design feeder routes are performed in preprocessing and are not easily modified. Because all costs are ultimately determined by the underlying grid design, Pitkin asserts that flaws in the methodologies and the engineering assumptions of BCPM would result in grossly overestimated costs. However, Mr. James Schaaf of U S WEST argued alternately that flaws in the methodologies and the engineering assumptions of HAI could result in grossly underestimated costs. Schaaf Rebuttal, p. iii. In making its decision, the Commission looked at each model's preprocessing and internal methodologies and assumptions, as well as at each model's inputs in large part to address these concerns.

54. Both parties testified regarding the appropriate loop length used for cost estimations. Pitkin took issue with engineering assumptions in the BCPM that limited serving area grids to areas less than 12,000 feet by 14,000 feet and that subdivided macro-grids if there are more than 1,000 customers. He testified that larger areas could be more efficiently served. He argued that these limitations create grids that are too small and tend to cause the BCPM to overbuild plant and overstate costs. Pitkin Direct, pp. 8-9. Pitkin supported the HAI engineering assumptions and asserts that a loop design of up to 18,000 feet is appropriate and cost efficient.

55. In his rebuttal testimony, U S WEST's witness Schaaf testified that the long loop design (18,000 feet) engineered by HAI, if actually built, results in difficult-to-hear, poor, noisy phone service. His testimony referenced manufacturer user manuals for systems components and AT&T's own Outside Plant Engineering Handbook both of which document this loss in service quality. Schaaf Rebuttal, pp. 4-6. Schaaf adds that this unacceptably poor quality of service is exasperated by HAI's over reliance on aerial plant. Aerial plant is more susceptible to weather,

and temperature changes decrease the quality of service to these long loops. Schaaf concluded that these engineering assumptions in HAI do not meet quality standards associated with universal service. Schaaf Rebuttal, p. 10.

56. Another key engineering assumption on which the parties disagree relates to the assumed lot shape in the different models. AT&T's Pitkin testified that assuming lots are rectangular with the short side along the street more closely matches reality. He noted that developers minimize the costs of building roads, sidewalks, and driveways by creating rectangular lots where the depth is greater than the width. Pitkin Rebuttal, p. 53. U S WEST's Schaaf refutes Pitkin's assumption that lots are rectangular. He explained that in reality, homes are most likely to be placed on very different shaped lots. Schaaf also maintained that the BCPM's square lot assumption is a better estimation because it averages the many different shapes and sizes of lots and assumes that plant could come from any side of the lot. Hence, Schaaf concluded that the HAI would underestimate drop lengths by assuming the shortest distance possible, while the BCPM more accurately estimates average drop lengths. Schaaf Rebuttal, p. 18.

57. The parties also disagreed on the method of estimating customer location. AT&T's Pitkin testified that the BCPM fails to model actual customer locations. Instead, the BCPM only estimates locations based on road mileage, line counts, and Census Block data. While the BCPM does exclude uninhabited roads such as limited access highways and bridges, it does not account for other road types in its assumptions. Transcript, Vol. 2 , p. 27. Pitkin further asserted that the BCPM customer location methodology creates a false sense of precision and is

not much more accurate than the methods of determining customer location in earlier versions of BCPM. Pitkin Rebuttal, pp. 29-30.

58. U S WEST's Copeland, in turn, took issue with the HAI's customer location methodology. He disputed AT&T's claim that geocoding accurately locates customers. He showed that in rural areas in Montana geocoding was not accurate—the HAI successfully geocoded only about 8.5% of actual customer locations in three test counties U S WEST serves. For those households that cannot be successfully geocoded, the HAI distributes households uniformly along Census Block boundaries. Copeland's exhibits show how geocoding and placing unknown households along Census Block boundaries inaccurately places households when compared to actual satellite images. According to Copeland, the HAI gives a false sense of accuracy. Copeland Rebuttal, pp. 3-4.

59. AT&T's Pitkin further noted that the BCPM's feeder route design overstates costs. Because the BCPM directs feeder routes toward population clusters, average feeder route distances are minimized. However, total route distances can actually be larger than when horizontal or vertical feeder routes are used. Pitkin Rebuttal, p. 18-21. In rebuttal to this criticism, Copeland pointed out that the BCPM is designed to determine the least cost alternative, based on total feeder length in designing feeder routes. Copeland Rebuttal, p. 30.

60. Pitkin also criticized BCPM 3.1's input values. He argued that the "state-specific" values were flawed because they are proprietary and therefore unverifiable, and because they represent embedded costs and not forward looking costs as required by the FCC. In addition, Pitkin stated that the BCPM understates the amount of structure sharing that is possible. Pitkin Rebuttal, pp. 18-21. U S WEST witnesses denied that input values are unverifiable. Copeland

admitted the cost inputs used for Montana reflect current U S WEST equipment contracts and construction costs, but denied that these are embedded costs. Rather, he argued these costs reflect the true costs U S WEST would incur if the network were built today using current technology. Copeland testified that using these inputs actually shows that the BCPM for Montana is forward looking. Copeland Rebuttal, p. 35.

