in a TELRIC study.[24]

30. In 1997, FCC lives, or similar state prescribed lives, were adopted by New

[24] *Id*., at 55-56.

York,[25] West Virginia,[26] Wyoming,[27] Delaware,[28] Ohio,[29] Colorado,[30] Maryland,[31] Louisiana[32] and Georgia.[33] The West Virginia Commission noted:

> The Commission will adopt, for the most part, AT&T's argument that the Commission should base BA-WV's depreciation lives on those lives prescribed by the FCC during the represcription process. Such lives do take into account technological advances and telecommunications carriers' actual retirement of plant. Moreover, the FCC has indicated that these lives, or those adopted by state commissions, are an "appropriate starting point" for establishing depreciation lives for an ILEC's physical plant.[34]

The Ohio Commission stated:

> As noted previously, the incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing UNEs and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate than that previously authorized. Ameritech has failed to meet its

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[25] New York Public Service Commission ("PSC"), Cases 95-C-0657, 94-C-0095, 91-C-1174, Opinion No. 97-2 , (April 1, 1997).

[26] West Virginia PSC, Case No. 96-1516-T-OC (April 21, 1997) ("West Virginia UNE Case'").

[27] Wyoming PSC, Docket 70000-TF-96-319, 72000-TF-96-95 (April 23, 1997).

[28] Delaware PSC, Docket 96-324 (April 24, 1997).

[29] Ohio PUC, Docket 96-922-TP-UNC (June 19, 1997) ("Ohio UNE Case").

[30] Colorado PUC, Docket 96S-331T (July 28, 1997).

[31] Maryland PSC, Case No. 8731 Phase II (Sep. 22, 1997).

[32] Louisiana PSC, Docket U-22022/22093 (Oct. 22, 1997).

[33] Georgia PSC, Docket 7061-U (Dec. 16, 1997) ("Georgia UNE Case").

[34] West Virginia UNE Case, at 41.

> burden on this issue. As pointed out by the intervenors, the most recent depreciation rates which have been analyzed and approved for the company are the projection lives prescribed by the FCC. Ameritech has failed to demonstrate with specificity why those previously prescribed depreciation lives are inadequate for the provision of UNEs and interconnection services.[35]

The Georgia Commission noted:

> For purpose of the assumptions contained in the cost studies in this proceeding, the Commission will use the plant lives and depreciation rates as prescribed by the FCC for BellSouth's operations in Georgia. These are appropriate for the cost study methodology and model assumptions, unless and until such time as the FCC enters into any new rulemaking on the matter. The FCC is fully aware of the increasingly competitive telecommunications marketplace, as evidenced by many FCC orders in recent years including the FCC's First Report and Order in the local competition docket (CC Docket 96-98) dated August 1996, which followed lengthy proceedings.[36]
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> ***
>
> In addition, the FCC's orders and the evidence presented in this case show that the FCC-prescribed lives and rates are forward-looking and are reasonable for use in the cost studies in this proceeding.[37]

31. In 1998, FCC lives, or similar state prescribed lives, were adopted by Nevada, [38]

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[35] Ohio UNE Case, at 8.

[36] Georgia UNE Case, at 30.

[37] *Id*.

[38] Nevada PUC, Docket 96-9035 (Feb. 5, 1998).

Illinois, [39] Florida, [40] Virginia, [41] South Carolina, [42] Alabama, [43] Mississippi, [44] and North Carolina.[45] The Illinois Commission stated:

> We believe that the projection lives and future net salvage percentages underlying the depreciation rates prescribed for Ameritech Illinois by the FCC as set forth in the FCC's annual update of depreciation rates should be used in the TELRIC calculations. (FCC 96-22 adopted January 25, 1996). They reflect the most recent credible and comprehensive evaluation of depreciation in the record. We are persuaded by Mr. Majoros' testimony that the FCC projected lives are reasonably forward-looking. We note the FCC has stated they are based on a detailed analysis of each carrier's most recent retirement patterns, the carrier's plans, and current technological developments and trends.[46]

The Virginia Commission noted:

> We adopted the AT&T/MCI-recommended depreciation parameters (Exhibit RBL-78, Attachment 6, Column "FCC VA"), in which Staff concurred, for forward-looking, economic lives and net salvage percentages. These parameters are the best supported and most

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[39] Illinois Commerce Commission, Docket 96-0569 (Feb. 17, 1998) ("Illinois UNE Case")

[40] Florida PSC, Docket 960833-TP (April 29, 1998).

[41] Virginia State Corporation Commission, Docket PUC970005 (May 22, 1998) ("Virginia UNE Case").

[42] South Carolina PSC, Docket 97-374-C (June 1, 1998).

[43] Alabama PSC, Docket 96029 (Aug. 25, 1998).

[44] Mississippi PSC, Docket 97-AD-544 (Aug. 25, 1998).

[45] North Carolina Utilities Commission, Docket P-100, Sub. 133d (Dec. 10, 1998).

[46] Illinois UNE Case, at 28-29.

reasonable data in this proceeding.[47]

32. In 1999, state prescribed lives similar to those prescribed by the FCC were also adopted by Hawaii[48] and Tennessee.[49] In 2001, the Rhode Island Commission adopted lives prescribed by the FCC,[50] and the New Jersey Board adopted lives at the midpoint of the FCC's authorized range.[51] Last year, the Maine Commission adopted the lives prescribed by the FCC for use in UNE costing,[52] as did the Pennsylvania Commission in a Tentative Order.[53] Earlier this year, the Georgia Commission reaffirmed its 1997 decision to use FCC prescribed lives,[54] and the Maryland Commission adopted lives based upon the ranges prescribed by the FCC.[55]

33. In August, the FCC's Wireline Competition Bureau ("FCC WCB"), standing in the stead of the Virginia State Corporation Commission, adopted lives based upon

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[47] Virginia UNE Case, at 6.

[48] Hawaii PUC, Docket 7702 (Jan. 7, 1999).

[49] Tennessee Regulatory Authority, Docket 97-01262 (Jan. 25, 1999).

[50] Rhode Island PUC, Docket No. 2681 (Nov. 18, 2001).

[51] New Jersey Board of Public Utilities, Docket No. T00060356 (Dec. 17, 2001).

[52] Maine PUC, Docket No. 97-505 (Feb. 12, 2002).

[53] Docket No. R-00016683 (October 24, 2002).

[54] Docket No. 14361-U (March 18, 2003).

[55] Case No. 8879 (June 30, 2003).

34. the FCC's prescribed ranges.[56] The FCC WCB stated:

> Based on the record before us, we agree with AT&T/WorldCom that FCC regulatory lives should be used for purposes of calculating UNE prices.[57]

35. In its 1999 Update, the FCC noted the use of its prescriptions in state UNE cases as follows:

> We are concerned that forbearance from depreciation regulation by the Commission might deprive state regulatory commissions of valuable information that they may want or need in setting rates for interconnection and UNE's, and might enable incumbent LECs to raise arbitrarily the rates for essential inputs that competitors must purchase from the incumbent LECs. This could have an adverse impact on the development of local competition.[58]

C. FINANCIAL BOOK LIVES REMAIN INAPPROPRIATE FOR TELRIC CALCULATIONS

35. The NPRM notes that the FCC has been reluctant to rely on financial book lives for regulatory purposes.[59] As I will explain, this reluctance is well founded. As the FCC and most state commission have found, financial book lives are not

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[56] In the Matter of Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia, Inc., and for Expedited Arbitration, CC Docket No. 00-218; In the Matter of Petition of AT&T Communications of Virginia Inc., Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia Corporation Commission Regarding Interconnection Disputes With Verizon Virginia, Inc., CC Docket No. 00-251; Memorandum Opinion and Order, DA 03-2738, released August 29, 2003 ("Virginia Arbitration Order"), at para. 112.

[57] *Id*.

[58] *1999 Update*, ¶ 33 (footnote deleted).

[59] NPRM, para. 98.

appropriate for use in TELRIC calculations.

36. Financial book lives are governed by the Generally Accepted Accounting Principle ("GAAP") of conservatism, which dictates, when alternative estimates are about equally likely, the less optimistic estimate, that is, the estimate that yields the lowest net income, should be used.[60]

37. In the FCC's Prescription Simplification proceeding, GTE noted that the GAAP conservatism principle "prefers the understatement (versus overstatement) of net income and net assets where any potential measurement problems exist."[61] Most accountants would agree that the very nature of depreciation – specifically the requirement to predict future plant lives – makes it a challenge to measure with any precision or certainty.[62] GAAP, independent auditors and the Security and Exchange Commission, therefore, might well prevent LECs from <u>understating</u> depreciation, since this would overstate net income and net assets. It is highly unlikely, however, that GAAP, or any financial auditor, would find that a LEC (or any company, for that matter) had overstated its depreciation, since this would result in a conservative view of net income and net assets.

38. In its October 1993 Order, the FCC agreed with GTE, stating:

> One of the primary purposes of GAAP is to ensure that a company does not present a misleading picture of its financial condition and

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[60] Statement of Financial Accounting Concepts No. 2, Financial Accounting Standards Board, May 1980, at 95.

[61] Prescription Simplification, Comments of GTE Service Corporation and its affiliated domestic telephone operations companies ("GTE"), March 10, 1993, at 14.

[62] In his discussion of stock option valuation, investor Warren Buffet noted: "It's far more problematic to calculate the useful life of machinery, a difficulty that makes the annual depreciation charge merely a guess." Washington Post, Tuesday, April 9, 2002.

> operation results by, for example, overstating its asset values or overstating its earnings, which would mislead current and potential investors. GAAP is guided by the conservatism principle which holds, for example, that, when alternative expense amounts are acceptable, the alternative having the least favorable effect on net income should be used. Although conservatism is effective in protecting the interest of investors, it may not always serve the interest of ratepayers.[63]

39. The FCC again expressly rejected the use of financial book lives in its Universal Service Inputs Order. The FCC stated:

> We also agree with GSA's comments that the projected-life values currently used by LECs for financial reporting purposes are inappropriate for use in the model. In addition, the commenters proposing these values have not explained why the values used for financial reporting purposes would also reflect economic depreciation. The depreciation values used in the LECs' financial reporting are intended to protect investors by erring on the side of conservative understatement of net assets, partially achieving this goal by erring on the side of over-depreciation. These preferences are not compatible with the accurate estimation of the cost of providing services that are supported by the federal high-cost mechanism. We, therefore, decline to adopt the proposed life values used by LECs for financial reporting purposes.[64]

40. The FCC also addressed this issue in response to a petition by the United States

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[63] Prescription Simplification, Report and Order, FCC 93-452, released October 20, 1993, ¶ 46.

[64] Universal Service Inputs Order, at 429 (footnote deleted).

Telecom Association ("USTA").[65] In its 1999 USTA Order, the FCC reiterated its conclusion that conservatism "did not offer adequate protection for ratepayers in the case of depreciation accounting."[66] The Commission added:

> We are not persuaded that the role of the conservatism principle has changed or that we should change our previous decision.[67]

41. The GAAP conservatism principle has certainly not changed since 1999. As the Supreme Court has noted, "financial accounting has as its foundation the principle of conservatism."[68] If anything, the recent accounting scandals involving such companies such as Enron, and their "independent" auditors, have reinforced the instinct of the profession to adhere to the GAAP principle of conservatism. This principle, while vital to investors, precludes the use of financial book lives in TELRIC calculations.

D. LIVES USED FOR PLANNING CAPITAL EXPENDITURES ARE NOT APPROPRIATE FOR TELRIC CALCULATIONS

42. The NRPM also requests information concerning the lives that companies use to plan capital expenditures, and the relationships of these lives to financial book lives.[69] As I will demonstrate, the lives used by AT&T to plan its capital

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[65] Forbearance from Depreciation Regulation of Price Cap Local Exchange Carriers, Petition for Forbearance of the United State Telephone Association, filed September 21, 1998.

[66] USTA Order, ¶48.

[67] *Id*.

[68] *Shalala v. Guernsey Memorial Hospital*, 115 S.Ct. 1232 (1995).

[69] NPRM, at para. 98.

expenditures are even more conservative (i.e. – shorter) than those used by AT&T for financial book purposes. Such lives are entirely too short for use in TELRIC calculations.

43. In preparing its financial books, AT&T estimates the remaining live of each asset group consistent with the GAAP principle of conservatism. Page 1 of Attachment 7, estimates projection lives for the major accounts (Column e) based upon the remaining lives currently used for AT&T's local service assets (Column d). Each remaining life is multiplied by the ratio of projection life to remaining life (Column c) currently used by Technology Futures, Inc. ("TFI") in its analyses of incumbent LEC plant lives.[70] On Page 2 of Attachment 7, AT&T's projection lives (Column a) are compared to the FCC's prescribed projection life ranges (Column b). AT&T's projection lives are near or above the high point of the FCC's ranges in all cases. Since AT&T's financial book lives are based upon the GAAP principle of conservatism, this comparison provides another indication of the appropriateness of the FCC's ranges for use in TELRIC calculations.

44. For capital expenditure planning purposes, AT&T uses a single plant life, as shown on Page 3 of Attachment 7. The use of a single life not only simplifies the planning process, it also reflects the fact that in many cases AT&T's project planners do not know specifically what plant will be used to implement a given project. Most projects require a mix of embedded and new plant of various types. AT&T has found its single-life process highly efficient.

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[70] TFI's telecommunications studies are sponsored by the Telecommunications Forecasting Group, an industry association of major incumbent LECs in the United States and Canada. TFI's studies have been used frequently by incumbent LECs to support shorter lives in regulatory proceedings.

45. For a number of reasons, the life chosen by AT&T for capital expenditure planning is significantly shorter than the latest life indication noted above for all BOC plant (18 years). First, as explained above, the planning life applies to embedded plant, as well as new plant, so it is essentially a composite of remaining life and projection life. Second, AT&T's capital projects tend to involve a high proportion of electronic equipment, with relatively short lives. Finally, and of greatest importance, the life used is intentionally very conservative (i.e.-short). The internal competition for access to limited capital resources is intense at AT&T, as it is at all telecommunications companies. The deliberate use of short plant lives for capital expenditure planning provides a margin of safely against the risk of overoptimism by project planners. The use of lives as short as those used for capital expenditure planning is clearly inappropriate for use in TELRIC calculations.

IV. DEPRECIATION RATES

A. LIVES AND LIFE RANGES PRESCRIBED BY THE FCC FULLY COMPENSATE CARRIERS FOR FUTURE INITIAL INVESTMENT COST INCREASES

46. The NPRM suggests that front-loading of depreciation may be appropriate for an asset whose market prices are expected to decline over time.[71] The NPRM also suggests that back-loading depreciation may be appropriate when asset prices are rising.[72] The NPRM reasons that, when prices are declining, recovering

[71] NPRM ¶ 102. It should be noted, of course, that the use of the Equal Life Group model option already front-loads depreciation relative to "straight-line" (Vintage Group) depreciation.

[72] *Id.*, at footnote 150.

more of the initial capital outlay for an asset in the early years would enable a carrier to recover less in later years, thereby allowing it to compete with carriers that purchase new, lower-priced equipment in those later years.[73]

47. While theoretically appealing, these suggestions assume that the lives being used in the TELRIC calculation are not short enough to compensate for declines in asset values resulting from future price declines due to technological improvements. As I explained above, however, the lives and life ranges prescribed by the FCC have proven to be short enough to compensate for physical exhaustion, technological obsolescence and expected decreases in asset values. Indeed, overlaying an adjustment on top of a calculation using FCC lives which are far shorter than supported by recent empirical data would result in a double-count of the effect of technological obsolescence.

B.

B. FINE-TUNING OF DEPRECIATION RATES TO ACCOUNT FOR INITIAL INVESTMENT COST CHANGES WOULD RESULT IN SOME RATES GOING UP AND SOME RATES GOING DOWN

48. Even assuming, for the sake of argument, that adopted lives fail to capture the effects of future changes in asset values, adjustments to correct such an omission would have the effect of increasing depreciation costs for some assets, and decreasing them for others. Assets whose initial costs were expected to decrease would accrue higher depreciation initially, while assets whose initial costs were expected to increase would accrue lower depreciation initially.

49. A working paper by David Mandy and William Sharkey for the FCC's Office of

[73] *Id.*, at ¶ 93.

Strategic Planning ("OSP") examines this matter and proposes an adjustment that marks up the levelized capital recovery factor for the difference in the present value of the revenue stream that would result if triennial UNE price represcription tracked the continued decline in the initial costs of assets.[74] The OSP Working Paper also notes that the reverse adjustment would be appropriate if UNE asset costs are increasing.[75]

50. Attachment 8, Schedule 1 to this declaration develops the adjustment required to adjust the levelized capital recovery factor (accepting as correct the assumptions used in the OSP Working Paper) to illustrate decreasing initial investment costs. This illustration assumes an asset life of 16 years, an annual decrease in initial investment of 10.98 percent, a discount factor of 11.25 percent and recalculation of UNE rates every three years.[76] It should be noted that each of these assumptions represents little more than a guess. The rate of initial investment price change for any asset group over its entire service life is particularly susceptible to error. Schedule 1 calculates an adjustment factor of approximately 50 percent, as noted in the OSP Working Paper.[77]

51. Attachment 8, Schedule 2 to this declaration develops the adjustment required to adjust the levelized capital factor (again, accepting as correct the assumptions

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[74] D. Mandy and W. Sharkey, *Dynamic Pricing and Investment from Static Proxy Models*, OSP Working Paper Series, September 2003 ("OSP Working Paper"), at 20-21. It should be noted, of course, that the analyses and conclusions in the Working Paper Series are those of the authors and do not necessarily reflect the views of other Commission staff members, or the Commission itself.

[75] *Id*., at 21.

[76] *Id*., at 16-18.

[77] *Id*., at 20.

used in the OSP Working Paper) to illustrate increasing initial investment costs. This illustration assumes an asset life of 30 years, an annual increase in initial investment cost of 3 percent, a discount factor of 11.25 percent and a recalculation of UNE rates every three years.[78] Schedule 2 calculates an adjustment factor which would reduce UNE rates by approximately 20 percent, as noted in the OSP Working Paper.[79]

52. Attachment 8, Schedule 3 to this declaration displays adjustment factors for each account based upon the OSP Working Paper methodology and using comprehensive nationwide data provided by the major ILECs to the FCC. To calculate adjustment factors according to the OSP Working Paper methodology that can be applied appropriately, one need to start with an economic life estimate and an annual inflation estimate. For the life estimate, we have used the economic lives developed by the FCC for use in Universal Service models (Column A).[80]

53. The development of an annual inflation factor requires a series of calculations. The first step is to determine the age, or expired life of each account. To determine this, we begin with the composite theoretical reserve for each account as developed by the FCC WCB for the BOCs as of January 1, 2002 (Column B).[81] We then adjust these theoretical reserves to remove the effect of net

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[78] *Id*., at 18.

[79] *Id*., at 21.

[80] *Universal Service Inputs Order*, Appendix A, Part 3.

[81] Report on Depreciation Reserves, FCC Pricing Policy Division, Wireline Competition Bureau, October 2002.

salvage (Column C), in order produce a theoretical reserve (Column D) which represents the age to life ratio of each plant account. By multiplying this ratio by the economic life (Column A), we calculate the expired life, or age, of each account in Column E. We next determine the change in cost for each account over its realized life, or age, by averaging the Current to Book ("C/B") ratios for each account (Column F) as identified by the FCC in the Virginia Arbitration Order.[82] The C/B ratio essentially represents the cumulative effect of inflation (or deflation) on each account over its realized life. We then combine the expired life (Column E) and the C/B ratio (Column F) to determine the realized annual inflation rate for each account (Column G). I consider this to be a reasonable estimate of the expected annual inflation rate for each account.

54. The adjustment factors shown in Column I of Schedule 3 are developed in Attachment 8, Schedule 4 for each account using the same OSP Working Paper methodology used in Schedules 1 and 2. In addition to the lives and inflation factors from Schedule 3, Schedule 4 assumes a discount factor of 11.25 percent and a recalculation of UNE rates every three years.

55. An examination of the adjustment factors on Schedule 3 reveals factors over 1.0 for the digital switching, digital circuit and the fiber cable accounts.[83] Application of the OSP Working Paper methodology to these accounts would result in slightly

[82] Virginia Arbitration Order, Appendix B. A simple average of the metallic aerial, underground and buried cable parameters was used for NID, SAI and Drop assets. The aerial cable C/B ratios for metallic and non-metallic were used for the intrabuilding accounts. The digital switching C/B ratio was used for the computer account.

[83] Note that the adjustment factor for digital switching developed in Schedule 3 is 1.0755. This is less than the adjustment factor of 1.495 developed in the OSP Working Paper (and reproduced in Schedule 1) because Schedule 3 uses an inflation factor based upon actual nationwide ILEC data for changes in plant replacement costs.

higher UNE prices. Conversely, the rest of the accounts show factors below 1.0, indicating that the OSP Working Paper methodology would result in lower UNE prices.

