[Service Date June 10, 2005]

BEFORE THE WASHINGTON STATE
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 (Recurring Costs)	)	DOCKET NO. UT-023003
	)	TWENTY-SEVENTH SUPPLEMENTAL ORDER DENYING PETITIONS FOR RECONSIDERATION AND GRANTING REQUESTS FOR CLARIFICATION OF THE 24TH SUPPLEMENTAL ORDER
. . . . .	)	

Synopsis: *The Commission denies Verizon's and XO/Pac-West's petitions for reconsideration and grants Verizon's petition for clarification of the 24th Supplemental Order.*

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I. INTRODUCTION

1 **PROCEEDING**. Docket No. UT-023003 is a proceeding to review recurring costs[1] and rates for unbundled network element (UNE) loops, switches, transport, and termination, and to review the deaveraged zone rate structure for loops.

2 **APPEARANCES.** Verizon Northwest Inc. (Verizon), by Catherine Ronis, attorney, Washington, D.C.; Qwest Corporation (Qwest) by Lisa Anderl, attorney, Seattle, Washington; AT&T of the Pacific Northwest, Inc. (AT&T),[2] Pac-West Telecomm, Inc. (Pac-West), and XO Washington, Inc. (XO), by Gregory J. Kopta, attorney, Seattle, Washington; MCI/WorldCom (MCI) by Michel Singer-Nelson, attorney, Denver, Colorado; Covad Communications Company (Covad), by Karen Frame, attorney, Denver, Colorado; WeBTEC, by Arthur Butler, attorney, Seattle, Washington; Eschelon Telecom, Inc. (Eschelon), by Dennis Ahlers, Minneapolis, Minnesota; and Commission Staff, by Shannon Smith, Assistant Attorney General.

3 **COMMISSION.** In this Order, the Commission considers all the requests for reconsideration filed by Verizon and XO/Pac-West and finds that none of the requests necessitates a change in the findings and conclusions made in the 24th Supplemental Order. The Commission further considers Verizon's requests for

[1] To assist the reader, we have included as Appendix A to this Order a glossary of terms and acronyms.

[2] AT&T presented witnesses in this proceeding, cross-examined Verizon and Staff witnesses, and filed post-hearing briefs. However, in a letter to the Commission dated December 22, 2004, AT&T advised the Commission that it would be unable to provide answers to post-briefing Commission bench requests because it "would require AT&T to expend significant resources – resources that AT&T does not have."

clarification of the 24th Supplemental Order and provides the requested clarifications.

4 **BACKGROUND.** The Commission initiated this proceeding on February 12, 2002, to address issues arising out of the previous generic cost proceeding, Docket No. UT-003013.[3] The basic purpose of these cost proceedings is to establish recurring (annual or monthly) rates and non-recurring rates that an incumbent local exchange carrier (ILEC) such as Verizon, may charge its competitors for access to Verizon's telephone network. In this proceeding, the Commission addresses only Verizon's recurring charges. For purposes of determining these charges, Verizon's network is broken down into discrete elements called unbundled network elements (UNEs), and a charge is established for each UNE.

5 The Commission conducted evidentiary hearings before Chairwoman Marilyn Showalter, Commissioner Richard Hemstad, Commissioner Patrick J. Oshie, and Administrative Law Judge Theodora Mace from May 26 to June 4, 2004. The parties filed initial briefs on July 15, 2004, and reply briefs on August 12, 2004.

6 On February 9, 2005, the Commission entered its 24th Supplemental Order (Order), a final order establishing Verizon's recurring rates for UNEs, including average rates for 2- and 4-wire loops,[4] switching,[5] transport,[6] and termination.[7]

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[3] *In the Matter of the Continued Costing and Pricing of Unbundled Network Elements, Transport, and Termination*, Docket No. UT-003013 (UT-003013), Twenty-Sixth Supplemental Order, October 19, 2001. The Commission's first cost proceeding after the passage of the Telecommunications Act of 1996 was *In the Matter of the Pricing Proceeding for Interconnection, Unbundled Network Elements, Transport and Termination, and Resale, et al*. Docket Nos. UT-960369, 960370, 960371 (UT-960369). However, the Commission established rates for interconnection prior to the Act in *WUTC v. US WEST Communications, Inc., et al, Docket Nos. UT-941464, 941465, 950146, 950265, 4th Supplemental Order (1995)*. Interconnection is the physical linking of two networks for the mutual exchange of traffic. *See In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 et al.,* CC Docket Nos. 96-98 et al., First Report and Order, 11 FCC Rcd. 15,499, FCC 96-325 (1996) (Local Competition Order), ¶ 176; Section 251(c)(2).

[4] An ILEC telephone network loop consists of the central offices (where switching of calls occurs), feeder plant (cable or fiber that connects the central offices to Serving Area Interfaces (SAIs) at distribution areas), and distribution plant (cable or fiber that connects SAIs to homes and businesses).

[5] Switching is the process of routing calls over the loop.

The Commission also established revised deaveraged zone loop rates[8] and rejected deaveraged zone switching rates.[9]

7 On February 23, 2005, Verizon filed a Motion for Clarification and Petition for Reconsideration (Verizon Petition) of the 24th Supplemental Order. XO and Pac-West also filed a Petition for Reconsideration (XO/Pac-West Petition).

8 Commission Staff filed a response to Verizon's Petition (Staff Response). Verizon filed a response to the XO/Pac-West Petition (Verizon Response).

II. MEMORANDUM

A. Introduction.

9 In this order the Commission addresses the Verizon and XO/Pac-West challenges to the Commission's findings and determinations in the 24th Supplemental Order. The Commission also provides clarification of the 24th Supplemental Order as requested by Verizon.

10 The Commission's task in this cost proceeding is to determine Verizon's recurring rates for UNEs and interconnection. UNEs include the local loop and switching. In order to determine rates for these UNEs, the Commission is required to follow the Total Element Long Run Incremental Cost (TELRIC)

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[6] Transport is transmission of telecommunications traffic between two carriers terminating at the switch that serves the called party. *See FCC Local Competition Order, ¶ 1055; Section 251(b)(5).*

[7] Termination is the switching of traffic at the terminating carrier's end office switch and delivery of that traffic from the switch to the called party's premises. *See FCC Local Competition Order, ¶ 1056.*

[8] In the 24th Supplemental Order, the Commission calculated a 2-wire average loop rate of $18.43 *(¶ 447).* However, the Commission also adopted Staff's proposed deaveraging of the loop rate over five geographic zones in Verizon's service territory in order to account for the differences in loop costs among the five zones. *(¶ 500).* Deaveraging involves dividing Verizon's 99 wire centers into five geographic zones. The Commission adopted Staff's methodology for determining which wire centers belong in each zone. A wire center is a location where switching equipment is located.

[9] The Commission Staff also recommended the deaveraging of switching rates by zones depending on switching costs. However, the Commission rejected this proposal in the 24th Supplemental Order. *(¶ 521).*

methodology established by the Federal Communications Commission (FCC).[10] The chief assumption of the TELRIC methodology is that cost estimates are based on an efficient, forward-looking telephone network built to serve an incumbent phone company's current demand. The only parts of the carrier's existing network that are mandated to be incorporated into the design of the forward-looking TELRIC network are the carrier's existing wire centers and rights-of-way. TELRIC prohibits use of embedded investment and traditional regulatory rate base/rate of return methodology. Implicit in the current definition[11] of TELRIC is a complete rebuild of the network to simulate an efficient, forward-looking network that would achieve the economies of scale inherent in such a network.

11 In this proceeding, Verizon and AT&T proposed UNE rates based on their respective versions of a forward-looking TELRIC network. To design and cost the forward-looking network, each party used a cost model. For pricing network loops,[12] Verizon presented the VzCost model, a new model that has not been presented to this Commission before. AT&T presented an updated version of the Hatfield Model, HM 5.3. The Hatfield Model, unlike VzCost, has been presented to this Commission on several occasions in the past and has been presented to other state Commissions and the Federal Communications Commission as well.

12 Each cost model is based on certain basic modeling assumptions and incorporates various inputs, many of which may be adjusted in order to alter the model's outputs. For example, the basic assumption underlying the VzCost model is that in large measure Verizon's forward-looking network will be quite

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[10] *Order ¶¶ 10-18.*

[11] The FCC is contemplating a possible change to the TELRIC standard to make it: "more firmly rooted in the real-world attributes of the existing network, rather than the speculative attributes of a purely hypothetical network." *See In the Matter of Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, WC Docket No. 03-173, FCC 03-224, September 10, 2003 (TELRIC NOPRM) at ¶ 4

[12] The parties also used cost models to design and cost their switching and transport UNEs. For example, Verizon employed the SCIS and COSTMOD programs to develop switching rates. *(Order ¶ 164).* AT&T used a component of HM 5.3 to develop its proposed switching rates. (*Order ¶ 188).*

similar to its existing network.[13] Verizon's existing network loops generally consist of central offices (where switching takes place), feeder plant (cable or fiber that carries calls from the central office to a serving area interface (SAI)), and distribution plant (cable or fiber that carries plant from the SAI to homes and businesses.). The distribution areas served by Verizon's distribution plant usually consist of approximately 400 to 600 lines.[14]

13 On the other hand, the basic assumption in HM 5.3 is that the forward-looking network is structured with much larger distribution areas called clusters. Some of the HM 5.3 clusters consist of up to 5,000 access lines.[15] These design clusters result from the preprocessing of customer location data by TNS.[16] TNS uses various proprietary computer algorithms and programs to create these basic clusters on which the HM 5.3 network is based and from which the HM 5.3 proposed UNE rates are derived.

14 In addition to these basic assumptions built into the cost models, there are also numerous model inputs that influence the costs for a given UNE. For example, a basic assumption of the cost model may be that a distribution area serves a maximum of 1,000 lines, rather than 600. Furthermore, a different set of inputs will identify the cost of installing different size cables. Thus the cost of distribution plant is based not only on the size of the distribution area, but also on the cost of distribution cables. The cost of distribution plant is also influenced by such inputs as the frequency of aerial versus underground cable, and the extent the structure that holds the cables is shared with other facilities.

15 After the cost models determine the amount of investment that is required for each UNE in the forward-looking network, each UNE investment is then multiplied by cost of money, depreciation and expense factors, to arrive at a proposed recurring charge for the UNE.

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[13] *Order ¶ 138, 142-144*

[14] *Id.*, ¶ 248.

[15] *Id.*, ¶ 249.

[16] Taylor-Nelson-Sofres (TNS) is a third-party vendor that performs certain cost model pre-processing steps. Essentially, TNS maintains proprietary databases containing customer location information. TNS also uses proprietary computer programs to fashion this customer location data into the HM 5.3 distribution "clusters" that form the basis for the HM 5.3 network design and costs.

B. The 24th Supplemental Order.

16 In the 24th Supplemental Order, the Commission found that both the VzCost model and the HM 5.3 cost model were flawed. The Commission found that VzCost was too difficult to use and included a higher than appropriate level of existing, rather than forward-looking, plant.[17] The Commission documented the difficulty of working with the model in Appendix A to the order.[18] The severity of the difficulty was demonstrated by the fact that the model documentation provided by Verizon during the course of the proceeding was woefully inadequate, which frustrated the Commission's efforts to run VzCost on its own, and make the adjustments the Commission found appropriate. Several Bench Requests were issued during the Commission's deliberations and two teleconferences were held to assist the Commission in running the Verizon model.

17 The Commission found that HM 5.3's network design was improper because it created extremely large distribution areas.[19] These large distribution areas, in turn, lead to the modeling of less feeder plant, and are inconsistent with current engineering practices for distribution areas. If the HM 5.3 model had produced smaller distribution clusters, and required more feeder plant (which is more expensive than distribution plant), the loop cost produced by the model may have been higher. In addition, the HM 5.3 process for designing distribution areas formulated by TNS was not available for review by the parties and the Commission. TNS will not permit review of its proprietary processes without payment of very high licensing fees.[20]

18 Because the Commission found each model to be flawed, it chose not to give either full weight in determining UNE rates. The Commission instead considered the respective flaws and decided to weight the VzCost model UNE rates at 60% and the HM 5.3 model UNE rates at 40% for purposes of determining what the final Verizon UNE rates would be.

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[17] *Order ¶¶ 221-222.*

[18] *See* also Order, fns. 177,178.

[19] As indicated above, some of the HM 5.3 clusters serve up to 5,000 customer access lines.

[20] *Order ¶ 223.*

19 The Commission's overall approach to ratemaking in the Order was to: 1) determine an appropriate TELRIC-based cost of capital, depreciation expense factor and operating expense factor to apply to the UNE investments produced by the cost models; 2) change various inputs to the models to better reflect TELRIC cost assumptions; 3) run each cost model to produce an investment amount specific to each UNE; 4) apply cost factors to each UNE investment produced by the cost models; and, 5) require Verizon to use the weighting and rates produced by the Commission from each model to make a post-order compliance filing of weighted, recurring rates for each UNE.

C. Verizon Petition for Reconsideration.

20 We turn first to the Verizon petition for reconsideration. In its petition for reconsideration, Verizon challenges the Commission's weighting of the loop cost models; the Commission's switching determinations; the Commission's decisions on cost of capital, depreciation and expenses; and many of the Commission's adjustments to model inputs. Each of these issues is discussed below.

21 The first issue Verizon raises is whether the Commission should reject outright the HM 5.3 model rather than assigning it 40% weight for purposes of determining Verizon's loop rates.

1. Should the Commission reject the HM 5.3 cost model in its entirety and instead adopt the VzCost model to determine UNE rates in this case?