61. U S WEST's Ms. Lori Lent testified that the HAI was designed to produce predetermined results. The HAI produces very similar results despite major changes between its current version and previous versions.

62. Lent testified that the HAI results were unreasonable based on a series of sensitivity runs she had performed. She modified several key inputs in the HAI, including structure sharing, non-switched access lines, drop investment, plant mix, and economic lives. She concluded that reasonable changes in these and other key inputs result in a significantly higher statewide average basic local service cost estimate. Lent Rebuttal, p. 50.

63. AT&T's Pitkin attributes the HAI's stable outputs to the model's overall soundness. In his testimony, Pitkin claimed that the stable results show that the original foundation of the model is solid. For this reason, stable model outcomes should increase confidence in the model, not decrease it. Pitkin Direct, p. 11. Furthermore, many of the values for key inputs Lent modified in her runs of the HAI are the same input values that are disputed between the parties, and tend to be cost drivers in both models.

E. Model Selection Criteria

64. There are several sources of criteria on which this Commission may base its selection of a proxy cost model. The Commission is obligated to use the FCC's ten criteria. In

this regard, the Montana Commission considers the State Members' First and Second Reports on the Use of Cost Proxy Models in its proxy cost model choice.[12] In addition, this Commission chooses to exercise its right to recommend a forward looking economic cost model using additional criteria.

65. Attached to this order is a copy of the document required by the FCC for evaluation of Montana's choice of a proxy cost model, as put forth in the FCC's February 27, 1998 Public Notice (DA98-217). *See* Attachment a. This document gives general and supporting information regarding the Montana Commission's choice of a proxy cost model. In addition, it demonstrates in detail how the Commission's choice fulfills the FCC's Criteria for State-conducted Economic Cost Studies and other requirements of the Universal Service Order.

66. Further consideration of the model criteria mentioned here follows in the discussion of the Commission's model choice.

III. MODEL SELECTION

67. Although time limited the analysis of this Docket's cost modeling issues, the Commission opted to recommend a proxy cost model to determine Montana's federal universal service funding. The alternative choice was to defer to the FCC. The FCC, however, is not as familiar with Montana's unique circumstances. It is not unprecedented to decide complex issues

---

[12] The State Members' Second Report on the Use of Cost Proxy Model, CC Docket No. 96-45, lists eight criteria a proper proxy cost model should incorporate. These criteria were essentially adopted and expanded by the FCC for its criteria. Hutsell Direct, p. 27. Therefore, a repeated discussion of these criteria is not necessary. The Joint Board also critiqued the BCPM and the HAI in both the State Members' First and Second Reports on the Use of Cost Proxy Models. They raised concerns regarding the engineering constraints of the models, terrain assumptions, operating costs, input values, and benchmark levels. In making its decision, the Commission is cognizant of these critiques.

in short time frames and with less than perfect information. The Arbitration Order in the U S WEST and AT&T arbitration docket states that while the Commission finds both parties' studies flawed, the short time frame and complexity of issues made it impossible to conduct a thorough review of each of the studies. *See* In the Matter of the Petition of AT&T Pursuant to 47 U.S.C. Section 252(b) for Arbitration of Rates and Conditions of Interconnection With U S WEST, Docket No. D96.11.200, Order No. 5961b (Mar. 20, 1997). That situation and the Commission's finding rings true in this Docket. The same sort of complexity need not preclude decisions in this Docket. Therefore, we recommend a forward looking economic cost model to the FCC for purposes of computing federal universal service funding for Montana.

68. In this section of the order we state our reasons for recommending the BCPM model to the FCC for purposes of the federal universal service funding. Multiple reasons underlie the Commission's decision. These reasons include technical, legal, and economic rationale that supplement the FCC's criteria.[13] In order, the Commission's reasons first involve and address AT&T's analysis of U S WEST's need for universal service funding. This first part includes a discussion of the accuracy of AT&T's cost model. Next, we address the accessibility of the models, including sponsor support and the proprietary and transparency aspects of the models.

69. Two additional reasons for choosing the BCPM are more complex and require separate and expanded discussions. One reason entails sizing, sourcing and distributing universal service funds. The second such reason involves the parties' arguments for consistent costing.

---

[13] *See* Public Notice of February 27, 1998.

Their arguments intertwine their consistency arguments with allegations of arbitrage and cross subsidies, all addressed below.

A. Montana's High Cost Areas and Need For Universal Service Funds

70. Montana stands apart from most other states in terms of its land and population characteristics. Montana is one of the nation's least densely populated states. This fact places Montanans at risk of not enjoying the basic telephone services that urban consumers may take for granted.