C. IF LIVES WERE ADJUSTED BASED UPON THE OSP WORKING PAPER THEORY, DECREASES TO LIVES WOULD BE MINIMAL, BUT SOME INCREASES WOULD BE SIGNIFICANT

56. The NPRM suggests that recognition of the effects of changing initial investment costs could be made by adjusting the lives used in TELRIC calculations.[84] Attachment 8, Schedule 5 develops the life adjustments which would result from the use of the adjustment factors calculated above. As can be seen on Schedule 5 and the tables below, the resulting decrease in lives for accounts with increasing investment costs are minimal, while the increases in lives for accounts with increasing costs are, in some cases, significant:

Decreasing Initial Investment Cost	Life Adjustment
Digital Switching	-1.13 years
Digital Circuit	- 0.19 years
Aerial Fiber	-2.78 years
Underground Fiber	-3.36 years
Buried Fiber	- 0.82 years

Increasing Initial Investment Cost	Life Adjustment
Network Support	+ .26 to + .62 years
General Support	+1.04 to +16.84 years
Poles	+24.20 years
Aerial Metallic	+6.12 years
Underground Metallic	+7.65 years

[84] NPRM. at 108.

Buried Metallic	+4.07 years
Conduit	+23.27 years

57. As noted in the Clarke Essay at 5.12-5.13 and footnote 15,[85] OSP Working Paper methodology adjustment factors must be applied only to the actual service lives of plant, and not to lives that already reflect changes in plant replacement costs, such as the FCC's prescribed lives. Otherwise, a double counting of the effect of changes in plant replacement cost would occur. Thus, the application of these life adjustments to actual service life indications, as developed in Attachment 6 and described above, would have little practical effect. For example, the reduction of the 17 year life indication for digital switching by 1.13 years to 16 years would still leave it above the mid-point of the FCC's prescribed range (12 to 18 years). There would be no appreciable adjustment to digital circuit (-0.19 years), which at 15 years would remain well above the FCC's prescribed range of 11 to 13 years. Furthermore, the implied increases to the metallic cable accounts would more than offset the decreases to fiber cable accounts, leaving cable lives at or near the top of the FCC's prescribed range (30 years).

D. THE FCC SHOULD NOT REQUIRE STATE COMMISSIONS TO FINE-TUNE THE RATE OF DEPRECIATION FOR EXPECTED INITIAL COST CHANGES

58. The concepts advanced in the NPRM and OSP Working Paper have a certain theoretical appeal for their attempt to be precise in the calculation of UNE prices. As the above analysis shows, however, the practical effect of applying these

[85] Depreciation Costs Have Been Properly Incorporated Into TELRIC, Richard N. Clarke Essay, Ex Parte Communication in WC Docket No. 03-173 dated December 5, 2003, from Joan Marsh, AT&T to Ms. Marlene Dortch.

concepts would not affect UNE prices much. On the other hand, the calculation of such explicit adjustments is sure to be complex and controversial. State commissions attempting to make adjustments would have to predict both the trend in future initial investment costs and the frequency with which UNE rates will be reset. Requiring the state commissions to strive for theoretical precision in this manner would impose unreasonable burdens on them.

59. It would not be unreasonable, however, for the FCC to find that its life ranges already reflect the concepts discussed above. As I have demonstrated, those life ranges are significantly shorter than the actual plant lives experienced by the BOCs since 1990.[86] While not as mathematically elegant as the theoretical exercise offered by Mandy and Sharkey, such a finding is a more realistic response to the practical limitations of the available data.

[86] *See*, *e.g.*, Attachment 6 to this declaration.

VERIFICATION

I, Richard B. Lee, declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief. Executed on December____, 2003.

_____

Richard B. Lee

RICHARD B. LEE

FCC FILINGS ON BEHALF OF GENERAL SERVICES ADMINISTRATION

PROCEEDING	SUBJECT	TYPE	DATE
CC Docket No. 87-568	AT&T Communications Revisions to Tariff FCC No. 12	Reply	3/25/91
CC Docket No. 91-141	Expanded Interconnection with Local Telephone Company Facilities	Comments	8/6/91
		Reply	9/20/91
		Reply	12/10/91
		Comments	1/14/93
		Reply	2/19/93
		Comments	4/2/93
		Reply	4/30/93
DA 91-698	New York Telephone Co. Petition for Waiver of Part 61.49(g) of the Commission=s Rules	Comments	8/9/91
		Reply	9/9/91
CC Docket No. 89-79	Amend. of Part 69 of the Commission=s Rules Relating to the Creation of Access Charge Subelements for Open Network Architecture	Comments	8/26/91
			9/25/91
			10/2/91
CC Docket No. 87-313	Policy and Rules Concerning Rates for Dominant Carriers	Comments	8/26/91
		Reply	9/25/91
		Reply	10/2/91

PROCEEDING	SUBJECT	TYPE	DATE
CC Docket No. 91-213	Transport Rate Structure and Pricing	Comments Reply Comments Reply	11/22/91 1/22/91 2/1/93 3/19/93
Petition	ONA Access Charge Tariff Filings	Petition to Suspend	11/26/91
DA 91-1452	Federal-State Joint Conference on ONA Staff Report on UniformTariffing Guidelines for ONA Services	Comments Reply	12/20/91 1/21/92
CC Docket No. 91-346	Intelligent Networks	Reply Comments Reply	4/6/92 11/1/93 12/1/93
CC Docket No. 92-133	Amend. of Parts 65 and 69 of the Commission=s Rules to Reform the Interstate Rate of Return Represcription and Enforcement Processes	Comments Reply	9/11/92 10/13/92
CC Docket No. 92-91	ONA Tariffs of Bell Operating Companies	Comments	10/16/92
CC Docket No. 92-222	Amendment of the Part 69 Allocation of General Support Facility Costs	Comments Reply	12/4/92 12/18/92
CC Docket No. 92-256	Application of ONA and Nondiscrimination Safeguards to GTE Corporation	Comments Reply	2/1/93 3/24/93

PROCEEDING	SUBJECT	TYPE	DATE
CC Docket No. 92-296	Simplification of the Depreciation Prescription Process	Reply Reply Reply	4/13/93 1/21/94 12/14/94
DA 93-481	Ameritech=s Petition for Declaratory Ruling and Related Waivers to Establish a New Regulatory Model for the Ameritech Region	Reply	7/12/93
DA 93-687	Rochester Telephone Corp. Petition for Waivers of Part 61 Tariff Rules and Part 69 Access Charge Rules to Implement Its Open Market Plan	Comments Reply	7/19/93 8/9/93
CC Docket No. 91-273 DA 93-1537	Amendment of Part 63 of the Commission=s Rules to Provide for Notifications by Common Carriers NYNEX Transition Plan to Preserve Universal Service in a Competitive Environment	Comments Reply Reply	1/21/94 2/22/94 3/2/94
Petition	Petition for Declaratory Ruling Assigning an N11 Dialing Code for use by the Public in Gaining Access to the Services of the Federal Executive Agencies	Petition	3/11/94

PROCEEDING	SUBJECT	TYPE	DATE
CC Docket No. 94-1	Price Cap Performance Review for Local Exchange Carriers	Comments	5/9/94
		Reply	6/29/94
		Comments	1/31/95
		Comments	4/17/95
		Comments	10/27/95
		Reply	11/20/95
		Comments	12/18/95
		Reply	3/1/96
CC Docket No. 94-54	Equal Access and Interconnection Obligations Pertaining to Commercial Mobile Radio Services	Comments	8/30/94
		Reply	10/13/94
IAD File No. 94-101	Requests of Federal Agencies and Others for the Assignment of N11 Codes	Reply	9/23/94
CC Docket No. 80-286	Amendment of Part 36 of the Commission=s Rules and Establishment of a Joint Board	Reply	12/2/94
		Comments	9/12/95
		Reply	11/9/95
CC Docket No. 92-237	Administration of the North American Numbering Plan	Nomination	8/7/95
		Application	9/12/95
CC Docket No. 95-115	Amendment of the Commission=s Rules and Policies to Increase Subscribership and Usage of the Public	Comments	9/27/95
		Reply	11/13/95

PROCEEDING	SUBJECT	TYPE	DATE
CC Docket No. 95-155	Toll Free Service Access Codes	Comments Reply	11/1/95 11/20/95
CCB-IAD 95-110	Telecommunications Access Provider Survey	Comments Reply	12/11/95 1/16/96
CC Docket No. 87-124	Access to Telecommunications Equipment and Services by Persons With Disabilities	Comments Reply	1/12/96 2/29/96
AAD 96-28	Rate of Return Inquiry	Comments Reply	3/11/96 4/15/96
CS Docket No. 96-46	Implementation of Section 302 of the Telecommunications Act of 1996	Comments Reply	4/1/96 4/11/96
CC Docket No. 96-45	Federal-State Joint Board on Universal Service	Comments Reply Comments	4/12/96 5/7/96 10/17/97
CC Docket No. 96-61	Policy and Rules Concerning the Interstate, Interexchange Marketplace	Reply	5/3/96
CC Docket No. 96-98	Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	Comments Reply	5/16/96 6/3/96

PROCEEDING	SUBJECT	TYPE	DATE
CC Docket No. 96-112	Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Services	Comments Reply	5/28/96 6/12/96
CC Docket No. 96-150	Accounting Safeguards Under the Telecommunications Act of 1996	Comments Reply	8/26/96 9/10/96
CC Docket No. 91-141 CCB-IAD File No. 98-102	Local Competition Survey	Comments Reply	6/8/98 6/22/98
CC Docket No. 98-81	1998 Biennial Regulatory Review - Review of Accounting and Cost Allocation Requirements	Reply	9/4/98
CC Docket No. 98-117	1998 Biennial Regulatory Review Review of ARMIS Reporting Requirements	Reply	9/4/98
CC Docket No. 98-166	Prescribing the Authorized Unitary Rate of Return for Interstate Services of Local Exchange Carriers	Comments	1/19/99 3/16/99
CC Docket No. 96-45 CC Docket No. 97-160	Federal-State Joint Board on Universal Service Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	Comments Reply	7/23/99 8/6/99
CC Docket No. 98-147	Deployment of Wireline Services Offering Advanced Telecommunications Capability	Comments	9/24/99

PROCEEDING	SUBJECT	TYPE	DATE
CC Docket No. 98-137	1998 Biennial Regulatory Review - Review of Depreciation Requirements for Incumbent Local Exchange Carriers	Comments Reply	4/17/00 4/28/00
---------	Biennial Regulatory Review 2000	Comments Reply	10/10/00 10/20/00
CC Docket No. 00-199	2000 Biennial Regulatory Review – Comprehensive Review of the Accounting Requirements and ARMIS Reporting Requirements for Incumbent Local Exchange Carriers: Phase 2 and Phase 3	Comments Reply Comments Reply Comments Reply Comments	12/21/00 1/30/01 2/13/01 3/14/01 7/16/01 7/26/01 4/8/02
File No. ASD-01-20	Application for Review of Responsible Accounting Officer Letter 31, Cost Allocation Manual Audit Requirements for Large Local Exchange Carriers	Comments Reply	3/28/01 4/9/01
CC Docket No. 99-301	Local Competition and Broadband Reporting	Reply	4/2/01
CC Docket No. 80-286	Jurisdictional Separations Reform and Referral to the Federal-State Joint Board	Comments Reply	7/20/01 8/6/01
CC Docket No. 01-337	Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services	Reply	4/22/02

PROCEEDING	SUBJECT	TYPE	DATE
WC Docket No. 92-80	Winstar Communications, LLC Emergency Petition for Declaratory Ruling Regarding ILEC Obligations to Continue Providing Service	Comments	4/29/02

RICHARD B. LEE

APPEARANCES BEFORE REGULATORY AGENCIES

STATE	CLIENT	UTILITY	CASE	SUBJECT	TYPE	FILE DATE	CROSS DATE
CA	Federal Executive Agencies	All LECs	I.87-11-033 Phase III	IntraLATA Competition	Direct Reply	9/23/91 10/2/91	10/7/91 10/7/91
CA	Federal Executive Agencies	All LECs	I.87-11-033 Phase III	Rate Design	Direct Reply Suppl.	12/16/91 1/17/92 4/18/92	4/28/92 4/28/92 4/28/92
CO	Federal Executive Agencies	All LECs	92R-050T	Interconnection	Direct	8/20/92	8/31/92
WV	Consumer Advocate Division of WV PSC	C&P	90-424-T-PC	Cost Allocation	Direct Reply	10/6/92 12/18/92	1/14/93 1/14/93
CA	Federal Executive Agencies	Pacific Bell	A.92-05-004	Incentive Regulation	Direct Reply	4/8/93 5/5/93	6/9/93 6/9/93
DC	Federal Executive Agencies	C&P	926	Productivity	Direct	7/30/93	10/7/93

STATE	CLIENT	UTILITY	CASES	SUBJECT	TYPE	FILE DATE	CROSS DATE
NJ	Federal Executive Agencies	All LECs	TX90050349 TE92111047 TE93060211	IntraLATA Competition	Direct Reply	4/5/94 4/25/94	-- --
CT	Federal Executive Agencies	Cellular Carriers	94-03-27	Financial Performance	Direct	--	6/7/94
NY	Federal Executive Agencies	Niagara Mohawk	94-E-0098 94-E-0099 94-G-0100	Incentive Regulation	Direct	8/31/94	10/26/94
DC	DC Office Of People's Counsel	Pepco	939	Productivity	Direct	1/17/95	3/17/95
GA	GA Public Service Commission	Southern Bell	5503-U	Cost Allocation	Direct Reply	1/27/95 4/14/95	2/14/95 4/25/95
HI	Federal Executive Agencies	GTE Hawaiian	94-0298	Rate Case	Direct	5/7/96	--
CANADA	AT&T Canada	Stentor Companies	96-8	Depreciation	Direct	8/27/96	11/5/96

STATE	CLIENT	UTILITY	CASE	SUBJECT	TYPE	FILE DATE	CROSS DATE
NJ	AT&T	Bell Atlantic	T096070519	Depreciation	Direct	9/18/96	10/3/96
MA	AT&T	New England Telephone	DPU96-80/81	Depreciation	Direct	10/11/96	--
NY	AT&T	New York Telephone	95-C-0657 94-C-0095 91-C-1174	Depreciation	Rebuttal	10/15/96	11/8/96
VA	AT&T	GTE	PUC960117	Depreciation	Direct	10/30/96	--
NJ	AT&T	All LECs	TX95120631	Depreciation	Direct Rebuttal	11/1/96 12/20/96	1/24/97 1/24/97
PA	AT&T/MCI	Bell Atlantic	A-310203F0002	Depreciation	Rebuttal Direct Surrebuttal	1/13/97 2/7/97 2/21/97	1/28/97 2/25/97 2/25/97
DE	AT&T/MCI	Bell Atlantic	96-324	Depreciation	Rebuttal	2/4/97	2/18/97
WY	AT&T	U S West	7200-TF-96-95 7000-TF-96-319	Depreciation	Direct	2/5/97	2/12/97

STATE	CLIENT	UTILITY	CASE	SUBJECT	TYPE	FILE DATE	CROSS DATE
WV	AT&T	Bell Atlantic	96-1516-T-PC 96-1561-T-PC 96-1009-T-PC 96-1533-T-T	Depreciation	Direct Rebuttal	2/13/97 2/20/97	2/27/97 2/27/97
MD	AT&T/MCI	Bell Atlantic	8731, Phase II	Depreciation	Direct	3/7/97	4/14/97
UT	AT&T/MCI	U S West	94-999-01	Depreciation	Direct Rebuttal Surrebuttal Sup. Surr.	3/19/97 3/31/97 4/23/97 5/2/97	5/13/97 5/13/97 5/13/97 5/13/97
DC	AT&T/MCI	Bell Atlantic	962	Depreciation	Direct Rebuttal	3/24/97 5/2/97	6/11/97 6/11/97
VA	AT&T/MCI	Bell Atlantic	970005	Depreciation	Affidavit Direct Rebuttal	4/7/97 4/23/97 6/10/97	6/27/97 6/27/97 6/27/97
HI	Federal Executive Agencies	GTE	7702	Depreciation	Direct Reply	7/03/97 8/28/97	10/22/97 10/22/97
LA	AT&T/MCI	Bell South	22022/22093	Depreciation	Direct	8/25/97	9/16/97

STATE	CLIENT	UTILITY	CASE	SUBJECT	TYPE	FILE DATE	CROSS DATE
ME	AT&T	Bell Atlantic	96-781	Depreciation	Direct Surrebuttal	9/15/97 12/22/97	1/20/98 1/20/98
TENN	AT&T/MCI	Bell South	97-01262	Depreciation	Direct	10/10/97 10/17/97	2/25/98 2/25/98
VT	AT&T	Bell Atlantic	5713	Depreciation	Direct Surrebuttal	10/30/97 12/4/97	12/11/97 12/11/97
KY	AT&T/MCI	BellSouth, GTE, CBT	360	Depreciation	Reply	11/4/97	--
PA	AT&T	GTE	A-310125F002 GTEN-11	Depreciation	Direct	11/13/97	--
NC	AT&T/MCI	BellSouth, GTE, Sprint	P-100, SUB133b	Depreciation	Direct	12/10/97 1/30/98	--
NC	AT&T/MCI	BellSouth, GTE, Sprint	P-100, SUB133d	Depreciation	Direct	12/15/97 3/9/98	--
OHIO	AT&T/MCI	CBT	96-899-TP-ALT	Depreciation	Direct Reply	12/17/97 12/23/98	3/22/99 3/22/99
LA	AT&T/MCI	BellSouth	U-20883 Subdocket A	Depreciation	Direct Reply	1/9/98 1/20/98	--

STATE	CLIENT	UTILITY	CASE	SUBJECT	TYPE	FILE DATE	CROSS DATE
OK	AT&T	SBC	970000213 970000442	Depreciation	Direct	1/12/98	--
MISS	AT&T	BellSouth	97-AD-544	Depreciation	Direct Reply	1/28/98 3/13/98	--
MISS	AT&T	BellSouth	98-AD-035	Depreciation	Direct Reply	2/23/98 3/6/98	--
TENN	AT&T	BellSouth, GTE, Sprint	9700888	Depreciation	Direct Reply	3/18/98 3/25/98	--
RI	AT&T	Bell Atlantic	2681	Depreciation	Direct Surrebuttal	6/30/98 12/11/98	1/7/99
AZ	Federal Executive Agencies	U S West	T-01051B-97-0689	Depreciation	Direct Suppl Surrebuttal Comments Suppl Direct Reply	7/13/98 7/15/98 8/17/98 10/30/98 4/2/99 2/7/00 2/22/00	11/13/98 11/13/98 11/13/98 11/13/98 4/27/99 2/28/00 2/28/00

STATE	CLIENT	UTILITY	CASE	SUBJECT	TYPE	FILE DATE	CROSS DATE
MICH	Michigan Cable Television Association	All	U-11016	Affiliate Transactions	Direct Reply	5/27/98 7/1/99	7/29/99 7/29/99
HI	Federal Executive Agencies	GTE	7702	Collocation and Nonrecurring Charges	Direct	6/2/00	--
NY	AT&T/WorldCom	Bell Atlantic	98-C-1357	Depreciation	Reply Rebuttal	6/26/00 10/19/00	-- --
AZ	Federal Executive Agencies	Qwest	T-01051B-99-0105	Revenue Requirements	Direct Surrebuttal Direct	7/25/00 9/8/00 11/13/00	12/1/00 12/1/00 12/1/00
MA	AT&T/WorldCom	Verizon	D.T.E. 01-20	Depreciation	Direct Rebuttal Surrebuttal	5/8/01 7/18/01 12/17/01	1/8/02
MD	AT&T/WorldCom	Verizon	8879	Depreciation	Direct Rebuttal Surrebuttal	5/25/01 9/5/01 10/15/01	--
VA	AT&T/WorldCom	Verizon	FCC 00-218 FCC 00-249 FCC 00-251	Depreciation	Direct Rebuttal Surrebuttal	7/31/01 8/27/01 9/21/01	10/23/01

STATE	CLIENT	UTILITY	CASE	SUBJECT	TYPE	FILE DATE	CROSS DATE
CA	Federal Executive Agencies	SBC-Pacific	A01-20-024	Depreciation	Direct Direct Reply Rebuttal	9/19/01 10/18/02 2/7/03 3/12/03	--
PA	AT&T/WorldCom	Verizon	R-00016683	Depreciation	Direct Rebuttal Surrebuttal	12/7/01 1/11/02 2/8/02	--
AZ	Federal Executive Agencies	Qwest	T-01051B-02-0666	Directory	Rebuttal Rejoinder	3/4/03 5/9/03	--
CA	Federal Executive Agencies	Verizon	R93-04-003	Depreciation	Direct	11/3/03	

11/17/03

Richard B. Lee

Attachment 3

Experience

Snavely King Majoros O'Connor & Lee, Inc.
Washington, DC

Vice President (1996 to Present)
Senior Consultant (1991 to 1995)

Mr. Lee provides consulting services that reflect his depth of experience with regulated utilities. For over a quarter of a century, he has been extensively involved in regulatory financial and accounting matters.