22 Verizon asks the Commission to reconsider its finding that AT&T's HM 5.3 cost model be weighted 40% in determining the cost of loop UNEs in this proceeding. In effect, Verizon requests that the Commission adopt in totality the Verizon cost model for setting loop UNE rates.

23 Verizon raises numerous objections[21] to the Commission's HM 5.3 weighting determination, contending that the Commission should have rejected the HM 5.3 model outright because of its flaws. First, Verizon contends that HM 5.3 is incapable of implementing Commission-ordered input adjustments (Petition at 18-19). Verizon claims that because the TNS preprocessing that created the over-large serving area clusters in HM 5.3 was not disclosed, the HM 5.3 model cannot be adjusted to correct this basic problem. For example, Verizon contends that HM 5.3's large distribution cluster sizes create a need for distribution cables that are correspondingly large – sometimes assigning 4,200-pair size cable[22] to be strung aerially (on poles or other above ground structure). Thus, Verizon claims that the Commission's ruling limiting aerial cable to 2,400-pair size cannot be implemented unless the TNS preprocessing is overhauled.[23]

24 Second, Verizon objects that the length of the loops produced by HM 5.3 are inaccurate because they generally exceed the actual loop lengths found in Verizon's existing network.[24] Verizon rejects the remedy espoused by Staff

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[21] Several of the objections Verizon raises to the Commission's weighting determination have already been adequately addressed in the 24th Supplemental Order and we will not deal with them further here. These objections are: 1) AT&T did not comply with the Commission's order to produce the TNS preprocessing information and this puts the HM 5.3 cost model in violation of the Commission's criteria for cost modeling (*Order ¶¶ 224-225, 272-273*); 2) HM 5.3 is not compliant with TELRIC (*Id., ¶¶ 245-247)*; 3) HM 5.3 fails validation tests *(Id., ¶ 263)*; 4) HM 5.3 exhibits significant modeling defects *(Id., ¶¶ 272-273)*.

[22] Cable comes in many sizes according to its capacity to carry signals. Sizes range from 25-pair cable to 4,200 pair cable. Ordinarily, very large cable is not placed on aerial structure, such as a pole, because of its size, but rather is buried or placed in underground vaults.

[23] Verizon also argues that HM 5.3 cannot reflect the Commission's preferred level of network detail because of HM 5.3's plant mix assumptions *(Order ¶ 286)*. Plant mix refers to the amount of aerial, buried or underground plant structure that is required to support distribution and feeder cable *(Order ¶ 275*). In addressing HM 5.3's plant mix assumptions, the Commission stated that even though it could not adopt Verizon's adjusted detailed plant-mix data in HM 5.3, the Commission could alternatively adopt Staff's proposed plant mix inputs, and thus find an adequate resolution to the lesser degree of detail in HM 5.3. Verizon's model includes very detailed plant information taken directly from Verizon's plant inventory databases and incorporated into Verizon's cost model. HM 5.3 was not designed to operate with this level of detailed plant information in creating its cost estimates.

[24] The HM 5.3 model produced much more loop plant than the Verizon model. *(Order ¶¶ 34-237; 178-180)*. When there is a sizeable discrepancy between actual loop lengths and modeled loop lengths, it may mean that there is a problem with the operation of the model. On the other hand,

witness Spinks for the HM 5.3 loop lengths – to true up the HM 5.3 model loop lengths against actual loop lengths for each wire center.[25] Verizon claims that Staff's solution is a "band-aid" that cannot disguise the model's gross over-estimation of the need for loop plant.[26]

25 Third, Verizon objects that giving any weight to HM 5.3 is a failure of fairness and due process under *State ex rel Puget Sound Navigation Co. v. Dept. of Transp.*, 33 Wash. 2d 448, 476, 206 P. 2d 456, 485 (1949)(Puget Sound).[27]

26 Finally, Verizon contends that according HM 5.3 any weight is inconsistent with the Commission's outright rejection of Verizon's switching model.[28]

27 **Discussion and decision.** We are persuaded that both of the cost models presented in the case are flawed; that we cannot not rely exclusively on one or the other to develop Verizon's UNE rates; and, that the weight we accorded each is appropriate based on the record before us. Therefore, we affirm the 40% weighting accorded HM 5.3 in the 24th Supplemental Order because the Commission's weighting of the model adequately accounted for the model's flaws.

28 With regard to the undisclosed TNS preprocessing in the HM 5.3 cost model, the 24th Supplemental Order addressed the lack of information from TNS by severely reducing the weight accorded the HM 5.3 model. While we could further reduce the weight accorded HM 5.3, or reject it altogether, each of these options would present further problems because of the shift in weight toward the Verizon model, which is also severely flawed, as described above. By significantly

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it may signify that the model is simply designing a network based on different assumptions than the existing network was designed. It is not clear precisely what in the HM 5.3 caused this excess of modeled loop length over actual. However, both AT&T and Staff proposed methods to reconcile the loop lengths produced by the HM 5.3 model to Verizon's actual existing loop lengths. AT&T proposed use of the Strand Distance Multiplier *(Order ¶ 171).* Staff advocated its own loop length normalization adjustment. (*Order ¶ 180).*

[25] A wire center is a place where switches are located. A wire center may house one or more switching machines. Verizon's Washington network is comprised of 99 wire centers.

[26] Verizon Petition at 9-10

[27] *Id*.

[28] *Id.*, at 10-11.

reducing the weight accorded the HM 5.3 model to 40% in this case, the Commission sends a strong signal that, in the future, the failure to produce the TNS data may be even more damaging to its proponent's case.

29 We reject Verizon's assertion that AT&T's failure to produce the TNS preprocessing data precluded cross-examination on the HM 5.3 model. Verizon's argument ignores the amount of evidence that was produced in the case (almost 2000 pages of transcript and over 300 exhibits) and the Commission's painstaking deliberations on and weighting of the models in reaching a determination.

30 In addition, we find Verizon's due process argument unconvincing. In the *Puget Sound* case cited by Verizon, the court found that the agency wrongly failed to wait for a post-hearing submission of evidence about labor costs, contrary to what the agency had agreed to do during the hearing, before reaching a decision on the merits. In this case, the Commission made clear during the proceeding that, while it wanted AT&T to produce the TNS data, the Commission's decision would be based on the sufficiency of the evidence before it.[29]

31 Contrary to Verizon's contentions, the Commission's rejection of Verizon's switching model does not also require rejection of the HM 5.3 loop cost model. The Commission rejected Verizon's switching model for several reasons, not just because Verizon failed to provide information about it in a timely way.[30] The Commission found that Verizon also failed to adequately document the switching investment numbers contained in the switching model and failed to provide documentation of its proposed additional charges for switch features. Moreover, for switching rates, the Commission had an alternative model on which it could rely – the HM 5.3 switching model[31]- whereas for loop rates, the Commission could not rely solely on the VzCost model as an alternative to HM 5.3 because VzCost also is significantly flawed.[32]

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[29] *See* 14th Supplemental Order, October 14, 2003; 18th Supplemental Order, December 5, 2003.
[30] *Order ¶ 462.*
[31] *Id.*, ¶ 463.
[32] *See* Appendix A to the Order, Section 3. VzCost Commentary.

32 Finally, Verizon's challenge to loop lengths produced by the HM 5.3 loop cost model ignores the fact that Verizon could have recommended its own solution to the HM 5.3 model's production of loop lengths that were in excess of actual loop lengths. The Commission's general approach in prior cost dockets has been to consider proposed corrections to a cost model, rather than to reject the whole model.[33] Corrections to the model, such as the loop length true-up mechanism Staff has proposed in this case, have been successfully adopted in other Commission proceedings.[34] Since Staff's proposal was reasonable, the Commission adopted it.[35]

2. Should the Commission adopt Verizon's proposed cost of equity?

33 As mentioned above, cost of capital is one of the factors applied to UNE investment to develop a recurring rate for the UNE. The cost of capital consists of a cost of debt, a cost of equity and a weighting of the two by determining the percentage of debt and equity in the company's capital structure. Of these components, Verizon focuses on the Commission's cost of equity determinations.

34 Verizon proposed a 12.03% cost of equity in this case, derived by using a Discounted Cash Flow (DCF) methodology.[36] The DCF method arrives at a cost of equity by dividing the dividend payout (D) of a stock by its price (P) and adding the dividend growth rate (g) to that result. The formula is expressed as follows:

$$R=(D/P)+g$$

35 The significant determinant of the formula is the growth rate (g), which Verizon projected to be 11.90%. Because the version of the DCF formula relied on by Verizon is deemed a "single stage DCF" formula, the growth rate chosen is projected to continue into perpetuity.

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[33] *See* Docket No. UT-960369, 8th Supplemental Order, ¶¶ 85-98, discussion of Hatfield Model Placement Costs.

[34] *Order ¶¶ 218-227; see* also Docket No. UT-980311(a), Tenth Supplemental Order, ¶¶ 270-271.

[35] *See* Appendix A of the Order.

[36] In order to determine an appropriate cost of equity in rate cases, parties and commissions routinely rely on cost of capital pricing models. In this case, Verizon proposed the DCF model *(Order ¶¶ 54-55)* and AT&T proposed the Capital Asset Pricing Model (CAPM)*(Order ¶ 56)*.

36 Verizon proposed to develop its cost of equity by comparing Verizon to a proxy group of firms that are part of the Standard & Poor's Industrial index.[37]

37 In the 24th Supplemental Order, the Commission adopted an 11.22% cost of equity for Verizon.[38] In determining the cost of equity, the Commission agreed with Verizon that the DCF methodology was appropriate for arriving at a cost of equity. However, the Commission made two adjustments to Verizon's DCF proposal. The Commission determined that for the growth rate component in the DCF formula, a rate of 6-8% was more reasonable than the 11.90% proposed by Verizon because the lower rate range assumes that Verizon will outpace the growth of the economy as a whole (3%) and because the lower range of rates falls between Verizon's current growth estimate of 3.7% and Verizon's proposed 11.90%.[39]

38 The Commission also determined that a more reasonable sample of proxy comparison companies would consist of the 10 telecommunications companies included in the S&P Industrial index instead of the group of S&P Industrials Verizon proposed, because Verizon's group included no telephone companies. The Commission's sample group of 10 companies ultimately provided only six comparison companies because three of the sample group of 10 did not issue dividends and one had negative growth.[40] The Commission reviewed growth rates for the six telecommunications firms and found that the average growth rate was 6.47%, verifying the Commission's determination that a growth rate in the range of 6-8% was reasonable for use in the DCF formula.[41] The Commission actually used 7%, the middle of that range, to calculate the DCF cost of equity of 11.22%.[42]

39 Verizon challenges the size of the Commission's proxy group and reliance on a 7% growth rate.[43] Verizon argues that a sample of companies from an industry that is undergoing radical restructuring, such as the telecommunications

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[37] Tr 642.
[38] *Order ¶¶ 52-78*
[39] *Id., ¶ 75*.
[40] *Id., ¶ 77*, Table 2
[41] *Id.,* ¶ 76.
[42] *Id.,* Table 2.
[43] Verizon Petition at 27.

industry, is inappropriate. Verizon also asserts that of the ten proxy companies chosen by the Commission, only six produce usable results. Therefore, Verizon claims that the Commission's sample is as unreliable as the AT&T sample of four RBOCs that was rejected by the Commission. Verizon further claims that the Commission provided little reasoning for adoption of the 7% growth rate.

40 **Discussion and decision.** We affirm the Commission's cost of equity determination in the 24th Supplemental Order. The DCF formula, as proposed by Verizon assumes that the growth rate chosen will be in effect for perpetuity. Thus, Verizon is proposing that its stock dividend will grow at the rate of 11.90% in perpetuity. As was pointed out in the Order, 11.90% is demonstrably too high – double the growth rate of telecommunications companies and four times the expected growth of the economy as a whole.[44] The 7% growth rate determined by the Commission is thus amply supported on the record.[45] In addition, the proxy group relied on by the Commission, while small, still captures the dynamics of telecommunications companies which more closely fits the purpose of this docket – developing UNE rates for telecommunications companies. The Commission properly exercised its judgment to choose the smaller group.

3. Should the Commission adopt Verizon's proposed risk premium?

41 Verizon proposed a weighted cost of capital of 12.03%, comprised of a cost of equity of 13.95%, a cost of debt of 6.26%, weighted 75% equity, 25% debt. Verizon then proposed to add a 3.95% risk premium to the 12.03% weighted cost of capital. The addition of the risk premium would bring Verizon's cost of capital recommendation to 15.98%.[46] Verizon requested the risk premium addition to compensate for regulatory risk not accounted for in the DCF methodology or elsewhere in its cost of capital calculations. The primary risk Verizon wants additional compensation for is the risk that competing phone carriers may cancel their UNE leases without notice and Verizon would then be left with stranded investment.

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[44] *Order ¶ 74.*
[45] *Id.*, ¶ 76.
[46] *Id.*, ¶¶ 20-21.

42 Verizon's petition for reconsideration repeats the same arguments about the risk premium proposal found in its post-hearing briefs and that were rejected by the Commission in the 24th Supplemental Order.[47]

43 **Discussion and decision.** We affirm the 24th Supplemental Order's rejection of Verizon's risk premium proposal. The Commission rightly reasoned that the risk for which Verizon seeks additional compensation is already included in its cost of capital calculations. Many other firms compete in industries where lease cancellation or default is a possibility, and the potential associated cost is incorporated in costs of capital without recourse to an additional risk premium.