71. The 1996 Act envisions a dynamic definition of basic service and consumers likely would agree. The FCC recognized that what was once a luxury (e.g., touch tone) is now basic service. Congress required the FCC to define basic service for purposes of computing forward looking economic costs; it did so in its Universal Service Order. From the perspective of the Montana Commission and many Montana consumers, the definition is circumstantial as well as dynamic. Services like PCS and broadband internet are not taken for granted, are unavailable in some areas of Montana, and may in fact be critical to rural Montanans' access to medical and other essential services. Toll service also may be a lifeline to essential services in many areas of our state. From the perspective of rural Montanans, basic service may include services not considered basic in states more urbanized than Montana. Therefore, to achieve the Congress's and the Montana Legislature's universal service goals, the model which computes universal service costs for Montana's high cost areas should be as accurate as the parties' hypothetical cost models permit.

72. In her rebuttal, AT&T's Ms. Natalie Baker compared aggregate revenues and costs and then concluded that U S WEST needs no universal service subsidy. Baker Rebuttal, p.

5. If costs vary inversely with population density, and if federal universal service funding is not needed in Montana as AT&T asserts, the Commission questions how any other state's non-rural carriers could need universal service funding. The U. S. Congress did not commit itself and tremendous FCC and state commission resources to develop universal service funding policies if there is no need for any universal service funding, even for U S WEST in Montana which consistently ranks high among those states with highest costs.

73. Because the cost model for which the FCC seeks our recommendations is for non-rural carriers, this order applies only to U S WEST in Montana.[14] Although U S WEST is a non-rural carrier covering a 14-state region, its entire Montana Service territory differs from that in other states within the region. Although AT&T's analysis concludes U S WEST needs no universal service funding in Montana, a recent Telecommunications Industries Analysis Project paper reveals just how Montana differs from other states (see TIAP's March 10, 1998 paper titled "Payers and Receivers: Various Proposals for the High Cost Fund"). We doubt U S WEST's entire service territory in Montana has population density characteristics like most other states which would support AT&T's conclusion that U S WEST needs no universal service funding in Montana. Therefore, it is reasonable to conclude that U S WEST's Montana territory includes high cost areas which should be supported by universal service funding.

74. In addition, many of the services contained in AT&T's aggregate revenue and cost analysis, and for which AT&T reasons that U S WEST needs no subsidy, are not candidates for federal universal service funding. Universal service support targets basic voice grade access

---

[14] In the May 8, 1997 Universal Service Order at ¶¶ 206-211, the FCCit discusses the distinction between rural and non-rural carriers.

to the public switched network for single-party service and includes Dual Tone Multifrequency signaling (TouchTone), E911 access and, operator, directory and interexchange service access. Universal Service Order, at ¶ 56. Thus, Baker's universal service subsidy conclusion, if not her reasoning, appears at odds with the 1996 Act and FCC policies. Her conclusion also fails this Commission's test of reasonableness.

75. U S WEST's Mr. Brigham testified that AT&T's comparison of aggregate revenues and costs, and in turn AT&T's conclusion that U S WEST needs no universal service subsidy, undermine the basic purpose of universal service funding. We conclude that there is something amiss in AT&T's reasoning that becomes more evident as we look at AT&T's technical analysis and the accuracy of its geocoding.

76. U S WEST questions the results of AT&T's cost modeling. U S WEST's Ms. Lori Lent analyzed the trend in AT&T's Hatfield modeling to show consistent resulting costs with each change in the model. Lent Rebuttal, p. 9. Despite significant changes in input values, AT&T's model consistently arrived at a similar low cost result. We conclude that Lent's testimony appears reasonable from the evidence available to the Commission in this Docket.

77. In his rebuttal, U S WEST's Mr. Copeland provided evidence of the inability of AT&T's model to locate customers. Copeland's testimony compared AT&T's effort at geo-coding household locations with actual satellite locations. Copeland Rebuttal, Exh. Nos. 4-6. Based on this comparison, AT&T's HAI model does not appear to capture Montana's unique

demographic characteristics.[15] The evidence was undisputed; geocoding did not locate U S WEST's Montana rural population with much accuracy.

B. Model Support, Proprietary Aspects, and Accessibility

78. There are three parts to the Commission's findings regarding the accessibility of the models and model inputs that involve model support, proprietary material and transparency. First, AT&T's decision to withdraw its chief modeling witness's testimony is a Commission concern because it made it difficult to analyze the HAI in this Docket.

79. Second, both AT&T and U S WEST alleged that the other's model or inputs are proprietary. AT&T criticized the inaccessibility of all aspects of the BCPM's modeling and inputs. AT&T did not rebut U S WEST's rebuttal testimony asserting the AT&T model's preprocessing was not divulged. Copeland Rebuttal, p. 24. U S WEST's model also suffers, but AT&T's criticism that the BCPM contains proprietary material is simply not a criticism unique to the BCPM.

