BEFORE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Review of: **Unbundled Loop and Switching Rates; the Deaveraged Zone Rate Structure; and** **Unbundled Network Elements, Transport, and Termination**	**Docket No. UT-023003**

MOTION FOR CLARIFICATION AND PETITION FOR RECONSIDERATION

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Pursuant to Washington Administrative Code ("WAC") 480-07-850, Verizon Northwest Inc. ("Verizon NW") hereby seeks clarification and reconsideration of the Commission's Twenty-Fourth Supplemental Order, issued on February 9, 2005 (the "*Order*").

INTRODUCTION AND SUMMARY

Many of the Commission's findings violate applicable law, including the Federal Communications Commission's ("FCC's") TELRIC rules, the Commission's cost modeling principles, and its previous rulings.

First, the Commission inexplicably decided to set UNE rates using, in substantial part, the Hatfield Model Release 5.3 ("HM 5.3"), even though it recognized that HM 5.3 is fundamentally incapable of complying with the Commission's costing principles and the FCC's TELRIC rules. Among other things, AT&T refused to produce critical data regarding the model — e.g., the proprietary TNS source code — despite having been ordered to do so numerous times by both Administrative Law Judge ("ALJ") Mace and the Commission. Moreover, several of the changes ordered by the Commission *cannot* be implemented in HM 5.3 because of fundamental limitations in the model's platform and overall design. In short, the Commission should have disregarded HM 5.3 in its entirety. Its decision to accord *any* weight to this flawed costing tool was in error.

Second, the Commission's cost of capital findings significantly understate the risks of providing UNEs. Although the Commission's decision properly acknowledges that the FCC's rules mandate that a TELRIC-compliant cost of capital must account for the risks of a competitive market, the *Order* ignored some of these risks by rejecting Verizon NW's proposed risk premium, which accounts for the additional risk of providing UNEs (as opposed to the risks facing Verizon NW as a whole), and by using a small group of telecommunications companies to calculate growth rates, a component of the cost of equity. Contrary to the Commission's understanding, its adopted cost of capital does *not* accurately capture all the risks of providing UNEs, including the risk that CLECs may cancel the UNE at any time. In addition, the proxy group used to calculate growth rates is far too small, and because the telecommunications industry is undergoing radical restructuring, it does not correctly reflect forward-looking growth rates. The Commission should therefore reconsider its decision and adopt Verizon NW's cost of capital proposals.

Third, the Commission's decision to set depreciation lives using the rates previously established by the Commission in the retail rate proceeding violates the Telecommunications Act of 1996 ("Act") and TELRIC principles, and is based on an incorrect interpretation of the FCC's *Triennial Review Order*. The Act clearly *prohibits* the Commission's methodology, providing that UNE rates must be "determined without reference to a rate-of return proceeding."[1/] As the Supreme Court found, this "important limitation" on the states represents "an explicit disavowal of the familiar public-utility mode of rate regulation . . . presumably still being applied by many States for retail sales." The Commission's decision ignores this clear precedent. Moreover, the Commission incorrectly believes that the FCC rejected in its *Triennial Review Order* the use of

1/ 47 U.S.C. § 252(d)(1)(A).

financial lives, which Verizon NW proposes. The FCC did not reject the use of those lives, but rather declined to *require* use any particular set of lives given the record before it. Accordingly, the Commission should reconsider its decision to use the depreciation lives from its retail proceeding and should instead adopt Verizon NW's proposed financial lives.

Fourth, although the Commission correctly adopted Verizon NW's proposed forward-looking calibration ("FLC") approach, which recognizes that an adjustment must be made to align Verizon NW's forward-looking investments with its forward-looking expenses, it (perhaps inadvertently) failed to apply a FLC to HM 5.3. There is no reason to distinguish between the different models on this basis. HM 5.3 must similarly be adjusted to properly account for forward-looking investments and expenses. What is worse, the Commission's decision appears to allow the continued use of HM 5.3's annual cost factors ("ACFs") on current cost to book costs ("CC/BC") ratios, which generally have the *opposite* effect of the FLC and therefore exacerbate the problem the Commission agreed the FLC was designed to remedy. The Commission must therefore apply the same .90 FLC it adopted for Verizon NW's studies to HM 5.3's ACFs.

Fifth, the Commission improperly adjusted certain of Verizon NW's proposed loop inputs. In each of these cases, the Commission replaced substantial empirical data provided by Verizon NW either with speculative assumptions derived from or supported by the FCC's 1999 order designed for universal service purposes, or with wholly new assumptions as to which there was no testimony in the record, and no opportunity to be heard, because no party ever suggested using such assumptions. As noted below, and as the *Order* itself recognizes, the FCC itself has strongly discouraged state commissions from using its 1999 universal service inputs — which were designed for nationwide use without reference to any particular carrier — for purposes of

developing UNE prices. And basic principles of due process bar the Commission from making factual determinations about critical model inputs without prior notice and opportunity to provide engineering testimony concerning such assumptions. Nor does the Commission explain why it chose to ignore the extensive actual, current data and engineering testimony regarding loop costs that Verizon NW provided in this proceeding. Finally, the Commission erred by relying on wholly speculative assumptions about how a competitive TELRIC environment would warrant changes in existing engineering practices in sharing structure (both by carriers and by other utilities not subject to TELRIC requirements), or in existing limitations on the negotiation of placement contracts by region.

Sixth, the Commission improperly rejected Verizon NW's switching model and instead developed switching costs using only HM 5.3. The Commission's findings that Verizon NW did not produce the SCIS source code until one week before the hearing and that SCIS cannot determine and change the switch discount are not reasonable bases for rejecting Verizon NW's studies. Verizon NW gave the parties the SCIS source code in sufficient time to prepare for the hearings, particularly given that Catherine Pitts, an AT&T switching witness, was one of the original developers of SCIS. The parties also had plenty of time to address the SCIS source code in their briefs, which were filed seven weeks after the source code was produced. In stark contrast, AT&T *refused* to provide critical data regarding HM 5.3's preprocessing, but the Commission nonetheless decided to use HM 5.3, in substantial part, to set loop rates. The Commission's decision to reject Verizon NW's switching studies was also based on the misunderstanding that those studies cannot determine or change the switch discount. However, as Verizon NW has explained, information regarding switch discounts can be found in the studies (and in subsequent data requests) and is a user adjustable input.

The switching data included in HM 5.3, moreover, reflects switch purchases between 1989 and 1996 and thus is woefully outdated. The Commission's effort to update this stale data by applying the Turner Price Index ("TPI") does not rectify the problem, and in fact, creates new problems. Among other things, the TPI does not reflect current technology, and is not a replacement for the actual, current switch price data Verizon NW produced in this proceeding. Moreover, HM 5.3 improperly bases its switching cost estimates on the prices of all new switches purchased at the extraordinarily high new switch discount, instead of a mix of new and growth purchases, as Verizon NW proposes. The FCC, however, has unequivocally stated that it is *contrary* to TELRIC principles to assume all new switch discounts. The Commission's switching findings therefore violate applicable law.

Finally, pursuant to WAC 480-07-850, Verizon NW is seeking clarification of certain aspects of the Commission's findings.[2/] However, if the Commission grants Verizon NW's request for reconsideration and bases switching costs on Verizon NW's switching studies, most of these issues are moot.

As a result, the UNE cost estimates proposed by the *Order* are substantially and unlawfully understated. This outcome is significant. As the FCC has recognized, setting UNE rates that are too low "can thwart one of the central purposes of the [Telecommunications] Act [of] 1996: the promotion of facilities-based competition."[3/] Indeed, the Commission itself previously has emphasized that its goal cannot be to "striv[e] for the lowest possible price," but rather, must be to promote healthy competition based on "accurate price signals that tell

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[2/] Verizon NW is still evaluating the *Order* and may seek clarification on additional issues in the future.

[3/] Notice of Proposed Rulemaking, *Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, 18 FCC Rcd 18945 ¶ 3 (2003) ("*TELRIC NPRM*").

competitors when to invest and when to use other strategies."[4] By setting UNE rates that substantially understate Verizon NW's costs of providing UNEs in Washington, the Commission will send precisely the opposite signals, departing from what it has already recognized to be a central objective of this proceeding.

ARGUMENT

I. THE COMMISSION'S DECISION TO USE HM 5.3 TO SET VERIZON NW'S UNE RATES WAS ERRONEOUS.

The Commission erred in deciding to set Verizon NW UNE rates based, in substantial part, on the cost estimates produced by HM 5.3, notwithstanding the Commission's own recognition of HM 5.3's fundamental inability to comply with the Commission's own costing principles and the FCC's TELRIC rules. Those critical failings, in the face of very clear warnings by the Commission, are far too substantial to be accommodated by a mere discounting of the weight to be accorded HM 5.3's cost estimates. The Commission should have disregarded HM 5.3 entirely, as its prior decisions require.

A. HM 5.3 Does Not Comply with the Commission's Cost Modeling Requirements.

The Commission acknowledges that HM 5.3 does not satisfy its requirement that cost models be open and transparent: "the HM 5.3 model does not fully meet our cost-model criteria of openness and flexibility."[5] This finding is based in part on the fact that AT&T refused to make available for review a critical component of HM 5.3, the TNS preprocessing and clustering source code — the starting point for any and all outside plant modeling done by HM 5.3. Absent

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[4] Thirty-First Supplemental Order, Docket Nos. UT-960369, -960370, -960371, ¶ 23 (issued Dec. 14, 2000).

[5] Twenty-Fourth Supplemental Order Establishing Recurring Costs and Rates for Unbundled Network Elements, Transport, and Termination; Establishing Deaveraged Zone Loop Rates, *In the Review of: Unbundled Loop and Switching Rates; the Deaveraged Zone Rate Structure; and Unbundled Network Elements, Transport, and Termination (Recurring Costs)*, Docket No. UT-023003 ¶ 186 (Feb. 9, 2005) ("*Order*").

the production of these vital data, the ability to test, validate, and, if necessary, change the network designed by HM 5.3 is beyond the reach of the Commission, as well as every other party to this proceeding. A perfect example of this fatal limitation is the fact that the incredibly large distribution clusters modeled by HM 5.3, which the Commission correctly faulted (as discussed below), cannot be remedied by any changes made to the model of record in this proceeding. Rather, reducing the size of the clusters modeled by HM 5.3 would require a complete overhaul of HM 5.3's cluster database, which in turn is a product of the TNS proprietary processes and data that AT&T steadfastly refused to produced in their entirety. As such, the Commission is powerless to fix one of the most significant modeling problems identified in the *Order*. HM 5.3's blatant violation of the Commission's cost modeling criteria — and AT&T's steadfast refusal to produce the proprietary TNS data, despite repeated orders to do so[6/] — should have been reason enough to reject HM 5.3 outright.

In its *Eighth Supplemental Order*, the Commission reiterated its prior determination that an open cost model serves the public interest by "provid[ing] all parties with an opportunity to fully explore the advantages and the limitations" of the model.[7/] To qualify as open, the cost model must allow parties "to have the ability to understand assumptions used, to review and analyze the effect of inputs and outputs, and to modify and model different inputs and

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6/ *See, e.g.*, Thirteenth Supplemental Order: Granting, in Part, Motions to Compel ¶ 17 (Sept. 8, 2003) (ordering AT&T to produce TNS clustering information and stating that without TNS information AT&T may not be "transparent and readily capable of verification"); Fourteenth Supplemental Order: Denying Petition for Review of Interlocutory Order; Granting Motions to Compel ¶ 21 (Oct. 14, 2003).

7/ *See* Before the Washington Utilities and Transportation Commission, Docket Nos. UT-960369, -370, -371, *Eighth Supplemental Order Interim Order Establishing Costs for Determining Prices in Phase II; and Notice of Prehearing Conference* (May 11, 1998), ¶ 24 ("1998 8th Supp. Order"); *see also id.* ¶ 507.

assumptions."[8/] To satisfy these criteria, the Commission requires cost model proponents to provide interested persons with "the opportunity to review both the compiled and uncompiled source codes," to provide "support for input values," to include "a narrative description of how the model operates," and to ensure that the cost model is "susceptible to modification and sensitivity analysis."[9/] HM 5.3 fails to satisfy any of these requirements.