4. Should the Commission adopt Verizon's proposed depreciation rates?

44 Verizon proposed to use its financial reporting depreciation lives for purposes of setting UNE rates. Verizon's financial reporting is governed by principles contained in Generally Accepted Accounting Principles (GAAP) and hence financial reporting lives are termed GAAP lives.

45 Depreciation[48] is another of the factors or rates that are applied to UNE investment to arrive at recurring UNE rates. In the 24th Supplemental Order, the Commission rejected Verizon's use of financial reporting depreciation lives and found that Verizon's currently authorized depreciation rates were appropriate for calculating UNE rates in this case.[49] The Commission noted that in the Triennial Review Order,[50] the FCC had rejected the use of financial lives.[51] The

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[47] Compare Verizon Petition at 29-30 and Order ¶ 79

[48] Depreciation is the process for determining the amount of investment a company may recover for a given asset as the asset is used up. Depreciation usually requires establishing an appropriate life for the asset - the period of time over which its cost will be recovered, and a determination of how much of the asset's value will be recovered early in asset's life as opposed to later in the asset's life. Finally, depreciation requires determination of any salvage value attributable to the asset.

[49] *Order ¶¶ 86-94.*

[50] *In re Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket Nos. 01-338, et al., FCC 03-36, Report and Order and Order on Remand (Triennial Review Order) August 21, 2003

Commission further determined that since Verizon had filed a new depreciation case with the Commission, when the order in that case came out, the parties could petition the Commission to incorporate any changed depreciation rates into Verizon's UNE rates. [52]

46 In its petition for reconsideration, Verizon objects to the Commission's adoption of Verizon's currently authorized depreciation rates for setting UNE rates. Verizon argues that its currently authorized depreciation rates were set for regulatory accounting purposes pursuant to a rate-of-return methodology that is prohibited under TELRIC's forward-looking cost principles. Verizon further contends that GAAP depreciation lives most closely reflect TELRIC principles and that the FCC did not reject the use of financial lives in the Triennial Review Order, but rather declined to require use of any particular set of lives based on the record before it.

47 **Discussion and decision.** We affirm the Commission's adoption of Verizon's currently authorized depreciation rates for purposes of setting UNE rates. Verizon offers no new arguments in its petition for reconsideration. The depreciation rates set in Docket No. UT-992009 reflect economic lives for Verizon's assets. It is immaterial that those lives were then adopted in a retail rate proceeding governed by rate-of-return methodology. We note that in the Triennial Review Order, the FCC gave state commissions the discretion to decide the asset lives to be used in calculating depreciation expense.[53] In the 24th Supplemental Order, the Commission properly allowed the parties the future option of petitioning to incorporate in UNE rates the updated depreciation lives

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[51] *Id.*, ¶ 96; *see also In re Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, CC Docket Nos. 01-338, et al., FCC 03-36, Report and Order and Order on Remand (Triennial Review Order) August 21, 2003, ¶¶ 685-688.*

[52] Subsequent to entry of the 24th Supplemental Order, the Commission approved new depreciation rates for Verizon in conjunction with approval of a settlement in Verizon's retail rate case. *See WUTC v. Verizon Northwest, Inc., Docket No. UT-040788, Order No. 15 Approving and Adopting Proposed Settlement; Rejecting Filed Rates; Accepting Proposed Settlement Rates; In the Matter of the Petition of Verizon Northwest, Inc., for Approval of Revised Depreciation Rates, Docket No. UT-040520, Order No. 03, Order Approving and Adopting Proposed Settlement, April 12, 2005.*

[53] *Triennial Review Order ¶ 688.*

resulting from Verizon's then pending (now concluded) depreciation proceeding.[54]

5. Should the Commission incorporate the same expense adjustment in both the Verizon and the HM 5.3 cost models?

48 Just as cost of capital and depreciation factors are applied to UNE investment to obtain a given UNE rate, so are expense factors. Both Verizon and AT&T calculated expense factors for this purpose. Each party also proposed adjustments to expenses, to ensure that forward-looking expense levels were properly synchronized with forward-looking UNE investments.

49 To explain further, Verizon's expense factor is called the Annual Cost Factor (ACF). The ACF expresses, on an annual basis, the expenses associated with a given investment. The formula used to determine an ACF is:

ACF= expense/investment.

50 Verizon used its embedded investment data for the "investment" component of the formula, and then adjusted the investment amount by applying the Forward Looking Calibration (FLC) factor. The formula becomes:

ACF=expense/investment x FLC

51 The purpose of the FLC is to insure that even though forward-looking investment levels are lower than embedded investment levels, the expenses associated with forward-looking investments will not necessarily be lower. For example, though a switch that cost $40,000 in the past may cost $10,000 now, it will not necessarily require only one quarter of the current maintenance costs. Verizon proposed a .85 FLC.

52 On the other hand, using essentially the same formula, AT&T employs Automated Reporting Management Information System (ARMIS)[55] data for the

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[54] *Docket No. UT-040520, Order No. 03, Order Approving and Adopting Proposed Settlement, April 12, 2005.*

investment component but adjusts the investment data by applying a Current Cost to Booked Cost (CC/BC) ratio[56] in order to arrive at forward-looking expense levels. AT&T claims that the CC/BC ratio corrects for the fact that forward-looking investment amounts are generally lower than current investment amounts, but allows the changes in the types of plant installed in the forward-looking network, and any savings in expenses related to these different types of plant, to be reflected in maintenance expenses.

53 In the 24th Supplemental Order, the Commission agreed with Verizon's FLC proposal in concept, but the Commission required certain adjustments.[57] Ultimately, the Commission ordered Verizon to implement a .90 FLC factor for purposes of calculating ACFs, because it appeared that Verizon's proposed .85 FLC would otherwise overstate forward-looking expense.[58]

54 For the HM 5.3 model, the Commission left in place that model's reliance on CC/BC ratios to produce forward-looking UNE expenses.[59]

55 In its petition,[60] Verizon objects to the Commission's adoption of the CC/BC adjustment that HM 5.3 makes to the expense factor and to the Commission's failure to apply a .90 FLC factor to the HM 5.3 investment levels. Verizon contends that HM 5.3's reliance on CC/BC ratios results in significantly understating forward-looking expenses. Verizon suggests that even if HM 5.3 forward-looking UNE expense levels cannot be precisely adjusted using a .90

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[55] ARMIS data is accounting information about its network that Verizon is required to file with the Commission.

[56] The Current Cost is calculated by estimating what it would cost to rebuild today's facilities using the same technology that was adopted and installed in Verizon's network. For example, the calculation presumes that the same size and type cables would be used today as were selected when the facilities were first installed. The current-to-book ratio (CC/BC) would be calculated by dividing the cost of installing facilities today with the historical cost of installing the same type of facilities. Stated differently, the current cost estimates identify the cost of replicating today's network at today's prices and not allowing for any changes in technology.

[57] *Order ¶¶ 113-120.*

[58] *Id.*

[59] *Id., ¶ 112.*

[60] Verizon Petition at 33.

FLC, the Commission should adjust the model to assure that "there will be 90 cents of forward-looking investment for every dollar of book investment."[61]

56 **Discussion and decision.** We affirm the 24th Supplemental Order's acceptance of HM 5.3's use of CC/BC ratios to adjust expense levels in the HM 5.3 model and reject Verizon's recommendation to apply a .90 FLC adjustment to HM 5.3 investment levels.

57 As noted in the Order, the two cost models presented in this case are quite different and "because of the idiosyncratic relationship between model and inputs, the selection of models and inputs cannot necessarily be made as independent decisions."[62] In other words, adjustments made in one model cannot necessarily be made in the other. For example, HM 5.3's ACFs are based on ARMIS data. Verizon's, however, reflect more detailed data contained in Verizon's plant accounts. Verizon adjusts its own expense data but cites to nothing in the record that would suggest the HM 5.3 model implemented, or is capable of implementing, similar adjustments.[63]

58 Moreover, even though Verizon's proposal might theoretically increase the consistency of the inputs and assumptions used in both models, Verizon did not raise the issue until this late phase of the case. Verizon had the opportunity, both with respect to this issue and others, to provide an alternative adjustment, either in testimony, cross-examination or post-hearing brief. Adopting Verizon's proposal now deprives the other parties of an opportunity to address it. For these reasons, we reject Verizon's proposal to apply the .90 FLC to HM 5.3 investments.

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[61] *Id*., at 36.
[62] *Order ¶ 202*.
[63] *Ex. 201TC at 139, 144-150*.

6. Did the Commission properly rely on the FCC's USF Inputs Order in making its determinations in this proceeding?

59 Verizon contends that the Commission improperly relied on the FCC's Universal Service Fund (USF) Inputs Order[64] to adjust inputs to the parties' cost models, even though no party had proposed using those inputs. In the 1999 USF Inputs proceeding, the FCC established costs that would be incurred by a forward-looking telephone network to provide universal basic local service. Based on these cost determinations, an eligible carrier would receive support for providing such service from the Universal Service Fund.[65] In the process of establishing these costs, the FCC developed a comprehensive set of cost model inputs.

60 Model inputs play an important role in the development of UNE rates. As mentioned above, the parties' cost models develop an investment amount for each specific UNE that is available for lease to a competing telephone company. The derivation of these investment amounts, as well as ultimate rates for each UNE, depends on: 1) basic model assumptions, and 2) inputs to the cost model. For example, the loop rate produced by the model is the result of the basic assumptions incorporated into the model as well as a myriad of inputs to the model. A basic assumption might be the size of a distribution area. However, loop rates produced by the model are also influenced by model inputs such as distribution cable size, cable costs and labor costs for placement of the cable. Inputs are, for the most part, adjustable, unlike basic modeling assumptions that are more or less hardwired into the model.

61 In the 24th Supplemental Order, the Commission required changes to various inputs to the Verizon and HM 5.3 cost models. In some instances where the Commission was unable to accept one or both parties' proposed inputs to their respective models, the Commission chose instead to rely on inputs from the

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[64] Federal-State Joint Board on Universal Service, CC Docket No. 96-45, 10th Report and Order, 14 FCC Rcd 20156 (*USF Inputs Order*)

[65] The WUTC similarly addressed appropriate costs for determining levels of intrastate universal service support in Docket No. UT-980311(a), although the legislature never established an intrastate universal service fund.

FCC's USF Inputs Order,[66] even though no party had proposed using those inputs.

62 Verizon challenges the Commission's reliance on the FCC's USF Inputs Order,[67] claiming that: the FCC itself discouraged reliance on the order for developing UNE rates;[68] that FCC USF inputs fail to provide evidence specific to Verizon;[69] and that adoption of FCC USF Inputs Order inputs is a violation of due process because the parties were unable to cross-examine on Inputs Order data.[70]

63 **Discussion and decision.** We affirm the 24th Supplemental Order's reliance on inputs from the FCC USF Inputs Order. In the 24th Supplemental Order the Commission addressed Verizon's arguments,[71] stating that the FCC did not prohibit use of similar or identical inputs as those contained in the Inputs Order if the use was based on the particular record in a state proceeding. We note that the language of the Inputs Order is permissive. The Order states that "it *may* not be appropriate to use nationwide values for other purposes, such as determining prices for unbundled network elements" (emphasis added)[72] but it does not prohibit states from adopting USF Inputs.[73]

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[66] The Commission relied on the FCC's USF Inputs Order to determine: 1) HM 5.3 structure sharing percentages *(¶ 308; 2)* HM 5.3 placement costs *(¶ 321)*; 3) an engineering gross-up factor for placement costs in HM 5.3 *(¶ 333)*; 4) HM 5.3 material costs *(¶ 341)*; and 5) an adjustment to Verizon's maximum cable sizes based, in part, on information from the USF Inputs Order *(¶ 416)*.
[67] Verizon Petition at 35.
[68] *Id*. at 35; 41.
[69] *Id*. at 35.
[70] *Id.* at 44.
[71] *Order*, *¶ 392*.
[72] USF Inputs Order ¶ 32.
[73] *See also In re Petition of WorldCom, Inc., Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia, Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218 and 00-251, DA 03-2738, Memorandum Opinion and Order (Aug. 29, 2003)(Virginia Arbitration Order), ¶¶ 283-285. In this case the FCC's Wireline Competition Bureau compared the parties' presentations on structure sharing to the USF Inputs Order structure sharing inputs. The WCB then adopted the presentation that was closer to the Inputs Order structure-sharing figure for the particular density zone involved.

64 With regard to Verizon's due process argument, the Commission's mandate is to determine rates that are just, reasonable, nondiscriminatory, and cost-based in accord with the TELRIC cost standard. In performing its regulatory role, the Commission is not confined to choosing from among the parties' unreasonable rate proposals when, in the Commission's judgment, another reasonable option is available. In the USF Inputs Order proceeding, the FCC carefully examined evidence on the appropriate inputs to use in estimating the cost of an efficient provider building a network capable of supporting universal service. Based on the record in this cost proceeding, the Commission found, in its discretion, that those same USF Inputs Order inputs would produce UNE rates that are more in accord with the TELRIC standard than the parties' proposed inputs. Where the Commission adopted USF Inputs Order inputs, the inputs were within the range of inputs proposed by the parties and thus were well-supported on the record.

7. Did the Commission properly adjust Verizon's maximum cable size input and copper feeder fill?

65 Verizon contends that the Commission improperly increased its maximum cable size input in order to cause Verizon's copper feeder fill factor to correspondingly increase.[74]

66 Generally speaking, fill factors determine how much plant investment is necessary to serve current demand and also provide for additional capacity to serve administrative needs and reasonable future growth.[75]

67 In order to determine the appropriate amount of copper feeder[76] plant for its TELRIC network, Verizon used a copper feeder cable-sizing factor of 1.2. AT&T used a different methodology that resulted in a closely equivalent sizing factor proxy of 1.25. However, the "achieved fill" produced by Verizon's model, using

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[74] Petition at 43.