80. Third, AT&T criticizes the BCPM for not being accessible. With one qualification, the Commission finds both models similarly comprehensible or, as the case may be, incomprehensible. Whereas U S WEST subjected its model to the rigor of cross examination, AT&T did not. AT&T's decision to withdraw a key witness insulated the HAI model from critical cross examination in this Docket; AT&T foreclosed others from exploring the HAI model's deficiencies.

---

[15] As U S WEST's Mr. Brigham states in his rebuttal testimony, either sponsor's proxy cost model develops theoretic customer locations.

81. Complexity also affects a model's accessibility. Proxy cost models are both hypothetical and theoretical as U S WEST's Mr. Brigham stated. Neither the BCPM nor the HAI is unique in this regard. Due to their hypothetical and theoretical characteristics, proxy cost models differ from the incremental cost models used to establish retail prices. Cost of service models for retail service should reflect actual avoidable and incremental costs. Retail prices ration services subject to a revenue requirement constraint. Retail prices should seek to achieve an efficient outcome but should achieve a balance as suggested by Bonbright's principles. In contrast, forward looking economic costs for universal service support purposes are not subject to the same principles and constraints.

C. Funding: Size, Source and Distribution

82. In their respective testimony or briefs, AT&T and U S WEST argude that the Commission should consider the universal service fund's size when deciding a forward looking cost model for Montana. We address this testimony and find that the BCPM better achieves Congress's and the Montana Legislature's universal service goals.[16]

83. In his direct testimony, AT&T's Mr. Fischer testified on the policy implications of the federal high cost fund's size. This testimony involves the policy and the impacts of Montana statutes as well as how the FCC's "affordability" benchmark impacts a fund's size. He

---

[16] Consistent with § 254 of the 1996 Act, the FCC lists as critical goals: (1) implementing all universal service objectives of the Act; (2) maintain affordable basic residential service rates; (3) ensure affordable basis service rates via explicit funding mechanisms and (4) bring the benefits of competition to as many consumers as possible. The Montana Legislature's goals declare that it remains the policy of the state of Montana to maintain universal availability of basic telecommunications service at affordable rates and, to the extent consistent with maintaining universal service, it is further the policy of the state to encourage competition. Section 69-3-802, MCA.

also related the fund's size to consumer welfare, which involves developments of competition; minimizing price distortions; just, reasonable and affordable basic exchange service prices; and payment of the universal service "social program" bill.

84. Mr. Fischer expanded on these four consumer welfare dimensions. He asserted that too large a high cost fund subsidizes ILECs at the very time when markets that are opening should not be threatened by anti-competitive conditions. Therefore, both explicit over-subsidization and implicit subsidies will accrue to the incumbents and stifle the development of competition in Montana. Second, too large a fund will distort prices for all telecommunication services and, in turn, burden end users and distort service subscriptions. Third, too large a fund assumes that just, reasonable and affordable rates will not occur. Finally, to avoid double collection of subsidies, Fischer testified that the universal service fund should be no larger than necessary. He adds that customers are entitled to know the source and use of universal service funds.

85. In her rebuttal, AT&T's Ms. Natalie Baker analyzed whether U S WEST needs any universal service subsidy today given that its revenues exceed its costs. Her analysis compares aggregate revenues and costs for U S WEST's entire market. Even after correcting her initially erred estimate of U S WEST's universal service fund request, she found U S WEST's universal service subsidy request to be about $120 million per year. Baker Surrebuttal, pp. 2-3.[17]

---

[17] U S WEST asserts the $120 to $130 million range includes the 25 percent interstate fund and benchmarks in the range of 120 to 130 percent of cost. Transcript, Vol. 1, p. 174.

Based on the Montana statute's "pursuant to a determination of need" criterion, she concludes that U S WEST does not need a universal service subsidy.[18]

86. AT&T's also argues that this Commission should not ignore the fund's size when selecting a model. AT&T Reply Brief, p. 8. AT&T adds that it is entirely reasonable to look at the results of a given model and the effect it may have on the size of any state fund.

87. U S WEST cited Montana law in its Opening Brief, stating that because Montana has a large number of high cost customers, it has a strong interest in ensuring that it receives its just share of federal government support. U S WEST Opening Brief, at 4. U S WEST adds that the selected model directly affects federal support and that accurate costing is to Montana's advantage.

88. While the size of any federal universal service fund may be a chief concern of U S WEST or AT&T, this Commission finds that the resulting size should not be the goal. The resulting fund should be a by-product of critical analysis as it is in this docket.