In direct violation of the Commission's unambiguous and mandatory cost modeling criteria, and in defiance of repeated orders by Administrative Law Judge ("ALJ") Mace and the Commission to produce all of the proprietary processes (including the clustering source code) yielding the HM 5.3 cluster input database,[10/] AT&T refused to allow Verizon NW, the Commission or any other party to this proceeding to access and review the most critical aspects of HM 5.3's preprocessing.[11/] Without access to the clustering source code, it is impossible to fully understand the complex preprocessing conducted by TNS and make changes to the multitude of hard-coded values within the clustering process.[12/] This lack of openness and transparency is particularly problematic given AT&T's failure to demonstrate that HM 5.3's key cost drivers and engineering assumptions — many of which are buried or hardcoded in the model's preprocessing, or locked away in incredibly complex algorithms and an undisclosed

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8/ 1998 8th Supp. Order ¶ 24 n.11 (*quoting* Ninth Supplemental Order, Docket No. UT-950200 (Oct. 19, 1995) at 2); *see also TELRIC NPRM* ¶ 41 (noting that "the logic and algorithms of a cost study or cost model should be revealed to and understandable by the parties and regulators").

9/ 1998 8th Supp. Order ¶¶ 492, 25.

10/ *See supra* note 6.

11/ Tr. 1379:17-1380:7 (Dippon); Exh. No. 601T 8-11, 34-35 (Dippon); Exh. No. 503 10:3-11:8 (Tardiff). AT&T's refusal to comply with the Commission's orders is especially egregious given that AT&T voluntarily produced these critical data, including the clustering source code, in the ongoing Verizon California UNE proceeding. *See generally* Before the Public Utilities Commission of the State of California, I.93-04-002/R.93-04-003, *AT&T and MCI's Responses to Verizon California's First Set of Data Requests* (Dec. 4, 2003) at Response No. 1-36; Before the Public Utilities Commission of the State of California, I.93-04-002/R.93-04-003, *AT&T and MCI's Supplemental Responses to Verizon California's First Set of Data Requests* (Jan. 5, 2004) at Response No. 1-36.

12/ Tr. 1386:19-1387:13 (Dippon).

source code[13] — are operating as intended and producing reasonable results. Combined with the fact that AT&T has admittedly never checked the accuracy of the cluster input database,[14] the need for complete disclosure of the TNS preprocessing data and clustering source code becomes even more dire.[15]

Recognizing what should have been the fatal nature of the aforementioned flaws, the Commission concluded in the instant *Order*:

> Failure to disclose TNS pre-processing information is the primary problem with HM 5.3 ... We continue to believe that if our cost proceedings are to result in the most accurate and economic UNE prices, *openness of all aspects of supporting cost models is important.* We have ruled consistently in past cost dockets that AT&T would meet our openness criteria by producing for examination the TNS pre-processing algorithms and data. *AT&T has consistently failed to produce all the TNS information required.* While we will continue to weigh the evidence about the cost models based on the record before us, in future proceedings we do not expect to accord much weight to a cost model, that does not meet our criteria for openness.[16]

Nevertheless, and with complete disregard for the Commission's cost modeling requirements, the Commission ultimately accorded the cost estimates produced by HM 5.3 substantial weight (40 percent) in determining Verizon NW's UNE rates. However, the accordance of *any* weight to HM 5.3 cannot be squared with fundamental notions of fairness and due process,[17] the basic elements of which are embodied in the *Eighth Supplemental Order's*

13/ Exh. No. 551TC 23:15-25:25 (Murphy); Exh. No. 601T 36 (Dippon); Exh. No. 503 15:3-17:21 (Tardiff).

14/ Exh. No. 601T at Exh. CMD-6 and CMD-12 (Dippon).

15/ AT&T's refusal to comply with the Commission's cost modeling criteria stands in sharp contrast to Verizon NW's satisfaction of the openness requirement. *See Order* ¶ 162 (recognizing that, contrary to AT&T's claims, Verizon NW provided the Commission and other parties to this proceeding the source code for VzCost).

16/ *Order* ¶¶ 223-25 (emphasis added); *see also id.* ¶ 162.

17/ *See, e.g., State ex rel. Puget Sound Navigation Co. v. Dep't of Transp. of Wash.*, 33 Wash. 2d 448, 476, 206 P.2d 456, 485 (1949) (stating that the Commission's "findings must be based on evidence presented in the case, with an opportunity to all parties to know of the evidence to be submitted or considered, to cross-examine witnesses, to inspect documents and to offer evidence in explanation or rebuttal, and nothing can be treated as evidence which is not introduced as such . . . . It is said, in the cases cited, that the regulatory body must base its findings on evidence

clear admonition that cost models must be open and transparent. Moreover, given the Commission's stated intention to give little to no weight to cost models lacking openness in the future, the Commission's decision to place HM 5.3's cost estimates practically on par with those of Verizon NW's cost model is an unjustifiable, and arbitrary and capricious, result. Pursuant to the standards of both the *Eighth Supplemental Order* and the Commission's prior cost orders requiring the production of the proprietary TNS data, which AT&T steadfastly refused to provide, the Commission had no choice but to reject HM 5.3. Its failure to do so violates Verizon NW's right to due process and is tantamount to a repudiation for future cost proceedings of the clear requirements of the *Eighth Supplemental Order* — plainly an unlawful and untenable result.

The Commission's failure to reject HM 5.3 is also impermissibly inconsistent with its decision to reject Verizon NW's switching model (SCIS) because of Verizon NW's delay — as opposed to outright refusal — in producing the source code for the SCIS switching model.[18/] Putting aside the propriety of the Commission's decision to reject SCIS (a topic that is discussed in detail elsewhere herein), clearly, if a *delay* in providing the source code for one component of a model is sufficient grounds for rejecting that component outright, then AT&T's steadfast *refusal* to produce, or provide any access whatsoever, to the TNS source code — the

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before it, and that nothing can be treated as evidence which has not been introduced as such, and in one of the cases, that a violation of these principles constitutes 'a denial of due process,' and in another, is 'inconsistent with rational justice.'"); *Interstate Commerce Comm'n v. Louisville & Nashville R.R. Co.*, 227 U.S. 88, 93 (1913) ("All parties must be fully apprised of the evidence submitted or to be considered, and must be given opportunity to cross-examine witnesses, to inspect documents, and to offer evidence in explanation or rebuttal. In no other way can a party maintain its rights or make its defense. In no other way can it test the sufficiency of the facts to support the finding . . . . ").

[18/] *See, e.g.*, *Order* ¶ 167 ("In this instance, where Verizon produced the source code too late to allow evidence about it to be presented on the record by opposing parties, the parties could not adequately verify the model. Later in this order, we explicitly reject the Verizon switching model, in part because of the inability of the parties to adequately test and verify it through cross-examination on the record."); *id.* ¶ 462 ("Verizon's proposed switching rate proposal suffers . . . because Verizon failed to timely provide information to the other parties regarding the SCIS model . . . For these reasons, we reject Verizon's switching model and the resulting switching rate proposal.").

fundamental underpinning to all the outside plant modeling done by HM 5.3 — must be sufficient grounds, in and of itself, for the complete rejection of HM 5.3. The Commission's failure to do so was not only inconsistent with its openness requirements, but plainly arbitrary and capricious given its decision to the contrary with respect to Verizon NW's SCIS model.

B. HM 5.3 Cannot Model a Network Consistent with TELRIC Principles.

The Commission erred in failing to reject HM 5.3 based on the fact that, under no circumstances, can it model a network consistent with the FCC's TELRIC costing principles. The Commission's determination that HM 5.3 is "TELRIC-compliant" simply cannot be reconciled with the record evidence.[19/]

Both the FCC and this Commission have acknowledged the importance of recognizing the real-world constraints (e.g., the locations of existing customers) under which any telephone carrier must operate, and have recognized the efficiencies inherent in the acquisition and use of rights-of-way already secured by the ILEC. For example, the FCC has held that loop studies in which "cable routes . . . follow existing rights-of-way" are entirely consistent with its TELRIC rules.[20/] More recently, the FCC reached the tentative conclusion that its TELRIC rules should "more closely account for the real-world attributes of the routing and topography" of the ILECs' existing networks.[21/] Prior Commission decisions similarly identify as an important modeling consideration the ability of a cost model to serve as reasonable (albeit simplified) representation

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19/ *See Order* ¶ 226 ("In conclusion, we find, overall, that both models are flawed but both are TELRIC-compliant.").

20/ Memorandum Opinion and Order, *Joint Application of BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance for Provision of In-Region, InterLATA Services in Georgia and Louisiana*, 17 FCC Rcd 9018 ¶ 36 (2002).

21/ *TELRIC NPRM* ¶ 52.

of "the complexity of the real world,"[22] which includes, among other things, existing rights-of-way and the locations of actual customers. Indeed, in this *Order*, the Commission acknowledged that TELRIC requires "carriers to model their TELRIC networks based on existing central offices, customer locations, and rights-of-way."[23] Several other state commissions have agreed.[24] Nevertheless, AT&T has failed to submit a model that complies with these clear pronouncements of the FCC and the Commission, as accounting for actual customer locations and existing rights-of-way is something HM 5.3 simply cannot do.

Perhaps the most fundamental problem with HM 5.3's outside plant network design is its failure to model plant to actual customer locations.[25] Despite having been provided substantial amounts of data detailing Verizon NW's actual customer locations, HM 5.3 ignores this information and, instead, relies upon a deeply flawed and convoluted preprocessing procedure, which assumes that hypothetical customers are spread uniformly within rectangular shaped-

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[22] 1998 8th Supp. Order ¶ 21. The Commission has repeatedly required validation of cost models based on a comparison of their average loop lengths to those in the incumbent's actual network, based on the goal of "building a cost model that reflects actual operating characteristics." Before the Washington Utilities and Transportation Commission, Docket No. UT-003013, Thirty-Second Supplemental Order; Part B Order; Line Splitting, Line Sharing over Fiber Loops; OSS: Loop Conditioning; Reciprocal Compensation; and Nonrecurring and Recurring Rates for UNEs (June 21, 2002), ¶ 346 (quoting Verizon NW) (emphasis added); *see also* 1998 8th Supp. Order ¶ 227.

[23] *Order* ¶ 246; *see also id.* ¶ 221 (admitting that a cost model "would ideally use only the existing locations of the central offices (COs), customers, and rights-of-way to design the most efficient forward-looking network possible based on current demand and technological constraints"); *id.* ¶ 13 (recognizing that "under TELRIC the cost of a UNE must be based on 'use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the location of the incumbent LEC's wirecenters'").

[24] For example, in the SBC UNE proceeding, the California Commission criticized HM 5.3 for its inability to account for existing rights-of-way, and concluded "that the use of [the ILEC's] actual right-of-way and plant routes would be a superior modeling technique." Before the Public Utilities Commission of the State of California, Application Nos. 01-02-024, et al., *Decision No. 04-09-063* (Oct. 1, 2004) at p. 76 ("D.04-09-063"). *See also* Before the New Jersey Board of Public Utilities, Docket No. TO00060356, Decision and Order (Mar. 6, 2002) at p. 12 ("New Jersey Order"); Before the Illinois Commerce Commission, Docket No. 02-0864, *Order* (June 9, 2004) at 1.

[25] Tr. 1380:13-21 (Dippon); Exh. No. 601T 19-20, 25, and 39 (Dippon). *See also* Exh. No. 601T 21-24, 40-41 (Dippon) (explaining how HM 5.3 has failed to keep up with advancements in cost modeling techniques).

clusters containing lots of equal-size and shape — assumptions that are not only entirely divorced from reality, but clearly inconsistent with TELRIC principles and the Commission's stated preference for modeling to existing customer locations.[26/] As the maps of Verizon NW witness Mr. Dippon illustrate, HM 5.3 does not route plant to any existing customer locations.[27/] As such, there can be no dispute that the Commission erred in finding that "in HM 5.3, modeling is based on existing wirecenters and customer locations."[28/]

Compounding the aforementioned flaws, and as both AT&T and the Commission acknowledge,[29/] HM 5.3 also fails to account for existing rights-of-way, and other physical and man-made obstacles when designing outside plant[30/] — in direct violation of TELRIC and the Commission's cost modeling requirements. Again, this fatal modeling flaw is best illustrated by the maps produced by Verizon NW witness, Mr. Dippon,[31/] which clearly show that HM 5.3's "grills" of cables are placed without any regard for feasible network routes, street layouts and topography, rights-of-way, and physical and man-made obstructions.[32/] While the Commission was correct in recognizing that VzCost "is superior to HM 5.3 in modeling existing rights-of-

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26/ This process is conducted outside the model by AT&T's consultant, TNS, and (as discussed earlier) has never been made fully available to Verizon NW for review. As the California Commission recently recognized in the SBC-CA UNE proceeding, "The principle failure of HM 5.3 was its use of a customer location database provided by a third party, TNS, as an input." D.04-09-063 at p. 110.