[75] In the 24th Supplemental Order, ¶¶ 346-355, the Commission explained at some length the concept of fill factors and their role in determining appropriate levels of plant investment in the forward-looking telephone network

[76] Verizon employs both copper cable and fiber for its distribution and feeder plant.

the 1.25 sizing factor, was 51.93% whereas the "achieved fill" produced by the HM 5.3 model was 76.5%.[77]

68 In the 24th Supplemental Order, the Commission found Verizon's 51.93% achieved fill to be too low. The Commission reasoned that as cable sizes decrease, so does the achieved fill,[78] but that nevertheless, Verizon's modeled "achieved fill" of 51.93%, while possible, was unlikely. The Commission determined that based on Verizon's modeling of distribution areas with between 200-600 lines, a more logical and likely achieved fill would be in the vicinity of 66.6%.[79] The Commission relied on the industry cable-size comparisons contained in the FCC USF Inputs Order to adjust Verizon's maximum cable size upward.[80] After the adjustment, Verizon's "achieved fill" became 72.22% for average segment fill[81] and 60.04% at the head of the route.[82] The Commission found these adjusted fill percentages acceptable.[83]

69 In its petition,[84] Verizon argues that its 51.93% achieved fill is actually a "head-of-route or mainframe fill."[85] Since this "head of route" number also includes copper distribution cable, which typically has a lower fill than feeder cable, the inclusion of copper distribution tends to lower feeder fill. Verizon claims that the average segment fill for copper feeder in the Verizon cost model is 73.19%, clearly comparable to the HM 5.3 number of 76.5%. For this reason, Verizon argues that it was unnecessary for the Commission to raise the maximum cable

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[77] *Order ¶ 357.*
[78] *Id.*, ¶ 363.
[79] *Id.*, ¶ 364.
[80] *Id.*, ¶ 416.
[81] Fill, or extra capacity, varies by where the feeder/distribution plant is located in the network, because demand is different at different points in the network, so more or less extra capacity is available.
[82] Verizon's petition for reconsideration did not define the term "head of route." We presume that Verizon is using this term to refer to the portion of the loop that is closest to the central office (which would typically be at the Main Distribution Frame.)
[83] *Order* ¶ 365.
[84] Verizon Petition at 43; Verizon also repeats its argument that the Commission improperly relied on the FCC USF Inputs Order to determine that Verizon's copper feeder cable sizes were inappropriate. Since we disposed of this argument in section 5 of this order, we will not address it further here.
[85] *Id.*, at 45.

size to correct the discrepancy in the "achieved fill" numbers produced by the two models, because the "achieved fill" is quite similar for both models. In fact, Verizon argues that increasing the maximum cable size actually increases costs and makes the average segment fill lower because more cable is made available to serve the same amount of demand.

70 **Discussion and decision.** We affirm the 24th Supplemental Order adjustment of maximum cable size and copper feeder fill for the following reasons. First, Verizon provided no citation to the record for its assertion that 51.93% is a "head of route" fill percentage. Second, increasing cable sizes as the Commission did does not necessarily lower the fill percentage or raise costs, as Verizon suggests. Indeed, it is not possible to determine what the effect of adding larger copper cables is in the VzCost model, because the model does not provide information about the effect on fill of changing maximum cable sizes.[86]

8. Did the Commission properly adjust Verizon's plant mix input?

71 We now discuss several additional model inputs that have a significant effect on the ultimate loop rate developed by the model. These inputs are: plant mix, structure sharing, placement costs and material costs. In the following sections of this order, we define these inputs, describe how they were treated in the 24th Supplemental Order and address Verizon's objections to the Commission's determinations in the Order.

72 The first of the inputs we address is plant mix. Plant mix is the mixture of "outside" plant that is used to provide support for local loops. The three basic types of "outside" plant are: 1) aerial – poles (e.g. cable is strung on poles), block cables, risers; 2) buried – trenched or plowed; and 3) underground – in conduit or vaults. The least expensive type of plant is aerial, the most expensive is underground.

73 In the 24th Supplemental Order, the Commission adjusted Verizon's plant mix inputs that influenced the amount of aerial, as opposed to buried or underground cable the model produced. The Commission found that Verizon's model converted plant from aerial to underground at too low a threshold. In

[86] *Order, ¶ 363, fn. 275.*

other words, the Verizon model set a three-cable limit for aerial cable, which, when exceeded, caused the model to shift to buried or underground plant. The Commission reasoned that the amount of underground plant produced by Verizon's model exceeded significantly Verizon's "actual underground plant in Washington" and increased the amount of more expensive underground plant in Verizon's TELRIC network. The Commission's adjustment to Verizon's plant mix assumptions eliminated the aerial cable restriction in VzCost that caused the model to shift away from existing levels of aerial plant towards more expensive underground plant.

74 With regard to the HM 5.3 cost model, the Commission rejected the HM 5.3 plant mix inputs, replacing them with Staff's recommended plant mix inputs.[87]

75 In its petition, Verizon objects to the Commission's adjustment upward of its three-cable limit for aerial cable.[88] Verizon claims that the Commission's adjustment ignores engineering and safety concerns, especially in light of the Commission's decision to adjust upwards the input for maximum cable size in Verizon's model.[89] Verizon contends that this might result in the placement of much larger cables on aerial structure that cannot support it. Verizon states that a higher aerial cable limit adjustment also ignores the testimony about the long-run advantages of underground structure. Verizon further contends that the Commission failed to provide a data source for Verizon's "actual underground plant in Washington."[90]

76 Verizon also objects to the Commission's adoption of Staff's proposed plant mix inputs for HM 5.3. Verizon claims that if HM 5.3 could not be adjusted to accept Verizon's plant-mix data, it should have been rejected outright. In any event, Verizon argues that Staff's proposed plant mix data lacks sufficient detail about Verizon's network and is outdated.

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[87] *Order ¶¶ 285-286*

[88] Verizon Petition at 36-38.

[89] *Order ¶ 416.*

[90] Verizon Petition at 39, note 133.

77 **Discussion and decision.** We affirm the 24th Supplemental Order findings on plant mix inputs. As Staff points out in its response to Verizon's petition,[91] Verizon does not show why its VzCost forward-looking network, premised on full competition, would have so much underground plant when its current network, which, according to Verizon is already subject to competition, employs so much less underground plant. Moreover, the presence of a much larger percentage of aerial plant in Verizon's existing network, without evidence of any related safety problems, casts doubt on Verizon's asserted safety concerns related to aerial plant.

78 However, Verizon is correct that the Commission did not identify the source of its information that Verizon's current Washington network contained a much lower percentage of underground plant than Verizon's modeled network.[92] The Washington actual underground plant data for Verizon is found in the FCC's ARMIS database. ARMIS data shows that Verizon currently has less than 20% underground facilities in Washington. In comparison, Verizon's Copper Cable Inventory Report from the VzCost model shows that the majority of the copper facilities placed by the VzCost model are underground. This comparison clearly demonstrates that the VzCost three-cable restriction on aerial cable shifts the VzCost plant mix towards more expensive underground plant. The Commission's adjustment to the VzCost aerial cable limit in the 24th Supplemental Order was designed to better reflect the actual placement of underground facilities in Verizon's network.

79 With regard to HM 5.3 plant mix inputs, the Commission rejected them because they appeared designed simply to minimize costs without properly considering the amount of plant required to serve demand. Confronted with HM 5.3's cost minimization inputs, the Commission had an obligation to find more reasonable inputs. Since the Commission could not incorporate Verizon's adjusted plant mix inputs into the HM 5.3 model, and Verizon failed, until this phase of the case, to suggest any alternative plant mix inputs for HM 5.3, we affirm the Commission's adoption of Staff's proposed inputs.

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[91] Staff Response, ¶ 7.
[92] *Order, ¶285, fn. 218.*

9. Did the Commission properly adjust or reduce the weight accorded to the cost models to reflect reasonable structure sharing inputs?

80 Structure sharing is a model input that refers to how much of Verizon's outside plant costs Verizon can avoid by sharing its facilities with third parties, or with other parts of its own network. An example of structure sharing is the use of Verizon's poles by cable companies that string their own cable to the poles and pay Verizon a pole attachment fee. The more structure Verizon shares with third parties, such as cable companies, the less the cost to Verizon and the lower the UNE rates for structure.

81 Verizon's proposal for structure sharing in this case is based on its actual experience of structure sharing. Verizon claims that opportunities to share structure with third parties are very limited, and when they do occur, as in the case of cable companies sharing aerial structure they do not result in a significant decrease in Verizon's costs. Verizon says that sharing trenches, for example, does not occur because electric companies that might want to share facilities perform their installations on a different schedule than Verizon does. Trying to coordinate schedules might lead to lost or frustrated customers because it would involve one entity or the other waiting, or not ready.

82 On the other hand, AT&T claimed that in a forward-looking network, under competition, structure sharing would be much higher than what Verizon has proposed.

83 Striking a middle ground, Staff recommended adoption of sharing percentages from the Commission's 8th Supplemental Order in UT-960369. Staff claimed this represented a middle ground between the "actual" experience of Verizon and the "hypothetical forward-looking" proposal of AT&T.

84 In the 24th Supplemental Order, for aerial, buried and underground sharing with third parties, the Commission adjusted HM 5.3 by substituting Staff's proposed structure sharing inputs (by density zone)[93] from the Commission's 8th Supplemental Order in UT-960369 and by relying on data from the FCC's USF

[93] Sharing opportunities increase in higher population and customer density zones.

Inputs Order.[94] The Commission noted that the FCC had cited with favor the Commission's UT-960369 sharing percentages in the Inputs Order and that this was a further reason for relying on them. The Commission could not similarly adjust the Verizon cost model because the Verizon model is not capable of adjustment by density zone. To address this defect in the Verizon model, the Commission reduced the weight accorded the model.

85 In its petition,[95] Verizon objects to the Commission's adoption of structure sharing inputs from UT-960369 and the FCC USF Inputs Order. Presumably Verizon also objects to the reduced weight accorded the Verizon model because it could not be adjusted using the UT-960369 and FCC inputs.

86 Verizon's basic challenge is that the Commission should have relied on Verizon's structure sharing inputs because those inputs reflect Verizon's actual experience. Verizon contends Staff's inputs from the 8th Supplemental Order were speculative when proposed in that case and should not supplant Verizon's more detailed, actual data presented in this case. Verizon also argues that just because the FCC relied on Staff's UT-960369 structure sharing numbers in the USF Inputs Order does not lend credibility to UT-960369 inputs. Verizon contends that the FCC specifically directed that USF structure sharing should not be used in UNE proceedings.[96]

87 **Discussion and decision.** We affirm the 24th Supplemental Order's findings on structure sharing. One of the important tasks for the Commission in making its UNE ratemaking determinations is to use consistent assumptions to guide any adjustments to the cost models. For example, modeling assumptions and inputs should consistently reflect a forward-looking approach to cost development. In this case, Verizon's approach to structure sharing is inconsistent with its approach to cost of capital. On the one hand, Verizon advocates a forward-looking, market-based approach to cost of capital (which the Commission basically adopted), but on the other hand advocates use of current, actual network values for structure sharing. We conclude that the structure sharing values from UT-960369 are more consistent with a forward-looking TELRIC

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[94] *24th Supplemental Order, ¶¶ 306-308.*

[95] Verizon Petition at 38-41.

[96] *Id.* at 41.

costing assumption but strike a middle ground between Verizon's actual experience and HM 5.3's purely hypothetical approach.

88 Verizon's argument that the structure sharing percentages Staff proposed in UT-960369[97] are speculative is based on Verizon's cross-examination of Staff witness Tom Spinks, where he stated there were no additional studies performed in this case beyond the analysis Staff performed in UT-960369.[98] A review of Mr. Spinks full testimony on the issue[99] indicates that Staff's analysis of appropriate structure sharing inputs for this case was well-grounded and deliberate, not speculative and arbitrary. Mr. Spinks stated that Staff's analysis had compared the prior cost docket sharing inputs with inputs decided in recent state proceedings and found them to be similar. On that basis, Staff proposed to continue employment of UT-960369 sharing percentages in this case.

89 Verizon's argument that the FCC warned against using USF structure sharing inputs in a state UNE proceeding is also inapposite. As we noted in section 5 above, the FCC did not prohibit state commissions from relying on USF inputs in UNE cases. Moreover, the FCC's TELRIC Notice of Proposed Rulemaking[100] cited by Verizon indicates only that states should not assume that sharing opportunities were the same as when plant was first built. There is no evidence in this proceeding or in UT-960369 that this Commission made such an assumption about structure sharing in determining appropriate UNE rates.

10. Should the Commission have adopted Verizon's placement cost inputs for use in both the Verizon cost model and HM 5.3?

90 Placement costs inputs relate to what the company pays contractors for placement of poles and cables, for the digging of trenches and the laying conduit. Verizon's proposed placement costs are based on data from its current single source contracts. Single source contracts are used to cover a wide range of projects, from small repairs to large construction. Such contracts avoid the

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[97] *UT-960369, 8th Supplemental Order, ¶ 76; see also UT-980311(a), 10th Supplemental Order, ¶ 108.*
[98] *Tr 1100.*
[99] *Tr 1071-1072.*
[100] *TELRIC NOPRM,* ¶ 47.

necessity for a company to bid out each project, although the single source contracts themselves may result from a bidding process.