89. Although this Commission has no influence over the federal benchmark, and despite the fact this proceeding is not about a state universal service fund, both AT&T and U S WEST urge the Commission to pick a benchmark.[19] However, they disagree on the basis,

---

[18] The Montana Telecommunications Act reads, in relevant part, that pursuant to a determination of need, the Commission shall establish and administer a fund to assist eligible telecommunications carriers in providing affordable telecommunications services in high cost areas. Section 69-3-842, MCA.

[19] The FCC agreed with the Joint Board's recommendation and, in turn, intends to establish a nationwide benchmark based on average revenues per line for local, discretionary, interstate and intrastate access services, and other telecommunications revenues that will be used with either a cost model or a cost study to determine support that carriers receive for lines in a particular geographic area.

revenue, or cost of the benchmark. AT&T's Fischer favors a revenue benchmark for the state universal service fund. Fischer Direct, p. 41. Without reference to a fund (federal or state), U S WEST's Brigham favors a cost-based benchmark. Brigham Direct, p. ii.

90. While the Commission finds the testimony interesting, benchmark recommendations are irrelevant to this proceeding. For the federal universal service fund, the benchmark is simply outside of any state commission's jurisdiction. The federal benchmark is an FCC policy decision. The issue of a benchmark for a state universal service fund may be important, but any such discussion in this Docket is premature. That issue should be debated in a docket focused on the state, not the federal, universal service fund. The Commission will consider the issue of a state affordability benchmark when addressing the state universal service fund. As we next discuss, however, the source and use of the federal universal service funds is another source of uncertainty.

91. AT&T and U S WEST both testified on the source and use (distribution) of any federal universal service fund. AT&T's Fischer asserted that to avoid an unwieldy social program, universal service should be funded in an economically efficient manner--meaning the Montana Commission needs to fully understand the explicit source and use of funds. Fischer Direct, p. 35. The 1996 Act requires that all telecommunications providers contribute to universal service. Fischer testifies that an efficient subsidy is narrowly targeted. Fischer Direct, p. 36.

92. As for the state fund, Mr. Hayhurst testified that U S WEST would offset any universal service funds with price decreases. In the alternative, he noted how construction costs

in high cost areas could be offset directly.[20] Hayhurst Rebuttal, p. 5; and Transcript, Vol. 1, pp. 122-125. In contrast to Mr. Hayhurst, U S WEST's Mr. Brigham testified that universal service support should be targeted to basic service in high cost areas. Because of Hayhurst's focus on a state universal service fund, and because of the disparity of policy proposals, U S WEST was asked to explain how it plans to distribute federal universal service funds:

> [Ms. Hammel]: How would US West offset any draw from a federal universal service fund?
> [Mr. Hayhurst]: I suspect that that would be a reduction in interstate access charges.

Transcript, Vol. 1, p. 131.

93. This cross examination did not clarify the above disparate U S WEST testimony on how federal universal service fund would be distributed. We simply do not know at this time how U S WEST will distribute any resulting federal universal service fund. We do have U S WEST's assurance that it will not receive a windfall and that it will reduce prices that provide implicit subsidies. Brigham Rebuttal, p. 29. In any case, the choice is not likely one this Commission decides.

D. Costing Consistency, Arbitrage and Cross Subsidies

94. AT&T and U S WEST both testified on the need to apply costing models consistently to different purposes. The absence of cost consistency raises allegations of arbitrage and cross subsidization. We review the kinds of consistency, the arbitrage implications and, finally, the cross subsidy allegations.

---

[20] A March 20, 1997 U S WEST communication to the Commission contains a March 13, 1997 analysis performed by Alfred Kahn and Timothy Tardiff titled "Funding and Distributing the Universal Service Subsidy." This statement by Kahn and Tardiff, containing a similar proposal to Mr. Hayhurst's, was available to AT&T (Transcript, Vol. 1, p. 57).

95. There are three costing purposes raised by AT&T's and U S WEST's testimony. They include: (1) proxy cost modeling for universal service funding, (2) total element long-run economic cost (TELRIC) modeling for wholesale pricing, and (3) incremental cost modeling for retail service pricing. For each purpose there may be two or more competing cost tools such as AT&T's HAI model and U S WEST's BCPM for proxy cost modeling.

96. The FCC is the source of AT&T's and U S WEST's testimony on the need for consistent cost modeling:

> We also encourage a state, to the extent possible and consistent with the above criteria, to use its ongoing proceedings to develop permanent unbundled network element prices as a basis for its universal service cost study. This would reduce duplication and diminish arbitrage opportunities that might arise. We urge states to coordinate the development of cost studies for the pricing of unbundled network elements and the determination of universal service support.

Fischer Direct, p. 12 (emphasis added).

97. As U S WEST and AT&T stated, the FCC's Universal Service Order encouraged the states to use one cost model for universal service costing and wholesale pricing purposes. Brigham Direct, p. 5, Fischer Direct, p. 12.