27/ *See* Dippon Supp. Reply at Exh. No. CMD-12.

28/ *Order* ¶ 245.

29/ Exh. No. 883 at Response No. 1-35 (AT&T acknowledging that "[t]he customer location clusters used by the HAI Model do not explicitly account for physical obstacles such as those described in the request."); *Order* ¶ 221 (finding that VzCost "is superior to HM 5.3 in modeling existing rights-of-way").

30/ Exh. No. 601T at 4, 24 (Dippon); Exh. No. 503 2:21-3:4 (Tardiff).

31/ Exh. No. 606; Dippon Supp. Reply at Exh. CMD-12; Tr. 1380:8-1381:9 (Dippon).

32/ Exh. No. 601T 25 (Dippon); Exh. No. 606; Dippon Supp. Reply at CMD-12.

way,"[33] it erred when it failed to find that this fatal modeling flaw undercuts substantially, if not completely, HM 5.3's usefulness in determining Verizon NW's forward-looking UNE rates.

Moreover, any cost model that ignores the constraints and characteristics of the real world (e.g., actual customer locations and existing rights-of-way) cannot be squared with the FCC's prescription that TELRIC rates must be "economically efficient."[34] As Verizon NW witness Dr. Tardiff demonstrated, by designing a fantasy network that so clearly violates the FCC's and the Commission's cost modeling requirements, HM 5.3 is a worthless costing tool that "could never produce accurate UNE cost estimates" because it "[a]ssum[es] a level of 'efficiency' that no real carrier can achieve" and "does not approximate competitive conditions, but rather only serves to produce uneconomically low cost estimates."[35] Moreover, and contrary to the Commission's and AT&T's claims, many of the aforementioned flaws do not "go to the inputs,"[36] but rather are rooted in the fundamental design of the model itself.[37] Because HM 5.3 is fundamentally incapable of producing TELRIC-compliant UNE cost estimates or the requisite economically efficient rates, it should have been rejected by the Commission. The

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[33] *Order* ¶ 221.

[34] First Report and Order, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 11 FCC Rcd 15499 ¶ 113 (1996).

[35] Exh. No. 501T 9:13-15 (Tardiff); *see also* Exh. No. 503 6:13-15 (Tardiff) (challenging AT&T's assumption that, "except for the wire center locations, the existing network and all of its functions can be completely disregarded as irrelevant under the guise of TELRIC").

[36] *Order* ¶ 263.

[37] Exh. No. 551TC 19:13-23:9 (Murphy). This point is illustrated by the fact that HM 5.3 produces a statewide average loop rate that is more than 13 percent lower than that produced by VzCost. *Order* ¶ 447. As such, the Commission was wrong to conclude that many of the problems with HM 5.3 "relate to model inputs that can easily be adjusted." *Order* ¶ 223. On the contrary, a large portion of the flaws in HM 5.3 are directly attributable to errors in the model platform or are locked away in incredibly complex algorithms or an undisclosed source code.

Commission's disregard for the record evidence and failure to appreciate this undeniable fact was clear error.

C. HM 5.3 Fails Reasonable Validation Tests.

In direct violation of the Commission's cost modeling criteria, HM 5.3 is fundamentally incapable of producing verifiable UNE cost estimates. In its *Eighth Supplemental Order*, the Commission emphasized the importance of evaluating whether a cost model produces valid estimates of the economic costs of providing UNEs,[38/] based on algorithms that capture the salient characteristics of the network.[39/] And, in establishing whether a cost model satisfies the requisite standard of validity, the Commission agreed that both the model's inputs and selected outputs should be subject to validation.[40/] HM 5.3 repeatedly failed such tests.[41/]

As Dr. Tardiff points out, one useful validation test is whether successive releases of the HAI Model are consistent with reasonable trends in the industry.[42/] For example, AT&T and other CLECs have conceded that the costs of loop plant "are not declining," and for many non-switch elements "costs are rising."[43/] Nevertheless, the loop costs AT&T proposes in the instant proceeding are substantially lower than those produced by previous versions of the HAI Model presented to this Commission.[44/] Specifically, in 1997, the Hatfield Model, Release 3.1 ("HM

38/ 1998 8th Supp. Order ¶ 27.

39/ *Id.* ¶ 14.

40/ *Id.* ¶ 37.

41/ Exh. No. 501T 4:17-5:14 (Tardiff).

42/ Exh. No. 501T 5:15-6:21 (Tardiff).

43/ *WorldCom, Inc. v. Verizon Communications, Inc.*, Reply Brief for Petitioners WorldCom, Inc., the Association for Local Telecommunications Services, and Competitive Telecommunications Association, No. 00-555 (July 23, 2001) at 6 (emphasis added). *See also* Before the Federal Communications Commission, CC Docket Nos. 01-338, 96-98, 98-147, *Comments of AT&T Corp.*, (Dec. 16, 2003) at pp. 99-100.

44/ Exh. No. 501T 6:11-19, 55:15-56:9 (Tardiff).

3.1") produced a loop cost of $14.58;[45] and, in this Commission's 1998 universal service proceeding, the Hatfield Model, Release 5.0a produced a loop cost of $12.62.[46] In this proceeding, AT&T advocates a loop cost of $8.50,[47] which is *less than 40 percent* of this Commission's current rate of $20.30,[48] and *48 percent less* than the loop cost produced by HM 3.1.[49] There is no reasonable explanation for a one-third reduction in loop costs from what the Commission adopted as a rate just a few years ago.[50]

Similarly, in just three short years, the productivity assumptions and labor rates advocated by AT&T have changed substantially.[51] For example, in a recent Alaska UNE proceeding, AT&T proposed aerial placement rates that were five to eight times higher than

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45/ Exh. No. 501T 6:14-15 (Tardiff) (*citing* Before the Washington Utilities and Transportation Commission, Docket Nos. UT-960369, -370, -371, *Supplemental Direct Testimony of John C. Klick* (Feb. 21, 1997) (sponsoring Hatfield Model Release 3.1)).

46/ Exh. No. 501T 6:15-17 (Tardiff) (*citing* Before the Washington Utilities and Transportation Commission, Docket No. 980311(a), Direct Testimony of Robert Mercer on behalf of AT&T & MCI (June 15, 1998) (sponsoring HAI Model, Release 5.0a)).

47/ Tr. 1478:15-18 (Mercer) (indicating that the change to HM 5.3 increased the loop cost from $7.64 to $8.50 (an $0.84 difference)). During the hearings, AT&T slightly increased its loop proposal by less than $1. Tr. 1477:25-1478:19 (Mercer).

48/ *See* Before the Washington Utilities and Transportation Commission, Docket No. UT-003013, *Thirty-Eighth Supplemental Order; Final Order on Reconsideration, Part B* (Sept. 23, 2002), ¶ 148 (adopting $20.30 statewide direct loop cost and $23.94 statewide loop rate consisting of direct and common costs).

49/ Exh. No. 501T 56:4-6 (Tardiff).

50/ Tr. 1409:3-6 (Tardiff) (stating that "there's nothing that I've heard that explains why loop costs should be only one third of what the Commission adopted as a price just a few years ago"). The *Order* suggests that line growth since 1995 may have caused loop costs to decrease and reports that a 25 percent change in lines in HM 5.3 causes approximately a 16 percent decrease in HM 5.3's loop costs. *Order* ¶¶ 448-49. Such a decrease, however, is nowhere close to what the costs proposed by AT&T imply. Further, the increase in switched access lines between 1995 and 2003 was only 20 percent, implying an even smaller impact on loop costs. More importantly, switched access lines have declined in recent years, suggesting that whatever impact line growth may have had historically is rapidly diminishing. Moreover, and contrary to the Commission's suggestion, it is the declining trend in switched access lines (and not the overall increase in DS-0 equivalents) that is the salient consideration in determining forward-looking loop costs. For example, because HM 5.3's costs are almost exclusively determined by switched access lines, the complete exclusion of high-capacity lines changes loop costs by less than one percent. Exh. No. 501T at 67:4-9 (Tardiff).

51/ Exh. No. 551TC 122:15-23:13 (Murphy).

those it advocated in this proceeding.[52/] There have been, however, no changes in installation procedures or labor costs that would justify such drastic changes.[53/] In fact, as Verizon NW witness Mr. Murphy stated, one would have to go back about 25 years to find any significant changes in methods, procedures or technologies to justify increased placement rates of the magnitude advocated by AT&T here.[54/] Although the *Order* properly rejected the unsupported judgments of AT&T's consultants with respect to cable engineering and installation and other inputs, the fact remains that similarly faulty and biased engineering judgment, particularly in the design of outside plant modeled by HM 5.3, cannot be overridden.

A further validation test is whether a cost model includes enough equipment, as well as adequate ongoing expenses, to pay for the material and labor costs needed to run the network.[55/] At a minimum, any substantial deviation between the model and reality should be explained with specificity.[56/] HM 5.3, however, generates widespread deviations that AT&T has never attempted (nor could ever) explain. For example:

- HM 5.3 hypothesizes that a brand new network could be deployed throughout Washington at investment levels that are *less than 30 percent* of the reproduction cost of Verizon NW's network.[57/] While some reduction might be expected for some facilities, such as switching, HM 5.3 makes large across-the-board reductions that are not supported by any record evidence.[58/]

52/ Tr. 1554:4-1555:23 (Fassett).

53/ Exh. No. 551TC 124:4-12 (Murphy).

54/ Exh. No. 551TC 124:4-12 (Murphy). *See also id.* 128:10-130:5 (noting that there is no plausible explanation for the dramatic decrease in switch room size recommended by Mr. Klick).

55/ Exh. No. 501T at 43:3-8 (Tardiff).

56/ *Id.* The New Jersey Board of Public Utilities rejected the Hatfield Model, Release 5.2a, and its primary concern was this same kind of disparity. *New Jersey Order* at 25-26.

57/ Exh. No. 501T 5:15-17, 39:2-3, 44:11-13 (Tardiff).

58/ Exh. No. 501T at 5:17-6:4 (Tardiff).

- HM 5.3 produces investment levels that are *less than 30 percent* of Verizon NW's total current investment (and about 38 percent of Verizon NW's ARMIS investments),[59/] and expenses for operating the network that are *less than 40 percent* of Verizon NW's current levels.[60/]

- HM 5.3 produces *only 29 percent* of Verizon NW's current support investment (for vehicles, office equipment, and the like),[61/] and *54 percent* of Verizon NW's current plant-specific expenses.[62/]

- HM 5.3 estimates that the total investment required to construct Verizon NW's entire network *from scratch* is only $896 million.[63/] This is only $80 million less than what Verizon NW spent on additions to its total plant in service ($976 million) over a mere six-year period (1997-2003).[64/]

- HM 5.3 assumes that Verizon NW could operate its wholesale operations with only a little more than *one-third* of Verizon NW's labor force.[65/]

Such untenable results are plainly inconsistent with the Commission's requirement that a cost model produce valid estimates of the costs of providing UNEs. Due to HM 5.3's fundamental inability to comply with the *Eighth Supplemental Order*'s validation criteria, HM 5.3 should have been rejected outright.

D. HM 5.3 Is Incapable of Implementing a Number of the Inputs Adopted in the *Order*.

That the Commission should have rejected HM 5.3 outright is further underscored by the fact that the model lacks the ability to implement certain modeling inputs, including those ordered by the Commission. For example, in the *Order*, the Commission recognizes (and

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59/ Exh. No. 501T at 44:11-15 (Tardiff).

60/ Exh. No. 501T at 39:1-3 (Tardiff).

61/ Exh. No. 501T at 45:11-13, Table 2A (Tardiff).

62/ Exh. No. 501T at 46:4-5, Table 2B (Tardiff).

63/ Exh. No. 501T at 47:5-8, Table 2A (Tardiff).

64/ Exh. No. 501T at 47:4-5 (Tardiff).

65/ Exh. No. 501T at 54: 1-5 (Tardiff).