91 In the 24th Supplemental Order, the Commission rejected both the Verizon and the HM 5.3 placement cost proposals. The Commission reduced Verizon's placement costs by 5%, primarily because Verizon based its placement costs on data from single source contracts. The Commission found that relying on prices from single source contracts was not TELRIC- compliant. For example, under TELRIC, the assumption is that a cost efficient network will be constructed all at once, thus achieving the economies of scale inherent in the competitive bidding for such a large construction project. Since single source contracts reflect a mix of projects, they cannot, by their nature, adequately capture large-construction-project economies of scale contemplated by TELRIC. To adjust the Verizon placement cost inputs, the Commission reduced Verizon's placement costs by 5%.

92 The Commission also rejected the HM 5.3 placement inputs because they incorporated labor costs that were too low.[101] The Commission adjusted HM 5.3 placement costs by substituting placement inputs, by density zone, from the USF Inputs Order, updated by application of the Turner Price Index (the Turner Price Index is an index recognized by the telecommunications industry to bring historic costs to current levels).[102]

93 In its petition for reconsideration,[103] Verizon argues that the Commission's 5% reduction in placement costs was unfounded. Verizon contends that TELRIC does not require an assumption that firms will instantaneously rebuild their networks at a single time and that its single source placement contracts include large-scale projects.

94 Verizon also argues that the Commission ought to have rejected the HM 5.3 model, or, barring that, to have used Verizon's actual placement costs in the HM 5.3 model, rather than adopting placement inputs from the USF Inputs Order.

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[101] *Order ¶ 320*

[102] *Id., ¶¶ 319-321.*

[103] Verizon Petition at 41.

Verizon repeats its claim that reliance on the USF Inputs Order data is a violation of due process.

95 **Discussion and decision.** We affirm the 24th Supplemental Order's placement cost findings.

96 We conclude that Verizon's contention that its single source contracts can be used to cost large-scale projects is not adequately supported on the record. Verizon's witness was unable to testify knowledgeably about what types of contracts were used to cost large-scale projects in the Verizon model.[104] We also affirm that the FCC's TELRIC methodology currently requires an assumption that the incumbent carrier's telephone network will be completely rebuilt to incorporate currently available efficient technology at the lowest cost.[105] The FCC's recently issued notice of proposed rulemaking on the TELRIC methodology[106] signals that the FCC may be contemplating a change to the TELRIC standard, but such an FCC rulemaking proposal is not a final FCC order. While the FCC's rulemaking proposal can provide the Commission with valuable insight, the Commission is not required to regard the proposal as precedent. In addition, we note that in the USF Inputs Order the FCC specifically pointed out that using small contracts as proxies for the types of contracts necessary to construct a network was improper.[107]

97 We also reject Verizon's recommendation to incorporate Verizon's own placement inputs into the HM 5.3 model. Practically speaking, Verizon's recommendation would be impossible to implement. As we noted in section 5 above, the two cost models are very different and an adjustment that applies to one does not readily transfer to the other. Even if Verizon's placement inputs could be used in HM 5.3, Verizon's placement proposal strays unacceptably from the TELRIC assumption that UNE rates be based on costs for construction of a forward-looking network. The Commission is required to determine fair, just,

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[104] Tr 1272-1279.

[105] *Order ¶ 13.*

[106] *In the Matter of Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers,* WC Docket No. 03-173, FCC 03-224, September 10, 2003 (TELRIC NOPRM).

[107] USF Inputs Order, ¶ 109.

reasonable and sufficient rates. In the 24th Supplemental Order, the Commission chose the most reasonable approach to determining the placement cost inputs for those rates in HM 5.3 by adopting the FCC USF Inputs Order placement data for use in that model.

11. Should the Commission adopt Verizon's proposed material cost inputs?

98 Material cost inputs relate to costs incurred for physical plant, such as cable, which Verizon purchases from suppliers pursuant to contract. Verizon's cost model relied on price inputs taken from vendor contracts in effect at the time its filing in this case was made. The HM 5.3 cost model incorporated material cost inputs from a Florida Commission order.

99 In the 24th Supplemental Order, the Commission rejected the material costs proposed in each cost model.[108] In the HM 5.3 model, the Commission substituted the FCC's USF Inputs Order material cost data by density zone, updated by application of the Turner Price Index, in order to be consistent with its findings on placement costs. Since Verizon's model was not capable of adjustment by density zone, the Commission was unable to similarly incorporate the USF inputs in the Verizon model. Instead, the Commission reduced the weight it accorded the Verizon model.

100 Verizon repeats its objection to the Commission's reliance on the FCC's USF Inputs Order.[109]

101 **Discussion and decision.** We affirm 24th Supplemental Order material cost findings, on the same grounds discussed in the placement cost inputs section above.

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[108] *Order ¶¶ 341-345.*

[109] Verizon Petition at 42.

12. Should Verizon implement the 5% line reduction associated with full competition, or should the Commission's affirm its surrogate line reduction?

102 One of the issues the Commission instructed the parties to address in their post-hearing briefs was whether increased structure sharing in a fully competitive market would be likely to cause line losses for incumbent carriers like Verizon. That is, if there were facilities-based carriers[110] in full competition with Verizon, would Verizon be likely to lose customers to those carriers? If competition reduced the number of Verizon lines, the effect would be to spread Verizon's network element costs over fewer lines. This, in turn, would increase UNE loop rates.

103 In the 24th Supplemental Order, the Commission found it reasonable to implement a 5% line count reduction to account for Verizon line loss to facilities-based competitors.[111] Because it proved too difficult for the Commission to figure out how to implement the 5% reduction to loop rates in the Verizon model, the Commission developed a surrogate adjustment: the Commission implemented the 5% reduction in the HM 5.3 model and found that it increased the HM 5.3 loop price by 3.1%. Therefore, the Commission increased the Verizon loop cost estimate by 3.1%.

104 Verizon protests that the Commission should allow Verizon to implement directly the 5% reduction by incorporating it in a VzCost model compliance run, rather than making a 3.1% surrogate adjustment to Verizon's loop rate. Staff recommends against leaving the adjustment to a Verizon compliance filing because Staff had great difficulty with running the Verizon model and it is unlikely Staff will be able to verify Verizon's compliance adjustment. Staff recommends that the Commission itself verify the compliance filing.

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[110] A facilities-based telephone carrier is one who owns and operates its own switches and transport. Such a carrier may rely on Verizon's distribution facilities to a customer's home, but otherwise maintains its own facilities. Facilities-based carriers may be compared with other carriers who rely on UNE-P (purchase of Verizon's switching, transport and loop) to provide service to their customers. We note that UNE-P has been dismantled by the FCC and will no longer be available to competing carriers as of March, 2006.

[111] *Id.*

105 **Discussion and decision.** We affirm the Commission's surrogate 5% line reduction adjustment to Verizon's loop rate and reject Verizon's proposal to perform the adjustment in its compliance filing.

106 We identified earlier in this order the difficulties the Commission experienced in understanding and running the Verizon cost model. We also noted that Commission Staff expressed difficulty in running the VzCost model. If we permitted Verizon to include the 5% line reduction in its compliance filing and Commission Staff were unable to verify Verizon's implementation of the reduction, the Commission itself would end up performing the verification. The verification process would likely be a lengthy one, given the Commission's experience in running the Verizon cost model while preparing the order in this proceeding, and would likely achieve only a small benefit in increased accuracy of the resulting loop rates.

13. Switching issues.

107 We turn now from the loop UNE to a discussion of the switching UNE. Switching is the process of: 1) funneling a call from one part of Verizon's network to another, or 2) funneling a call to or from a competing carrier, through Verizon's switches, to or from a Verizon customer. Switching ceases to be a UNE after March 11, 2006 according to the FCC's recently issued permanent unbundling rules.[112] However, the Commission must determine the price for switching in order to determine a rate for reciprocal compensation. Reciprocal compensation is the charge carriers pay each other for the termination of a call on each other's networks. That is, if a Verizon customer calls an AT&T customer, Verizon pays AT&T for getting the call to the AT&T customer's phone.

108 Just as loop costs and rates are produced by means of using cost models, so are switching costs and rates. In this proceeding, Verizon presented the SCIS switching model, whereas AT&T relied on the HM 5.3 model's switching component to develop switching investments and rates.

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[112] *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 (rel. Feb. 4, 2005).*

109 In the 24th Supplemental Order, the Commission rejected Verizon's switching cost model – SCIS – for three reasons: 1) Verizon failed to produce documentation about the model until one week prior to the evidentiary hearing; 2) Verizon failed to provide adequate documentation of the discounts it received on switch purchases;[113] and 3) Verizon did not provide sufficient documentation to support its proposed additional costs for vertical switch features.[114] Vertical switch features are those aspects of switching, such as call waiting or call forwarding, that are among the functions a switch can perform. In rejecting Verizon's proposed additional charges for vertical switch features, the Commission relied on an earlier ruling in UT-960369, where the Commission rejected separate or additional ILEC charges for vertical switch features absent sufficient documentation that additional costs were incurred to provide the features.[115]

110 Having rejected Verizon's switching model, the Commission adopted the HM 5.3 switching model which incorporates switch investment data from the USF Inputs Order for the period 1989 to 1996. To update the Inputs Order data, the Commission applied the Turner Price Index.[116]

111 Finally, the Commission determined that 92% was an appropriate fill factor for switching, relying on similar determinations in prior generic cost proceedings.[117] The remaining 8% of line capacity is a measure of the percentage of switching capacity left vacant for growth, maintenance, and administrative functions.

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[113] Switch manufacturers customarily provide deep discounts for initial switch purchases, with smaller discounts for later upgrades, on the premise that once the purchaser is locked into an initial purchase from a manufacturer, the manufacturer will benefit from later upgrade purchases that are not as steeply discounted.

[114] *Order ¶ 462.*

[115] *Id.*, ¶ 469.

[116] *Id.*, ¶¶ 462-463.

[117] *Id.*, ¶ 385.

a. Should the Commission affirm the rejection of Verizon's SCIS switching model?

112 First, Verizon contends that the Commission improperly rejected Verizon's SCIS switching model for failure to timely provide information about it.[118] Verizon asserts that even though it provided the SCIS source code to AT&T only one week prior to hearing, this was not detrimental to AT&T. Verizon claims that it was an AT&T employee who had developed the SCIS model in the first place and thus AT&T must already have possessed adequate information about the code. Moreover, in Verizon's California UNE proceeding (still pending before the California Commission), Verizon claims that even when it provided AT&T with SCIS documentation in a timely way, AT&T did nothing with the information because the source code has no impact on Verizon's switching costs.

113 Second, Verizon asserts that it was improper for the Commission to reject Verizon's switching model for failure to provided complete documentation of the types and amounts of switch discounts that apply to SCIS switch investment inputs. Verizon claims that the record contains sufficient support for the kinds of discounts that apply to its switch investments, including the testimony of its witness Mr. Mazziotti.

114 **Discussion and decision.** We conclude that the Commission properly rejected the SCIS model based on a number of factors, not just Verizon's untimely production of the SCIS source code. Contrary to its argument, Verizon did not provide adequate documentation of its switch purchase discounts. The Commission was unable to determine how much of Verizon's switch investment was discounted as a new purchase and how much was discounted as an upgrade. The Commission reviewed in depth Verizon's switch investment data in Exhibit 304C and found it contained insufficient information to determine a percentage of new versus upgrade discounts applied to Verizon's switch purchases. Nor does Mr. Mazziotti's testimony[119] include adequate discount information. Verizon did not identify where, other than Mr. Mazziotti's testimony, information about such discounts was provided. Without such

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[118] Verizon Petition at 46.

[119] Verizon Petition at 51.

information the Commission could not rely on the Verizon switching investments to produce a TELRIC-based switching rate.

b. Should the Commission reject the HM 5.3 switching model and investments?

115 Verizon attacks the Commission's adoption of the HM 5.3 switching model. Verizon contends that the data used for switch investment in the HM 5.3 model is outdated and that the Turner Price Index (TPI) is not adequate to update switching investments because it does not address advances in switch technology over the years.

116 Verizon also objects that the HM 5.3 switching model improperly assumes the purchase of all new switches. Verizon contends that this assumption means that the HM 5.3 switching investment is too low because new switch discounts are much higher than discounts for the purchase of upgrades. Verizon claims that such an assumption is contrary to FCC pronouncements requiring consideration of both growth purchases at smaller discounts and new purchases at greater discounts in determining UNE switching rates. Verizon states that if the Commission disputes the discount mix for switches in the Verizon model, the Commission can adjust the mix to what it deems reasonable, but that outright rejection of the SCIS model is improper.

117 **Discussion and decision.** We determine that the Commission properly adopted the HM 5.3 switching model and investments in the 24th Supplemental Order. The HM 5.3 switch investment data can readily be updated by the TPI Index and is compliant with TELRIC costing standards for a complete, forward-looking network rebuild.[120] Verizon does not cite any compelling evidence to support its proposition that the TPI Index, when used in combination with the FCC inputs, fails to produce a reasonable estimate of the cost of a digital switching machine. Since the Commission could not determine whether Verizon's switching

[120] HM 5.3's assumption of "all new" switch purchases better complies with the TELRIC standard of cost for a complete, forward-looking, efficient network rebuild. The FCC's TELRIC Notice of Proposed Rulemaking (NPRM), cited by Verizon as rejecting a "100% new" assumption, is not an FCC order. Thus, while the NPRM may offer guidance or insight to the Commission, it does not have the same force as an FCC order in directing the outcome of a state proceeding.

investment inputs comply with the TELRIC standard, it chose the most reasonable alternative – updating the switching investments proposed in HM 5.3.

c. Should the Commission include Verizon's proposed costs for vertical switch features?