98. In this docket, AT&T and U S WEST disagreed on what cost modeling tools should be applied consistently to the three above listed purposes. Because they disagreed on the kind of consistency, they also disagreed on the arbitrage consequences and cross subsidy implications of inconsistent cost modeling. AT&T and U S WEST alleged different arbitrage consequences result from inconsistently applying costing to the three applications. We review AT&T's and U S WEST's consistency and arbitrage testimony. Because their testimony is not

limited to the need for consistency and the consequences of inconsistent costing, we then review and respond to their cross subsidy allegations.

99. To achieve "consistency of cost methodology," AT&T's Fischer testified that the Hatfield model uniquely satisfies the requirements and should be applied to the three cost purposes.[21] Fischer Direct, pp. 32, 39. To assure consistent use of cost models, the Commission must apply the same method to identify explicit universal service funding (§ 254(e) of the 1996 Act) as used with unbundled network elements and interconnection (§ 252(d)(1) of the 1996 Act).[22] Because the use of different cost methods (i.e., historic or embedded) drives a wedge between economic costs and incremental revenues, thereby distorting ILEC and CLEC investment and operation decisions, Fischer added that it is essential to use consistent cost estimates to establish the cost of ILEC facilities in both unbundled network element cost proceedings and for universal service support. AT&T's Baker testified that the need for consistency stems from the fact that unbundled network elements are a major component of services to be supported. Baker Rebuttal, p. 6. Forward looking economic logic is the glue that binds the need for cost consistency.

100. As for AT&T's arbitrage concern, Mr. Fischer testified that "universal service subsidies must be <u>economically efficient</u> and <u>competitively neutral</u>." Fischer Direct, p. 5.

---

[21] Although Ms. Baker adopts Mr. Fischer's testimony we will refer to this testimony as Mr. Fischer's.

[22] Fischer asserted that U S WEST uses statewide average pricing for local retail exchange rates and the underlying unbundled network elements offered to AT&T. He noted that unbundled network elements serve as the building blocks to provide local service -- the primary beneficiary of universal service support. He added that universal service fund costs are based on the same unbundled network elements used to provide local service (p.11).

Competitive neutrality is an FCC principle. Because CLECs must purchase unbundled network elements and interconnection services from ILECs to compete, Fischer testified that it is essential to estimate ILEC facility costs consistently for unbundled network elements and universal service purposes. Fischer Direct, p. 6. In situations where a CLEC offers service solely through purchased ILEC unbundled network elements, the CLEC's support gets capped at the unbundled network element prices it pays. The ILEC, however, can obtain universal service fund support based on deaveraged universal service fund costs that typically exceed average costs. Given today's interim unbundled network element rates, ILECs may receive universal service funds denied new entrants.

101. AT&T's Fischer also noted that the FCC recognized "pitfalls that could occur" when universal service support is determined at a lower level of aggregation than unbundled network element costs. Fischer Direct, p. 12. In sharp contrast to arbitrage pitfalls that could occur, Fischer asserted that the current and excessive access charges are "profoundly anticompetitive." Fischer Direct, p. 19. To solve the arbitrage problem, however, Fischer recommended deaveraging both retail prices and unbundled network element costs to the level of universal service fund support required by Montana law.[23] Fischer Direct, p. 13.

102. U S WEST's Mr. Brigham testified that despite the FCC's encouragement to the contrary, a different cost model should be used to estimate universal service costs than is used for wholesale and retail pricing costs. Brigham Direct, pp. 4-5. Wholesale and retail prices ought to derive from the same model, however. He testified that universal service proxy cost studies

---

[23] AT&T's Ms. Baker later testified that retail rates need not be deaveraged. Transcript, Vol. 1, p. 22.

should reflect generic, nationwide average standards and technologies. He asserted the Commission should base wholesale and retail prices on forward looking incremental cost models considering U S WEST's specific engineering designs, standards, technology and equipment.[24] Brigham disputed AT&T's testimony that the Hatfield model is applicable to the three costing purposes and doubted the need to estimate costs in the consistent manner that AT&T proposes.

103. In rebuttal, U S WEST's Mr. Brigham raised an arbitrage concern and then disputed AT&T's arbitrage testimony. First, he asserted consistent wholesale unbundled network element and retail service costing is needed to avoid an arbitrage opportunity. Specifically, unbundled loop network element costs should be developed using the same loop investment model used with retail service loop costs; otherwise, inconsistent wholesale and retail prices place U S WEST at a retail pricing disadvantage.