AT&T's engineering witness acknowledged) that the large cable sizes modeled by HM 5.3 are inconsistent with sound engineering practices.[66/] Accordingly, the Commission ordered a limitation on aerial cable sizes to 2,400 pairs or smaller. However, there is no way to impose such a limitation in HM 5.3.[67/] As a direct result of the excessively large clusters produced by the undisclosed TNS preprocessing, HM 5.3's distribution module produces cables with excessively large pair sizes — some of which are then assigned to aerial structure. As such, the only way to implement the Commission's ruling to limit the size of that aerial cable would be to overhaul completely the TNS preprocessing — an impossible task given AT&T's steadfast refusal to produce the requisite data and source code, and its present unwillingness to further support the model and change certain formulas in HM 5.3's distribution module.

Similarly, in the *Order*, the Commission indicated its preference for a much more granular representation of plant mix,[68/] and noted the inferiority of HM 5.3 to VzCost in this regard. Again, HM 5.3 is incapable of implementing the change. HM 5.3's plant mix assumptions are so deeply rooted in HM 5.3's overall network design, and thus there is no way for HM 5.3 to incorporate the Commission's desire for a more detailed break-down of plant mix.[69/]

66/ *Order* ¶ 417; Exh. No. 956TC at 14:1-7 (Fassett) (denying (incorrectly) that HM 5.3 places large cables on poles); Tr. 1594:15-17 (Mr. Fassett admitting that "you're not going to put 4,200 [pair] cables on aerial pole structure. You're just not going to do that").

67/ Exh. No. 501T 26:11-27:11 (Tardiff).

68/ *Order* ¶ 286.

69/ At a minimum, by the standards applied to VzCost elsewhere, such a limitation should have resulted in a substantial reduction in the weight accorded HM 5.3. *See, e.g.*, *Order* ¶ 308 (finding fault with the lack of granularity in VzCost's assignment of structure sharing percentages and indicating that the weight afforded the model would be reduced as a result).

E. HM 5.3 Contains Other Significant Modeling Defects.

Other significant modeling defects in HM 5.3, many of which should have proved fatal to the adoption, even in part, of HM 5.3 were summarily dismissed by the Commission without explanation or justification. This complete disregard for the record evidence was clear error. For example, the Commission recognized that HM 5.3's modeling of inordinately large clusters — a problem that the Commission admits *cannot be remedied* — is a fundamental modeling flaw that results in substantially understated UNE cost estimates:

> In addition, we are concerned about the large cluster sizes produced by HM 5.3. Because the clusters are a result of the TNS pre-processing phase of AT&T's network modeling, we were unable to examine how the cluster sizes were determined because the TNS pre-processing data was not made available in the record. Our discomfort with the size of clusters in HM 5.3 is exacerbated by the fact that such large clusters decrease the amount of feeder plant required. HM 5.3 produces a feeder fill rate of 76.5%, a rate that is achievable only when the cluster sizes are very large. The feeder utilization rate produced by the model suggests that the clusters are too large. Even though AT&T and Staff advance good reasons for larger cluster sizes, we are not convinced that such large clusters are appropriate for a forward-looking network, because they may hinder provision of fiber to the home and high-capacity services.[70/]

Similarly, the California Commission in the SBC UNE proceeding recently criticized HM 5.3's modeling of such inordinately large clusters, stating that "is *unreasonable* to assume that all distribution areas could accommodate a CEV to serve 6,451 lines."[71/]

Nevertheless, and despite the Commission's clear acknowledgment that HM 5.3's extremely large clusters may not be appropriate in a forward-looking network and are likely to impede the deployment of advanced services,[72/] the Commission not only failed to remedy these and other modeling flaws, but also erroneously accorded HM 5.3's cost estimates considerable

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70/ *Order* ¶ 187; *see also id.* ¶ 226.

71/ D.04-09-063 at p. 281 (emphasis added).

72/ *Order* ¶ 187.

weight in determining Verizon NW's UNE rates. This was plain error. As Mr. Murphy explained, these large clusters — which cannot be modified absent access to the largely undisclosed TNS preprocessing data and programs — enable HM 5.3 to assume fictitious economies of scale for larger items (e.g., in HM 5.3, the cost of DLC system common equipment decreases as capacity increases), and thus low investments and understated UNE cost estimates.[73] The Commission was well aware of the problems associated with HM 5.3's unrealistically large clusters and acknowledged their existence, but ignored the record evidence. This was in error, and the *Order* should be modified to reflect this fact.

There are at least three additional defects that the Commission's choice of inputs cannot rectify. First, Verizon NW's witnesses demonstrated that the loop lengths produced by HM 5.3 are both inaccurate (i.e., they fail to match Verizon NW's overall average in Washington) and imprecise (e.g., the wire center lengths produced by HM 5.3 have a large standard deviation).[74] Nonetheless, the Commission adopted Mr. Spinks' band-aid "solution" of forcing HM 5.3 loop lengths to match actual loop lengths for each wire center.[75] But as Dr. Tardiff explained:

> not only does HM 5.3 produce imprecise loop lengths, it tends to place the wrong types of facilities (e.g., cables of a particular size) in the wrong places. Consequently, a mere "true up" of distances will not guarantee that the cost outputs are reliable.[76]

The *Order* fails to address this fact. Moreover, the *Order* fails to address the question of how a model which claims to design an efficient local exchange network can so grossly overestimate average loop lengths. The contrast between HM 5.3's results and Verizon NW's own model

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[73] Exh. No. 551TC 64:6-13, 75:3-76:2 (Murphy).

[74] Exh. No. 451T 15:7-17:2 (Richter); Exh. No. 501T 96:7-97:19 (Tardiff); Tr. 1376:22-1377:3 (Tardiff).

[75] *Order*, Appendix A.

[76] Exh. No. 501T 97 (Tardiff).

(which produces an average modeled loop length which is slightly shorter than the existing network's) makes it clear that affording any weight to HM 5.3 cannot be justified.

The adjustment proposed by Mr. Spinks creates an additional problem. Because the decision to deploy fiber or copper feeder depends on total loop lengths, HM 5.3 first decides on what facilities to build, based on unadjusted lengths, and Mr. Spinks' procedure merely scales the resulting investments after the fact. Consequently, HM 5.3 will depict copper feeder when fiber should be deployed, and vice versa. The fact that even after HM 5.3's loop lengths have been adjusted, the wire-center-level loop costs produced by HM 5.3 deviate substantially from those produced by VzCost, which accurately and precisely matches actual loop lengths, further illustrates the futility of Mr. Spinks' procedure and the fundamental flaws in HM 5.3.[77/]

HM 5.3 also fails to properly limit the lengths of the copper component of loops. While Verizon NW's witnesses described the problem in terms of AT&T's proposed maximum of 18,000 feet, HM 5.3's logic would cause violations of the maximum when this default value is changed as well. While Dr. Mercer conceded there may be a problem with the maximum copper distance,[78/] he later backpedaled during the hearings. Most telling, however, is the fact that HM 5.3's sponsors finally acknowledged in California that the model as filed in Washington does indeed produce loops lengths that exceed the stipulated maximum, and thus they completely revamped the model to purportedly correct this problem.[79/] For purposes of this proceeding,

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77/ *Order*, Appendix A.

78/ Exh. No. 861T 28 (Mercer).

79/ Before the Public Utilities Commission of the State of California, R.93-04-002/I.93-04-003, *Declaration of John C. Donovan, Brian F. Pitkin, Steven E. Turner in Support of Reply Comments of Joint Commentors* (Aug. 6, 2004) at pp. 72-73.

however, the important fact remains that despite the ordered limitation on copper loop lengths to no more than 12,000 feet,[80] there is no guarantee that HM 5.3 will comply with this directive.

F. Verizon NW Should Not Be Required to Perform Compliance Runs Using HM 5.3.

The Commission ordered Verizon NW to not only file compliance runs to implement to the Commission's changes to VzCost, but also to HM 5.3. Verizon NW cannot be legally required to file compliance runs for a cost model that it did *not* sponsor in this proceeding. That task must fall on the parties sponsoring HM 5.3 — AT&T and Staff. It is simply unreasonable — and devoid of a legal basis — to require Verizon NW to spend the time, effort and resources to manipulate a model it has not sponsored, and which it believes contains serious flaws that have not been remedied by the *Order*. The fact that AT&T has indicated it will no longer provide substantive support for HM 5.3 is not Verizon NW's fault.[81] The Commission must therefore reconsider this aspect of the *Order*.

Moreover, even if Verizon NW could legally be required to perform compliance runs using HM 5.3 (which it is not), it would be extremely difficult, if not impossible, for Verizon NW to do so. As noted above, there are a number of ordered changes that simply cannot be implemented in HM 5.3. Moreover, Appendix A to the *Order* provides an incomplete documentation of the changes the Commission made to HM 5.3. In particular, the *Order* identifies a number of changes made to HM 5.3's distribution module, but the modified module

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[80] *Order* ¶ 443.

[81] *See* Correspondence from Gregory J. Kopta (counsel for AT&T) to Carole J. Washburn (Executive Secretary of the Commission) regarding Bench Request No. 26 (dated Dec. 29, 2004). *See also* Correspondence from Gregory J. Kopta to Carole J. Washburn regarding Bench Request Nos. 23 and 24 (dated Dec. 23, 2004).

itself was never produced. Thus, for another party to replicate the HM 5.3 results listed in Appendix A, an electronic version of the modified distribution model must be produced.[82/]

The Commission is thus left with a once proposed, but now unsupported, cost model that cannot comply with the Commission's requirements. Without AT&T's support, and in light of Staff's inability to correctly operate HM 5.3, regardless of the weight the Commission accords HM 5.3, the Commission cannot ensure that the model will operate as intended when changes are made and compliance filings ordered. The model is, and always has been, a useless costing tool, and should be rejected outright.

II. THE COMMISSION'S COST OF CAPITAL FINDINGS UNDERSTATE THE RISKS OF PROVIDING UNES.

The Commission's decision on cost of capital properly acknowledges that, under the FCC's TELRIC guidelines, the cost of capital must account for the risks of a competitive market.[83/] In many respects, such as capital structure and cost of debt, the *Order* accurately implements this requirement. The cost of capital determination is flawed, however, in two important respects. First, in calculating the cost of equity using the DCF model, the Commission uses an inappropriate proxy group and growth rate. Second, the Commission fails to adopt Verizon NW's proposed risk premium, which is necessary to allow Verizon NW to recover its costs. The Commission should reconsider its decision on these two issues in order to establish a cost of capital that is fully TELRIC-compliant.

With respect to the cost of equity calculation, the Commission appropriately adopted the DCF model over the CAPM, recognizing that the DCF model is more widely accepted than the

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82/ In the particular case of the Commission determination that copper lengths should not exceed 12,000 feet, a complete remedy with the context of HM 5.3 would require limiting cluster sizes *before* they are used in HM 5.3 (i.e., by rerunning the entire TNS clustering process).

83/ *Order* ¶ 22.

CAPM and requires fewer variables.[84/] While the decision to adopt the DCF model was correct, the modifications the *Order* makes to Verizon NW's proposed DCF inputs were not. The Commission created both a new proxy group and growth rate for use in calculating the cost of equity. Instead of using Verizon NW's proposed proxy group, the S&P Industrials, the Commission uses a small group of telecommunications companies taken from the S&P Industrials.[85/] The *Order* states that that while AT&T's proposed "sample of only four telecommunications companies . . . is too small, we find reliance only on non-telecommunications industrial firms is unreasonable *when there is ample data available on a broader telecommunications sample*."[86/] But the proxy group adopted in the *Order* is flawed, both because there is *not* "ample data available" from a sufficient number of telecommunications companies to form a proxy group, and because the telecommunications industry is currently undergoing radical restructuring that makes it inappropriate to base a proxy group solely on telecommunications companies. Although the *Order* lists ten telecommunications companies in Table 2, only six of them produce cost of equity results, because three of them did not issue dividends and one of them had negative growth.[87/] A proxy group of six companies is not materially different from a proxy group of four companies; therefore the Commission's proxy group fails on its own reasoning.

Further, as Verizon NW has explained, the S&P Industrials is the most appropriate proxy group. It is a large, well-known sample of publicly traded companies operating in competitive

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84/ *Order* ¶¶ 69-70.

85/ *Order* ¶¶ 74-77.

86/ *Order* ¶ 74 (emphasis added).