Mr. Lee has provided expert witness testimony, technical assistance and strategic support to clients in state commission proceedings related to the telephone, cellular telephone and electric industries. His testimony has addressed such matters as competition, interconnection, incentive regulation, rate design, cost allocation, depreciation, productivity, and overall financial performance. Mr. Lee has also conducted a cost allocation and affiliate transaction audit of a major telephone company on behalf of its state commission.

Mr. Lee has assisted clients in proceedings before the Federal Communications Commission (FCC) related to competition, interconnection, universal service, incentive regulation, accounting, cost allocation, reporting, depreciation, and advanced services. Mr. Lee also performed a study on plant writedowns in the U.S. telecommunications industry on behalf of the Canadian Radio-Television and Telecommunications Commission.

AT&T, Basking Ridge, NJ

Regulatory Vice President (1988-1990)
Division Manager (1980-1988)

Mr. Lee represented AT&T before the FCC in all financial and accounting matters. In this capacity, he directed the preparation of all financially related AT&T filings and coordinated the analysis of commission and intervenor responses. In addition, he was responsible for the periodic review of AT&T financial operating results and the development of related capital and expense forecasts.

Mr. Lee directed the design and implementation of AT&T's automated system for the reporting of financial information to the FCC. He also was responsible for the implementation of AT&T's manual for the separation of regulated and unregulated costs and the conversion of the company to the revised Uniform System of Accounts.

His responsibilities included liaison with the FCC's audit staff and coordination of their activities with respect to AT&T. During his tenure, Mr. Lee brought scores of FCC investigations involving many billions of dollars to equitable conclusions.

Mr. Lee participated in the strategic development of price cap incentive regulation proposals and performed numerous related financial analyses. He also conceived and developed a methodology which reduced the administrative burden of AT&T's depreciation filings by over 90%.

Prior to divestiture, Mr. Lee coordinated all Bell System depreciation filings, rate of return pleadings and interstate rate cases. He was responsible for securing FCC approval of the accounting entries which implemented the Modified Final Judgment.

New York Telephone Company
New York, NY

District Manager (1970-1980)
Accounting Manager (1963-1970)

Mr. Lee held a variety of progressively responsible positions leading to his selection as the Company's accounting representative before the New York Public Service Commission. In this capacity, he participated in numerous general rate cases and related proceedings.

In an earlier assignment, Mr. Lee directed an inter-departmental study of the company's "Lost Telephone Set" problem. The study resulted in both operational improvements and major strategy changes by the company.

While in a rotational assignment to AT&T, Mr. Lee developed a cost accounting and productivity measurement system that was implemented in all Bell System Comptrollers Departments.

Mr. Lee also managed numerous line organizations of up to 200 persons responsible for billing and collection, property and cost and data processing functions.

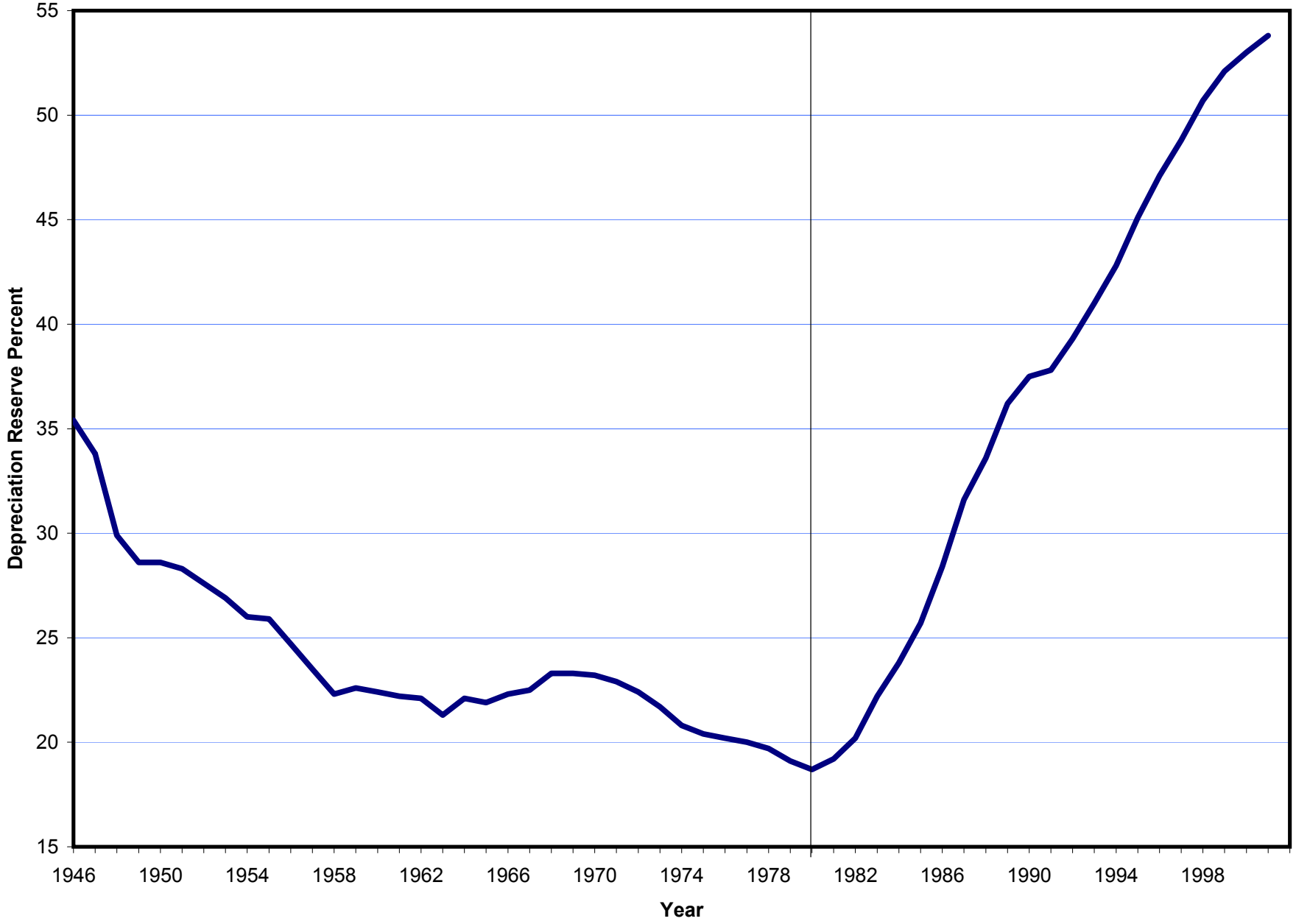
Education

Yale University, B.S. (High Honors)
Harvard Business School, MBA (Distinction)

Professional Affiliations

Society of Depreciation Professionals

Depreciation Reserve Percent
All Reporting LECs



All Reporting LECs' Plant Related Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY	EOY	Average	Increase	Add	Ret	Deprec	EOY Reserve	AVG Reserve	Add Rate	Retire Rate	Deprec Rate	Reserve Percent
	(a)	(b)	(c)=(a+b)/2	(d) = b-a	(e)	(f)	(g)	(h)	(i)	(j) = e/a	(k) = f/a	(l) = g/c	(m) = h/b
1946		6,500						2,300					35.4
1947	6,500	7,400	6,950	900				2,500	2,400				33.8
1948	7,400	8,700	8,050	1,300				2,600	2,550				29.9
1949	8,700	9,800	9,250	1,100				2,800	2,700				28.6
1950	9,800	10,500	10,150	700				3,000	2,900				28.6
1951	10,500	11,300	10,900	800				3,200	3,100				28.3
1952	11,300	12,300	11,800	1,000				3,400	3,300				27.6
1953	12,300	13,400	12,850	1,100				3,600	3,500				26.9
1954	13,400	14,600	14,000	1,200				3,800	3,700				26.0
1955	14,600	15,800	15,200	1,200				4,100	3,950				25.9
1956	15,800	17,400	16,600	1,600				4,300	4,200				24.7
1957	17,400	19,600	18,500	2,200				4,600	4,450				23.5
1958	19,600	22,000	20,800	2,400				4,900	4,750				22.3
1959	22,000	23,000	22,500	1,000				5,200	5,050				22.6
1960	23,000	25,000	24,000	2,000	2,700	700	1,100	5,600	5,400	11.7	3.0	4.6	22.4
1961	25,000	27,000	26,000	2,000	2,800	800	1,200	6,000	5,800	11.2	3.2	4.6	22.2
1962	27,000	29,000	28,000	2,000	2,900	900	1,300	6,400	6,200	10.7	3.3	4.6	22.1
1963	29,000	32,000	30,500	3,000	4,000	1,000	1,400	6,800	6,600	13.8	3.4	4.6	21.3
1964	32,000	34,000	33,000	2,000	2,900	900	1,600	7,500	7,150	9.1	2.8	4.8	22.1
1965	34,000	37,000	35,500	3,000	4,100	1,100	1,700	8,100	7,800	12.1	3.2	4.8	21.9
1966	37,000	40,000	38,500	3,000	4,100	1,100	1,900	8,900	8,500	11.1	3.0	4.9	22.3
1967	40,000	44,000	42,000	4,000	5,100	1,100	2,100	9,900	9,400	12.8	2.8	5.0	22.5

All Reporting LECs' Plant Related Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY (a)	EOY (b)	Average (c)=(a+b)/2	Increase (d) = b-a	Add (e)	Ret (f)	Deprec (g)	EOY Reserve (h)	AVG Reserve (i)	Add Rate (j) = e/a	Retire Rate (k) = f/a	Deprec Rate (l) = g/c	Reserve Percent (m) = h/b
1968	43,249	47,123	45,186	3,874	5,104	1,230	2,304	10,979	10,440	11.8	2.8	5.1	23.3
1969	47,175	51,724	49,450	4,549	6,022	1,473	2,507	12,072	11,526	12.8	3.1	5.1	23.3
1970	51,723	56,951	54,337	5,228	6,880	1,651	2,751	13,213	12,643	13.3	3.2	5.1	23.2
1971	56,972	63,090	60,031	6,118	8,052	1,933	3,016	14,447	13,830	14.1	3.4	5.0	22.9
1972	63,068	69,870	66,469	6,802	9,044	2,242	3,330	15,643	15,045	14.3	3.6	5.0	22.4
1973	69,951	77,442	73,697	7,491	10,085	2,595	3,659	16,769	16,206	14.4	3.7	5.0	21.7
1974	77,107	84,888	80,998	7,781	11,024	3,243	4,047	17,685	17,227	14.3	4.2	5.0	20.8
1975	84,799	92,284	88,542	7,485	10,881	3,396	4,486	18,809	18,247	12.8	4.0	5.1	20.4
1976	92,591	99,879	96,235	7,288	11,139	3,856	4,934	20,163	19,486	12.0	4.2	5.1	20.2
1977	101,237	109,496	105,367	8,259	12,438	4,136	5,630	21,903	21,033	12.3	4.1	5.3	20.0
1978	109,502	119,336	114,419	9,834	14,549	4,681	6,199	23,474	22,689	13.3	4.3	5.4	19.7
1979	118,612	129,972	124,292	11,360	16,843	5,452	6,820	24,881	24,178	14.2	4.6	5.5	19.1
1980	129,767	142,096	135,932	12,329	18,694	6,378	7,804	26,512	25,697	14.4	4.9	5.7	18.7
1981	142,121	155,845	148,983	13,724	19,482	5,749	8,664	29,932	28,222	13.7	4.0	5.8	19.2
1982	155,907	168,075	161,991	12,168	18,466	6,409	9,757	33,957	31,945	11.8	4.1	6.0	20.2
1983	169,162	178,482	173,822	9,320	16,076	6,664	11,340	39,571	36,764	9.5	3.9	6.5	22.2
1984	152,315	159,798	156,057	7,483	14,994	4,994	10,048	37,996	38,784	9.8	3.3	6.4	23.8
1985	174,218	186,294	180,256	12,076	18,972	6,687	11,469	43,837	40,917	10.9	3.8	6.9	25.7
1986	186,972	198,758	192,865	11,786	18,907	6,954	13,142	51,543	47,690	10.1	3.7	7.5	28.4
1987	199,063	209,687	204,375	10,624	18,535	7,886	15,263	61,471	56,507	9.3	4.0	8.1	31.6
1988	210,720	220,395	215,558	9,675	17,947	8,949	16,627	74,123	67,797	8.5	4.2	7.7	33.6

All Reporting LECs' Plant Related Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY	EOY	Average	Increase	Add	Ret	Deprec	EOY Reserve	AVG Reserve	Add Rate	Retire Rate	Deprec Rate	Reserve Percent
	(a)	(b)	(c)=(a+b)/2	(d) = b-a	(e)	(f)	(g)	(h)	(i)	(j) = e/a	(k) = f/a	(l) = g/c	(m) = h/b
1989	220,126	229,326	224,726	9,200	16,868	8,145	16,839	83,115	78,619	7.7	3.7	7.5	36.2
1990	229,103	235,247	232,175	6,144	18,473	12,380	16,955	88,146	85,631	8.1	5.4	7.3	37.5
1991	236,093	241,620	238,857	5,527	18,322	12,896	16,607	91,427	89,787	7.8	5.5	7.0	37.8
1992	242,599	249,508	246,054	6,909	18,877	12,138	17,036	98,053	94,740	7.8	5.0	6.9	39.3
1993	250,570	258,782	254,676	8,212	18,864	11,217	17,676	106,079	102,066	7.5	4.5	6.9	41.0
1994	259,216	267,443	263,330	8,227	18,781	10,990	18,656	114,598	110,339	7.2	4.2	7.1	42.8
1995	268,555	278,946	273,751	10,391	19,482	9,411	19,393	125,789	120,194	7.3	3.5	7.1	45.1
1996	278,974	291,569	285,272	12,595	22,401	10,271	20,527	137,278	131,534	8.0	3.7	7.2	47.1
1997	291,569	303,809	297,689	12,240	23,171	11,627	21,156	148,163	142,721	7.9	4.0	7.1	48.8
1998	303,689	319,767	311,728	16,078	24,218	9,337	21,947	162,102	155,133	8.0	3.1	7.0	50.7
1999	319,809	335,486	327,648	15,677	26,304	11,641	23,455	174,922	168,512	8.2	3.6	7.2	52.1
2000	335,486	354,759	345,123	19,273	28,789	13,755	24,939	187,922	181,422	8.6	4.1	7.2	53.0
2001	332,576	355,421	343,999	22,845	30,402	8,855	23,560	191,177	189,550	9.1	2.7	6.8	53.8
Avg.	'60-'83									12.6	3.6	5.2	
	'84-'01									8.4	4.0	7.2	

Source: 1946 -1967 Report on Telephone Industry Depreciation, Tax and Capital/Expense Policy, Accounting and Audits Division, FCC, April 15, 1987, pp.6, 9
1968 - 1983 FCC Statistics of Common Carriers, Tables 12 and 16
1984 - 1987 FCC Statistics of Common Carriers, Tables 10 and 14
1988 - 2000 FCC Statistics of Common Carriers, Tables 2.7 and 2.9
2001 - FCC Statistics of Common Carriers, Tables 2.7 and 2.8

Note 1: 1946 - 1983 Includes AT&T

Note 2: Cols l and m for 1985-1987 from Table 14 data as follows:
Col l = 1985 Col g/165,076
1986 Col g/175,926
1987 Col g/187,920
Col m = 1985 Col h/170,355
1986 Col h/181,496
1987 Col h/194,343

9/25/02 - Snavely King Majoros O'Connor & Lee, Inc.

Total BOCs - Plant Related Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY (a)	EOY (b)	Average (c)=(a+b)/2	Increase (d) = b-a	Add (e)	Ret (f)	Deprec (g)	EOY Reserve (h)	AVG. Reserve (i)	Add Rate (j) = e/a	Retire Rate (k) = f/a	Deprec Rate (l) = g/c	Reserve Percent (m) = h/b
1992	222,248	231,644	226,946	9,396	17,643	8,352	15,642	90,164	86,432	7.9	3.8	6.9	38.9
1993	233,803	242,013	237,908	8,210	17,619	9,991	16,686	98,839	94,501	7.5	4.3	7.0	40.8
1994	243,361	251,329	247,345	7,968	17,699	10,157	17,684	107,378	103,109	7.3	4.2	7.1	42.7
1995	251,987	261,670	256,828	9,683	18,248	8,909	18,369	117,712	112,545	7.2	3.5	7.2	45.0
1996	262,604	274,323	268,463	11,719	21,086	9,812	19,457	128,894	123,303	8.0	3.7	7.2	47.0
1997	274,323	285,837	280,080	11,514	21,794	11,019	19,972	139,070	133,982	7.9	4.0	7.1	48.7
1998	285,865	300,001	292,933	14,137	22,544	8,994	20,910	151,774	145,422	7.9	3.1	7.1	50.6
1999	300,001	314,445	307,223	14,444	24,633	11,279	21,501	163,582	157,678	8.2	3.8	7.0	52.0
2000	314,445	332,576	323,511	18,131	29,998	13,300	22,441	175,632	169,607	9.5	4.2	6.9	52.8
2001	332,576	355,421	343,999	22,844	30,402	8,855	23,722	191,177	183,404	9.1	2.7	6.9	53.8
2002	312,516	320,906	316,711	8,390	17,516	11,433	21,354	182,744	186,960	5.6	3.7	6.7	56.9
Avg.										7.8	3.7	7.0	

Source: ARMIS 43-02 Reports, Table B-1 and B-5 1992-2002 (Qwest data for 2002 not yet available)

Note: Excludes Customer Premises Wiring

Total BOCs - Digital Switch Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY	EOY	Average	Increase	Add	Ret	Deprec	EOY Reserve	AVG. Reserve	Add Rate	Retire Rate	Deprec Rate	Reserve Percent
	(a)	(b)	(c)=(a+b)/2	(d) = b-a	(e)	(f)	(g)	(h)	(i)	(j) = e/a	(k) = f/a	(l) = g/c	(m) = h/b
1992	27,822	31,550	29,686	3,728	4,004	422	2,026	8,312	7,457	14.4	1.5	6.8	26.3
1993	31,942	35,328	33,635	3,387	4,016	914	2,352	10,225	9,268	12.6	2.9	7.0	28.9
1994	35,645	38,573	37,109	2,928	4,177	1,038	2,614	11,956	11,090	11.7	2.9	7.0	31.0
1995	38,710	41,329	40,019	2,619	3,582	1,043	2,905	14,097	13,026	9.3	2.7	7.3	34.1
1996	41,525	45,074	43,300	3,550	4,809	1,400	3,250	16,332	15,214	11.6	3.4	7.5	36.2
1997	45,074	49,007	47,041	3,933	5,112	1,403	3,505	18,656	17,494	11.3	3.1	7.5	38.1
1998	49,007	53,287	51,147	4,280	5,555	1,555	3,977	21,292	19,974	11.3	3.2	7.8	40.0
1999	53,287	56,354	54,821	3,067	4,892	2,210	4,268	23,819	22,556	9.2	4.1	7.8	42.3
2000	56,354	59,904	58,129	3,550	5,893	2,610	4,490	26,376	25,098	10.5	4.6	7.7	44.0
2001	59,904	63,258	61,581	3,354	4,994	1,941	4,731	29,447	27,912	8.3	3.2	7.7	46.6
2002	55,692	56,255	55,973	563	2,387	2,598	4,222	28,681	29,064	4.3	4.7	7.5	51.0
Avg.										10.4	3.3	7.4	

Source: ARMIS 43-02 Reports, Table B-1 and B-5 1992-2002 (Qwest data for 2002 not yet available)