104. Mr. Brigham also rebuts AT&T's arbitrage testimony. Whereas AT&T's arbitrage concern paints a picture of how CLEC's are disadvantaged, Brigham asserted that AT&T misunderstood the underlying FCC concern and argument. Brigham maintained that the FCC was concerned that ILECs not be disadvantaged. Brigham added that AT&T failed to provide material evidence of how its arbitrage example occurs. Although modifying AT&T's initial allegation to assert arbitrage is an opportunity for both parties, Baker attempted to clarify

---

[24] Although U S WEST's Brigham argues to use separate proxy cost and unbundled network element cost models, but consistent unbundled network element and retail cost models, his rebuttal holds that even if a proxy cost model produces all unbundled network element costs, there still must be another model for retail services. This testimony of Brigham's appears actually to contradict his other arguments for consistency between retail and wholesale pricing. This testimony, however, is not in any way supportive of AT&T's testimony on the need for cost consistency.

for U S WEST that AT&T's arbitrage concern is a consequence of differing levels of aggregation and not differing models. Transcript, Vol. 1, pp. 30-31, and 55.

105. To restate, AT&T argues that the HAI model ought to resolve three costing purposes: (1) universal service proxy cost modeling, (2) wholesale pricing, and (3) retail pricing. In contrast, U S WEST disputes AT&T's assertion and holds cost consistency need only exist between wholesale and retail prices.

106. The Commission finds both AT&T's and U S WEST's arguments for consistency appear, in part, strategically driven. As with the parties' testimony, our findings are multi-faceted. We do not find cost consistency to be a binding constraint that forces the selection of a proxy cost model over and above other considerations. We explain our doubts with the arbitrage allegations, and we find the cross subsidy allegations add more heat than light to the confusion that surrounds them.

107. First, even if AT&T were correct that universal service funding and wholesale pricing must be consistently based, given the outcome of the AT&T and U S WEST arbitration and the improvements to AT&T's sponsored model since 1996, costs will differ and cannot be made consistent such that universal service and wholesale prices are similarly cost based. That is, even if the HAI model was adopted in this Docket, it is unlikely the HAI model's outputs could be hammered into consistency with the results of the AT&T and U S WEST arbitration docket's outcomes. The two dockets are "out of sync." If other negotiated agreements permit prices that differ from those that result from the AT&T and U S WEST arbitration, wholesale prices are not uniform among U S WEST and all other CLECs.

108. More importantly, the cost models for universal service funding and wholesale pricing have different purposes. The constraints imposed on the resulting costs, as U S WEST has noted, prohibit consistency. Wholesale prices are not deaveraged to the level of detail that universal service costing is disaggregated. It is unlikely that the level of high cost area detail found in proxy cost models will ever exist in retail rates. Even AT&T concedes not to seek deaveraged retail rates. Transcript, Vol. 1, p. 22.

109. Second, different goals and objectives underlie the choice of costing methods for universal service, unbundled network elements, and retail prices. Retail prices are set to achieve certain objectives including, but not limited to, a binding revenue requirement constraint. Another objective is to minimize price distorting consumption of retail services. For example, a drop line has no place in an economic cost study for existing customers' basic exchange service. Drop line costs are sunk in a study of avoidable economic costs. Drop line costs, however, must be included in forward looking economic cost models for universal service funding costs.

110. There simply are different objectives and constraints involved in applying costing to universal service, and to unbundled network element prices and retail pricing. The twain should not meet. Just because proxy cost models must include hypothetical modeling assumptions, the rest of the costing should not have to conform.[25] While the FCC requires

---

[25] One of the vacated portions of the FCC's Interconnection Order, In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, First Report and Order, FCC 96-325 (released Aug. 8, 1996), required the prices that new entrants pay for interconnection and unbundled network elements to be based on what the FCC labeled Total Element Long Run Incremental Cost, plus a reasonable share of forward-looking joint and common costs. Total Element Long Run Incremental Costs should: (1) assume wire centers are placed at the ILEC's current wire center locations; (2) employ the most efficient technology in determining the cost to reconstruct the local network.

hypothetical cost modeling assumptions for universal service funding, the same assumptions are not necessarily relevant or required for efficient retail pricing purposes.

111. Third, AT&T's arbitrage concern arises when the universal service cost exceeds an unbundled network element price. Based on AT&T's reasoning, CLECs are discriminated against vis-a-vis an ILEC. If one explores this concern, the outcome of the allegation is unclear. U S WEST's cross examination of AT&T's Ms. Baker made abundantly clear that the FCC fully contemplated and foreclosed the opportunity for CLECs to engage in arbitrage. Transcript, Vol. 1, p. 30.

112. If U S WEST receives a new and higher level of federal universal service funding, this Commission expects the changed amount would be offset by changes in other rates. For example, if universal service funding in the amount of a $25 million increase flows to U S WEST which then reduces contributions from carrier access charges and other rates by an equal amount, would IXCs and CLECs not benefit? Given AT&T's comment that the current access charges are excessive and "profoundly anticompetitive," we expect AT&T would flow through any access charge reductions. Fischer Direct, p. 19.