87/ *See Order* ¶ 77, Table 2.

markets.[88] The fact that these companies face the risks of a competitive market makes them a much more suitable proxy than the Regional Bell Holding Companies ("RBHCs") and other telecommunications companies. The telecommunications industry is also undergoing radical restructuring, which makes use of a telecommunications-only proxy group inappropriate. As Dr. Vander Weide has explained, this restructuring has caused a high standard deviation of analysts' growth forecasts for telecommunications companies.[89] Verizon NW's proposed proxy group, which uses the second and third quartiles of the S&P Industrials, presents a much more stable group of companies that reflect the risks of operating in a competitive market. For these reasons, the Commission should reconsider its use of a telecommunications-only proxy group and should instead adopt Verizon NW's broader S&P Industrials proxy group in calculating the cost of equity.

The Commission also improperly adopts a seven percent growth rate in calculating the DCF cost of equity. The Commission provides little reasoning for this growth rate, stating only that it is supported by the growth rates of the (incorrectly adopted) proxy group of ten telecommunications companies.[90] The Commission also notes that Verizon NW's proposed growth rate assumes perpetual growth at rates much higher than other telecommunications companies and the economy as a whole.[91]

The Commission erred in failing to adopt Verizon NW's proposed growth rate. As Verizon NW has explained, the critical factor in estimating the cost of equity is what *investors*

88/ *See* Exh. No. 101T 47:9-14 (Vander Weide).

89/ *See* Exh. No. 106TC 42:4-16 (Vander Weide).

90/ *Order* ¶ 76.

91/ *Order* ¶ 74.

expect.[92] The I/B/E/S growth rates used by Dr. Vander Weide are widely used by institutional and other investors, making them appropriate for use in estimating the cost of equity.[93] The fact that those rates may exceed the growth rate of a particular industry or the economy as a whole is beside the point. Furthermore, the I/B/E/S growth rates proposed by Verizon NW reflect a much broader group of companies than the telecommunications companies used in the Commission's proxy group and therefore provide a much better estimate of the growth rates of companies operating in a competitive market. The I/B/E/S rates, as applied to the proxy group of the S&P Industrials, are therefore entirely appropriate for use in calculating the DCF cost of equity.

Finally, the Commission incorrectly failed to adopt a risk premium to allow Verizon NW a fair opportunity to earn its cost of capital and recover its costs. In rejecting Verizon NW's proposed risk premium, the Commission states that the competitive risks required by TELRIC are already fully accounted for in the other cost of capital inputs — capital structure, cost of debt, and cost of equity.[94] But as Verizon NW explained, the TELRIC standard imposes *additional* risks on Verizon NW, for which it should be compensated. While the Commission correctly uses the DCF model to calculate the cost of equity, the DCF model does not take account of the risks inherent in giving CLECs the option of canceling their leases. And while the Commission notes that many companies face the risk that their customers will back out of or default on agreements,[95] the risk Verizon NW faces is quite different. Under TELRIC, Verizon NW is required to *facilitate* the movement of customers off of its network by leasing its network to its competitors pursuant to agreements that the CLECs can cancel at any time. Such operating

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92/ *See* Exh. No. 106TC 66:15 - 68:3 (Vander Weide).

93/ *See id.* 66:10-14 (Vander Weide).

94/ *Order* ¶ 83.

95/ *Id.* ¶ 84.

leases are recognized as significantly more risky than regular, non-cancelable leases, and Verizon NW proposed a widely-accepted method for accounting for this risk.[96/]

The Commission also fails to recognize the unique risks imposed by the TELRIC regime.[97/] As Verizon NW has explained, these include the facts that (1) UNE rates are generally reset to reflect the lower cost of new technology before the incumbent LEC's assets are fully depreciated; and (2) UNE rates are based on the unrealistic assumption that the incumbent serves the entire demand for telecommunications service, even though competitors serve a significant and increasing share of the market.[98/] These risks are accounted for in Verizon NW's risk premium and are not elsewhere accounted for in the DCF cost of equity calculation or in other TELRIC inputs. The Commission should therefore adopt Verizon NW's proposed risk premium.

III. THE COMMISSION'S DEPRECIATION FINDINGS VIOLATE TELRIC PRINCIPLES AND ARE BASED ON AN INCORRECT INTERPRETATION OF THE FCC'S *TRIENNIAL REVIEW ORDER*.

The Commission's decision to calculate UNE rates for Verizon NW using the same depreciation lives it established to set retail rates violates the Act and TELRIC. The Commission originally adopted those lives pursuant to a rate-of-return methodology to set retail rates that would allow Verizon NW to recover its historical costs (i.e., the costs of its embedded assets).[99/]

96/ *See* Exh. No. 101T 41:4-17 (Vander Weide).

97/ The FCC has stated that the regulatory risk of the TELRIC standard should be considered in estimating the cost of capital. *See* Reply Brief for Petitioners United States and FCC, *Verizon Communications, Inc. et al. v. FCC et al.*, 535 U.S. 467 (2002), *available at* 2001 WL 881216, at *12 n.8 (". . . an appropriate cost of capital determination takes into account not only existing competitive risks . . . but also risks associated with the regulatory regime to which a firm is subject.").

98/ *See* Exh. No. 206TC 26:1-12 (Vander Weide).

99/ *See* Verizon NW Opening Br. at 28 (citing Exh. No. 151T 5:19-6:7 (Flesch)). The Commission's pending review of those lives in its retail rate proceeding is premised on the same type of analysis. Therefore, any rates adopted in that case would also be inapplicable to TELRIC calculations.

But the 1996 Act expressly *prohibits* the use of that methodology to determine UNE rates, providing that UNE rates must be "determined *without* reference to a rate-of-return . . . proceeding."[100/] As the Supreme Court has emphasized, this "important limitation" on the states represents "an *explicit disavowal* of the familiar public-utility model of rate regulation . . . presumably still being applied by many States for retail sales."[101/] The Commission's disregard of this binding authority (and its reliance instead on a Commission decision that predated the Supreme Court's decision by four years[102/]) is plainly arbitrary and capricious, and could not withstand judicial scrutiny.

The Commission's decision to adopt depreciation lives designed to recover the costs of Verizon NW's embedded assets is also inconsistent with other portions of its decision, in which it emphasized the irrelevance of the historical network for determining UNE rates. For example, in evaluating Verizon NW's proposed cost model, VzCost, the Commission emphasized the importance of assuming the construction of "an efficient network using state-of-the-art technology,"[103/] and (erroneously) criticized VzCost on the ground that some of its inputs "reflect[] technology and standards that are not the most efficient in terms of today's network construction procedures and demand levels state-of-the-art."[104/] This critique is flatly inconsistent with the Commission's decision to then adopt depreciation lives that do *not* reflect

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100/ *See* 47 U.S.C. § 252(d)(1)(A)(i) (emphasis added).

101/ *Verizon Communications Inc. v. FCC*, 535 U.S. 467, 489, 493 (2002) (emphasis added).

102/ *See Order* ¶ 95 (stating that there is no basis "for reversing our prior finding that regulatory depreciation rates are a reasonable input for a forward-looking cost study") (citing 1998 8th Supp. Order ¶¶ 215-17).

103/ *Id.* ¶ 221 (citation omitted).

104/ *Id.*; *see also id.* ¶ 221 n.176 ("VzCost uses facility locations that were once optimal in the eyes of its engineers, but are likely sub-standard today.").

the most efficient and state-of-the-art technology, but which instead are designed to recover Verizon NW's historical costs.

The only depreciation lives presented in this proceeding that satisfy the Supreme Court's and the Act's directive (and thus comply with TELRIC) are the financial lives proposed by Verizon NW, which comply with Generally Accepted Accounting Principles ("GAAP"). The FCC has stated that depreciation should provide a sound and realistic estimate of the forward-looking "anticipated economic lives of assets" — that is, the expected time period, going forward, during which the assets can be expected to produce economic benefit.[105/] As the record here demonstrates, GAAP lives do precisely that, taking into account those factors that shorten the useful lives of the telecommunications assets subject to unbundling requirements — primarily, the pace of competition and technological advancement.[106/] Verizon NW's proposed lives are therefore inherently forward-looking, and inherently reliable.[107/] If anything, those GAAP lives are not forward-looking enough, since they are based only on current and expected near-term competition and thus do not fully account for all of the risks inherent in a view of TELRIC that assumes full competition and the construction of a new network every three to five years.[108/]

Contrary to the Commission's understanding,[109/] the FCC did *not* reject the use of financial lives to set UNE rates in its *Triennial Review Order*; rather, the FCC declined to require the use of *any* particular set of lives in light of the record before it, concluding that it could not

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105/ *TELRIC NPRM* ¶ 99.

106/ *See* Verizon NW Opening Br. at 25.

107/ *See id.*

108/ Exh. No. 151T 7:21-8:8 (Flesch).

109/ *See Order* ¶ 96.

"conclude *on this record* that one set of lives or the other more closely reflects the actual useful life of an asset that would be anticipated in a competitive market."[110/] Accordingly, the FCC preserved states' discretion to adopt the depreciation lives that most closely comply with TELRIC.[111/] As Verizon NW has demonstrated here, its GAAP lives are unquestionably more forward-looking that the lives established in the retail rate proceedings.

Finally, that the FCC (and its Wireline Competition Bureau in the Virginia arbitration) elected not to adopt financial lives based on *different* evidentiary records and proposals made in *different* proceedings is of no consequence, as the Commission's own Staff has conceded.[112/] In fact, the clear trend following those federal rulings has been to adopt GAAP lives,[113/] a course that one state commission has described as "a more progressive view of depreciation."[114/]

Accordingly, the Commission should reverse its decision to set UNE rates for Verizon NW using regulatory accounting lives that it developed for retail ratemaking purposes, and instead adopt the depreciation lives proposed by Verizon NW.

IV. THE COMMISSION ERRED BY NOT APPLYING A FLC FACTOR TO HM 5.3.

Although the Commission correctly adopts Verizon NW's proposed Forward-Looking Calibration ("FLC") factor approach, it (perhaps inadvertently) failed to apply the same FLC factor to HM 5.3. There is no reason to apply a FLC factor to one model, but not the other. In

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110/ *Triennial Review Order* ¶ 688.

111/ *See id.*; *see also* Exh. No. 151T 9:15-10:2 (Flesch).

112/ *See* Staff Br. at 4-5 & n.9 (noting that the Wireline Competition Bureau's ruling in the Virginia arbitration is of limited utility in light of its application of baseball arbitration rules to different proposals premised on a different record).

113/ *See* Verizon NW Br. at 26-27 (citing FCC and state decisions adopting GAAP lives).

114/ Order, *Commission Investigation and Generic Proceeding of Rates and Unbundled Network Elements and Collocation for Indiana Bell Telephone Company, Inc. d/b/a SBC Indiana Pursuant to the Telecommunications Act of 1996 and Related Indiana Statutes*, Cause No. 42393, at 60 (Ind. Util. Reg. Comm'n Jan. 5, 2004).

fact, HM 5.3 applies current cost to book cost ("CC/BC") ratios, which produces the *opposite* result of a FLC factor and significantly understates costs. The Commission should therefore make it clear that the same FLC factor ordered with respect to Verizon NW's model be applied to HM 5.3 (rather than CC/BC ratios).

In approving Verizon NW's application of a FLC factor, the Commission found that "since the [Annual Cost Factors] ("ACFs") are calculated based on booked investments that are generally greater than TELRIC cost estimates, applying the booked ACF to the lower TELRIC estimate will cause an artificial reduction in expense estimates."[115/] Booked investments are generally greater because the TELRIC model assumes that the same equipment and plant will be less expensive in the future. The Commission's decision recognized that the same equipment will not have less maintenance expenses associated with it simply because it costs less: "There is no reason to assume that it would cost half as much to maintain a switch just because the vendor reduced the purchase price by 50%."[116/]

The Commission properly found that the solution to this artificial reduction in expenses is to use the FLC to adjust for the mismatch between the book investment in the ACFs and the lower TELRIC investment, and "put[] the booked investment [in the ACFs] on the same terms as the forward-looking investment."[117/] The FLC "essentially inflates the ACF by the ratio of

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115/ *Order* ¶ 116.