Total BOCs - Circuit Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY	EOY	Average	Increase	Add	Ret	Deprec	EOY Reserve	AVG. Reserve	Add Rate	Retire Rate	Deprec Rate	Reserve Percent
	(a)	(b)	(c)=(a+b)/2	(d) = b-a	(e)	(f)	(g)	(h)	(i)	(j) = e/a	(k) = f/a	(l) = g/c	(m) = h/b
1992	35,793	37,712	36,752	1,919	3,802	1,885	3,773	16,203	15,224	10.6	5.3	10.3	43.0
1993	37,896	40,040	38,968	2,143	4,139	2,040	4,015	18,442	17,323	10.9	5.4	10.3	46.1
1994	40,264	43,083	41,673	2,819	4,409	2,081	4,282	20,929	19,686	11.0	5.2	10.3	48.6
1995	43,156	46,322	44,739	3,166	4,921	1,857	4,429	23,478	22,204	11.4	4.3	9.9	50.7
1996	46,414	50,483	48,448	4,069	5,975	2,022	4,727	26,562	25,020	12.9	4.4	9.8	52.6
1997	50,483	54,983	52,733	4,501	6,166	1,896	5,112	29,990	28,276	12.2	3.8	9.7	54.5
1998	54,983	60,426	57,705	5,443	6,843	1,899	5,638	33,967	31,978	12.4	3.5	9.8	56.2
1999	60,426	66,295	63,361	5,869	7,858	2,329	6,052	38,045	36,006	13.0	3.9	9.6	57.4
2000	66,295	74,937	70,616	8,642	10,993	2,608	6,712	42,827	40,436	16.6	3.9	9.5	57.2
2001	74,937	84,442	79,690	9,505	11,507	2,318	7,593	48,609	45,718	15.4	3.1	9.5	57.6
2002	74,395	78,081	76,238	3,686	5,769	2,780	7,212	48,173	48,391	7.8	3.7	9.5	61.7
Avg.										12.2	4.2	9.8	

Source: ARMIS 43-02 Reports, Table B-1 and B-5 1992-2002 (Qwest data for 2002 not yet available)

Total BOCs - Aerial Cable Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY (a)	EOY (b)	Average (c)=(a+b)/2	Increase (d) = b-a	Add (e)	Ret (f)	Deprec (g)	EOY Reserve (h)	AVG. Reserve (i)	Add Rate (j) = e/a	Retire Rate (k) = f/a	Deprec Rate (l) = g/c	Reserve Percent (m) = h/b
1992	21,958	23,144	22,551	1,185	1,579	412	1,377	10,491	10,031	7.2	1.9	6.1	45.3
1993	23,405	24,377	23,891	973	1,489	603	1,503	11,604	11,047	6.4	2.6	6.3	47.6
1994	24,617	25,626	25,121	1,008	1,348	385	1,614	12,872	12,238	5.5	1.6	6.4	50.2
1995	25,674	26,800	26,237	1,125	1,422	348	1,767	14,357	13,614	5.5	1.4	6.7	53.6
1996	26,905	28,234	27,569	1,329	1,602	319	1,855	15,865	15,111	6.0	1.2	6.7	56.2
1997	28,234	29,470	28,852	1,236	1,754	577	1,947	17,157	16,511	6.2	2.0	6.7	58.2
1998	29,470	30,863	30,166	1,393	1,689	378	2,046	18,740	17,949	5.7	1.3	6.8	60.7
1999	30,863	32,180	31,521	1,317	1,674	396	2,156	20,382	19,561	5.4	1.3	6.8	63.3
2000	32,180	33,239	32,710	1,059	1,655	682	2,247	21,983	21,183	5.1	2.1	6.9	66.1
2001	33,239	34,624	33,931	1,384	1,801	402	2,322	23,772	22,877	5.4	1.2	6.8	68.7
2002	33,281	33,703	33,492	422	1,305	924	2,217	24,262	24,017	3.9	2.8	6.6	72.0
Avg.										5.7	1.8	6.6	

Source: ARMIS 43-02 Reports, Table B-1 and B-5 1992-2002 (Qwest data for 2002 not yet available)

Total BOCs - Underground Cable Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY	EOY	Average	Increase	Add	Ret	Deprec	EOY Reserve	AVG. Reserve	Add Rate	Retire Rate	Deprec Rate	Reserve Percent
	(a)	(b)	(c)=(a+b)/2	(d) = b-a	(e)	(f)	(g)	(h)	(i)	(j) = e/a	(k) = f/a	(l) = g/c	(m) = h/b
1992	20,135	21,085	20,610	950	1,240	304	1,129	8,297	7,851	6.2	1.5	5.5	39.4
1993	21,122	21,877	21,500	755	993	241	1,215	9,267	8,782	4.7	1.1	5.6	42.4
1994	21,904	22,617	22,261	713	911	237	1,284	10,305	9,786	4.2	1.1	5.8	45.6
1995	22,620	23,322	22,971	701	908	223	1,295	11,441	10,873	4.0	1.0	5.6	49.1
1996	23,371	24,215	23,793	844	1,065	242	1,324	12,409	11,925	4.6	1.0	5.6	51.2
1997	24,215	25,250	24,733	1,036	1,165	177	1,373	13,604	13,006	4.8	0.7	5.6	53.9
1998	25,250	26,223	25,737	972	1,321	213	1,420	14,792	14,198	5.2	0.8	5.5	56.4
1999	26,223	27,232	26,727	1,009	1,168	180	1,487	16,059	15,425	4.5	0.7	5.6	59.0
2000	27,232	28,397	27,814	1,165	1,406	288	1,509	17,252	16,656	5.2	1.1	5.4	60.8
2001	28,397	29,993	29,195	1,596	1,699	173	1,581	18,580	17,916	6.0	0.6	5.4	61.9
2002	26,781	27,639	27,210	858	1,074	238	1,423	17,819	18,199	4.0	0.9	5.2	64.5
Avg.										4.9	1.0	5.5	

Source: ARMIS 43-02 Reports, Table B-1 and B-5 1992-2002 (Qwest data for 2002 not yet available)

Total BOCs - Buried Cable Rates

(Dollars in Millions)

	Telecommunications Plant in Service												
	BOY	EOY	Average	Increase	Add	Ret	Deprec	EOY Reserve	AVG. Reserve	Add Rate	Retire Rate	Deprec Rate	Reserve Percent
	(a)	(b)	(c)=(a+b)/2	(d) = b-a	(e)	(f)	(g)	(h)	(i)	(j) = e/a	(k) = f/a	(l) = g/c	(m) = h/b
1992	33,033	34,829	33,931	1,795	2,135	356	1,723	13,957	13,283	6.5	1.1	5.1	40.1
1993	35,680	37,437	36,559	1,756	2,194	632	1,873	15,737	14,847	6.1	1.8	5.1	42.0
1994	37,862	39,665	38,764	1,803	2,165	504	2,002	17,454	16,595	5.7	1.3	5.2	44.0
1995	39,979	41,762	40,870	1,783	2,279	542	2,267	19,423	18,438	5.7	1.4	5.5	46.5
1996	42,009	44,308	43,158	2,299	2,734	490	2,538	21,635	20,529	6.5	1.2	5.9	48.8
1997	44,308	46,694	45,501	2,386	2,854	524	2,656	23,839	22,737	6.4	1.2	5.8	51.1
1998	46,694	48,985	47,839	2,291	2,638	391	2,814	26,277	25,058	5.6	0.8	5.9	53.6
1999	48,985	51,286	50,135	2,301	2,666	410	2,961	28,840	27,559	5.4	0.8	5.9	56.2
2000	51,286	52,605	51,946	1,319	3,158	1,940	3,091	30,681	29,761	6.2	3.8	5.9	58.3
2001	52,605	55,261	53,933	2,656	2,994	386	3,170	33,388	32,035	5.7	0.7	5.9	60.4
2002	45,124	46,267	45,696	1,143	1,863	763	2,609	29,757	31,572	4.1	1.7	5.7	64.3
Avg.										5.8	1.4	5.6	

Source: ARMIS 43-02 Reports, Table B-1 and B-5 1992-2002 (Qwest data for 2002 not yet available)

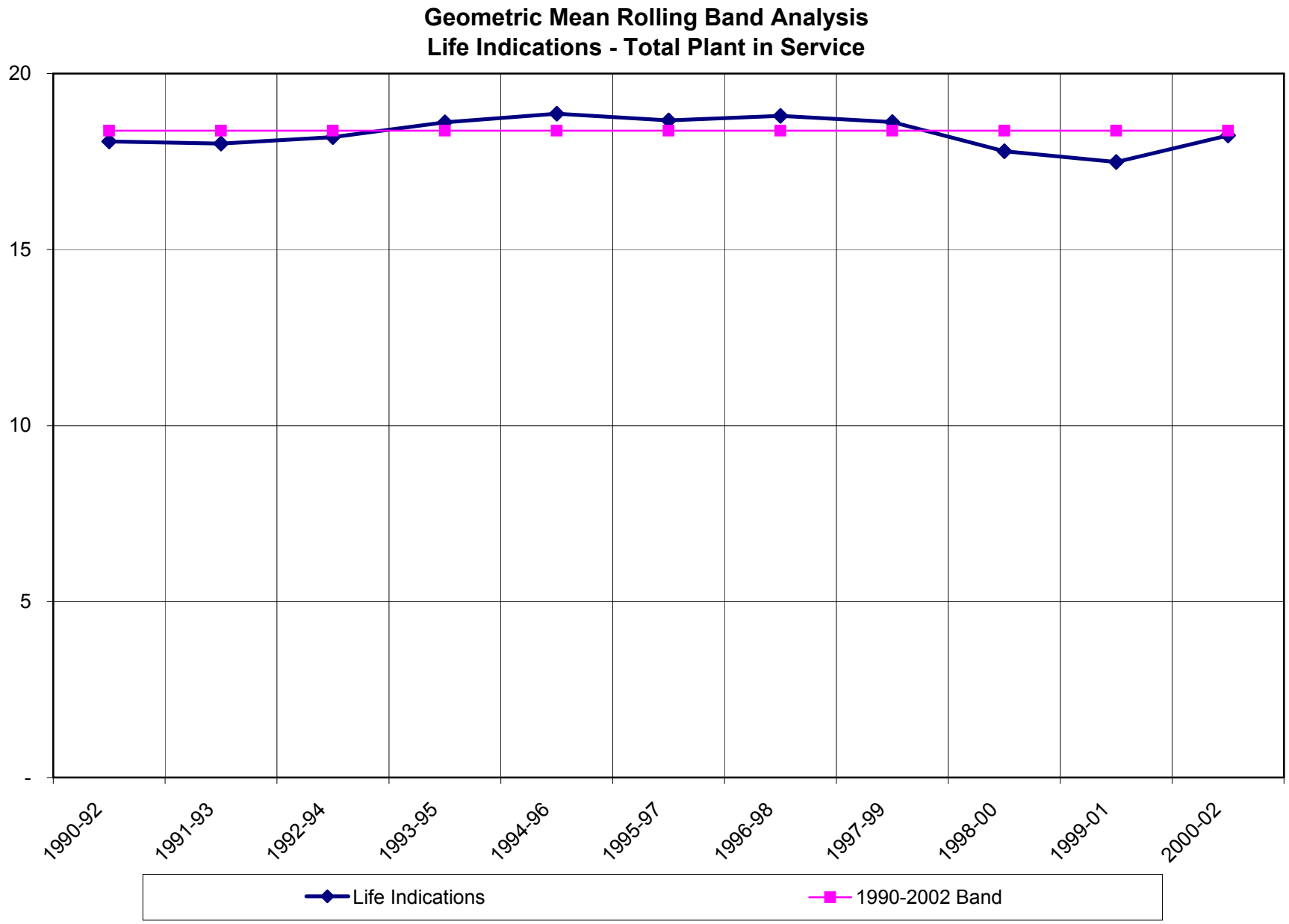
All BOCs
Telephone Plant in Service
Geometric Mean Turnover Analysis

Total Plant in Service
($ Thousands)

									3 Year Band					
Year	**BOY Plant Balance**	**Avg. Plant Balance**	**Single Year Additions**	**Single Year Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**	**3 Year Band**	**Avg. Plant Balance**	**Additions**	**Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**
	a	b=(a+(a+1))/2	c	d	e = c/b	f = d/b	g = 1/sqrt(e*f)	h	i	j	k	l = j/i	m = k/i	n = 1/sqrt(l*m)
1990	204,414,500	209,016,448	17,205,219	8,001,324	0.08232	0.03828	17.81							
1991	213,618,396	217,933,025	17,244,681	8,820,148	0.07913	0.04047	17.67							
1992	222,247,653	228,025,316	17,747,685	8,351,588	0.07783	0.03663	18.73	1990-92	654,974,789	52,197,585	25,173,060	0.07969	0.03843	18.07
1993	233,802,979	238,582,051	18,201,087	9,990,863	0.07629	0.04188	17.69	1991-93	684,540,392	53,193,453	27,162,599	0.07771	0.03968	18.01
1994	243,361,123	247,673,948	18,124,752	10,156,983	0.07318	0.04101	18.25	1992-94	714,281,315	54,073,524	28,499,434	0.07570	0.03990	18.20
1995	251,986,773	257,295,384	18,591,619	8,908,769	0.07226	0.03462	19.99	1993-95	743,551,383	54,917,458	29,056,615	0.07386	0.03908	18.61
1996	262,603,994	268,463,302	21,530,999	9,812,382	0.08020	0.03655	18.47	1994-96	773,432,634	58,247,370	28,878,134	0.07531	0.03734	18.86
1997	274,322,610	280,093,640	22,533,338	11,019,087	0.08045	0.03934	17.78	1995-97	805,852,326	62,655,956	29,740,238	0.07775	0.03691	18.67
1998	285,864,670	292,932,966	23,130,923	8,994,332	0.07896	0.03070	20.31	1996-98	841,489,908	67,195,260	29,825,801	0.07985	0.03544	18.80
1999	300,001,261	307,223,229	25,723,207	11,279,274	0.08373	0.03671	18.04	1997-99	880,249,835	71,387,468	31,292,693	0.08110	0.03555	18.62
2000	314,445,197	323,510,825	31,431,636	13,300,386	0.09716	0.04111	15.82	1998-00	923,667,019	80,285,766	33,573,992	0.08692	0.03635	17.79
2001	332,576,452	322,546,233	31,699,332	8,855,064	0.09828	0.02745	19.25	1999-01	953,280,286	88,854,175	33,434,724	0.09321	0.03507	17.49
2002	312,516,013	316,711,129	19,823,418	11,433,186	0.06259	0.03610	21.04	2000-02	962,768,186	82,954,386	33,588,636	0.08616	0.03489	18.24
1990-2002	3,451,761,621	3,510,007,494	282,987,896	128,923,386	0.08062	0.03673	18.38							

Source: ARMIS 43-02 Reports, Table B-1, 1990-2002 (Qwest data for 2002 not yet available)
Note: Excludes Customer Premises Wiring
Column c includes transfers.

Company: All BOCs
Account: Total Plant in Service



Total BOCs
Telephone Plant in Service
Geometric Mean Turnover Analysis

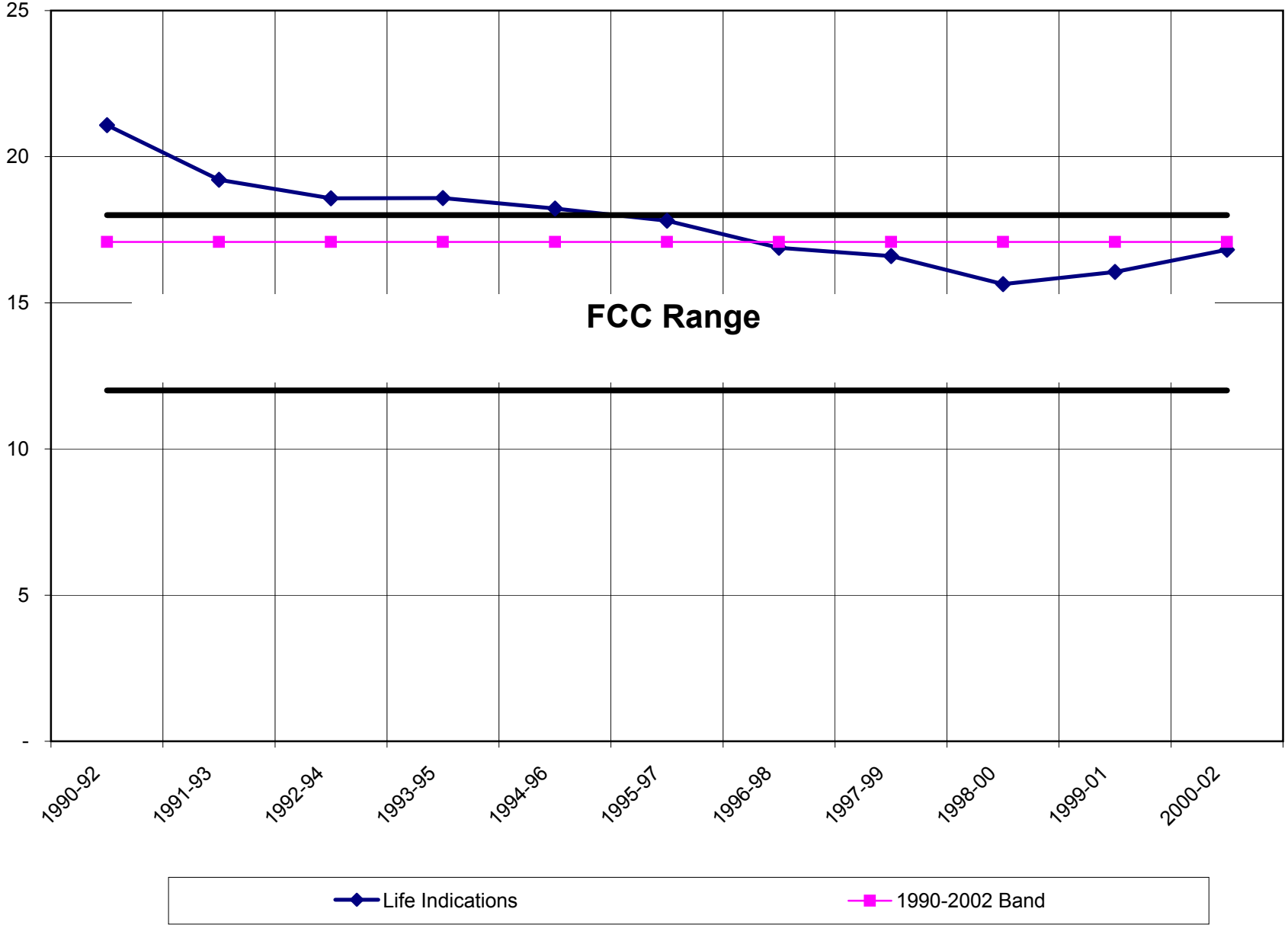
Account 2212 - Digital Electronic Switching
($ Thousands)

									3 Year Band					
Year	**BOY Plant Balance**	**Avg. Plant Balance**	**Single Year Additions**	**Single Year Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**	**3 Year Band**	**Avg. Plant Balance**	**Additions**	**Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**
	a	b=(a+(a+1))/2	c	d	e = c/b	f = d/b	g = 1/sqrt(e*f)	h	i	j	k	l = j/i	m = k/i	n = 1/sqrt(l*m)
1990	21,041,303	22,770,484	3,777,680	319,319	0.16590	0.01402	20.73							
1991	24,499,664	26,160,700	3,759,724	455,136	0.14372	0.01740	20.00							
1992	27,821,736	29,881,801	4,149,613	421,805	0.13887	0.01412	22.59	1990-92	78,812,984	11,687,017	1,196,260	0.14829	0.01518	21.08
1993	31,941,865	33,793,300	4,300,708	914,083	0.12727	0.02705	17.04	1991-93	89,835,801	12,210,045	1,791,024	0.13592	0.01994	19.21
1994	35,644,735	37,177,269	3,965,988	1,037,699	0.10668	0.02791	18.33	1992-94	100,852,369	12,416,309	2,373,587	0.12311	0.02354	18.58
1995	38,709,802	40,117,284	3,661,539	1,042,758	0.09127	0.02599	20.53	1993-95	111,087,852	11,928,235	2,994,540	0.10738	0.02696	18.59
1996	41,524,765	43,299,626	4,949,795	1,400,076	0.11431	0.03233	16.45	1994-96	120,594,178	12,577,322	3,480,533	0.10429	0.02886	18.23
1997	45,074,486	47,040,869	5,335,705	1,402,938	0.11343	0.02982	17.19	1995-97	130,457,778	13,947,039	3,845,772	0.10691	0.02948	17.81
1998	49,007,251	51,147,137	5,834,558	1,554,788	0.11407	0.03040	16.98	1996-98	141,487,631	16,120,058	4,357,802	0.11393	0.03080	16.88
1999	53,287,022	54,820,712	5,276,906	2,209,527	0.09626	0.04030	16.05	1997-99	153,008,717	16,447,169	5,167,253	0.10749	0.03377	16.60
2000	56,354,401	58,129,406	6,160,283	2,610,272	0.10598	0.04490	14.50	1998-00	164,097,254	17,271,747	6,374,587	0.10525	0.03885	15.64
2001	59,904,410	57,798,017	5,294,552	1,941,023	0.09160	0.03358	18.03	1999-01	170,748,134	16,731,741	6,760,822	0.09799	0.03960	16.05
2002	55,691,623	55,973,265	3,160,846	2,597,563	0.05647	0.04641	19.53	2000-02	171,900,687	14,615,681	7,148,858	0.08502	0.04159	16.82
1990-2002	540,503,063	558,109,865	59,627,897	17,906,987	0.10684	0.03209	17.08							

Source: ARMIS 43-02 Reports, Table B-1, 1990-2002 (Qwest data for 2002 not yet available)
Note: Column c includes transfers.