118 Verizon disputes the Commission's rejection of Verizon's proposal to include additional costs for vertical switch features in switching rates. Verizon argues that certain switch features, such as three-port conference circuits, undisputedly require additional hardware, and thus cause additional costs to Verizon. Verizon contends that it did provide adequate documentation of the additional costs of this hardware, but that if the Commission disagrees with Verizon's documentation, the proper remedy is to adjust Verizon's proposed costs rather than to reject them totally. Verizon states that this is the approach that the Massachusetts Department of Telecommunications and Energy followed in a recent Massachusetts UNE proceeding involving Verizon.

119 **Discussion and decision.** We affirm the 24th Supplemental Order finding on this issue. Verizon did not provide sufficient documentation on the record to support the inclusion of any additional vertical features costs in its model. Moreover, the Commission adopted the HM 5.3 switching model, which includes the costs of vertical switch features. Verizon's new recommendation, to adjust for additional vertical switch feature cost inputs as the Massachusetts Commission did, is based on a record made in another jurisdiction and comes too late in this proceeding to permit the Commission to consider it.

d. Should the Commission adopt Verizon's proposed switching fill factor?

120 Verizon disputes the Commission's determination of a 92% fill factor for switching.[121] Verizon instead proposes a 74% switching utilization factor.[122] Verizon claims that its switching cost studies demonstrate that the 74%

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[121] *Order ¶ 385;* fill factors measure the amount of extra plant capacity necessary to meet reasonable estimates of growth of customer demand plus capacity required for testing and repair. *See* the discussion of fill factors at Order ¶¶ 346-351.

[122] Verizon Petition at 52.

utilization factor is more appropriate than the 92% fill factor because the lower number measures the total number of ports, beyond those required for repair or testing, that are actually assigned to customers, rather than are merely available to be assigned to customers.[123]

121 **Discussion and decision.** We are not persuaded to adopt Verizon's proposed switching fill factor, presented to us for the first time in Verizon's petition for reconsideration. Verizon provides no citation to the record that refers to a 74% utilization factor, and we have been unable to locate Verizon's recommended factor in the record. The 92% fill factor adopted by the Commission was employed in two previous dockets[124] associated with UNE pricing. Without any evidence on the record in this proceeding to contradict the reasonableness of the 92% factor, or to support Verizon's 74% factor, we affirm as reasonable the Commission's decision to maintain use of the 92% factor.

14. Does the 24th Supplemental Order require Verizon to run HM 5.3 in order to make a compliance filing?

122 In the 24th Supplemental Order,[125] the Commission ordered Verizon to make a compliance filing in which Verizon would weight the rates resulting from the Commission's adjusted VzCost model run and the Commission's adjusted HM 5.3 model run, according to the 60% Verizon, 40% HM 5.3 weighting ordered by the Commission.

123 Verizon contends that the Commission may not legally require it to run the HM 5.3 cost model in order to comply with the Commission's Order. In addition, Verizon asserts that although the Order identifies changes made to the HM 5.3 distribution module contained in the model, the Commission did not produce a modified distribution module. In order for Verizon to replicate the adjusted HM 5.3 model run, Verizon claims it must obtain an electronic version of the modified distribution module.

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[123] *Id.*, at 53.
[124] *UT-980311(a), 10th Supplemental Order, ¶ 159; UT-960369, 8th Supplemental Order, ¶ 312.*
[125] *Order ¶ 578.*

124 **Discussion and decision.** Upon review of the 24th Supplemental Order,[126] we conclude that the Commission did not order Verizon to perform a compliance run of either VzCost or HM 5.3. Instead, the Commission set forth the results of the Commission's own model runs in Appendix A of the Order and required that Verizon provide a list of the UNE rates produced when those results are weighted 60/40%. The Commission further requires Verizon to make certain calculations related to determining: 1) a reciprocal compensation rate;[127] 2) the incorporation of umbilicals and SS7 in the traffic-sensitive switching rate;[128] and 3) the incorporation of loop costs from the Main Distribution Frame cost study.[129] None of these calculations require Verizon to run the HM 5.3 model.

D. XO/Pac-West's Petition for Reconsideration

125 XO and Pac-West (XO/Pac-West) raise only one issue in their petition for reconsideration – the reciprocal compensation rate to be paid by Verizon to CLECs for the termination of local traffic. XO/Pac-West contend that the rate paid by Verizon for terminating a call on XO/Pac-West's networks should exactly equal the rate Verizon identifies as its traffic-sensitive switching rate.

126 As indicated above, reciprocal compensation is the payment carriers make to each other for connecting calls to each other's customers. For example, when an XO customer calls a Verizon customer, XO pays Verizon to connect the call to the Verizon customer's phone. It is called reciprocal compensation because Verizon similarly pays XO to terminate Verizon customers' calls on XO's network.

127 The duty of carriers to establish reciprocal compensation is established in 251(b)(5) of the Act. However, two other sections of the Act provide rate setting standards that have an effect on reciprocal compensation rates. Each standard is slightly different. The first, Section 252(d)(1), addresses the way rates may be set for switching. That section provides that state commissions may set just and reasonable rates for interconnection and network elements, such as switching, based on the *cost plus a reasonable profit*. *(emphasis added)*.

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[126] *Id.*, ¶ 578.
[127] *See* Section E.1 of this Order.
[128] *See* Section E.2 of this Order.
[129] *See* Section E. 3 of this Order.

128 On the other hand, Section 252(d)(2) addresses the way rates may be set for reciprocal compensation. That section states that ILEC rates for reciprocal compensation must (i) provide for the "mutual and reciprocal recovery by each carrier of costs associated with the transport and termination on each carrier's network facilities of calls that originate on the network facilities of the other carrier," and (ii) "determine such costs on the basis of a reasonable approximation of the *additional costs* of terminating such calls." *(emphasis added).*

129 Thus, the provisions of the Act itself clearly envision the possibility that the cost for the switching UNE would be different from the termination or reciprocal compensation cost.

130 The FCC, in the Local Competition Order, released August 8, 1996, determined that the pricing standards established in each of the above sections of the Act were "sufficiently similar to permit the use of the same general methodologies for establishing rates."[130] The FCC determined that the Section 252(d)(2) "additional cost" of terminating a call originating on a CLEC network "primarily" consisted of the "traffic-sensitive component of local switching." The FCC indicated that "additional costs" *may* include a "reasonable allocation of forward-looking common costs." *(emphasis added)*.[131]

131 Prior to the passage of the 1996 Telecom Act, the Commission, in a U.S. West rate order,[132] found that shared costs, such as getting started costs, should not be included in the estimate of the incremental or "additional" cost of service. However, in the second UNE cost proceeding,[133] the Commission agreed with the Local Competition Order, stating that: "the cost of call termination consists of the traffic-sensitive component of local switching." On that basis the Commission established a per-MOU reciprocal compensation rate structure based on

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[130] *Local Competition Order ¶ 1054; see also* 47 C.F.R. § 51.705(a)(1) which provides that the pricing of termination shall be based on the same methodology used for pricing UNEs.
[131] *Id.*, ¶ 1058.
[132] *Docket No. UT-950200, Fifteenth Supplemental Order, April 11, 1996 at 82-86.*
[133] *Docket No. UT-003013, 32nd Supplemental Order, ¶ 91*

permanent UNE switching and transport rates, in effect agreeing with the position XO/Pac-West espouse in this case.[134]

132 In this cost docket, Verizon proposed a reciprocal compensation rate lower than the traffic-sensitive rate it proposed for UNE local switching. Verizon claims that the section 252(d)(2) "additional cost" standard, cited above, is different from the switching UNE cost-recovery standard in section 251(d)(1) and allows Verizon to exclude from its "additional costs" the costs it incurs for "getting started," such as "switch processor and memory, test equipment, maintenance equipment, office spares, and other miscellaneous equipment [that] are not impacted by the additional reciprocal compensation usage."[135]

133 XO /Pac-West objected to Verizon's proposal, arguing to the Commission in their post- hearing brief that the reciprocal compensation rate should be the same as the traffic-sensitive, per-minute of use (MOU) portion of the local switching rate. They argue that since Verizon's per-MOU portion of the local switching rate includes getting started costs, the getting started costs are not properly excluded from the reciprocal compensation rate.

134 In the 24th Supplemental Order, the Commission rejected XO/Pac-West's proposal on grounds that: 1) it was not timely made or properly supported on the record; 2) the Act makes a distinction between switching and termination rates and provides that the cost of call termination need not be the same as the cost for switching.[136]

1. Should the Commission adopt XO/Pac-West's proposed reciprocal compensation rate?

135 In their petition, XO/ Pac-West argue[137] that the Commission: 1) erroneously adopted a new interpretation of the Act in determining that the reciprocal

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[134] *Id.*, ¶¶ 29-91.
[135] *Ex. 201TC at 95; Verizon Response to XO at 3*
[136] *Order ¶ 528*
[137] XO and Pac-West also argue that the Commission erred in rejecting their proposal due to failure to timely present it. Since we reject XO/Pac-West's arguments on substantive grounds, we will not address the procedural argument.

compensation need not be the same as the traffic-sensitive portion of the local switching rate; 2) violated the express finding of the Local Competition Order that under the "additional cost" standard, common and shared costs could be included to determine reciprocal compensation; and 3) overturned the Commission's ruling on reciprocal compensation in the 32nd Supplemental Order.

136 Verizon responds that the Commission's determination in the 24th Supplemental Order was proper. Verizon observes that the Local Competition Order only states that reciprocal compensation rates should be set using a TELRIC methodology. The Order does not specifically require reciprocal compensation for termination to be the same as the per-MOU rate for local switching.

137 Staff observes that the Local Competition Order states that the reciprocal compensation rate consists primarily of the traffic-sensitive portion of the local switching rate. Based on that language, Staff requests that the Commission clarify "what [the Commission] sees as being required by the FCC's statements regarding additional cost."

138 **Discussion and decision.** We affirm the holding of the 24th Supplemental Order adopting a reciprocal compensation rate different from the traffic-sensitive portion of the local switching rate. The Commission correctly recognized that Sections 252(d)(1) and 252(d)(2) clearly allow different rates because they identify different cost standards for switching and reciprocal compensation (termination). Even though the FCC's Local Competition Order indicates that costs under both standards should be calculated using the same TELRIC methodology, the language employed in the Local Competition Order is permissive. For example, the FCC says that "additional costs" for reciprocal compensation include "primarily" the traffic-sensitive portion of the local switching rate, and that TELRIC-based termination rates "may" include a reasonable allocation of common costs.

139 We are persuaded that in ruling on reciprocal compensation rates in the 32nd Supplemental Order, the Commission did not address the same issue that XO/Pac-West raise here. In the 32nd Supplemental Order, the Commission focused on whether or not it could set a reciprocal compensation rate for non-

Internet Service Provider (ISP) bound traffic.[138] The issue of what costs are properly considered "additional costs" in Section 252(d)(2) of the Act was not before the Commission.

140 We note that in its recent Notice of Proposed Rulemaking on Intercarrier Compensation (IC NOPRM), [139] the FCC pointed out several reasons why reciprocal compensation termination rates should not precisely equal per-MOU local switching rates. In the NOPRM, the FCC discusses the fact that reciprocal compensation rates often substantially exceed the per-minute incremental cost of terminating a call. Because of this, such reciprocal compensation rates create a windfall for carriers that serve customers that receive large volumes of incoming calls, such as internet service providers. In fact, in the IC NOPRM, the FCC goes on to solicit comments on the exact issue we are presented with here, that is, what costs are properly considered additional costs for purposes of setting reciprocal compensation.

141 We further note that the record in this proceeding is thin with regard to the issue of what costs should be considered "additional costs" for purposes of setting reciprocal compensation rates, partially because XO and Pac-West did not make an evidentiary presentation. However, Verizon presented evidence supporting the exclusion of its non-traffic sensitive "getting started" costs from the traffic-sensitive switching costs. We find that this exclusion better reflects that the reciprocal compensation rate will recover only the actual traffic-sensitive portion of the local switching rate. This accords with both the statutory language and the permissive language of the Local Competition Order. No other evidence was presented to refute the exclusion. Based on the evidence presented, the Commission's decision adopting Verizon's reciprocal compensation rate remains reasonable.

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[138] *UT-003013, 32nd Supplemental Order, ¶ 88-92*. The Commission was grappling with a recent FCC order removing from state commissions' jurisdiction over the function of setting rates for Internet-related (ISP-bound) traffic and intercarrier compensation.

[139] *In the Matter of Developing a Unified Intercarrier Compensation Regime, CC Docket No. 01-92, further Notice of Proposed Rulemaking, Released March 3, 2005 (ICC NOPRM), ¶¶ 13; 71-73; fn. 67*.

E. Verizon's clarification requests.

142 In its motion and petition for clarification, Verizon raises several matters in the 24th Supplemental Order that it believes require clarification. Most of these requests for clarification are relatively technical in nature, and refer to aspects of the Commission's operation of the Verizon cost model. We provide answers and explanations below.

1. Cable size adjustment.

143 Appendix A of the 24th Supplemental Order states that the "Commission adjustments required the use of aerial and buried cables in excess of 1200 pairs and underground cable in excess of 2100 pairs." Based on this statement, Verizon requests clarification that the additional cable sizes Verizon should add to the VzCost table are 1800 and 2400-pair for aerial cable; 1800, 2400, 3000, 3600 and 4200-pair for buried cable; and 2400, 3000, 3600 and 4200-pair for underground cable.[140]

144 Appendix A also states that "[t}he cost of [the] materials [for the added cable sizes] was estimated based on a regression of Verizon's existing cable data and added to the Materials table." Verizon asks that the Commission specify the regression function and the resultant prices for the added cable sizes, so that Verizon can be sure it is implementing the adjustments correctly.