116/ *Id.*

117/ *Order* ¶ 118.

booked-to-TELRIC investment."[118/] The Commission accordingly adopted a FLC factor, although it adjusted Verizon NW's proposal by increasing the FLC from .85 to .90.[119/]

The Commission should apply the same FLC factor to HM 5.3's ACFs, which similarly start with book investments. Just like in Verizon NW's studies, when the HM 5.3 ACFs are applied to TELRIC investment, the TELRIC investment produce artificially lower expenses, thus understating costs. It is therefore entirely improper to apply a FLC to the VzCost ACFs, but not to the HM 5.3 ACFs.

Even worse, instead of ordering that the FLC be applied to the book investment in the HM 5.3 ACFs, the Commission implicitly allowed the application of CC/BC ratios in developing those ACFs. These CC/BC ratios are generally greater than one, and since they are multiplied by the book investment in the denominators of the ACFs, usually *reduce* even further the value of the ACFs and the expenses produced by the model. This only exacerbates the difference between the book investment in the ACFs and the TELRIC investment the Commission found so problematic in its discussion of Verizon NW's cost studies. Thus, applying a CC/BC therefore does not calibrate the ACFs so that they can be properly applied to the forward-looking investment used in the TELRIC studies, which is different from (and typically lower than)

118/ *Id.*

119/ The .90 FLC that the Commission ordered for the VzCost ACFs means that for every dollar of book investment, we assume that the TELRIC model has 90 cents of forward-looking investment. Verizon NW would normally recalculate the FLC in the compliance phase of the proceeding, because the Commission's inputs order changes the amount of TELRIC investment from what Verizon NW predicted in its model. However, the Commission ordered Verizon NW to not adjust the FLC "to reflect other changes discussed in this order." *Order* ¶ 120 n.108. Verizon NW disagrees with this decision. Verizon NW should be permitted to fully capture the effect of the reduced investments ordered elsewhere by the Commission. Disallowing such a re-run because of purported concerns about the FLC (which the Commission does not quantify) both overstates those concerns and overcompensates for them. The Commission should therefore reconsider its decision not to allow Verizon to re-run the FLC in its compliance filing.

current network investment.[120/] As the Massachusetts Department of Telecommunications and Energy ("DTE") found:

> When calculating the Expense-to-investment ratio ("E/I ratio"), there should be a consistency between the numerator and denominator in terms of the time period and network assumption . . . . [W]e agree with Verizon that as forward-looking expenses are used in the numerator, it is only logical to adjust the denominator (the current investments) by the FLC to make it forward-looking.[121/]

The Commission should similarly find that HM 5.3's CC/BC ratios are incorrect because they fail to align forward-looking investments with forward-looking expenses and therefore significantly understate costs.[122/]

The Commission should therefore apply the .90 FLC to HM 5.3 in the same manner that the Commission ordered it to be applied to the VzCost ACFs. Because of the way HM 5.3 operates, it would be difficult (if not impossible) to calculate precisely the actual forward-looking investment that correlates to the book investment in each ACF. However, given that HM 5.3 is purportedly based on TELRIC investments, the Commission's assumption, in its discussion of Verizon NW's FLC factor, that there will be 90 cents of forward-looking investment for every dollar of book investment should apply equally to HM 5.3. At a minimum,

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120/ Exh. No. 1001TC 12:12-15 (Lundquist).

121/ Order, *Investigation by the Department of Telecommunications and Energy on its Own Motion into the Appropriate Pricing, Based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided-Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts*, Docket No. D.T.E. 01-20, at 95 (Mass. Dep't of Telecomm. and Energy July 11, 2002).

122/ At most a CC/BC would be a half measure. If the Commission nonetheless continues to permit HM 5.3's CC/BC ratios, then another adjustment, akin to the FLC but slightly adjusted, would still be necessary to make the ACFs relevant for a TELRIC study. Such a FLC would have to account for the fact that after applying a CC/BC ratio the book investment is even higher and, consequently, the difference between the book investment and TELRIC investment is greater.

for the reasons discussed above, the Commission should order that the CC/BC ratios be removed and the .90 FLC be used when calculating the HM 5.3 ACFs.[123/]

V. THE COMMISSION SHOULD RECONSIDER A NUMBER OF ITS ORDERED LOOP INPUTS.

Verizon NW seeks reconsideration of only five of the Commission's loop inputs: (1) plant mix, (2) structure sharing, (3) placement costs, (4) material prices, and (5) cable sizing in light of copper feeder fill factors.[124/] As noted below, in each of these areas the *Order* fails to address extensive data or engineering evidence that is inconsistent with the inputs adopted in the *Order* — in some cases, data or evidence identified in the *Order*'s own summary of Verizon NW's position.

As noted below, a number of these inputs rely on those adopted six years ago by the FCC for purposes of universal service. As the *Order* itself recognizes,[125/] the FCC has strongly "discourage[d] states from using the[se] nationwide [universal service] inputs for the purpose of developing UNE prices."[126/] Yet the *Order* nevertheless seems to proceed from this baseline presumption to apply these FCC USF inputs in doing so — and to apply those inputs in the face of specific contrary evidence in *this* record about *this* carrier at *this* time. It may well be that the *Order* has adopted USF inputs because HM 5.3's inputs are not aligned with Verizon NW's costs. But that failure of HM 5.3 to adhere to FCC-established constraints, or to employ inputs based on real-world data, should not force the Commission to commit the same error.

123/ At a minimum, each HM 5.3 ACF should be multiplied by the CC/BC.

124/ The *Order* also fails to recognize that VzCost has the capacity to produce a more accurate line adjustment than the rough estimate imposed by the Commission in the *Order*.

125/ *See Order* ¶ 389.

126/ *TELRIC NPRM* ¶ 46.

A. The Commission's Plant Mix Assumptions are Flawed.

The Commission generally agreed with Verizon NW's plant mix calculations, which were based upon "actual underground plant in Washington"[127] at a very granular segment-by-segment level, and rejected AT&T's inputs, which were "based primarily on the cost-minimization principles that we rejected in our prior orders and [did] not adequately balance the engineering and social constraints Verizon would face."[128] However, the Commission adjusted Verizon NW's determination to adjust its existing plant mix in one respect — to convert aerial structure to underground structure on segments where there are currently more than three aerial cables.

Verizon NW seeks reconsideration of this adjustment. The *Order* acknowledges, but then fails to address, Verizon NW's engineering testimony that this "three-cable limit ensures that aerial cables do not sag below an 18-foot clearance space."[129] Just as the Commission recognized that a forward-looking cost model must incorporate other adjustments necessary to conform to applicable engineering constraints (e.g., the need to limit copper loop length in order to ensure the provision of advanced services),[130] Verizon NW demonstrated that this three-cable limit reflected current engineering practice with respect to safety considerations.[131] The need for this adjustment in the model is even more critical in light of the Commission's decision elsewhere in the *Order* to enlarge the maximum size (and hence the weight) that must be

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127/ *Order* ¶ 285.

128/ *Order* ¶ 286.

129/ *Order* ¶ 276 (citing testimony).

130/ *Order* ¶ 419.

131/ The same is true of the two-cable limit for buried cable. Exh. No. 201T 49:10-50:2 (Verizon Panel Direct).

assumed for copper cable.[132/] The *Order* also does not address Verizon NW's engineering testimony that underground structure has significant long-run operational advantages notwithstanding its initial expense, including better protection against the elements and ease of augmentation, replacement, and repair.[133/]

Verizon NW also seeks reconsideration of the Commission's approach to plant mix in HM 5.3. As noted above, the Commission concluded that HM 5.3 was incapable of accommodating Verizon NW's more appropriate "granular plant-mix data" that reflected the real-world limitations on placing structure.[134/] But here, as in other areas, the Commission then largely ignored that critical inadequacy, other than slightly discounting the weight to be accorded HM 5.3's cost estimates. As noted in Part I above, the appropriate remedy for this and other multiple flaws in HM 5.3 is to disregard the model entirely. But in any event, the Commission's stopgap remedy warrants reconsideration. The Commission permitted HM 5.3 to be rerun by loading in the Staff's proposed inputs for plant mix, which the *Order* claimed: (1) Verizon NW did not dispute, and (2) were "are generally consistent" with those of Verizon NW.[135/] Neither assertion was correct. Verizon NW *did* challenge Staff's proposed structure mix, as both outdated and much less granular.[136/] And there was no evidence that Staff's prior density zone inputs were consistent with the much more current (and much more granular) plant mix data

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132/ *Order* ¶ 416.

133/ Nor does the *Order* explain how the Commission made its adjustment to Verizon NW's underground structure mix. Its only citation (at footnote 219) is not to any source of data for "actual underground plant in Washington." *Order* ¶ 285. It is solely to Verizon NW's description of how it uses real world data, and to AT&T's description of its (rejected) alternative approach, which relied on unwarranted extrapolation from partial ARMIS data (concerning only aerial and buried plant).

134/ *Order* ¶ 286.

135/ *Id.*

136/ Verizon NW Reply Br. at 39 & n.135.

provided by Verizon NW here.[137/] Thus, HM 5.3's recognized flaw cannot be saved by reference to these data.

B. Verizon NW's Structure Sharing Inputs Should Be Adopted.

The *Order* rejects Verizon NW's substantial empirical data regarding its current structure sharing opportunities in Washington, largely because the Commission asserts that this evidence does not reflect "the maximum achievable rate of sharing in a fully competitive market."[138/] As the Commission has emphasized before, however, loop inputs should not be based purely on speculation, but rather on "validation," and preferably on "data" reflecting "the recent experience of efficient firms" in a competitive environment.[139/] And here the *Order* ignores such real-world data in favor of assumptions about structure sharing in a competitive environment that were based solely on speculation.

The *Order*'s structure sharing inputs are based on those used in the *Eighth Supplemental Order*. As the Commission itself notes, Verizon NW adduced evidence that the recommendations Staff persuaded the Commission to adopt in that prior order over six years ago "were not based on empirical data or studies of any kind."[140/] Indeed, when asked for such studies or other workpapers, the Staff admitted that it had none.[141/] Nor can these assumptions be validated by reference to the structure sharing proposals in the FCC's 1999 USF Order, as the *Order* suggests. That FCC order relied on the same Staff recommendations now conceded to be

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137/ *See* Exh. No. 1057 (Staff Revised Workpapers).

138/ *Order* ¶ 306.

139/ 1998 8th Supp. Order at 240.

140/ *Order* ¶ 291.

141/ Tr. 1100:4-17 (Spinks).

pure speculation.[142/] Moreover, the FCC stressed that its structure sharing inputs for universal service purposes would be "revisited" in future proceedings.[143/] The need to do so here is even more imperative now that the FCC has warned against "extrapolating" in UNE proceedings "from statements made in the context of universal service funding," particularly for structure sharing inputs.[144/]

Nor does the *Order* address how these concededly speculative Staff proposals can be squared with the numerous engineering constraints that make them entirely unrealistic for any telecommunications carrier, including one confronting significant competition. Thus, for example, Verizon NW demonstrated that it had not found it possible to engage in virtually any sharing of buried or underground structure in Washington. Mr. Richter also provided expert testimony that there would be insuperable hurdles to buried and underground sharing in a forward-looking network, even in middle- and high-density zones. As he explained, buried sharing is almost always impractical because the cable must be laid in the brief time that the trench is open, and it is virtually impossible for utilities with different budget cycles and priorities to lay cable at the same time.[145/] And the *Order* itself noted that Verizon NW introduced evidence that "AT&T itself recognized that for these reasons, its own opportunities for co-trenching are 'slim' since 'most [companies] extend fiber when customers order it.'"[146/] Underground sharing is similarly difficult because it would require companies to take safety

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142/ Tenth Report and Order, *Federal-State Joint Board on Universal Service,* 14 FCC Rcd 20156 ¶ 306 (1999) ("*Inputs Order*").

143/ *Inputs Order* ¶ 247.

144/ *TELRIC NPRM* ¶ 47.

145/ Exh. No. 451T 25:5-11 (Richter).

146/ *Order* ¶ 297 (citing Exh. No. 551TC 85:1-7 (Murphy)).

risks that have generally been considered unacceptable (e.g., having telephone company technicians operate near live power wires). It would also require all companies engaged in such sharing to widen conduits (or underground trenches for conduits) at considerable costs.[147] The Commission does not square its conclusions with any of these data.