113. Fourth, cross subsidy allegations pervade AT&T's and U S WEST's testimony arguing for cost consistency. When nothing else seems constant, the polarized views of AT&T and U S WEST on the existence of cross subsidies appear frozen in time.

114. AT&T's Fischer asserted, "Much of what has been alleged to be needed through subsidies may be unnecessary, because existing retail local service revenues may already recover efficiently incurred costs." Fischer Direct, p. 19. He also testified that this docket must be used to eliminate implicit subsidies, that the Commission should initiate a state universal service fund

via a rulemaking and that the Commission should postpone the on-going rate rebalancing docket, No. D96.12.220.[26] Fischer Direct, p. 20, 41.

115. AT&T's Baker also analyzed whether residential service is subsidized. She found U S WEST's statewide average residential revenues to exceed U S WEST's statewide average residential costs. Baker Rebuttal, p. 14. In her terms, customers essentially subsidize themselves under the current pricing system.

116. The polar view is U S WEST's. Mr. Brigham's cross subsidy testimony addresses the existence of a residential subsidy and rebuts AT&T's testimony. Brigham alleged that residential service is cross subsidized. Brigham Direct, Exec. Summary, and p. 10. In his rebuttal, Brigham corrected AT&T's estimate of the universal service subsidy U S WEST would receive. Although illustrative to rebut AT&T's $208 million dollar subsidy estimate, Brigham testified that the subsidy ranges between $120 and $130 million per year.

117. The allegations of cross subsidies are not substantiated by testimony in this docket. Cross subsidy allegations, based on a comparison of the BCPM's or the HAI model's costs to existing retail rates, are erroneous. Retail service prices need not, and should not, be based on hypothetical (e.g, scorched node) modeling assumptions that the FCC uses with TELRIC and proxy cost models. Cross subsidies may be determined after a comparison of

---

[26] The implicit subsidies AT&T lists include those due to: (1) geographic averaging; (2) the business/residence price difference; and (3) access charges (Fischer Direct, p. 33).

relevant costs and prices in a retail rate case. The last such comparison for U S WEST occurred in 1992 in Docket No. 90.12.86 (Order Nos. 5535g and 5535h).[27]

118. AT&T's recommendation to postpone the rate rebalancing docket and to make this universal service proxy cost docket a rate rebalancing docket is ill advised. This docket never was, nor can it be, a rate rebalancing docket. This docket strictly focuses on what hypothetical cost model this Commission should recommend to the FCC to use for federal universal service funding purposes.

119. Consistency issues are not limited to those raised by AT&T and U S WEST. Aside from the above concerns, this Commission questions whether a consistent estimate of universal service funding costs is achievable. The Commission believes the FCC will be challenged in its efforts to achieve cost consistency and may simply have to settle for second best cost estimates. At least two and possibly more differing cost studies will be recommended by states to the FCC. Thus, a single model will not likely be used to compute every state's forward looking economic costs. It is not clear to this Commission that all states that recommend cost studies will submit studies that use the same year's dollars. Although an AT&T witness asserts U S WEST's and AT&T's costs are in January 1, 1998 dollars, it does not follow that all forward looking costs are, or will be, in the same year's dollars.

120. In summary, the Montana Commission recommends the BCPM 3.1 to the FCC for its federal universal service fund program. We acknowledge the FCC's agreement with the

---

[27] Not only does U S WEST not base any of its cross subsidy arguments on valid cost studies, U S WEST goes so far as to compute two different estimates of lost contributions using two different cost models, neither of which should be used to estimate cross subsidies. *See* Brigham Direct, p. 12.

Joint Board that forward looking cost modeling is the best means to determine universal service support in a manner that creates incentives for carriers to operate efficiently but does not give carriers any incentive to inflate their costs. If and when a state universal service fund exists in Montana, the Commission finds that the BCPM model, in its then current evolutionary state, should be considered to estimate forward looking economic costs for high cost areas. Having recommended the BCPM, the Commission now turns to its decisions on the BCPM input values.

IV. MODEL INPUTS

121. Hundreds of user-defined inputs are used in the models to arrive at the cost. The Commission considered changes to user-defined inputs for the cost of capital and structural sharing percentages for aerial, buried and underground cable.

A. Cost of Capital

122. U S WEST's default for the cost of capital in the BCPM is as follows:

	Percentage	Cost	Rate of Return
Long-term Debt	28.00 %	7.53 %	2.11 %
Common Equity	72.00 %	12.85 %	9.25 %
Total	100.00 %		11.36 %

AT&T's default for the cost of capital in the HAI is as follows:

	Percentage	Cost	Rate of Return
Long-term Debt	45.00 %	7.70 %	3.465 %
Common Equity	55.00 %	11.90 %	6.545 %
Total	100.00 %		10.010 %