145 **Discussion.** The following calculations and tables show the cable sizes added to the VzCost Material table by the Commission. We note that some of the cable sizes assumed by the Commission in Appendix A differ from sizes referred to in Verizon's petition. Those cable sizes are underlined in the following table:

[140] Verizon Petition for clarification at 2-3.

Aerial

	Coefficients
Intercept	0.210642887
Variable	0.005455421

The estimated cost of a 2,400 pair aerial cable is:

(a) + (b)[x]

(0.210642887) + (0.005455421) x [2,400] = $ 13.30

Buried

	Coefficients
Intercept	0.179321
Variable	0.006174

Underground

	Coefficients
Intercept	0.33094
Variable	0.00595

Aerial	AER$	Buried	BUR$	Underground	UND$
25	$ 0.26	*25*	$ 0.26	*x*	x
50	$ 0.56	*50*	$ 0.49	*50*	$ 0.51
100	$ 0.86	*100*	$ 0.82	*100*	$ 0.85
200	$ 1.48	*200*	$ 1.44	*200*	$ 1.54
300	$ 1.71	*300*	$ 2.03	*300*	$ 2.22
400	$ 2.24	*400*	$ 2.67	*400*	$ 3.00
600	$ 3.49	*600*	$ 3.92	*600*	$ 3.85
900	$ 5.00	*900*	$ 5.72	*900*	$ 5.56
1200	$ 6.89	*1200*	$ 7.57	*1200*	$ 7.35
1500	$ 8.39	**1500**	$ 9.44	*1500*	$ 9.24
1800	$ 10.03	**1800**	$ 11.29	*1800*	$ 11.12
2100	$ 11.67	**2100**	$ 13.14	*2100*	$ 12.84
2400	$ 13.30	**2400**	$ 15.00	**2400**	$ 14.61
2700	$ 14.94	**2700**	$ 16.85	**2700**	$ 16.40
x	x	**3000**	$ 18.70	**3000**	$ 18.18
x	x	**3600**	$ 22.41	**3600**	$ 21.75
x	x	**4200**	$ 26.11	**4200**	$ 25.32

146 Based on this analysis, we acknowledge that our inclusion of the 2,700-pair cable-size assumption may be an error, but we do not believe that it is of sufficient magnitude to require correction. The 2,700-pair size is not part of the VzCost material table or the USF Inputs table. However, we included this cable size

because Verizon and AT&T witnesses specifically discussed the use of 2,700 pair cables.[141]

147 Based on this testimony, we concluded that a 2,700-pair cable was an option, and was the largest cable that could be placed on a pole. We generally assumed that the underground cable sizes Verizon already accounted for in its Material table were representative of the sizes also available for aerial and buried cable. To this we added 2,700-pair cables and the remaining large cable options listed in the appendix to the FCC Inputs Order [3,000; 3,600; and 4,200], as these are common sizes.

148 If Verizon concludes that there would be a significant difference in cost due to our inclusion of this 2,700-pair cable size, Verizon should provide in its compliance filing a comparison that includes two cost model runs, one with the Commission's assumed cable sizes and one with Verizon's corrected cable sizes. In performing these sensitivity runs, Verizon must use the inputs approved in this Order and the 24th Supplemental Order. Verizon must include step-by-step instructions for how to correct the cable sizes in the Commission's current run of VzCost so that the Commission is able to verify the change.

2. Umbilicals/SS7.

149 In the 24th Supplemental Order the Commission found that the costs for umbilicals (cable that runs between a wire center and a remote terminal to allow a signal to be sent to the switch at the wire center) and for the SS7 call set up function (tells the switch how to route the call) should be recovered through local switching rates, and that SS7 costs are properly recovered through the usage sensitive portion of the switching rate.[142]

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[141] *TR 1430; 1593.*

[142] *Order, ¶¶ 474-474; see also ¶¶ 515-518*. The Commission determined that the UNE rate for switching should consist of a bifurcated rate: a traffic-sensitive, or per-Minute-of-Use rate, for switching costs that increase with use of the switch, and a non-traffic sensitive, or flat rate, for non-usage based costs.

150 Verizon observes that implementation of this finding is difficult because the Commission adopted the HM 5.3 model for determining switching rates.[143] Verizon claims that since the HM 5.3 modeled a single, flat rate for switching, it may preclude incorporating SS7 costs. Verizon asks whether the SS7 and umbilical costs from Verizon's cost model should be incorporated into HM 5.3 for determining switching costs.

151 **Clarification.** The SS 7 and umbilical costs should be included in HM 5.3 as long as the costs are incorporated in a manner consistent with other decisions in the order such as the cost of equity and depreciation. Verizon must provide the Commission in the Verizon compliance filing with the ratio of umbilical and SS7 costs to its per-MOU switching rate from Verizon's original filing, so that we can inflate the HM 5.3 per-MOU rate by that factor.

3. Main Distribution Frame[144] loop costs.

152 In the 24th Supplemental Order, the Commission rejected Verizon's switching model but gave Verizon's VzCost model results 60% weighting when determining the appropriate cost for loops. Verizon points out[145] that it included a Main Distribution Frame cost study with its switching cost studies.[146] Verizon states that the Main Distribution Frame study includes some loop-related costs and Verizon requests that these Main Distribution Frame loop costs be included in calculating Verizon's loop rates. Verizon proposes to segregate out the loop-related Main Distribution Frame studies and incorporate them into VzCost to determine loop rates.

153 **Clarification:** Verizon should incorporate the Main Distribution Frame loop-related cost studies into VzCost in Verizon's compliance filing. Verizon should file an MDF study in its compliance filing that incorporates the Commission's decisions in the 24th Supplemental Order (e.g., cost of money, utilization,

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[143] Verizon Petition at 53.

[144] The Main Distribution Frame (MDF) is a frame that connects the telephone lines coming from outside on one side of the frame and the internal lines on the other. An MDF may also carry protective devices as well as function as a central testing point.

[145] Verizon Petition at 53.

[146] *Id.*, at 53.

depreciation) and add the recurring monthly cost of the MDF to the loop estimate produced by VzCost identified in the order. Verizon should then weight the resulting VzCost loop estimate at 60%, in accord with the Commission's order.

4. HM 5.3 reciprocal compensation rate calculation.

154 We have affirmed the 24th Supplemental Order determination that the price of call termination (reciprocal compensation) may be different from the cost of switching.[147] The Commission also determined that the switching rate properly consisted of both a traffic-sensitive and a non-traffic sensitive segment.[148] However, the Commission also adopted the HM 5.3 switching model that calculates a flat rate for switching.[149]

155 Verizon contends that it is not clear how the HM 5.3 model calculates reciprocal compensation rates and that Appendix A of the Order does not contain reciprocal compensation rate inputs. Verizon asks how its reciprocal compensation rates should be calculated.[150]

156 **Clarification:** For its compliance filing, Verizon should apply the ratio: Verizon's proposed reciprocal compensation rate to Verizon proposed switching usage rate, to the traffic sensitive rate that is produced by the HM 5.3 model

5. Application of 5% loop demand reduction to switching.

157 In the 24th Supplemental Order, the Commission reduced Verizon's loop demand by 5%. Verizon observes that this adjustment should also apply to switching costs.[151]

158 **Clarification:** The 5% loop demand reduction should also apply to switching costs. The Commission provides its HM 5.3 cost model run, demonstrating the

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[147] O*rder ¶ 528.*
[148] *Id*., Appendix A.
[149] *Id*. ¶ 518.
[150] Verizon Petition at 54.
[151] *Id*., at 54.

application of the loop demand reduction to switching costs, in Appendix B to this Order.

6. Loop demand reduction factor.

159 In the 24th Supplemental Order, the Commission reduced Verizon's line count by 5%, resulting in an increase in loop rates of 3.1% (¶ 312). However, in the ordering clause, the Commission stated that Verizon's loop costs should be increased by a factor of 1.03149% (¶ 578). Verizon asks whether the ordering clause should actually reflect an increase of 3.149%.

160 **Clarification:** Verizon is correct. The ordering clause should reflect an increase of 3.149%.

7. Performance of Step 2 in compliance run.

161 Verizon requests clarification whether in its compliance run it should perform Step 2 of the "VzLoop/VzCost Loop Study Checklist"[152] so that it properly applies the economic crossover analysis[153] for DLCs (Digital Loop Carriers) that lie within the 12,000 foot copper/fiber breakpoint distance from the central office.[154] While the 24th Supplemental Order adopted the 12,000-foot breakpoint,[155] it did not address the appropriate steps for applying the economic crossover analysis (Step 2) to DLCs within that distance.

162 Assuming Verizon should apply Step 2 of the VzLoop/VzCost Study Checklist in its compliance run, Verizon asks whether the economic crossover values should be populated for both labor groups LR1 and LR2 in the Placement table.

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[152] This is a checklist for operations that need to be performed in running the Verizon cost model.
[153] The economic crossover point determines when carriers will use fiber cable instead of copper cable in their feeder plant. The cost of a DLC system is included in the calculation of the economic cost of using fiber. DLC would not be used with copper feeder plant.
[154] Verizon Petition for Clarification at 3.
[155] In the 24th Supplemental Order, the Commission determined that the model input for the maximum length of copper loop should be 12,000 feet, rather than 18,000 feet as recommended by AT&T. The 12,000 feet maximum ensures that the modeled network will not impede the provision of high-speed telecommunications facilities on copper lines. *Order, ¶¶ 253-255.*

163 **Clarification:** Although the Commission believes that Verizon will not need to perform a compliance run of VzCost, to the extent Verizon performs such a run, it should perform Step 2 of the "VzLoop/VzCost Loop Study Checklist" and populate the economic crossover values for both labor groups LR1 and LR2 in the Placement Table.

8. Specific value of per-line investment.

164 Verizon asks the Commission to identify the specific value of the investment[156] per line for the 2-wire loop that corresponds to the $18.86 2-wire loop cost the Commission derived from VzCost.[157]

165 **Clarification:** The value of the investment per line for the 2-wire loop that Verizon requests is as follows:

Total loop investment $953.90:

TOTAL LOOP INVEST.			
	221200	D	4.39
	221200	S	0.000000
	223200	D	229.17
	223200	S	66.89
	241100	S	38.41
	242110	D	88.31
	242120	D	8.72
	242210	D	50.27
	242220	D	6.94
	242310	D	207.67
	242320	D	35.97
	244100	S	217.17

[156] This investment per-line refers to the investment amount per UNE produced by the cost model. *See* Part II.A. above.
[157] Verizon Petition for Clarification at 3.

9. Other required adjustments.

166 Verizon asks whether any other adjustments should be made to any of Verizon's input tables, or to Verizon's EFI[158] loadings, BC families,[159] Cost Templates and Contents files,[160] apart from those specifically identified or referenced in the Commission's ordering clauses.[161]

167 **Clarification:** The Commission believes that all of the necessary adjustments were described in Appendix A to the 24th Supplemental Order. However, given the hundreds of initial and intermediate inputs used by VzCost, it is an extremely difficult task to re-verify all of VzCost's inputs. The difficulty of the this task is the reason the Commission specifically requested (in Appendix A to the Order) that Verizon produce a report that would identify the input values proposed by Verizon and those actually used in a given run of VzCost. The only changes the Commission made to BC families or to cost templates were to correct for the loop model version mismatches discussed in the 24th Supplemental Order.[162] The changes were performed according to the instructions provided by Verizon during the last conference call, January 14, 2005.

10. Lake Goodwin loop cost.

168 Verizon requests whether the $3.55 2-wire loop cost reported in Appendix A to the 24th Supplemental Order for Lake Goodwin (LKGWWAXA) is correct.[163] This loop cost represents a reduction of more than 90 percent and Verizon suggests that it may be the result of a typographical or other technical error.

169 **Clarification:** We conclude that Verizon is correct that the 2-Wire Loop cost estimated for Lake Goodwin reported in Appendix A is the result of a typographical error. The rate listed in Appendix A was $3.44 – the number "2"

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[158] Engineering, Furnish, and Install

[159] Basic Component files. Verizon's model builds its UNE investments from network investment elements which are then converted into larger groupings called "Basic Components" and then further grouped into unbundled network elements (UNEs). V*erizon Initial Brief at 63.*

[160] Cost Templates and Constants files are parts of the Verizon cost model.

[161] Verizon Petition for Clarification at 4.

[162] *Order*, *Appendix A, fn. 438, 439.*

[163] Verizon Petition for Clarification at 4.

was inadvertently omitted at the front of the rate.[164] The cost reported should have been $23.44.

III. FINDINGS OF FACT

170 The Commission has discussed in detail in the text of this order all of the issues raised for reconsideration and clarification of the 24th Supplemental Order. The Commission's findings in the text of the Order are incorporated by reference here, but summarized below:

171 (1) The Washington Utilities and Transportation Commission (Commission) is an agency of the State of Washington that has the authority, granted by statute, to regulate the rates, rules, regulations, practices, accounts, securities, and transfers of public service companies, including telecommunications companies.

172 (2) Verizon is a public service company engaged in the business of providing telecommunications service within the state of Washington.

173 (3) On August 13, 2003, the Commission initiated this docket to determine recurring and non-recurring unbundled network element rates for both Verizon and Qwest. Ultimately, the scope of the docket was reduced to include only recurring unbundled network element rates for Verizon.