Nor does the *Order* explain how the existence of new telephone entrants would allow Verizon NW to overcome these insuperable engineering constraints. And the evidence to the contrary was overwhelming. Verizon NW demonstrated that these constraints exist for a variety of reasons even in areas that are already quite competitive.[148] It also pointed out that, regardless of the state of competition in the telephone industry, power and other utilities could not be expected to replace all their cables in the ground simply to foster sharing with Verizon NW.[149] As the Florida Commission found, "assuming sharing percentages which require . . . power and cable companies to rebuild their networks" so that sharing can take place is to adopt an assumption "severed from reality."[150] Nor does a competitive telephone company environment assume, as the *Order* does, that existing legal constraints on pole attachment rates would somehow be repealed for CLECs, much less for cable operators not subject to TELRIC requirements.[151]

147/ Exh. No. 451T 29:7-31:11 (Richter).

148/ *Order* ¶¶ 288, 293-94, 296-97, 303.

149/ *See* Exh. No. 451T 26:12-17 (Richter).

150/ Final Order, *Investigation into Pricing of Unbundled Network Elements*, Docket No. 990649A-TP, Order No. PSC-02-1311-FOF-TP at 41-42 (Fla.P.S.C. 2002). The *Order* also appears to overlook the fact that the little buried sharing that does occur in new subdivisions cannot justify an increase in structure sharing inputs – because these situations are already accounted for by the *Order*'s adjustment to VzCost's input for developer-provided trenching. *Order* ¶ 329. Because these trench costs are entirely borne by developers, Verizon NW does not and cannot share them away to any other parties. Such developer-provided trenching is the only circumstance where buried sharing is generally feasible. Exh. No. 451T 25:9-16 (Richter).

151/ *See Order* ¶ 306.

In short, the Commission's decision to adopt Staff's structure sharing assumptions ignores Staff's admission now that these somewhat dated proposals were wholly speculative. Ultimately, the Commission's endorsement of those assumptions appears once again to proceed from the view that the FCC's USF inputs are presumptively valid, even though the FCC has now suggested exactly the converse. Verizon NW urges the Commission to reconsider that view, in light of the substantial record evidence that structure sharing is simply not a realistic alternative no matter what incentives may exist for it, and given the impropriety of assuming away all manner of legal and practical obstacles to sharing away structure costs in a competitive environment.

C. The Commission Improperly Reduced Verizon NW's Placement Costs.

The Commission discounted Verizon NW's actual placement cost data by 5 percent because these data allegedly did not reflect the hypothetical assumption of "rebuilding the entire network" at a single time.[152/] However, the FCC has made clear that commissions do not further the purposes of TELRIC by adhering to the unrealistic assumption that firms can "instantaneously replace all of their facilities with every improvement in technology."[153/] Far from sending correct economic signals about what a forward-looking network would cost to build, such an unrealistic assumption would set UNE rates based on economies of scale that could never be achieved. As Verizon NW made clear in its testimony, the placement contracts it has submitted reflect not only small jobs, but construction on a large scale as well.[154/]

152/ *Order* ¶ 319.

153/ *TELRIC NPRM* ¶ 50; *see also* Exh. No. 1T 4:13-5:13 (Shelanski).

154/ Tr. 1273:16-21 (Richter).

Verizon NW seeks reconsideration, not only of this 5 percent reduction, but also of the Commission's failure to use Verizon NW's actual placement costs as an input to HM 5.3. Here again, the Commission properly rejected AT&T's use of Mr. Fassett's wholly unsubstantiated assumptions regarding placement inputs, but then ordered HM 5.3 to be rerun basing these inputs on those used in the FCC's 1999 USF Order (updated using the Turner Price Index ("TPI")). As noted above, the FCC has cautioned against this approach. If the Commission does not completely reject HM 5.3 in light of all of the flaws identified in Part I of this petition, it should in any event populate it with Verizon NW's actual placement costs, not placement rates based on the FCC's non-carrier specific universal service order. That would be particularly inappropriate here, where parties had no notice of such a proposal or opportunity to address the problems associated with importing the FCC's USF placement rates.

D. The Commission Should Use Actual, Current Data to Determine Material Costs.

For material prices, the *Order* again relied on the FCC's 1999 USF Order, rather than the current and carrier-specific pricing information provided by Verizon NW in this proceeding. And it did so even though the Commission recognized that "AT&T did not challenge the cost data extracted from the Verizon contracts."[155/]

The Commission stressed that "the FCC's USF inputs were derived from actual contracts."[156/] But it did not explain why "actual contracts" applicable to *this carrier,* at the time of the later cost studies *in this case*, are not more appropriate. The *Order* again seems instead to begin from the premise that USF inputs are presumptively valid unless proven otherwise, when as noted above the FCC's own premise is exactly the opposite. Indeed, the contracts referenced

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155/ *Order* ¶ 341.

156/ *Order* ¶ 341.

in the 1999 USF Order all pre-date that order and may not reflect current telecommunications technology.[157] More importantly, because no party proposed these USF inputs for material prices in this proceeding, Verizon NW was afforded no opportunity to address them in reply or rebuttal testimony.

E. The Commission's Cable Size and Copper Feeder Fill Findings Are Unsupported.

The *Order* gives two reasons for enlarging Verizon NW's cable sizes. First, it says that such an adjustment in size is needed to increase Verizon NW's feeder fill.[158] It finds that although Verizon NW's feeder sizing factor is smaller than AT&T's proposed feeder sizing factor, its feeder fill (51.93 percent) appears to be substantially lower than AT&T's proposed fill of 76.5 percent.[159] However, the comparison that the *Order* uses as a basis for this reasoning is the wrong one. The 51.93 percent figure represents a head-of-route or mainframe fill. This fill also includes copper distribution that is fed directly from the mainframe. Since distribution typically has a lower fill than feeder, its presence makes the mainframe fill lower than fill for feeder cable. A more accurate comparison to HM 5.3's 76.5 percent fill is the average segment fill for copper feeder in VzCost, which is 73.19 percent.[160] Thus, Verizon NW's feeder fill is actually similar to that in HM 5.3. Indeed, far from increasing feeder fill, as the Commission

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[157] Use of the TPI in the *Order* does not remedy this inadequacy. Although the absence of any prior proposal to use this index in this case means that there has been no opportunity to provide testimony on its flaws, the index will obviously not take account of specific changes in technologies (such as DLC systems or SAI architectures).

[158] *Order* ¶ 365.

[159] *Id.* ¶¶ 362-65.

[160] *See* Ex. 217 ("Document Set 2 (CD No. 2)" corrected May 25, 2004), at Section #4, Loop Cost Study Detail Reports — Statistics Fills, Subsection 4, Loop Statistics, Fill by Density Cell. Rpt (page 52 of pdf).

intends,[161] increasing the maximum size of copper cable would make the average segment fill lower because there is more cable for the same amount of capacity.

Second, the *Order* claims that the maximum copper cable sizes used by Verizon NW are inconsistent with those used in the industry (and again cites the FCC's USF Order as evidence). As noted above, relying on that order is inappropriate for establishing UNE rates — and particularly in this case. The USF Order merely showed what cable sizes were *available* for use; it did not address what maximum sizes would be appropriate in a forward-looking UNE model.[162] Moreover, there is a fundamental due process problem with using for the first time in the *Order* the engineering assumptions about maximum cable size in the FCC's prior USF Order. No party had notice of the nature of this issue, and therefore the record contains no evidence on it, much less any opportunity to rebut the assumption imposed for the first time in the *Order*. Indeed, the parties' briefs devoted to the issue of "cable sizes" both addressed their cable sizing assumptions based on demand, not maximum cable sizes.[163] Imposing maximum cable sizes based on an interpretation of USF data that no party had an opportunity to address would be fundamentally unfair.

F. The Commission Errs in Assuming that VzCost Cannot Perform a Line Adjustment to Entry of New Competitors

The *Order* finds that a 5 percent line reduction adjustment is appropriate because given an assumed increase in competition, "hypothetical rivals will serve a portion of the market currently served by the incumbent."[164] Verizon NW does not challenge this finding, but

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161 *Order* ¶ 365.

162 *Inputs Order*, Appendix A

163 AT&T Opening Br. at 60; Verizon NW Opening Br. at 103-04.

164 *Order* ¶ 312.

believes the Commission is in error when it concludes that "implementing this reduction in VzCost [is] too difficult to accomplish."[165/] This adjustment can be easily accomplished by performing new BC Runs with adjusted demand reflecting the 5 percent line reduction. This would directly implement the Commission's requirement of "spread[ing] the cost of current demand over fewer lines."[166/] There is no reason that Verizon NW cannot do this as part of its compliance run. The *Order* should therefore be modified to permit Verizon NW to incorporate this adjustment instead of simply making a rough estimate of a 3.1 percent increase, as the *Order* currently requires.

VI. THE COMMISSION MADE A NUMBER OF ERRORS IN DETERMINING SWITCHING COSTS.

Although the FCC's recent *Triennial Review Remand Order* has eliminated the requirement that Verizon NW provide unbundled switching,[167/] the Commission must accurately determine switching rates in this proceeding because Verizon NW's proposed reciprocal compensation rates are based on cost studies underlying those rates. Therefore, if key switching rate determinations are incorrect, the reciprocal compensation rates could be as well.

The Commission's decisions with regard to switching rates are mixed. Although some decisions were correct, such as its decision to retain the current switching rate structure, other decisions violate applicable law and appear to be based on a misunderstanding of how Verizon NW's switching model works. The Commission must reverse these incorrect decisions in order

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165/ *Id.*

166/ *Id.*

167/ Order on Remand, *Unbundled Access to Network Elements, Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, WC Docket No. 04-313, CC Docket No. 01-338, FCC 04-290 ¶ 199 (rel. Feb. 4, 2005).

to arrive at switching (and reciprocal compensation) rates that accurately reflect Verizon NW's forward-looking costs of providing switching in Washington.

A. The Commission Erred in Rejecting the SCIS Model.

The Commission seriously erred in rejecting Verizon NW's proposed SCIS model. The SCIS model, unlike HM 5.3, allows the user to input highly-detailed cost criteria to estimate switching costs as accurately as possible. These criteria include, but are not limited to, the central office size, the technology mix of both switch type and DLC interface, a specific switch discount, and utilization rates. HM 5.3, on the other hand, simply calculates a generic cost per line, based on outdated depreciation data that simply do not account for the numerous variables that affect switching costs.[168/]

The Commission's decision to adopt HM 5.3's switching investment per-line inputs, which are based the FCC's 1999 USF Order inputs and reflect the costs of switches installed between 1989 and 1996, does not comport with TELRIC for a number of reasons. For example, putting aside the fact that HM 5.3's inputs erroneously reflect all new switch purchases, which is discussed below, the Commission erroneously believed that it was updating HM 5.3's outdated switch prices by applying the TPI.[169/] However, the TPI does not account for technological changes — a factor that is particularly important here given the enormous change in switching technology that has occurred in the last 15 years. Thus, there is no credible basis for relying on the TPIs to update stale switch prices, particularly when the Commission has available to it current and forward-looking switch prices provided by Verizon NW. Indeed, nowhere does the

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168/ HM 5.3 also ignores the impact IDLC/UDLC assumptions have on switching costs. These cost drivers are only addressed in Verizon NW's SCIS and COSTMOD models.

169/ *Order* ¶ 463.

Commission explain why data from 1989 through 1996, adjusted by the TPI, is more reliable and accurate than Verizon NW's actual switching data.

Moreover, applying the TPI to outdated switching prices creates other problems. The price index has declined since 1999. Thus, the switching investments used in HM 5.3 are lower, while expenses remain the same. This causes a significant mismatch between the investment levels produced by HM 5.3 and those used to develop HM 5.3's expense-to-investment factor. As a result, the expenses associated with digital switching would be even a smaller fraction of what Verizon NW currently spends to maintain its digital switches in Washington — clearly, an untenable result that is flatly inconsistent with TELRIC principles, as the Commission recognized in its decision on Verizon NW's FLC factor.[170/]

The Commission provided two reasons for rejecting Verizon NW's SCIS model. First, the Commission noted that Verizon NW did not provide the source code for the SCIS model until approximately one week before the hearings.[171/] But that is not a valid reason to reject Verizon NW's switching model and to base switching costs entirely on HM 5.3. AT&T clearly had plenty of time before the hearing to review the source code and prepare cross examination, particularly given that Catherine Pitts, an AT&T switching witness in other proceedings, was a developer of SCIS and is therefore presumably familiar with it.[172/] The reason AT&T made no effort to examine the SCIS code in preparation for the hearings or in its post-hearing brief, which was filed approximately seven weeks after the source code was provided, is obvious: there is nothing in the SCIS source code that undermines Verizon NW's proposed switching costs.