Company: Total BOCs
Account: 2212 - Digital Electronic Switching

Geometric Mean Rolling Band Analysis
Life Indications - Account 2212 - Digital Electronic Switching



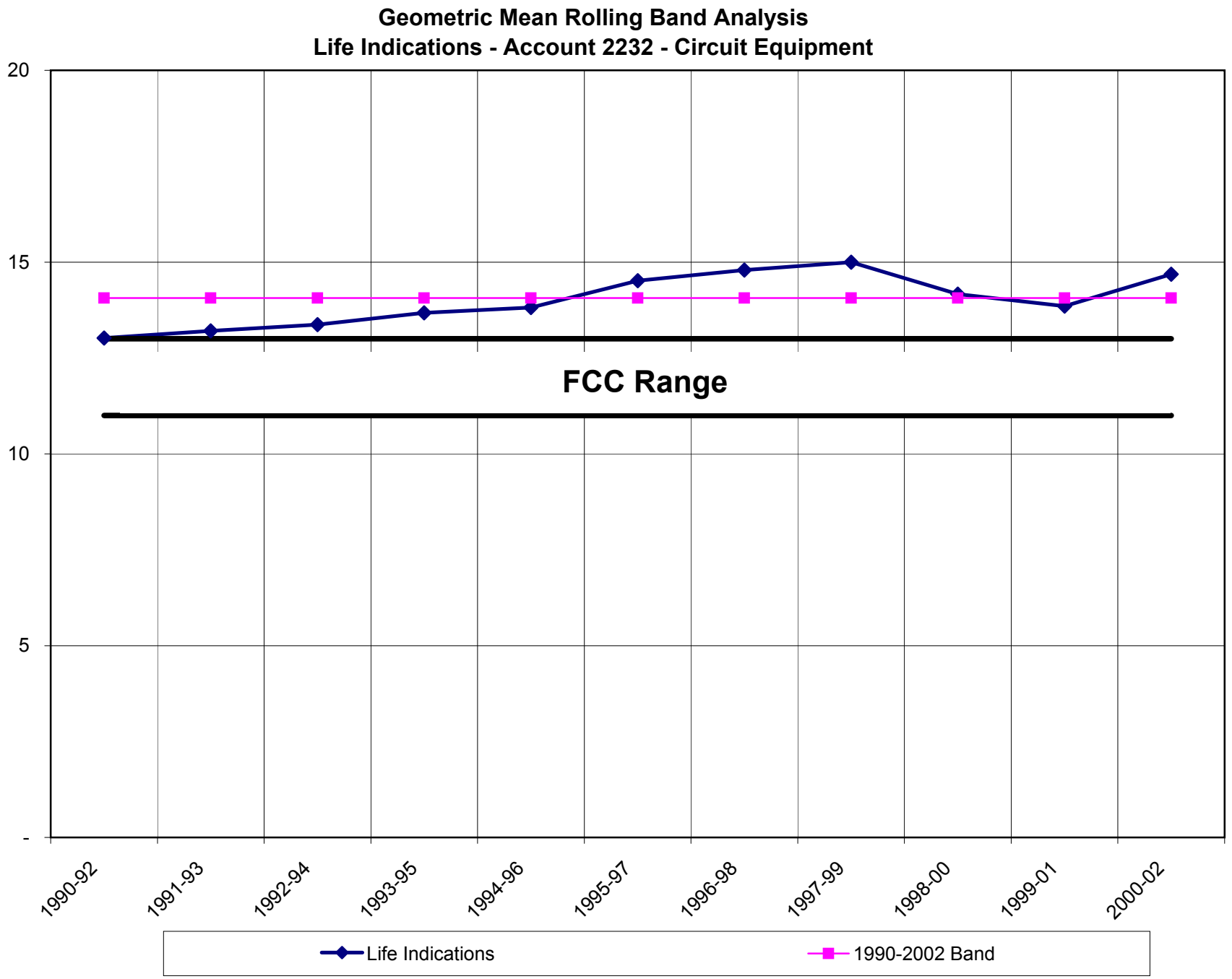
Total BOCs
Telephone Plant in Service
Geometric Mean Turnover Analysis

Account 2232 - Circuit Equipment
($ Thousands)

									3 Year Band					
Year	**BOY Plant Balance**	**Avg. Plant Balance**	**Single Year Additions**	**Single Year Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**	**3 Year Band**	**Avg. Plant Balance**	**Additions**	**Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**
	a	b=(a+(a+1))/2	c	d	e = c/b	f = d/b	g = 1/sqrt(e*f)	h	i	j	k	l = j/i	m = k/i	n = 1/sqrt(l*m)
1990	33,047,059	33,740,504	3,418,613	2,031,725	0.10132	0.06022	12.80							
1991	34,433,948	35,113,451	3,555,168	2,196,290	0.10125	0.06255	12.57							
1992	35,792,953	36,844,557	3,804,308	1,885,258	0.10325	0.05117	13.76	1990-92	105,698,511	10,778,089	6,113,273	0.10197	0.05784	13.02
1993	37,896,160	39,079,893	4,183,302	2,039,822	0.10704	0.05220	13.38	1991-93	111,037,900	11,542,778	6,121,370	0.10395	0.05513	13.21
1994	40,263,626	41,709,985	4,900,680	2,081,492	0.11749	0.04990	13.06	1992-94	117,634,435	12,888,290	6,006,572	0.10956	0.05106	13.37
1995	43,156,344	44,784,929	5,022,471	1,856,763	0.11215	0.04146	14.67	1993-95	125,574,807	14,106,453	5,978,077	0.11234	0.04761	13.67
1996	46,413,514	48,448,061	6,090,773	2,021,683	0.12572	0.04173	13.81	1994-96	134,942,975	16,013,924	5,959,938	0.11867	0.04417	13.81
1997	50,482,607	52,732,884	6,396,252	1,895,697	0.12130	0.03595	15.14	1995-97	145,965,874	17,509,496	5,774,143	0.11996	0.03956	14.52
1998	54,983,161	57,704,804	7,342,492	1,899,211	0.12724	0.03291	15.45	1996-98	158,885,748	19,829,517	5,816,591	0.12480	0.03661	14.79
1999	60,426,446	63,360,812	8,197,243	2,328,511	0.12937	0.03675	14.50	1997-99	173,798,499	21,935,987	6,123,419	0.12622	0.03523	15.00
2000	66,295,177	70,616,155	11,250,250	2,608,294	0.15932	0.03694	13.04	1998-00	191,681,770	26,789,985	6,836,016	0.13976	0.03566	14.16
2001	74,937,132	74,665,832	11,823,057	2,317,794	0.15835	0.03104	14.26	1999-01	208,642,798	31,270,550	7,254,599	0.14988	0.03477	13.85
2002	74,394,532	76,237,563	6,466,126	2,780,065	0.08482	0.03647	17.98	2000-02	221,519,549	29,539,433	7,706,153	0.13335	0.03479	14.68
1990-2002	652,522,659	675,039,426	82,450,735	27,942,605	0.12214	0.04139	14.06							

Source: ARMIS 43-02 Reports, Table B-1, 1990-2002 (Qwest data for 2002 not yet available)
Note: Column c includes transfers.

Company: Total BOCs
Account: 2232 - Circuit Equipment



Total BOCs
Telephone Plant in Service
Geometric Mean Turnover Analysis

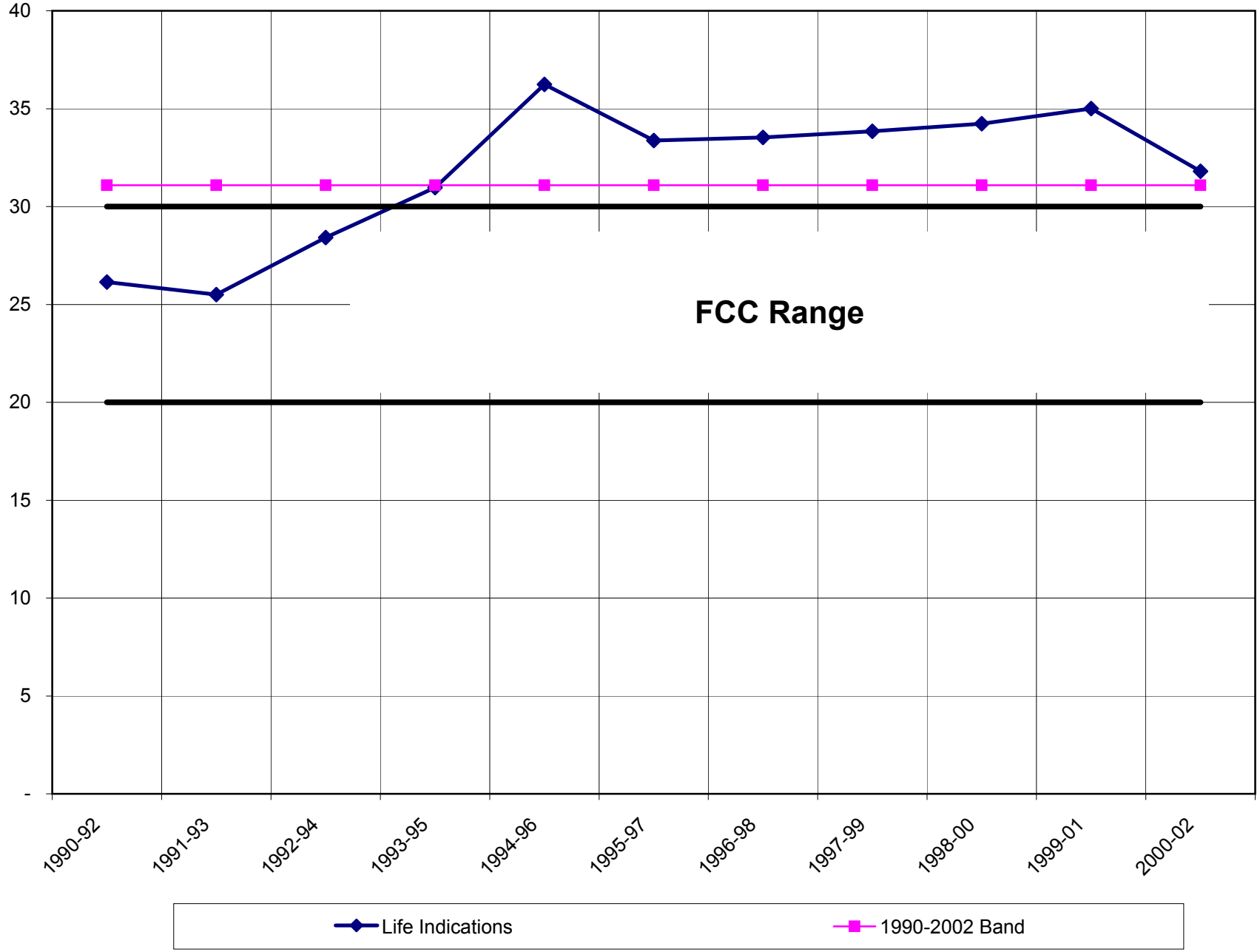
Account 2421 - Aerial Cable
($ Thousands)

									3 Year Band					
Year	**BOY Plant Balance**	**Avg. Plant Balance**	**Single Year Additions**	**Single Year Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**	**3 Year Band**	**Avg. Plant Balance**	**Additions**	**Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**
	a	b=(a+(a+1))/2	c	d	e = c/b	f = d/b	g = 1/sqrt(e*f)	h	i	j	k	l = j/i	m = k/i	n = 1/sqrt(l*m)
1990	19,932,601	20,474,027	1,488,651	405,799	0.07271	0.01982	26.34							
1991	21,015,452	21,486,816	1,467,426	524,628	0.06829	0.02442	24.49							
1992	21,958,180	22,681,424	1,597,611	412,121	0.07044	0.01817	27.95	1990-92	64,642,266	4,553,688	1,342,548	0.07044	0.02077	26.14
1993	23,404,667	24,011,031	1,575,461	602,852	0.06561	0.02511	24.64	1991-93	68,179,271	4,640,498	1,539,601	0.06806	0.02258	25.51
1994	24,617,395	25,145,836	1,393,316	385,166	0.05541	0.01532	34.33	1992-94	71,838,290	4,566,388	1,400,139	0.06356	0.01949	28.41
1995	25,674,276	26,289,399	1,473,692	348,321	0.05606	0.01325	36.69	1993-95	75,446,265	4,442,469	1,336,339	0.05888	0.01771	30.96
1996	26,904,521	27,569,153	1,648,430	319,167	0.05979	0.01158	38.01	1994-96	79,004,387	4,515,438	1,052,654	0.05715	0.01332	36.24
1997	28,233,785	28,851,880	1,813,363	577,178	0.06285	0.02000	28.20	1995-97	82,710,432	4,935,485	1,244,666	0.05967	0.01505	33.37
1998	29,469,975	30,166,443	1,770,909	377,971	0.05870	0.01253	36.87	1996-98	86,587,476	5,232,702	1,274,316	0.06043	0.01472	33.53
1999	30,862,910	31,521,473	1,713,215	396,093	0.05435	0.01257	38.27	1997-99	90,539,796	5,297,487	1,351,242	0.05851	0.01492	33.84
2000	32,180,036	32,709,683	1,740,808	681,514	0.05322	0.02084	30.03	1998-00	94,397,599	5,224,932	1,455,578	0.05535	0.01542	34.23
2001	33,239,330	33,260,020	1,786,288	402,029	0.05371	0.01209	39.25	1999-01	97,491,176	5,240,311	1,479,636	0.05375	0.01518	35.01
2002	33,280,709	33,491,651	1,345,453	923,569	0.04017	0.02758	30.04	2000-02	99,461,354	4,872,549	2,007,112	0.04899	0.02018	31.80
1990-2002	350,773,837	357,658,833	20,814,623	6,356,408	0.05820	0.01777	31.09							

Source: ARMIS 43-02 Reports, Table B-1, 1990-2002 (Qwest data for 2002 not yet available)
Note: Column c includes transfers.

Company: Total BOCs
Account: 2421 - Aerial Cable

Geometric Mean Rolling Band Analysis
Life Indications - Account 2421 - Aerial Cable



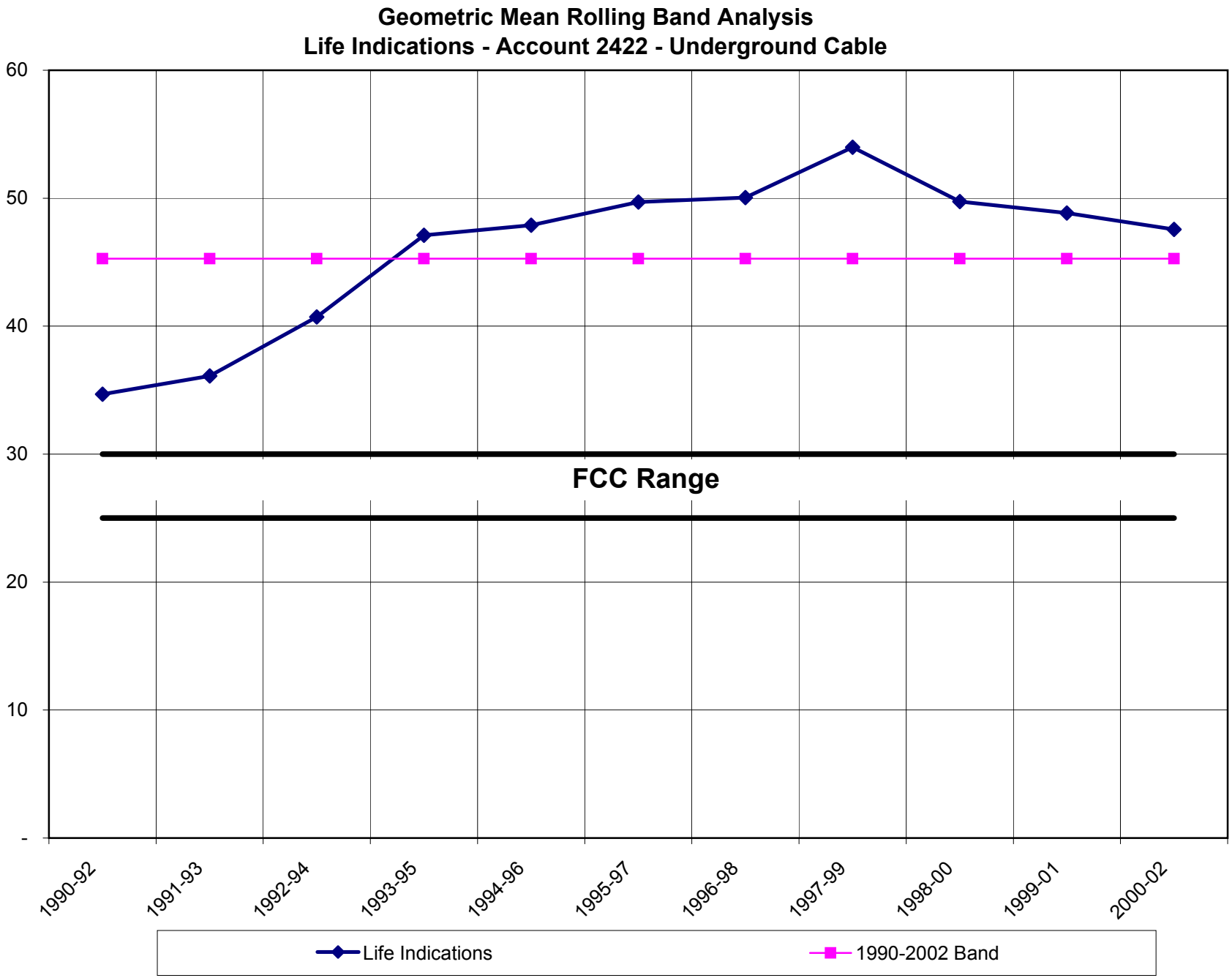
Total BOCs
Telephone Plant in Service
Geometric Mean Turnover Analysis

Account 2422 - Underground Cable
($ Thousands)

									3 Year Band					
Year	**BOY Plant Balance**	**Avg. Plant Balance**	**Single Year Additions**	**Single Year Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**	**3 Year Band**	**Avg. Plant Balance**	**Additions**	**Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**
	a	b=(a+(a+1))/2	c	d	e = c/b	f = d/b	g = 1/sqrt(e*f)	h	i	j	k	l = j/i	m = k/i	n = 1/sqrt(l*m)
1990	18,427,627	18,884,060	1,118,151	205,284	0.05921	0.01087	39.42							
1991	19,340,493	19,737,868	1,120,831	326,010	0.05679	0.01652	32.65							
1992	20,135,242	20,628,773	1,254,615	304,454	0.06082	0.01476	33.38	1990-92	59,250,701	3,493,597	835,748	0.05896	0.01411	34.68
1993	21,122,304	21,513,345	995,675	240,588	0.04628	0.01118	43.96	1991-93	61,879,985	3,371,121	871,052	0.05448	0.01408	36.11
1994	21,904,385	22,262,430	949,461	236,910	0.04265	0.01064	46.94	1992-94	64,404,547	3,199,751	781,952	0.04968	0.01214	40.72
1995	22,620,474	22,995,797	924,168	222,917	0.04019	0.00969	50.66	1993-95	66,771,571	2,869,304	700,415	0.04297	0.01049	47.10
1996	23,371,120	23,792,912	1,086,034	242,453	0.04565	0.01019	46.37	1994-96	69,051,139	2,959,663	702,280	0.04286	0.01017	47.90
1997	24,214,704	24,732,545	1,212,786	177,106	0.04904	0.00716	53.37	1995-97	71,521,254	3,222,988	642,476	0.04506	0.00898	49.70
1998	25,250,385	25,736,618	1,185,013	212,549	0.04604	0.00826	51.28	1996-98	74,262,074	3,483,833	632,108	0.04691	0.00851	50.04
1999	26,222,850	26,727,306	1,189,212	180,301	0.04449	0.00675	57.72	1997-99	77,196,468	3,587,011	569,956	0.04647	0.00738	53.99
2000	27,231,761	27,814,361	1,452,965	287,768	0.05224	0.01035	43.02	1998-00	80,278,284	3,827,190	680,618	0.04767	0.00848	49.74
2001	28,396,960	27,588,929	1,769,540	173,116	0.06414	0.00627	49.85	1999-01	82,130,595	4,411,717	641,185	0.05372	0.00781	48.83
2002	26,780,898	27,209,892	1,095,657	237,670	0.04027	0.00873	53.32	2000-02	82,613,181	4,318,162	698,554	0.05227	0.00846	47.57
1990-2002	305,019,203	309,624,832	15,354,108	3,047,126	0.04959	0.00984	45.27							

Source: ARMIS 43-02 Reports, Table B-1, 1990-2002 (Qwest data for 2002 not yet available)
Note: Column c includes transfers.

Company: Total BOCs
Account: 2422 - Underground Cable



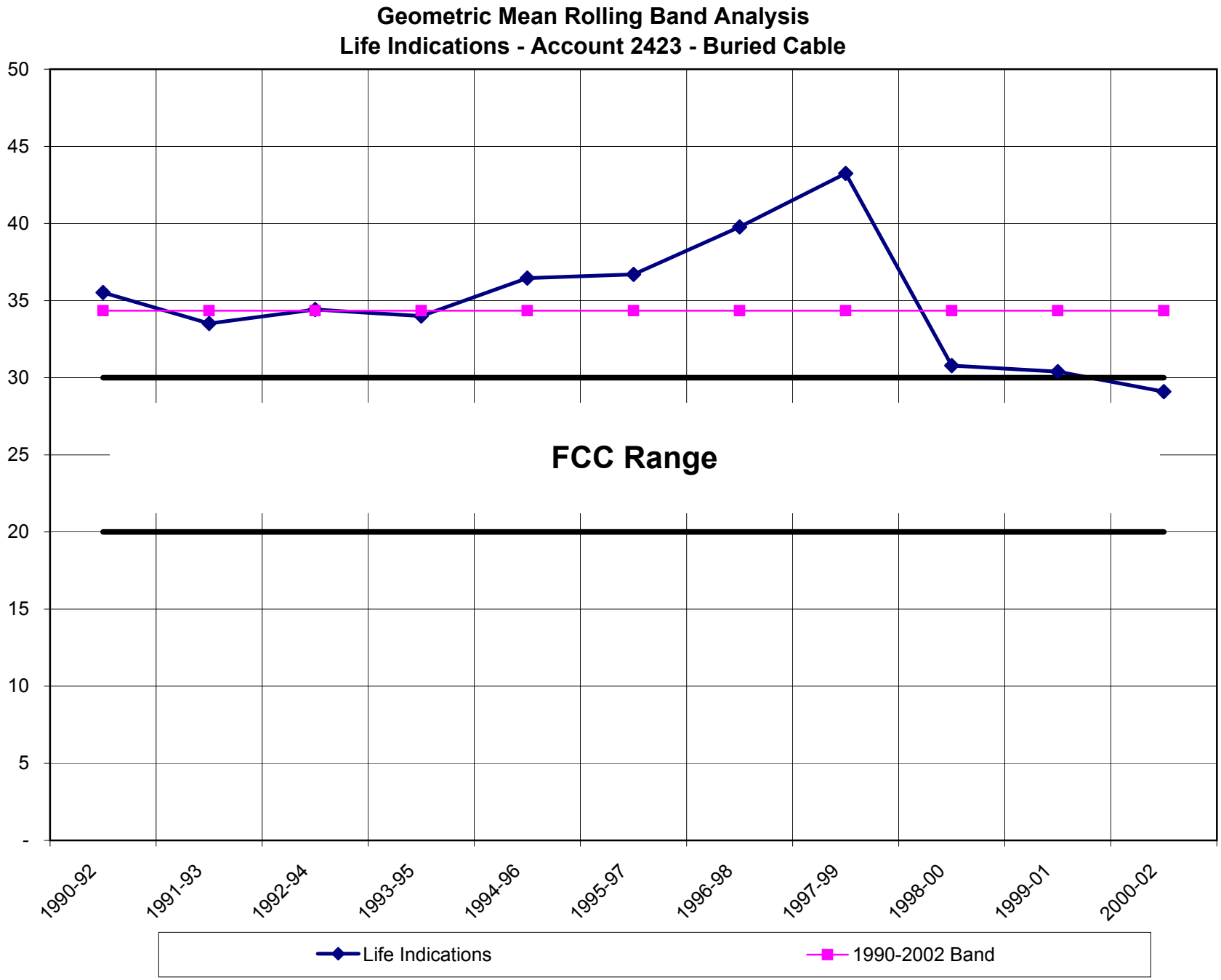
Total BOCs
Telephone Plant in Service
Geometric Mean Turnover Analysis

Account 2423 - Buried Cable
($ Thousands)

									3 Year Band					
Year	**BOY Plant Balance**	**Avg. Plant Balance**	**Single Year Additions**	**Single Year Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**	**3 Year Band**	**Avg. Plant Balance**	**Additions**	**Retirements**	**Addition Ratio**	**Retirement Ratio**	**Geometric Mean Life Estimate**
	a	b=(a+(a+1))/2	c	d	e = c/b	f = d/b	g = 1/sqrt(e*f)	h	i	j	k	l = j/i	m = k/i	n = 1/sqrt(l*m)
1990	29,574,489	30,480,141	2,173,423	362,120	0.07131	0.01188	34.36							
1991	31,385,793	32,209,545	2,092,217	444,782	0.06496	0.01381	33.39							
1992	33,033,297	34,356,889	2,151,582	356,329	0.06262	0.01037	39.24	1990-92	97,046,575	6,417,222	1,163,231	0.06613	0.01199	35.52
1993	35,680,480	36,771,226	2,388,639	632,212	0.06496	0.01719	29.92	1991-93	103,337,659	6,632,438	1,433,323	0.06418	0.01387	33.52
1994	37,861,971	38,920,505	2,307,207	503,758	0.05928	0.01294	36.10	1992-94	110,048,619	6,847,428	1,492,299	0.06222	0.01356	34.43
1995	39,979,038	40,993,899	2,324,385	541,714	0.05670	0.01321	36.53	1993-95	116,685,629	7,020,231	1,677,684	0.06016	0.01438	34.00
1996	42,008,759	43,158,320	2,789,316	490,193	0.06463	0.01136	36.91	1994-96	123,072,723	7,420,908	1,535,665	0.06030	0.01248	36.46
1997	44,307,881	45,500,819	2,910,243	524,368	0.06396	0.01152	36.83	1995-97	129,653,038	8,023,944	1,556,275	0.06189	0.01200	36.69
1998	46,693,757	47,839,267	2,682,101	391,079	0.05606	0.00817	46.71	1996-98	136,498,406	8,381,660	1,405,640	0.06140	0.01030	39.77
1999	48,984,777	50,135,463	2,711,308	409,939	0.05408	0.00818	47.55	1997-99	143,475,549	8,303,652	1,325,386	0.05788	0.00924	43.25
2000	51,286,149	51,945,714	3,258,848	1,939,719	0.06274	0.03734	20.66	1998-00	149,920,444	8,652,257	2,740,737	0.05771	0.01828	30.79
2001	52,605,279	48,864,849	3,041,840	386,230	0.06225	0.00790	45.08	1999-01	150,946,026	9,011,996	2,735,888	0.05970	0.01812	30.40
2002	45,124,418	45,695,760	1,905,991	763,307	0.04171	0.01670	37.88	2000-02	146,506,323	8,206,679	3,089,256	0.05602	0.02109	29.10
1990-2002	538,526,088	546,872,395	32,737,100	7,745,750	0.05986	0.01416	34.34							

Source: ARMIS 43-02 Reports, Table B-1, 1990-2002 (Qwest data for 2002 not yet available)
Note: Column c includes transfers.

Company: Total BOCs
Account: 2423 - Buried Cable



AT&T Local Services

Financial Book Lives

	TFI ILEC Data			AT&T Data	
	RL	PL	Ratio	RL	PL
	a	b	c=b/a	d	e=c*d
Digital Switching	5.0	9.0 - 12.0	1.8 - 2.4		
Digital Circuit	4.4	7.0 - 9.0	1.6 - 2.0		
Metallic Cable	8.0	15.0 - 19.0	1.9 - 2.4		
Non-Metallic Cable	5.0 - 9.2	15.0 - 20.0	3.0 - 2.2		

Sources: Columns a and b (Digital Switch and Circuit) - Technology Futures, Inc., Transforming the Local Exchange Network: Review and Update (2003), pp. 41 and 55.

Columns a and b (Metallic and Non-Metallic Cable) - Technology Futures, Inc., Depreciation Lives of Fiber Optic Cables in the Local Exchange (2003), pp. 55 and 62.

Column d - AT&T Corporate Finance.

REDACTED

Comparison of
AT&T Local Service Financial Book Projection Lives
to
FCC Projection Life Ranges

	AT&T Projection Lives	FCC Projection Life Ranges
	a	b
Digital Switching		12.0 - 18.0
Digital Circuit		11.0 - 13.0
Metallic Cable		20.0 - 30.0
Non-Metallic Cable		25.0 - 30.0

Sources: Column a - Attachment 7, page 1.

Column b - FCC Docket No. 92-296, Orders released 6/28/94 and 5/4/95 and Docket No. 98-137, Order released 12/30/99.

REDACTED

AT&T Capital Expenditure Planning Life

All Plant ___ Years

Source: AT&T Corporate Finance.

REDACTED

Attachment 8
Schedule 1

Economic Depreciation Adjustment Factor
Hypothetical Switch

Line			
1	Initial Investment	Assumed	$1000
2	Service Life Years (n)	OSP Working Paper	16
3	Annual Price Decline	OSP Working Paper	10.98%
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\frac{i(1+i)^n}{}$	0.6193738
6	Levelization Denominator	$(1+i)^n-1$	4.505545
7	Levelization Factor	Ln 5/Ln 6	0.1374692

Year	A Levelized Payment	B Price Decline	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	137.47	1.0000	1.0000	137.47	137.47	137.47	
2	137.47	1.1098	0.8875	137.47	122.00	122.00	
3	137.47	1.2196	0.7877	137.47	108.28	108.28	
4	137.47	1.3294	0.6990	96.10	96.10	67.18	
5	137.47	1.4392	0.6204	96.10	85.29	59.62	
6	137.47	1.5490	0.5506	96.10	75.69	52.91	
7	137.47	1.6588	0.4887	67.18	67.18	32.83	
8	137.47	1.7686	0.4337	67.18	59.62	29.14	
9	137.47	1.8784	0.3849	67.18	52.91	25.86	
10	137.47	1.9882	0.3416	46.96	46.96	16.04	
11	137.47	2.0980	0.3032	46.96	41.68	14.24	
12	137.47	2.2078	0.2691	46.96	36.99	12.63	
13	137.47	2.3176	0.2388	32.83	32.83	7.84	
14	137.47	2.4274	0.2119	32.83	29.13	6.96	
15	137.47	2.5372	0.1881	32.83	25.86	6.17	
Sum					1017.97	699.16	**1.456**

Attachment 8
Schedule 2

Economic Depreciation Adjustment Factor
Hypothetical Loop

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	OSP Working Paper	30
3	Annual Price Increase	OSP Working Paper	3.0%
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\frac{i(1+i)^n}{}$	2.7551999
6	Levelization Denominator	$(1+i)^n-1$	23.490666
7	Levelization Factor	Ln 5/Ln 6	0.1172891

Year	A Levelized Payment	B Price Increase	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	117.29	1.0000	1.0000	117.29	117.29	117.29	
2	117.29	1.0300	0.8989	117.29	105.43	105.43	
3	117.29	1.0609	0.8080	117.29	94.77	94.77	
4	117.29	1.0927	0.7263	128.17	85.18	93.08	
5	117.29	1.1255	0.6528	128.17	76.57	83.67	
6	117.29	1.1593	0.5868	128.17	68.83	75.21	
7	117.29	1.1941	0.5275	140.05	61.87	73.87	
8	117.29	1.2299	0.4741	140.05	55.61	66.40	
9	117.29	1.2668	0.4262	140.05	49.99	59.69	
10	117.29	1.3048	0.3831	153.04	44.93	58.63	
11	117.29	1.3439	0.3443	153.04	40.39	52.70	
12	117.29	1.3842	0.3095	153.04	36.30	47.37	
13	117.29	1.4258	0.2782	167.23	32.63	46.53	
14	117.29	1.4685	0.2501	167.23	29.33	41.82	
15	117.29	1.5126	0.2248	167.23	26.37	37.59	
16	117.29	1.5580	0.2021	182.73	23.70	36.92	
17	117.29	1.6047	0.1816	182.73	21.30	33.19	
18	117.29	1.6528	0.1633	182.73	19.15	29.83	
19	117.29	1.7024	0.1468	199.68	17.21	29.30	
20	117.29	1.7535	0.1319	182.73	15.47	24.11	
21	117.29	1.8061	0.1186	199.68	13.91	23.68	
22	117.29	1.8603	0.1066	218.19	12.50	23.26	
23	117.29	1.9161	0.0958	218.19	11.24	20.90	
24	117.29	1.9736	0.0861	218.19	10.10	18.79	
25	117.29	2.0328	0.0774	238.42	9.08	18.46	
26	117.29	2.0938	0.0696	238.42	8.16	16.59	
27	117.29	2.1566	0.0625	238.42	7.34	14.91	
28	117.29	2.2213	0.0562	260.53	6.59	14.65	
29	117.29	2.2879	0.0505	260.53	5.93	13.17	
30	117.29	2.3566	0.0454	260.53	5.33	11.83	
Sum					1112.50	1383.64	**0.804**

Attachment 8
Schedule 3

UNE Pricing Account Adjustment Factors
U.S. Local Exchange Carriers

Account	USOA Category	A Economic Life	B Theoretical Reserve	C Salvage Ratios	D Reserve w/o Salvage	E Expired Life	F Current/Book Ratio	G Annual Inflation	H Schedule 4 Page	I Schedule 4 Factor
		Note 1	Note 2	Note 1	B/(1-C)	A x D	Note 3	$F^{1/E}$		
2112	Motor Vehicles	8.24	48.0%	10.38%	53.6%	4.41	1.0653	1.0144	1	0.9689
2115	Garage Work Equipment	12.22	38.5%	-5.58%	36.5%	4.46	1.0653	1.0143	2	0.9517
2116	Other Work Equipment	13.04	38.5%	1.69%	39.2%	5.11	1.0653	1.0125	3	0.9546
2121	Buildings	46.93	26.2%	1.64%	26.6%	12.50	1.5262	1.0344	4	0.7360
2122	Furniture	15.92	57.0%	4.02%	59.4%	9.45	1.5262	1.0457	5	0.8057
2123.1	Office Support Equipment	10.78	54.1%	4.12%	56.4%	6.08	1.5262	1.0720	6	0.7931
2123.2	Company Comm.Equipment	7.40	54.1%	2.52%	55.5%	4.11	1.5262	1.1084	7	0.8028
2124	Computers	6.12	62.6%	2.29%	64.1%	3.92	1.5262	1.1139	8	0.8542
2122	Digital Switching	16.17	42.8%	1.57%	43.5%	7.03	0.8924	0.9839	9	1.0755
2220	Operator Systems	9.41	53.2%	-0.41%	53.0%	4.99	1.5262	1.0885	10	0.7867
2232.2	Digital Circuit Equipment	10.24	45.1%	-0.62%	44.8%	4.59	0.9704	0.9935	11	1.0186
2351	Public Telephone	7.60	70.1%	5.12%	73.9%	5.62	1.5262	1.0782	12	0.8298
	NID, SAI and Drop (Note 4)	22.39	59.9%	-16.46%	51.5%	11.52	1.5370	1.0380	13	0.8126
2411	Poles	30.25	80.7%	-89.98%	42.5%	12.85	2.4020	1.0706	14	0.5556
2421m	Aerial Cable - metallic	20.61	62.5%	-23.03%	50.8%	10.47	1.5720	1.0442	15	0.7710
2421 nm	Aerial Cable - non-metallic	26.14	33.4%	-17.53%	28.4%	7.43	0.8676	0.9811	16	1.1191
2422m	Underground -metallic	25.00	62.1%	-17.97%	52.6%	13.16	1.6675	1.0396	17	0.7656
2422nm	Underground - non-metallic	26.45	36.0%	-14.58%	31.4%	8.31	0.8243	0.9770	18	1.1455
2423m	Buried - metallic	21.57	55.2%	-8.39%	50.9%	10.98	1.3715	1.0292	19	0.8413
2423nm	Buried - non-metallic	25.91	32.1%	-6.91%	30.0%	7.78	0.9599	0.9947	20	1.0328
2426m	Intrabuilding - metallic	18.18	69.5%	-15.69%	60.1%	10.92	1.5720	1.0423	21	0.8000
2426 nm	Intrabuilding - non-metallic	26.11	34.5%	-10.43%	31.2%	8.16	0.8676	0.9827	22	1.1084
2441	Conduits	56.19	31.9%	-9.95%	29.0%	16.30	1.8418	1.0382	23	0.7072

Note 1: CC Docket No. 96-45, 10th Report and Order, Nov 2, 1999, FCC 99-304, Appendix A, Part 3
Note 2: FCC Pricing Policy Division, Wireline Competition Bureau, Report on Depreciation Reserve, October 2002
Note 3: Memorandum Opinion and Order, FCC Wireline Competition Bureau in the Virginia UNE pricing arbitration, August 29, 2003, Appendix B
Note 4: Simple average of metallic aerial, underground and buried cable parameters

Economic Depreciation Adjustment Factor
Motor Vehicles

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	8.24
3	Annual Inflation Factor	Schedule 3, Col.G	1.0144
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\frac{i(1+i)^n}{}$	0.27081
6	Levelization Denominator	$(1+i)^n-1$	1.4071999
7	Levelization Factor	Ln 5/Ln 6	0.192446

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	192.45	1.0000	1.0000	192.45	192.45	192.45	
2	192.45	1.0144	0.8989	192.45	172.99	172.99	
3	192.45	1.0291	0.8080	192.45	155.49	155.49	
4	192.45	1.0439	0.7263	200.90	139.77	145.91	
5	192.45	1.0590	0.6528	200.90	125.63	131.15	
6	192.45	1.0743	0.5868	200.90	112.93	117.89	
7	192.45	1.0898	0.5275	209.73	101.51	110.63	
8	192.45	1.1055	0.4741	209.73	91.24	99.44	
9	46.19	1.1215	0.4262	50.33	19.68	21.45	
Sum					1111.70	1147.40	**0.9689**

Economic Depreciation Adjustment Factor
Garage Work Equipment

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	12.22
3	Annual Inflation Factor	Schedule 3, Col.G	1.0143
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.4139413
6	Levelization Denominator	$(1+i)^n-1$	2.6794783
7	Levelization Factor	Ln 5/Ln 6	0.1544858

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	154.49	1.0000	1.0000	154.49	154.49	154.49	
2	154.49	1.0143	0.8989	154.49	138.86	138.86	
3	154.49	1.0288	0.8080	154.49	124.82	124.82	
4	154.49	1.0435	0.7263	161.21	112.20	117.08	
5	154.49	1.0584	0.6528	161.21	100.85	105.24	
6	154.49	1.0736	0.5868	161.21	90.65	94.60	
7	154.49	1.0889	0.5275	168.22	81.49	88.73	
8	154.49	1.1045	0.4741	168.22	73.25	79.76	
9	154.49	1.1203	0.4262	168.22	65.84	71.69	
10	154.49	1.1363	0.3831	175.54	59.18	67.25	
11	154.49	1.1525	0.3443	175.54	53.20	60.45	
12	154.49	1.1690	0.3095	175.54	47.82	54.33	
13	33.99	1.2027	0.2501	40.87	8.50	10.22	
Sum					1111.15	1167.52	**0.9517**

Economic Depreciation Adjustment Factor
Other Work Equipment

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	13.04
3	Annual Inflation Factor	Schedule 3, Col.G	1.0125
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.4517569
6	Levelization Denominator	$(1+i)^n-1$	3.0156167
7	Levelization Factor	Ln 5/Ln 6	0.1498058

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	149.81	1.0000	1.0000	149.81	149.81	149.81	
2	149.81	1.0125	0.8989	149.81	134.66	134.66	
3	149.81	1.0251	0.8080	149.81	121.04	121.04	
4	149.81	1.0379	0.7263	155.48	108.80	112.92	
5	149.81	1.0508	0.6528	155.48	97.80	101.50	
6	149.81	1.0639	0.5868	155.48	87.91	91.24	
7	149.81	1.0772	0.5275	161.36	79.02	85.11	
8	149.81	1.0906	0.4741	161.36	71.03	76.51	
9	149.81	1.1042	0.4262	161.36	63.85	68.77	
10	149.81	1.1179	0.3831	167.47	57.39	64.16	
11	149.81	1.1319	0.3443	167.47	51.59	57.67	
12	149.81	1.1460	0.3095	167.47	46.37	51.84	
13	149.81	1.1603	0.2782	173.81	41.68	48.36	
14	5.99	1.1747	0.2501	6.95	1.50	1.74	
Sum					1112.42	1165.31	**0.9546**