170/ Verizon addresses additional problems with the Commission's adoption of HM 5.31 above. *See supra* section I.

171/ *Order* ¶ 462.

172/ *See* Verizon Reply Br. at 32.

Indeed, in the pending Verizon California proceeding, where Verizon provided the SCIS source code to AT&T prior to rebuttal testimony, Ms. Pitts did *nothing* with the source code and admitted in a discovery response that she had not even analyzed it.

The fact that Verizon NW produced the SCIS source code one week prior to the hearing is nothing but a red herring and provides no credible reason for rejecting Verizon NW's SCIS model. The Commission's decision to do so, while at the same time using HM 5.3 to produce loops costs, even though AT&T *refused* to produce data that the Commission acknowledged was critical in evaluating AT&T's proposed cost model, was clearly arbitrary and capricious, and should be reversed.

Second, the Commission stated that it was rejecting the SCIS model because it believed that SCIS is unable to determine or change Verizon NW's assumed mix of new and growth switch purchases. The Commission is mistaken, and its reliance on testimony from Verizon NW's witness is misplaced. According to the Commission, "Verizon's witness asserted that he could not differentiate between the study's new and growth investments, because the study did not distinguish prices for Verizon's purchases in that regard."[173/] But at this point in the hearings Mr. Mazziotti was merely discussing whether, with respect to a particular page of Verizon NW's switching cost study referenced by counsel for AT&T, he could determine what specific part of the switch was listed and whether it was purchased at the new or growth switch discount.[174/] Mr. Mazziotti could not; the page referenced was simply a list of serial numbers for, as Mr. Mazziotti said, various switch parts such as circuit packs, fuses and, frames, and their corresponding

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173/ *Order* ¶ 462 (citing Tr. 964).

174/ Tr. 964.

prices.[175] However, just prior to this exchange, Mr. Mazziotti clearly testified that the discount information could be found at pages 95-96 of Verizon NW's cost study.[176]

Verizon NW also provided extensive information throughout the proceeding regarding the switch purchases and discount levels that it assumed in its switching cost study. For example, Verizon NW's testimony described in detail the procedure by which it determined the discounts to use in its cost studies.[177] In discovery, Verizon NW provided contracts and detailed pricing information regarding the purchases that were used in its cost studies.

In short, contrary to the Commission's belief, Verizon NW's SCIS model can be easily adjusted to reflect a particular mix of new and growth switch purchases; HM 5.3 clearly cannot. Nevertheless, although Verizon NW has fully supported its proposed mix, the Commission can simply order a different mix if it so chooses. Many state commissions, including the FCC's Wireline Competition Bureau standing in for the Virginia Commission, have taken precisely this approach. Adjusting the discount in Verizon NW's model, if the Commission deems it necessary, is certainly a better option than adopting the flawed and seriously outdated HM 5.3.

B. The Commission's All New Switch Discount Violates Applicable Law.

Contrary to applicable law, the Commission, by adopting HM 5.3, assumed that all switches would be purchased at the extraordinary high new switch discount. As Drs. Shelanski and Tardiff have explained, this conflicts with TELRIC and with the discounts that Verizon NW could ever actually achieve. Vendors only offer the high new switch discounts because they

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175/ *Id.*

176/ *See* Tr. 961:13-62:24.

177/ *See* Exh. No. 201TC 85:5-87:16 (Verizon Panel Direct).

expect carriers to purchase a much larger percentage of growth additions, which are priced relatively higher.[178/]

The FCC and the D.C. Circuit have agreed with this logic.[179/] Indeed, the FCC argued to the United States Supreme Court that "TELRIC . . . does *not* assume that an efficient carrier would provide the switching element with [all new] large-capacity switches, rather than with a mix of smaller switches and so-called 'add-on modules.'"[180/] Moreover, in the recent TELRIC NPRM, the FCC stated that it "recognized that certain vendors provide a greater discount for new switches and a smaller discount for growth additions, and that the large initial discount is available only when an overall purchase of both new and growth equipment is planned."[181/] The FCC therefore unambiguously concluded that assuming that all switches are purchased at the new switch discount, as HM 5.3 unquestionably does, does not comport with TELRIC principles: "[We have] rejected an assumption that the appropriate switching discount for TELRIC pricing purposes must be based on a purchase of 100 percent new switches."[182/]

178/ *See* Exh. No. 1T 13:16-14:12 (Shelanski); Exh. No. 501T 84:16-20 (Tardiff).

179/ *See AT&T Corp. v. FCC*, 220 F.3d 607, 618 (D.C. Cir. 2000) (noting that "growth additions to existing switches cost more than new switches *only because* vendors offer substantial new switch discounts in order to make telephone companies dependent on the vendors' technology to update the switches").

180/ Reply Brief for Petitioners United States and FCC, *Verizon Communications, Inc. v. FCC*, 535 U.S. 467 (2002), *available at* 2001 WL 881216, at *9 n.7 (emphasis added).

181/ *TELRIC NPRM* ¶ 77.

182/ *Id.* (citing *Verizon New Jersey 271 Order* ¶ 43). The FCC articulated this point in numerous section 271 decisions as well. *See* Memorandum Opinion and Order, *Joint Application by BellSouth Corporation, In the Matter of BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in Alabama, Kentucky, Mississippi, North Carolina, and South Carolina*, 17 FCC Rcd 17595 ¶ 83 (2002); Memorandum Opinion and Order, *Joint Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a/ Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Kansas and Oklahoma*, 16 FCC Rcd 6237 ¶ 77 (2001) (rejecting CLECs' claim that SBC should have reflected significant discounts associated with new switches). Other state commissions have recognized the FCC's instruction on this issue. *See* Phase 4 Order, *Before the Massachusetts Department of Telecommunications and Energy*, 1996 WL 773716, (Dec. 4, 1996) at *19; Recommended Decision, *Before the New York Public Service Commission*, Case 98-C-1357, (May 16, 2001) at pp. 136-37.

Despite this clear precedent, the Commission adopted HM 5.3 in part *because* it assumes all new switches: "[W]e find that AT&T's switch investment estimates are more in line with TELRIC network building assumptions because [they] . . . assume the installation of all new switches."[183/] Thus, in order to comply with TELRIC, the Commission must account in some way for the growth purchases that every carrier makes to incrementally expand and upgrade its network. Verizon NW's proposed mix of new and growth switch purchases does precisely that, by calculating the discounts Verizon NW reasonably expects to receive going forward. The Commission should therefore adopt Verizon NW's approach.

If, however, the Commission does not agree with Verizon NW's particular mix of growth and new purchases, it should order a different mix. But under no circumstances should it continue to apply an all new switch discount in determining switching costs.

C. Verizon NW Is Entitled to Recover the Costs of Providing Vertical Features.

The Commission should also reconsider its decision to deny Verizon NW *any* cost recovery for vertical features. As Verizon NW explained, certain features such as three-port conference circuit require specific, additional hardware.[184/] In compliance with the *Eighth Supplemental Order*, Verizon NW therefore proposed separate rates only for those features that require this additional hardware.[185/] Verizon NW fully explained and documented why it is required to purchase additional hardware for these features, and explained that these costs are not

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183/ *Order* ¶ 463.

184/ Exh. No. 201TC 70:13-18; 96:8-13 (Verizon Panel Direct).

185/ Exh. No. 201TC 70:13-18 (Verizon Panel Direct); Verizon Reply Br. at 55.

otherwise included in its switching cost studies.[186] The *Order*, however, incorrectly finds that Verizon NW failed to adequately support its proposed prices for vertical features.[187]

If the Commission is not satisfied with the way Verizon NW has supported its proposed costs for vertical features, it could order revised inputs. The Commission should not, however, deny Verizon NW *any* cost recovery. Verizon NW clearly incurs *some* costs providing these features, even if the Commission disagrees with the amount Verizon NW has requested. Indeed, the Massachusetts DTE adopted this very approach, first finding that Verizon had failed to document the costs for vertical features, but then finding that Verizon is entitled to some cost recovery, which it determined by evaluating in detail the documentation provided by Verizon and reducing Verizon's proposed costs by the amount it deemed appropriate.[188]

D. The Commission's Switching Fill Factor Understates Costs.

Finally, the Commission erred in ordering only a 92 percent fill factor for switching.[189] The Commission arrived at this figure by considering the 94 percent administrative fill factor for switch ports in AT&T's proposed HM model and the 92 percent factor previously adopted by the Commission for switching.[190] This fill factor, however, allows for only administrative fill,

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186 *See id.*; Exh. No. 228TC 88:14-19 and CD No. 2 of 5.

187 *Order* ¶ 469.

188 *See* Order on Motions by Verizon Massachusetts, AT&T Communications of New England, Inc., and CLEC Coalition for Partial Reconsideration and Clarification and on Motions by WorldCom, Inc, and Z-Tel Communications for Partial Reconsideration, *Investigation by the Department of Telecommunications and Energy on its own Motion into the Appropriate Pricing, based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts*, D.T.E. 01-20-Part A-A at 50-52 (Mass. D.T.E., Jan.14, 2003).

189 *Order* ¶ 385.

190 *Id.*

which represents the total assignable lines after spare capacity needed to accommodate customer churn and maintenance requirements, among other things, has been accounted for.

Verizon NW's studies, however, have an additional utilization factor of 74 percent for switching, which was not addressed in the *Order* and is not incorporated in to HM 5.3. A utilization factor represents the portion of total assignable lines (i.e., total lines minus administrative spare) that are *working* lines. It is well established that actual service demand in a network is less than the total number of lines available for service.[191/]

The Commission therefore appears to have failed to consider that administrative fill and *utilization* are two different things. The Commission must account for these additional costs by adopting Verizon NW's proposed utilization factor.

E. Issues Requiring Clarification

Verizon NW also seeks clarification for a few switching issues. *First*, the Commission agreed with Verizon NW that it is entitled to recover costs for umbilicals and SS7 call set-up through local switching rates, and that SS7 costs are properly recovered through usage rates.[192/] The *Order*, however, provides no explanation on how this is to be accomplished because HM 5.3 does not include costs for umbilicals and SS7. The Commission should therefore clarify that the SS7 and umbilical costs from Verizon NW's studies are to be used to determine switching costs.

Second, as the *Order* currently stands, it rejects Verizon NW's switching model but gives its VzCost model 60 percent weight in determining loop costs. The loop-related costs for Main Distribution Frames (or MDFs) costs are a separate study that was submitted with Verizon's switching studies. If the Commission continues to reject Verizon NW's switching model in light

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191/ Indeed, the *Order* discussed the need for realistic utilization rates and established them for many loop inputs, including copper feeder and DLC equipment. *See Order* ¶¶ 362-368; 381-82.

192/ *See Order* ¶¶ 473-74.

of Verizon's Petition for Reconsideration, Verizon NW requests that the Commission clarify whether Verizon NW is nonetheless permitted to use these MDF costs in calculating loop costs (as it did in its cost study). This could be easily accomplished by segregating out the MDF studies and incorporating them into VzCost. Alternatively, Verizon NW requests that the Commission clarify what MDF costs it should use if it is not permitted to do so.

Third, the *Order* adopts Verizon NW's approach to the cost standard for reciprocal compensation rates, determining that "the Act allows the price of call termination to be lower than the cost of ordinary switching."[193/] In addition, the *Order* adopts Verizon NW's proposed split of traffic sensitive and non-traffic sensitive switch resources.[194/] These decisions would allow Verizon NW to calculate reciprocal compensation rates using SCIS. However, using HM 5.3, the actual calculation of reciprocal compensation rates is left unclear, and the *Order*'s appendix does not contain reciprocal compensation rate inputs. Verizon NW therefore requests clarification on how the Commission's decision on the reciprocal compensation cost standard should be implemented and how reciprocal compensation rates should be calculated.

Finally, the *Order* makes an adjustment to loop demand levels which, if it is retained, should also apply to switching costs.[195/] Although Verizon NW discusses this adjustment in further detail above at section V.F of this Petition, it also requests that any demand adjustment be made to both the loop and switching studies to ensure consistency.

193/ *Order* ¶ 528.

194/ *Order*, Appendix A.

195/ *See Order* ¶ 312.

CONCLUSION

For the foregoing reasons, Verizon NW's Motion for Clarification and Petition for Reconsideration of the Commission's *Order* should be granted, as set forth herein.

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