Economic Depreciation Adjustment Factor
Buildings

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	46.93
3	Annual Inflation Factor	Schedule 3, Col.G	1.0344
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	16.749909
6	Levelization Denominator	$(1+i)^n-1$	147.88808
7	Levelization Factor	Ln 5/Ln 6	0.1132607

Year	A Levelized Payment Ln7x1000	B Price Change Prior Yr x Line 3	C Discount Factor Prior Yr/ (1+ Ln 4)	D UNE Prices AxB, Every Third Year	E Levelized Discounted A x C	F UNE Price Discounted C x D	G Adjustment Sum E/F
1	113.26	1.0000	1.0000	113.26	113.26	113.26	
2	113.26	1.0344	0.8989	113.26	101.81	101.81	
3	113.26	1.0700	0.8080	113.26	91.51	91.51	
4	113.26	1.1068	0.7263	125.36	82.26	91.04	
5	113.26	1.1449	0.6528	125.36	73.94	81.84	
6	113.26	1.1842	0.5868	125.36	66.46	73.56	
7	113.26	1.2250	0.5275	138.74	59.74	73.18	
8	113.26	1.2671	0.4741	138.74	53.70	65.78	
9	113.26	1.3107	0.4262	138.74	48.27	59.13	
10	113.26	1.3558	0.3831	153.56	43.39	58.83	
11	113.26	1.4024	0.3443	153.56	39.00	52.88	
12	113.26	1.4507	0.3095	153.56	35.06	47.53	
13	113.26	1.5006	0.2782	169.96	31.51	47.29	
14	113.26	1.5522	0.2501	169.96	28.33	42.50	
15	113.26	1.6056	0.2248	169.96	25.46	38.21	
16	113.26	1.6608	0.2021	188.11	22.89	38.01	
17	113.26	1.7179	0.1816	188.11	20.57	34.17	
18	113.26	1.7770	0.1633	188.11	18.49	30.71	
19	113.26	1.8382	0.1468	208.19	16.62	30.55	
20	113.26	1.9014	0.1319	208.19	14.94	27.46	
21	113.26	1.9668	0.1186	208.19	13.43	24.69	
22	113.26	2.0345	0.1066	230.43	12.07	24.56	
23	113.26	2.1045	0.0958	230.43	10.85	22.08	
24	113.26	2.1768	0.0861	230.43	9.75	19.84	
25	113.26	2.2517	0.0774	255.03	8.77	19.74	
26	113.26	2.3292	0.0696	255.03	7.88	17.75	
27	113.26	2.4093	0.0625	255.03	7.08	15.95	
28	113.26	2.4922	0.0562	282.27	6.37	15.87	
29	113.26	2.5779	0.0505	282.27	5.72	14.26	
30	113.26	2.6666	0.0454	282.27	5.14	12.82	
31	113.26	2.7583	0.0408	312.41	4.62	12.76	
32	113.26	2.8532	0.0367	312.41	4.16	11.47	
33	113.26	2.9513	0.0330	312.41	3.74	10.31	
34	113.26	3.0529	0.0297	345.77	3.36	10.25	
35	113.26	3.1579	0.0267	345.77	3.02	9.22	
36	113.26	3.2665	0.0240	345.77	2.71	8.28	
37	113.26	3.3789	0.0215	382.69	2.44	8.24	
38	113.26	3.4951	0.0194	382.69	2.19	7.41	
39	113.26	3.6153	0.0174	382.69	1.97	6.66	
40	113.26	3.7397	0.0156	423.56	1.77	6.63	
41	113.26	3.8683	0.0141	423.56	1.59	5.96	
42	113.26	4.0014	0.0126	423.56	1.43	5.35	
43	113.26	4.1391	0.0114	468.79	1.29	5.33	
44	113.26	4.2814	0.0102	468.79	1.16	4.79	
45	113.26	4.4287	0.0092	468.79	1.04	4.30	
46	113.26	4.5811	0.0083	518.85	0.93	4.28	
47	105.33	4.7386	0.0074	482.53	0.78	3.58	
Sum					1112.50	1511.62	**0.7360**

Economic Depreciation Adjustment Factor
Furniture

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	15.92
3	Annual Inflation Factor	Schedule 3, Col.G	1.0457
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.6141138
6	Levelization Denominator	$(1+i)^n-1$	4.4587891
7	Levelization Factor	Ln 5/Ln 6	0.1377311

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	137.73	1.0000	1.0000	137.73	137.73	137.73	
2	137.73	1.0457	0.8989	137.73	123.80	123.80	
3	137.73	1.0936	0.8080	137.73	111.28	111.28	
4	137.73	1.1436	0.7263	157.50	100.03	114.39	
5	137.73	1.1959	0.6528	157.50	89.91	102.82	
6	137.73	1.2506	0.5868	157.50	80.82	92.43	
7	137.73	1.3077	0.5275	180.12	72.65	95.01	
8	137.73	1.3676	0.4741	180.12	65.30	85.40	
9	137.73	1.4301	0.4262	180.12	58.70	76.76	
10	137.73	1.4955	0.3831	205.98	52.76	78.91	
11	137.73	1.5639	0.3443	205.98	47.43	70.93	
12	137.73	1.6354	0.3095	205.98	42.63	63.76	
13	137.73	1.7102	0.2782	235.55	38.32	65.54	
14	137.73	1.7884	0.2501	235.55	34.45	58.91	
15	137.73	1.8702	0.2248	235.55	30.96	52.95	
16	126.71	1.9557	0.2021	247.82	25.60	50.08	
Sum					1112.39	1380.69	**0.8057**

Economic Depreciation Adjustment Factor
Office Support Equipment

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	10.78
3	Annual Inflation Factor	Schedule 3, Col.G	1.0720
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.3550314
6	Levelization Denominator	$(1+i)^n-1$	2.1558344
7	Levelization Factor	Ln 5/Ln 6	0.164684

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	164.68	1.0000	1.0000	164.68	164.68	164.68	
2	164.68	1.0720	0.8989	164.68	148.03	148.03	
3	164.68	1.1491	0.8080	164.68	133.06	133.06	
4	164.68	1.2319	0.7263	202.87	119.61	147.34	
5	164.68	1.3205	0.6528	202.87	107.51	132.44	
6	164.68	1.4156	0.5868	202.87	96.64	119.04	
7	164.68	1.5175	0.5275	249.90	86.87	131.82	
8	164.68	1.6267	0.4741	249.90	78.08	118.49	
9	164.68	1.7438	0.4262	249.90	70.19	106.50	
10	164.68	1.8693	0.3831	307.84	63.09	117.93	
11	128.45	2.0038	0.3443	240.12	44.23	82.68	
Sum					1111.99	1402.02	**0.7931**

Economic Depreciation Adjustment Factor
Company Communications Equipment

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	7.40
3	Annual Inflation Factor	Schedule 3, Col.G	1.1084
4	Discount Factor (i)	Virginia Arbitration	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.2476126
6	Levelization Denominator	$(1+i)^n-1$	1.2010005
7	Levelization Factor	Ln 5/Ln 6	0.2061719

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	206.17	1.0000	1.0000	206.17	206.17	206.17	
2	206.17	1.1084	0.8989	206.17	185.32	185.32	
3	206.17	1.2286	0.8080	206.17	166.58	166.58	
4	206.17	1.3618	0.7263	280.77	149.74	203.92	
5	206.17	1.5095	0.6528	280.77	134.60	183.30	
6	206.17	1.6732	0.5868	280.77	120.98	164.76	
7	206.17	1.8546	0.5275	382.36	108.75	201.69	
8	82.47	2.0557	0.4741	152.95	39.10	72.52	
Sum					1111.25	1384.26	**0.8028**

Economic Depreciation Adjustment Factor
Computers

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	6.12
3	Annual Inflation Factor	Schedule 3, Col.G	1.1139
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.2160273
6	Levelization Denominator	$(1+i)^n-1$	0.9202427
7	Levelization Factor	Ln 5/Ln 6	0.2347504

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	234.75	1.0000	1.0000	234.75	234.75	234.75	
2	234.75	1.1139	0.8989	234.75	211.01	211.01	
3	234.75	1.2407	0.8080	234.75	189.67	189.67	
4	234.75	1.3819	0.7263	324.41	170.49	235.61	
5	234.75	1.5393	0.6528	324.41	153.25	211.78	
6	234.75	1.7145	0.5868	324.41	137.75	190.37	
7	28.17	1.9097	0.5275	53.80	14.86	28.38	
Sum					1111.79	1301.57	**0.8542**

Economic Depreciation Adjustment Factor
Digital Switching Equipment

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	16.17
3	Annual Inflation Factor	Schedule 3, Col.G	0.9839
4	Discount Factor (i)	Virginia Arbitration	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.6307015
6	Levelization Denominator	$(1+i)^n-1$	4.6062353
7	Levelization Factor	Ln 5/Ln 6	0.1369234

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	136.92	1.0000	1.0000	136.92	136.92	136.92	
2	136.92	0.9839	0.8989	136.92	123.08	123.08	
3	136.92	0.9681	0.8080	136.92	110.63	110.63	
4	136.92	0.9526	0.7263	130.43	99.44	94.73	
5	136.92	0.9373	0.6528	130.43	89.39	85.15	
6	136.92	0.9222	0.5868	130.43	80.35	76.54	
7	136.92	0.9074	0.5275	124.24	72.22	65.53	
8	136.92	0.8928	0.4741	124.24	64.92	58.91	
9	136.92	0.8785	0.4262	124.24	58.35	52.95	
10	136.92	0.8643	0.3831	118.35	52.45	45.34	
11	136.92	0.8505	0.3443	118.35	47.15	40.75	
12	136.92	0.8368	0.3095	118.35	42.38	36.63	
13	136.92	0.8233	0.2782	112.73	38.10	31.37	
14	136.92	0.8101	0.2501	112.73	34.24	28.19	
15	136.92	0.7971	0.2248	112.73	30.78	25.34	
16	136.92	0.7843	0.2021	107.39	27.67	21.70	
17	130.08	0.7717	0.1816	102.02	23.63	18.53	
Sum					1131.71	1052.29	**1.0755**

Economic Depreciation Adjustment Factor
Operator Systems

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	9.41
3	Annual Inflation Factor	Schedule 3, Col.G	1.0885
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	0.3067861
6	Levelization Denominator	$(1+i)^n-1$	1.7269877
7	Levelization Factor	Ln 5/Ln 6	0.1776423

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	177.64	1.0000	1.0000	177.64	177.64	177.64	
2	177.64	1.0885	0.8989	177.64	159.68	159.68	
3	177.64	1.1848	0.8080	177.64	143.53	143.53	
4	177.64	1.2897	0.7263	229.10	129.02	166.39	
5	177.64	1.4038	0.6528	229.10	115.97	149.56	
6	177.64	1.5281	0.5868	229.10	104.24	134.44	
7	177.64	1.6633	0.5275	295.47	93.70	155.85	
8	177.64	1.8105	0.4741	295.47	84.23	140.09	
9	177.64	1.9707	0.4262	295.47	75.71	125.93	
10	72.83	2.1451	0.3831	156.24	27.90	59.85	
Sum					1111.62	1412.97	**0.7867**

Economic Depreciation Adjustment Factor
Digital Circuit Equipment

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	10.24
3	Annual Inflation Factor	Schedule 3, Col.G	0.9935
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.3351697
6	Levelization Denominator	$(1+i)^n-1$	1.979286
7	Levelization Factor	Ln 5/Ln 6	0.1693387

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	169.34	1.0000	1.0000	169.34	169.34	169.34	
2	169.34	0.9935	0.8989	169.34	152.21	152.21	
3	169.34	0.9870	0.8080	169.34	136.82	136.82	
4	169.34	0.9805	0.7263	166.04	122.99	120.59	
5	169.34	0.9741	0.6528	166.04	110.55	108.40	
6	169.34	0.9677	0.5868	166.04	99.37	97.43	
7	169.34	0.9614	0.5275	162.81	89.32	85.88	
8	169.34	0.9551	0.4741	162.81	80.29	77.19	
9	169.34	0.9489	0.4262	162.81	72.17	69.39	
10	169.34	0.9427	0.3831	159.63	64.87	61.15	
11	40.64	0.9365	0.3443	38.31	13.99	13.19	
Sum					1111.93	1091.59	**1.0186**

Economic Depreciation Adjustment Factor
Public Telephones

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	7.6
3	Annual Inflation Factor	Schedule 3, Col.G	1.0782
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	0.2529488
6	Levelization Denominator	$(1+i)^n-1$	1.248434
7	Levelization Factor	Ln 5/Ln 6	0.2026129

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	202.61	1.0000	1.0000	202.61	202.61	202.61	
2	202.61	1.0782	0.8989	202.61	182.12	182.12	
3	202.61	1.1625	0.8080	202.61	163.71	163.71	
4	202.61	1.2534	0.7263	253.96	147.15	184.44	
5	202.61	1.3514	0.6528	253.96	132.27	165.79	
6	202.61	1.4571	0.5868	253.96	118.90	149.03	
7	202.61	1.5711	0.5275	318.32	106.87	167.91	
8	202.61	1.6939	0.4741	318.32	96.07	150.93	
9	121.57	1.8264	0.4262	190.99	51.81	81.40	
Sum					1201.51	1447.94	**0.8298**

Economic Depreciation Adjustment Factor
NID, SAI and Drop

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	22.39
3	Annual Inflation Factor	Schedule 3, Col.G	1.0380
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	1.2245155
6	Levelization Denominator	$(1+i)^n-1$	9.8845824
7	Levelization Factor	Ln 5/Ln 6	0.1238814

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	123.88	1.0000	1.0000	123.88	123.88	123.88	
2	123.88	1.0380	0.8989	123.88	111.35	111.35	
3	123.88	1.0774	0.8080	123.88	100.09	100.09	
4	123.88	1.1184	0.7263	138.55	89.97	100.62	
5	123.88	1.1609	0.6528	138.55	80.87	90.45	
6	123.88	1.2050	0.5868	138.55	72.70	81.30	
7	123.88	1.2508	0.5275	154.95	65.34	81.73	
8	123.88	1.2983	0.4741	154.95	58.74	73.47	
9	123.88	1.3477	0.4262	154.95	52.80	66.04	
10	123.88	1.3989	0.3831	173.30	47.46	66.39	
11	123.88	1.4521	0.3443	173.30	42.66	59.67	
12	123.88	1.5072	0.3095	173.30	38.34	53.64	
13	123.88	1.5645	0.2782	193.82	34.47	53.92	
14	123.88	1.6240	0.2501	193.82	30.98	48.47	
15	123.88	1.6857	0.2248	193.82	27.85	43.57	
16	123.88	1.7498	0.2021	216.76	25.03	43.80	
17	123.88	1.8163	0.1816	216.76	22.50	39.37	
18	123.88	1.8853	0.1633	216.76	20.23	35.39	
19	123.88	1.9569	0.1468	242.43	18.18	35.58	
Sum					1063.44	1308.75	**0.8126**

Economic Depreciation Adjustment Factor
Poles

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	30.25
3	Annual Inflation Factor	Schedule 3, Col.G	1.0706
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	2.82962
6	Levelization Denominator	$(1+i)^n-1$	24.152178
7	Levelization Factor	Ln 5/Ln 6	0.117158

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	117.16	1.0000	1.0000	117.16	117.16	117.16	
2	117.16	1.0706	0.8989	117.16	105.31	105.31	
3	117.16	1.1461	0.8080	117.16	94.66	94.66	
4	117.16	1.2270	0.7263	143.75	85.09	104.41	
5	117.16	1.3136	0.6528	143.75	76.48	93.85	
6	117.16	1.4063	0.5868	143.75	68.75	84.36	
7	117.16	1.5056	0.5275	176.39	61.80	93.04	
8	117.16	1.6118	0.4741	176.39	55.55	83.63	
9	117.16	1.7256	0.4262	176.39	49.93	75.17	
10	117.16	1.8474	0.3831	216.43	44.88	82.91	
11	117.16	1.9777	0.3443	216.43	40.34	74.53	
12	117.16	2.1173	0.3095	216.43	36.26	66.99	
13	117.16	2.2667	0.2782	265.57	32.60	73.89	
14	117.16	2.4267	0.2501	265.57	29.30	66.42	
15	117.16	2.5980	0.2248	265.57	26.34	59.70	
16	117.16	2.7813	0.2021	325.85	23.67	65.84	
17	117.16	2.9776	0.1816	325.85	21.28	59.19	
18	117.16	3.1877	0.1633	325.85	19.13	53.20	
19	117.16	3.4127	0.1468	399.83	17.19	58.68	
20	117.16	3.6536	0.1319	399.83	15.46	52.74	
21	117.16	3.9114	0.1186	399.83	13.89	47.41	
22	117.16	4.1875	0.1066	490.59	12.49	52.29	
23	117.16	4.4830	0.0958	490.59	11.22	47.00	
24	117.16	4.7994	0.0861	490.59	10.09	42.25	
25	117.16	5.1381	0.0774	601.97	9.07	46.60	
26	117.16	5.5007	0.0696	601.97	8.15	41.89	
27	117.16	5.8889	0.0625	601.97	7.33	37.65	
28	117.16	6.3045	0.0562	738.62	6.59	41.53	
29	117.16	6.7494	0.0505	738.62	5.92	37.33	
30	117.16	7.2258	0.0454	738.62	5.32	33.55	
31	29.29	7.7357	0.0408	226.58	1.20	9.25	
Sum					1112.45	2002.42	**0.5556**

Economic Depreciation Adjustment Factor
Aerial Cable - Metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	20.61
3	Annual Inflation Factor	Schedule 3, Col.G	1.0442
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	1.0125021
6	Levelization Denominator	$(1+i)^n-1$	8.0000186
7	Levelization Factor	Ln 5/Ln 6	0.1265625

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	126.56	1.0000	1.0000	126.56	126.56	126.56	
2	126.56	1.0442	0.8989	126.56	113.76	113.76	
3	126.56	1.0903	0.8080	126.56	102.26	102.26	
4	126.56	1.1384	0.7263	144.08	91.92	104.64	
5	126.56	1.1886	0.6528	144.08	82.62	94.06	
6	126.56	1.2411	0.5868	144.08	74.27	84.55	
7	126.56	1.2959	0.5275	164.02	66.76	86.51	
8	126.56	1.3531	0.4741	164.02	60.01	77.77	
9	126.56	1.4129	0.4262	164.02	53.94	69.90	
10	126.56	1.4753	0.3831	186.71	48.48	71.53	
11	126.56	1.5404	0.3443	186.71	43.58	64.29	
12	126.56	1.6084	0.3095	186.71	39.17	57.79	
13	126.56	1.6794	0.2782	212.55	35.21	59.14	
14	126.56	1.7536	0.2501	212.55	31.65	53.16	
15	126.56	1.8310	0.2248	212.55	28.45	47.78	
16	126.56	1.9118	0.2021	241.97	25.57	48.89	
17	126.56	1.9962	0.1816	241.97	22.99	43.95	
18	126.56	2.0844	0.1633	241.97	20.66	39.51	
19	126.56	2.1764	0.1468	275.45	18.57	40.42	
20	126.56	2.2725	0.1319	275.45	16.70	36.34	
21	77.20	2.3728	0.1186	168.03	9.15	19.92	
Sum					1112.31	1442.74	**0.7710**

Economic Depreciation Adjustment Factor
Aerial Cable - Non-metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	26.14
3	Annual Inflation Factor	Schedule 3, Col.G	0.9811
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	1.8257236
6	Levelization Denominator	$(1+i)^n-1$	15.228654
7	Levelization Factor	Ln 5/Ln 6	0.1198874

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	119.89	1.0000	1.0000	119.89	119.89	119.89	
2	119.89	0.9811	0.8989	119.89	107.76	107.76	
3	119.89	0.9625	0.8080	119.89	96.87	96.87	
4	119.89	0.9443	0.7263	113.20	87.07	82.22	
5	119.89	0.9264	0.6528	113.20	78.27	73.90	
6	119.89	0.9088	0.5868	113.20	70.35	66.43	
7	119.89	0.8916	0.5275	106.89	63.24	56.38	
8	119.89	0.8747	0.4741	106.89	56.84	50.68	
9	119.89	0.8582	0.4262	106.89	51.09	45.56	
10	119.89	0.8419	0.3831	100.94	45.93	38.67	
11	119.89	0.8260	0.3443	100.94	41.28	34.76	
12	119.89	0.8103	0.3095	100.94	37.11	31.24	
13	119.89	0.7950	0.2782	95.31	33.36	26.52	
14	119.89	0.7799	0.2501	95.31	29.98	23.84	
15	119.89	0.7652	0.2248	95.31	26.95	21.43	
16	119.89	0.7507	0.2021	90.00	24.23	18.19	
17	119.89	0.7365	0.1816	90.00	21.78	16.35	
18	119.89	0.7225	0.1633	90.00	19.57	14.69	
19	119.89	0.7088	0.1468	84.98	17.59	12.47	
20	119.89	0.6954	0.1319	84.98	15.82	11.21	
21	119.89	0.6822	0.1186	84.98	14.22	10.08	
22	119.89	0.6693	0.1066	80.24	12.78	8.55	
23	119.89	0.6566	0.0958	80.24	11.49	7.69	
24	119.89	0.6442	0.0861	80.24	10.32	6.91	
25	119.89	0.6320	0.0774	75.77	9.28	5.87	
26	119.89	0.6200	0.0696	75.77	8.34	5.27	
27	16.78	0.6083	0.0625	10.61	1.05	0.66	
Sum					1112.45	994.07	**1.1191**

Economic Depreciation Adjustment Factor
Underground Cable - Metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	25.00
3	Annual Inflation Factor	Schedule 3, Col.G	1.0396
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\frac{i(1+i)^n}{}$	1.6167878
6	Levelization Denominator	$(1+i)^n-1$	13.371447
7	Levelization Factor	Ln 5/Ln 6	0.1209135

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	120.91	1.0000	1.0000	120.91	120.91	120.91	
2	120.91	1.0396	0.8989	120.91	108.69	108.69	
3	120.91	1.0808	0.8080	120.91	97.70	97.70	
4	120.91	1.1236	0.7263	135.86	87.82	98.67	
5	120.91	1.1681	0.6528	135.86	78.94	88.69	
6	120.91	1.2144	0.5868	135.86	70.95	79.72	
7	120.91	1.2625	0.5275	152.66	63.78	80.52	
8	120.91	1.3125	0.4741	152.66	57.33	72.38	
9	120.91	1.3645	0.4262	152.66	51.53	65.06	
10	120.91	1.4186	0.3831	171.53	46.32	65.71	
11	120.91	1.4748	0.3443	171.53	41.64	59.07	
12	120.91	1.5332	0.3095	171.53	37.43	53.09	
13	120.91	1.5940	0.2782	192.73	33.64	53.62	
14	120.91	1.6571	0.2501	192.73	30.24	48.20	
15	120.91	1.7228	0.2248	192.73	27.18	43.33	
16	120.91	1.7910	0.2021	216.56	24.43	43.76	
17	120.91	1.8620	0.1816	216.56	21.96	39.33	
18	120.91	1.9357	0.1633	216.56	19.74	35.36	
19	120.91	2.0124	0.1468	243.33	17.74	35.71	
20	120.91	2.0921	0.1319	243.33	15.95	32.10	
21	120.91	2.1750	0.1186	243.33	14.34	28.85	
22	120.91	2.2612	0.1066	273.41	12.89	29.14	
23	120.91	2.3508	0.0958	273.41	11.58	26.19	
24	120.91	2.4439	0.0861	273.41	10.41	23.55	
25	120.91	2.5407	0.0774	307.21	9.36	23.78	
Sum					1112.50	1453.14	**0.7656**

Economic Depreciation Adjustment Factor
Underground Cable - Non-metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	26.45
3	Annual Inflation Factor	Schedule 3, Col.G	0.9770
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	1.8870701
6	Levelization Denominator	$(1+i)^n-1$	15.773957
7	Levelization Factor	Ln 5/Ln 6	0.119632

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	119.63	1.0000	1.0000	119.63	119.63	119.63	
2	119.63	0.9770	0.8989	119.63	107.53	107.53	
3	119.63	0.9546	0.8080	119.63	96.66	96.66	
4	119.63	0.9326	0.7263	111.57	86.89	81.03	
5	119.63	0.9112	0.6528	111.57	78.10	72.84	
6	119.63	0.8902	0.5868	111.57	70.20	65.47	
7	119.63	0.8698	0.5275	104.05	63.10	54.89	
8	119.63	0.8498	0.4741	104.05	56.72	49.34	
9	119.63	0.8303	0.4262	104.05	50.99	44.35	
10	119.63	0.8112	0.3831	97.04	45.83	37.18	
11	119.63	0.7925	0.3443	97.04	41.20	33.42	
12	119.63	0.7743	0.3095	97.04	37.03	30.04	
13	119.63	0.7565	0.2782	90.51	33.28	25.18	
14	119.63	0.7391	0.2501	90.51	29.92	22.63	
15	119.63	0.7222	0.2248	90.51	26.89	20.35	
16	119.63	0.7056	0.2021	84.41	24.17	17.06	
17	119.63	0.6893	0.1816	84.41	21.73	15.33	
18	119.63	0.6735	0.1633	84.41	19.53	13.78	
19	119.63	0.6580	0.1468	78.72	17.56	11.55	
20	119.63	0.6429	0.1319	78.72	15.78	10.38	
21	119.63	0.6281	0.1186	78.72	14.19	9.33	
22	119.63	0.6137	0.1066	73.42	12.75	7.83	
23	119.63	0.5996	0.0958	73.42	11.46	7.03	
24	119.63	0.5858	0.0861	73.42	10.30	6.32	
25	119.63	0.5723	0.0774	68.47	9.26	5.30	
26	119.63	0.5592	0.0696	68.47	8.32	4.76	
27	53.83	0.5463	0.0625	30.81	3.37	1.93	
Sum					1112.40	971.14	**1.1455**

Economic Depreciation Adjustment Factor
Buried Cable - Metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	21.57
3	Annual Inflation Factor	Schedule 3, Col.G	1.0292
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	1.121615
6	Levelization Denominator	$(1+i)^n-1$	8.969914
7	Levelization Factor	Ln 5/Ln 6	0.125042

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	125.04	1.0000	1.0000	125.04	125.04	125.04	
2	125.04	1.0292	0.8989	125.04	112.40	112.40	
3	125.04	1.0592	0.8080	125.04	101.03	101.03	
4	125.04	1.0901	0.7263	136.31	90.81	99.00	
5	125.04	1.1219	0.6528	136.31	81.63	88.99	
6	125.04	1.1546	0.5868	136.31	73.38	79.99	
7	125.04	1.1883	0.5275	148.59	65.96	78.38	
8	125.04	1.2230	0.4741	148.59	59.29	70.45	
9	125.04	1.2587	0.4262	148.59	53.29	63.33	
10	125.04	1.2954	0.3831	161.98	47.90	62.05	
11	125.04	1.3332	0.3443	161.98	43.06	55.78	
12	125.04	1.3721	0.3095	161.98	38.70	50.14	
13	125.04	1.4121	0.2782	176.57	34.79	49.13	
14	125.04	1.4533	0.2501	176.57	31.27	44.16	
15	125.04	1.4957	0.2248	176.57	28.11	39.69	
16	125.04	1.5394	0.2021	192.48	25.27	38.90	
17	125.04	1.5843	0.1816	192.48	22.71	34.96	
18	125.04	1.6305	0.1633	192.48	20.42	31.43	
19	125.04	1.6781	0.1468	209.83	18.35	30.79	
20	125.04	1.7270	0.1319	209.83	16.50	27.68	
21	125.04	1.7774	0.1186	209.83	14.83	24.88	
22	71.27	1.8293	0.1066	130.38	7.60	13.90	
Sum					1112.33	1322.08	**0.8413**

Economic Depreciation Adjustment Factor
Buried Cable - Non-metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	25.91
3	Annual Inflation Factor	Schedule 3, Col.G	0.9947
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	1.7815008
6	Levelization Denominator	$(1+i)^n-1$	14.835563
7	Levelization Factor	Ln 5/Ln 6	0.1200831

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	120.08	1.0000	1.0000	120.08	120.08	120.08	
2	120.08	0.9947	0.8989	120.08	107.94	107.94	
3	120.08	0.9895	0.8080	120.08	97.02	97.02	
4	120.08	0.9843	0.7263	118.20	87.21	85.85	
5	120.08	0.9792	0.6528	118.20	78.39	77.16	
6	120.08	0.9740	0.5868	118.20	70.47	69.36	
7	120.08	0.9689	0.5275	116.35	63.34	61.37	
8	120.08	0.9638	0.4741	116.35	56.94	55.16	
9	120.08	0.9587	0.4262	116.35	51.18	49.59	
10	120.08	0.9537	0.3831	114.52	46.00	43.87	
11	120.08	0.9487	0.3443	114.52	41.35	39.44	
12	120.08	0.9437	0.3095	114.52	37.17	35.45	
13	120.08	0.9387	0.2782	112.73	33.41	31.36	
14	120.08	0.9338	0.2501	112.73	30.03	28.19	
15	120.08	0.9289	0.2248	112.73	26.99	25.34	
16	120.08	0.9240	0.2021	110.96	24.27	22.42	
17	120.08	0.9192	0.1816	110.96	21.81	20.15	
18	120.08	0.9143	0.1633	110.96	19.61	18.12	
19	120.08	0.9095	0.1468	109.22	17.62	16.03	
20	120.08	0.9048	0.1319	109.22	15.84	14.41	
21	120.08	0.9000	0.1186	109.22	14.24	12.95	
22	120.08	0.8953	0.1066	107.51	12.80	11.46	
23	120.08	0.8906	0.0958	107.51	11.50	10.30	
24	120.08	0.8859	0.0861	107.51	10.34	9.26	
25	120.08	0.8812	0.0774	105.82	9.30	8.19	
26	114.08	0.8766	0.0696	100.53	7.94	7.00	
Sum					1112.80	1077.48	**1.0328**

Economic Depreciation Adjustment Factor
Intrabuilding Cable - Metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	18.18
3	Annual Inflation Factor	Schedule 3, Col.G	1.0423
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	0.7814242
6	Levelization Denominator	$(1+i)^n-1$	5.9459933
7	Levelization Factor	Ln 5/Ln 6	0.1314203

Year	A Levelized Payment	B Price Change	C Discount Factor	D UNE Prices	E Levelized Discounted	F UNE Price Discounted	G Adjustment
	Ln7x1000	Prior Yr x Line 3	Prior Yr/ (1+ Ln 4)	AxB, Every Third Year	A x C	C x D	Sum E/F
1	131.42	1.0000	1.0000	131.42	131.42	131.42	
2	131.42	1.0423	0.8989	131.42	118.13	118.13	
3	131.42	1.0864	0.8080	131.42	106.18	106.18	
4	131.42	1.1323	0.7263	148.81	95.45	108.08	
5	131.42	1.1802	0.6528	148.81	85.80	97.15	
6	131.42	1.2301	0.5868	148.81	77.12	87.32	
7	131.42	1.2821	0.5275	168.50	69.32	88.88	
8	131.42	1.3363	0.4741	168.50	62.31	79.89	
9	131.42	1.3928	0.4262	168.50	56.01	71.81	
10	131.42	1.4517	0.3831	190.79	50.35	73.09	
11	131.42	1.5131	0.3443	190.79	45.25	65.70	
12	131.42	1.5771	0.3095	190.79	40.68	59.05	
13	131.42	1.6438	0.2782	216.03	36.56	60.11	
14	131.42	1.7133	0.2501	216.03	32.87	54.03	
15	131.42	1.7858	0.2248	216.03	29.54	48.56	
16	131.42	1.8613	0.2021	244.61	26.56	49.43	
17	131.42	1.9400	0.1816	244.61	23.87	44.43	
18	131.42	2.0220	0.1633	244.61	21.46	39.94	
19	23.66	2.1076	0.1468	49.86	3.47	7.32	
Sum					1112.35	1390.51	**0.8000**

Economic Depreciation Adjustment Factor
Intrabuilding Cable - Non-metallic

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	26.11
3	Annual Inflation Factor	Schedule 3, Col.G	0.9827
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$\underline{i(1+i)^n}$	1.8198938
6	Levelization Denominator	$(1+i)^n-1$	15.176833
7	Levelization Factor	Ln 5/Ln 6	0.1199126

Year	A Levelized Payment Ln7x1000	B Price Change Prior Yr x Line 3	C Discount Factor Prior Yr/ (1+ Ln 4)	D UNE Prices AxB, Every Third Year	E Levelized Discounted A x C	F UNE Price Discounted C x D	G Adjustment Sum E/F
1	119.91	1.0000	1.0000	119.91	119.91	119.91	
2	119.91	0.9827	0.8989	119.91	107.79	107.79	
3	119.91	0.9658	0.8080	119.91	96.89	96.89	
4	119.91	0.9491	0.7263	113.81	87.09	82.66	
5	119.91	0.9327	0.6528	113.81	78.28	74.30	
6	119.91	0.9166	0.5868	113.81	70.37	66.79	
7	119.91	0.9008	0.5275	108.02	63.25	56.98	
8	119.91	0.8853	0.4741	108.02	56.85	51.21	
9	119.91	0.8700	0.4262	108.02	51.11	46.04	
10	119.91	0.8550	0.3831	102.52	45.94	39.27	
11	119.91	0.8402	0.3443	102.52	41.29	35.30	
12	119.91	0.8257	0.3095	102.52	37.12	31.73	
13	119.91	0.8115	0.2782	97.30	33.36	27.07	
14	119.91	0.7974	0.2501	97.30	29.99	24.33	
15	119.91	0.7837	0.2248	97.30	26.96	21.87	
16	119.91	0.7702	0.2021	92.35	24.23	18.66	
17	119.91	0.7569	0.1816	92.35	21.78	16.77	
18	119.91	0.7438	0.1633	92.35	19.58	15.08	
19	119.91	0.7310	0.1468	87.65	17.60	12.86	
20	119.91	0.7183	0.1319	87.65	15.82	11.56	
21	119.91	0.7059	0.1186	87.65	14.22	10.39	
22	119.91	0.6938	0.1066	83.19	12.78	8.87	
23	119.91	0.6818	0.0958	83.19	11.49	7.97	
24	119.91	0.6700	0.0861	83.19	10.33	7.16	
25	119.91	0.6585	0.0774	78.96	9.28	6.11	
26	119.91	0.6471	0.0696	78.96	8.34	5.49	
27	13.19	0.6359	0.0625	8.69	0.83	0.54	
Sum					1112.46	1003.63	**1.1084**

Economic Depreciation Adjustment Factor
Conduit Systems

Line			
1	Initial Investment	Assumed	$ 1,000
2	Service Life Years (n)	Schedule 3, Col.A	56.19
3	Annual Inflation Factor	Schedule 3, Col.G	1.0382
4	Discount Factor (i)	OSP Working Paper	11.25%
5	Levelization Numerator	$i(1+i)^n$	44.952166
6	Levelization Denominator	$(1+i)^n-1$	398.57481
7	Levelization Factor	Ln 5/Ln 6	0.1127823

Year	A Levelized Payment Ln7x1000	B Price Change Prior Yr x Line 3	C Discount Factor Prior Yr/ (1+ Ln 4)	D UNE Prices AxB, Every Third Year	E Levelized Discounted A x C	F UNE Price Discounted C x D	G Adjustment Sum E/F
1	112.78	1.0000	1.0000	112.78	112.78	112.78	
2	112.78	1.0382	0.8989	112.78	101.38	101.38	
3	112.78	1.0778	0.8080	112.78	91.13	91.13	
4	112.78	1.1189	0.7263	126.20	81.91	91.65	
5	112.78	1.1617	0.6528	126.20	73.63	82.39	
6	112.78	1.2060	0.5868	126.20	66.18	74.05	
7	112.78	1.2520	0.5275	141.21	59.49	74.48	
8	112.78	1.2998	0.4741	141.21	53.47	66.95	
9	112.78	1.3495	0.4262	141.21	48.07	60.18	
10	112.78	1.4010	0.3831	158.01	43.21	60.53	
11	112.78	1.4545	0.3443	158.01	38.84	54.41	
12	112.78	1.5100	0.3095	158.01	34.91	48.91	
13	112.78	1.5676	0.2782	176.80	31.38	49.19	
14	112.78	1.6275	0.2501	176.80	28.21	44.22	
15	112.78	1.6896	0.2248	176.80	25.35	39.74	
16	112.78	1.7541	0.2021	197.83	22.79	39.98	
17	112.78	1.8210	0.1816	197.83	20.49	35.93	
18	112.78	1.8906	0.1633	197.83	18.41	32.30	
19	112.78	1.9627	0.1468	221.36	16.55	32.49	
20	112.78	2.0377	0.1319	221.36	14.88	29.20	
21	112.78	2.1154	0.1186	221.36	13.37	26.25	
22	112.78	2.1962	0.1066	247.69	12.02	26.40	
23	112.78	2.2800	0.0958	247.69	10.81	23.73	
24	112.78	2.3671	0.0861	247.69	9.71	21.33	
25	112.78	2.4574	0.0774	277.15	8.73	21.45	
26	112.78	2.5512	0.0696	277.15	7.85	19.29	
27	112.78	2.6486	0.0625	277.15	7.05	17.33	
28	112.78	2.7497	0.0562	310.12	6.34	17.44	
29	112.78	2.8547	0.0505	310.12	5.70	15.67	
30	112.78	2.9637	0.0454	310.12	5.12	14.09	
31	112.78	3.0768	0.0408	347.01	4.61	14.17	
32	112.78	3.1943	0.0367	347.01	4.14	12.74	
33	112.78	3.3162	0.0330	347.01	3.72	11.45	
34	112.78	3.4428	0.0297	388.29	3.34	11.51	
35	112.78	3.5742	0.0267	388.29	3.01	10.35	
36	112.78	3.7107	0.0240	388.29	2.70	9.30	
37	112.78	3.8523	0.0215	434.47	2.43	9.36	
38	112.78	3.9994	0.0194	434.47	2.18	8.41	
39	112.78	4.1520	0.0174	434.47	1.96	7.56	
40	112.78	4.3105	0.0156	486.15	1.76	7.60	
41	112.78	4.4751	0.0141	486.15	1.59	6.84	
42	112.78	4.6459	0.0126	486.15	1.43	6.14	
43	112.78	4.8233	0.0114	543.98	1.28	6.18	
44	112.78	5.0074	0.0102	543.98	1.15	5.55	
45	112.78	5.1985	0.0092	543.98	1.04	4.99	
46	112.78	5.3970	0.0083	608.68	0.93	5.02	
47	112.78	5.6030	0.0074	608.68	0.84	4.51	
48	112.78	5.8169	0.0067	608.68	0.75	4.06	
49	112.78	6.0390	0.0060	681.09	0.68	4.08	
50	112.78	6.2695	0.0054	681.09	0.61	3.67	
51	112.78	6.5088	0.0048	681.09	0.55	3.30	
52	112.78	6.7573	0.0044	762.10	0.49	3.32	
53	112.78	7.0152	0.0039	762.10	0.44	2.98	
54	112.78	7.2830	0.0035	762.10	0.40	2.68	
55	112.78	7.5610	0.0032	852.75	0.36	2.70	
56	112.78	7.8497	0.0028	852.75	0.32	2.42	
57	112.78	8.1493	0.0026	852.75	0.29	2.18	
58	21.43	8.4604	0.0023	181.30	0.05	0.42	
Sum					1107.86	1566.57	**0.7072**

Attachment 8
Schedule 5

UNE Pricing Account Adjusted Projection Lives
U.S. Local Exchange Carriers

Account	USOA Category	A Adjustment Factor	B Economic Life	C Adjusted Life	D Change in Life
		Sch. 3, Col I	Sch 3, Col A	Col B/Col A	Col C-Col B
2112	Motor Vehicles	0.9689	8.24	8.50	0.26
2115	Garage Work Equipment	0.9517	12.22	12.84	0.62
2116	Other Work Equipment	0.9546	13.04	13.66	0.62
2121	Buildings	0.7360	46.93	63.77	16.84
2122	Furniture	0.8057	15.92	19.76	3.84
2123.1	Office Support Equipment	0.7931	10.78	13.59	2.81
2123.2	Company Comm.Equipment	0.8028	7.40	9.22	1.82
2124	Computers	0.8542	6.12	7.16	1.04
2122	Digital Switching	1.0755	16.17	15.04	-1.13
2220	Operator Systems	0.7867	9.41	11.96	2.55
2232.2	Digital Circuit Equipment	1.0186	10.24	10.05	-0.19
2351	Public Telephone	0.8298	7.60	9.16	1.56
	NID, SAI and Drop	0.8126	22.39	27.56	5.17
2411	Poles	0.5556	30.25	54.45	24.20
2421m	Aerial Cable - metallic	0.7710	20.61	26.73	6.12
2421 nm	Aerial Cable - non-metallic	1.1191	26.14	23.36	-2.78
2422m	Underground -metallic	0.7656	25.00	32.65	7.65
2422nm	Underground - non-metallic	1.1455	26.45	23.09	-3.36
2423m	Buried - metallic	0.8413	21.57	25.64	4.07
2423nm	Buried - non-metallic	1.0328	25.91	25.09	-0.82
2426m	Intrabuilding - metallic	0.8000	18.18	22.73	4.55
2426 nm	Intrabuilding - non-metallic	1.1084	26.11	23.56	-2.55
2441	Conduits	0.7072	56.19	79.46	23.27