174 (4) On February 9, 2005, the Commission entered the 24th Supplemental Order in this docket, a final order establishing recurring unbundled network element rates for Verizon and requiring Verizon to make a compliance filing.

175 (5) Pursuant to WAC 480-07-850, Verizon filed a petition for reconsideration of the following issues determined in the 24th Supplemental Order: the weight accorded to the Verizon cost model and the HM 5.3 cost model respectively; the rejection of Verizon's proposed cost of equity, proposed risk premium, depreciation cost and expense adjustment; use of the FCC's USF Inputs Order to adjust the HM 5.3 cost model; adjustments to

[164] Appendix A did not report a loop cost of $3.55 for Lake Goodwyn

Verizon's maximum cable size, copper feeder fill, plant mix, and placement cost inputs; reductions in weight accorded the VzCost model related to structure sharing and material costs; rejection of Verizon's switching model, Verizon's proposed additional costs for vertical switch features, and proposed switching fill factor. Verizon also challenged the Commission's surrogate 5% line reduction adjustment.

176 (6) Pursuant to WAC 480-07-850, XO and Pac-West filed a petition for reconsideration of the Commission's determination to adopt Verizon's proposed reciprocal compensation rate.

177 (7) For the reasons set forth in the body of this Order, The Commission determined that it was unnecessary to change any of the findings and conclusions made in the 24th Supplemental Order pursuant to the parties' petitions for reconsideration.

178 (8) Pursuant to WAC 480-07-835, Verizon requested clarification of the 24th Supplemental Order so that it would be able to make a compliance filing in accord with the Order.

179 (9) None of the issues on which Verizon requested clarification sought a change of outcome of the Order.

180 (10) The Commission provided clarification of the 24th Supplemental Order as requested by Verizon, including clarification that Verizon need not run the HM 5.3 cost model in order to make a compliance filing as ordered below.

IV. CONCLUSIONS OF LAW

181 The Washington Utilities and Transportation Commission has the authority to decide this case and has jurisdiction over all the parties to this proceeding.

182 (1) The Commission denies Verizon's and XO/Pac-West's petitions for reconsideration.

183 (2) The Commission grants Verizon's motion and petition for clarification and provides clarification of the 24th Supplemental Order.

184 (3) Verizon must file rate tariffs and supporting compliance filings for each network element consistent with this Order and with the 24th Supplemental Order.

185 (4) The rates established by this Order and the 24th Supplemental Order are just and reasonable, in accord with the pricing standards in Section 252(d) of the Telecommunications Act of 1996, and are fair, just, reasonable, and sufficient in accordance with RCW 80.36.080.

V. ORDER

The Commission orders that:

186 (1) The recurring rates for unbundled network elements proposed by Verizon are rejected in accord with the findings and conclusions contained in this Order and the 24th Supplemental Order.

187 (2) As to each unbundled network element rate that is identified in Appendix A to the 24th Supplemental Order, Verizon shall make compliance filings consistent with this Order and the 24th Supplemental Order, and consistent with the instructions contained in Appendix A to the 24th Supplemental Order, no later than 20 days after the service date of this Order, unless additional time is specifically requested and granted by letter of the Commission's executive secretary.

188 (3) Each compliance item must be accompanied by a brief description of what is accomplished by the filing, must cite each paragraph of this Order or the 24th Supplemental Order with which it complies, and must identify each model input modified. In addition, Verizon must include a complete updated checklist and additional documentation about the Verizon cost model in accord with our directions in Appendix A to the 24th Supplemental Order.

189 (4) Other parties may respond to Verizon's compliance filings no later than 20 business days after Verizon files them, unless additional time is specifically requested and granted by letter of the Commission's executive secretary. If other parties claim that Verizon has failed to comply with the terms of this Order or the 24th Supplemental Order, they must identify the portion of the Order with which Verizon is out of compliance and describe how Verizon's filing fails to comply.

190 (5) A copy of each filing with the Commission must be served on counsel for the other parties so that it is received on the date filed with the Commission.

191 (6) The Commission retains jurisdiction over all matters and the parties in this proceeding to effectuate the provisions of this Order.

DATED at Olympia, Washington, and effective this 10th day of June 2005.

MARK H. SIDRAN, Chairman

PATRICK J. OSHIE, Commissioner

PHILIP B. JONES, Commissioner

VI. APPENDIX A - GLOSSARY

Act – The Federal Telecommunications Act of 1996.

Achieved fill – see definition of "Fill." Achieved fill is the fill factor that is produced as the output of a cost model.

Annual Cost Factor (ACF) – the factor used to adjust a UNE investment to reflect the annual expenses that will be incurred for that investment. For example, the ACF will determine the annual expense related to operating and maintaining a switch.

Automated Reporting Management Information System (ARMIS) – data about an ILEC network and operations that are reported regularly to the FCC.

Capital Asset Pricing Model (CAPM) – one example of a formula that can be used to estimate the cost of equity capital.

Capital structure – the percentage of funds a company obtains by either borrowing money or issuing stock. In a TELRIC proceeding the FCC mandates that the capital structure be forward-looking, not historical.

Central office – the place where switching equipment is located. Central offices are located in wire centers. Verizon has 99 wire centers. Each wire center may have more than one central office.

CLEC – Competitive local exchange company; not an ILEC, and generally subject to very limited regulation.

Collocation – Space rented in an ILEC central office by a CLEC. The CLEC typically uses the space to aggregate loops and transmit telecommunications back to its own network.

Cost of capital – the cost that a company incurs to obtain the money it requires to run its business. A company may acquire funds by borrowing (incurring a cost of debt) or by issuing stocks (incurring a cost of equity). The cost of capital is

usually calculated by looking at the percentage of debt and the percentage of equity that exists in a company's capital structure, and weighting the actual debt cost and equity cost to produce the overall cost of capital.

Cost of debt – the cost a company incurs for borrowing money.

Cost of equity – the cost a company incurs for obtaining money from stockholders through an issuance of stock.

Clusters – customer demand groupings created for the HM 5.3 cost model by TNS, similar to distribution areas, but typically projected to serve more than 600 customer telephone lines.

Depreciation – a process that allows a company to recover as an expense the cost of its investment in equipment or facilities. For example, if Verizon buys a switch that costs $40,000, it may take a certain percentage of the cost of the switch as a depreciation expense each year. The depreciation expense reduces Verizon's tax liability and allows it to accumulate funds for eventual replacement of the equipment.

Discounted Cash Flow (DCF) – one example of a formula that can be used to estimate an appropriate cost of equity capital.

Distribution – The portion of the loop that runs from a Serving Area Interface (SAI) to a customer's premises.

Distribution areas – in Verizon's network, local customer demand areas, usually serving 400 to 600 customer telephone lines.

Federal Communications Commission (FCC) – Federal body charged with regulation of interstate telecommunications.

Fill – the percentage of plant capacity that is in-use. One minus the fill is the percentage spare capacity. The spare capacity is a reserve for additional growth in customer demand and for repair and testing of equipment. For example, if a switch is put in place to serve 500 lines, the total capacity of the switch would

likely be higher than 500. The total capacity is calculated based on how much current demand is to be served and might be 600 lines. The extra 100 lines are reserved so that future customers would be able to take service without the company having to buy a new switch. Also, if some customer lines experience an outage or need repair, those customers could be served temporarily from the remaining 100 lines

Feeder – The portion of the loop that runs from an ILEC's central office to the Serving Area Interface (SAI) where it is connected to the distribution portion of the loop.

Forward-Looking Calibration (FLC) Factor – the factor used by Verizon to ensure that its forward-looking plant investment is associated with what the Company believes is the appropriate level of forward-looking maintenance and operations expenses. The FLC ensures that the maintenance cost for a switch that used to cost $40,000, but now costs $10,000, will not be correspondingly reduced, since maintenance costs for the switch will likely be the same.

Head of route or mainframe fill - the portion of the loop that is closest to the central office (which would typically be at the main distribution frame).

HM 5.3 – the HM 5.3 cost model was presented by AT&T in this proceeding. HM 5.3 is a successor version of the Hatfield cost model which has been presented to many state commissions and the FCC in telecommunications cost proceedings.

ILEC – Incumbent local exchange carrier.

Interconnection – the physical linking of two networks for the mutual exchange of telecommunications traffic.

Interconnection agreement – agreements between an ILEC and a CLEC governing the interconnection of the CLEC with the ILEC's network. Interconnection agreements must be filed with the Commission and the Commission may arbitrate and enforce such agreements.

Loop -

2-wire loop – a pair of wires that runs from the local exchange carrier's central office to the telephone set or system at the customer's premises. This is the most basic unit of a wireline telecommunications system. The loop consists of feeder wire, running from the central office to a Serving Area Interface (SAI) in the local distribution area, and distribution wire, running from the SAI to the customer's premises.

deaveraged loop rate – loop rates charged to CLECs are deaveraged to reflect the different costs of providing loops in different geographic areas. The Commission has ordered 5-zone loop deaveraging in Washington.

Main Distribution Frame (MDF) – a frame that connects the telephone lines coming from outside on one side of the frame and the internal lines on the other. An MDF may also carry protective devices as well as function as a central testing point.

Material costs – the costs for physical plant facilities such as cable. The material costs do not include the cost of installing the equipment. The total investment (material, installation and testing cost) is known as the equipped, furnished, and installed cost (EF&I).

Non-recurring rates - rates charged by the ILEC for CLEC access to the ILEC's Unbundled Network Elements. Non-recurring rates are one-time charges, usually related to service ordering and installation. Non-recurring rates differ from recurring rates for UNEs, which are monthly or period charges for access to a given UNE.

Non-traffic sensitive rate (NTS) - the switching UNE rate has usually been a bifurcated rate, composed of a traffic-sensitive or per-Minute-of-Use (MOU) rate and a non-traffic sensitive flat rate. The bifurcated rate addresses the fact that some switching costs increase with the number of calls flowing through a switch. For example the size of the switch may need to be larger to accommodate high usage peaks. On the other hand, some switching costs do not vary with usage and can be recovered through a flat rate. The flat rate that recovers NTS costs is often referred to as a port charge.

Operations Support Systems (OSS) – Operational Support Systems (OSS) are used by telephone companies – both CLEC and ILECs – to provision plant, to process service orders, to manage service connections, disconnections, moves and changes, and to track network maintenance. OSS consists of computer hardware and software such as databases.

Outside plant – facilities located outside a central office. The outside plant is mostly composed of loop facilities but it also includes the interoffice facilities that are used to link together different central offices.

Placement costs – the costs for installing cable, usually related to labor costs. Placement usually involves stringing cable, or burying, trenching or plowing.

Plant mix – the mixture of outside plant that is used to provide physical support for local loops. The three basic types of outside plant are: 1) aerial – poles (e.g. cable is strung on poles), block cables, and risers; 2) buried – trenched or plowed; and 3) underground – in conduits or vaults.

Proxy group –a proxy group is a group of comparison companies whose data is used to determine appropriate expectations for the company whose rates are being set.

Reciprocal compensation – the payment carriers make to each other when more than one carrier handles part of a telephone call. For example, if a CLEC customer calls an ILEC customer, the CLEC compensates the ILEC for the cost of terminating a call on the ILEC's network. In reverse, the ILEC compensates the CLEC for terminating a call on the CLEC's network. Reciprocal compensation includes a charge for call termination and for transport and is closely linked with the switching function. Reciprocal compensation is a rate that the Commission will continue to govern after the UNE switching element disappears.

Recurring rates – rates charged by the ILEC for CLEC access to the ILEC's Unbundled Network Elements. Recurring UNE rates are monthly or period rates, as opposed to non-recurring rates, that are one-time charges, usually related to service ordering and installation.

Remote terminal – usually a part of a loop used to assist in providing digital, as opposed to just analog signals. In a digital loop, feeder cable is fiber, rather than copper. Distribution cable is typically copper, but may be fiber. At the end of the fiber feeder cable, the remote terminal converts the fiber digital signal to electrical signals that can be carried over copper cable. The remote terminal then connects to the SAI (by means of an umbilical cable) so that the electrical signals can be transmitted from the SAI through the copper distribution cable to the customer premises.

Risk premium – a proposal by Verizon for an additional return to be added to its proposed cost of equity to compensate Verizon for additional risks associated with UNEs that Verizon claims are not included its cost of equity calculation.

Strand Distance Multiplier (SDM) – the method used by AT&T to ensure that the loop length's produced by the HM 5.3 cost model correspond to the length of loops required to serve actual customer locations.

Switching System Cost Information System (SCIS) – Verizon's switching cost model, used in conjunction with Verizon's COSTMOD program to develop switching costs.

Serving Area Interface (SAI) – a device that connects the feeder portion of the loop with the distribution portion of the loop.

Signaling System 7 (SS7) – a computerized system for setting up and routing calls on a telephone network.

Sizing factor – a factor that increases the amount of customer demand sufficiently so that cable that is selected to serve the demand will be large enough to serve all existing customers plus projected additional future customers and administrative needs for repair and testing of cable.

Structure - plant facilities that are used to support local loops. The three basic types of structure are: 1) poles used for aerial cable; 2) trenches for plowed cable; and 3) conduit used for underground cable

Structure sharing – the degree to which an ILEC is able to share the cost of plant such as poles, feeder and distribution cable, or underground conduit, with third-parties, or within its own network.

Switching – the process of connecting the calling party to the called party. This may involve passing the call through several switches depending on the location of the two parties.

Targeted fill – the fill factor that is used as an input to a cost model so that the model outputs produce sufficient amounts of plant to serve customer demand.

TNS – TaylorNelsonSofres, a company that maintains proprietary customer location databases and that uses proprietary computer programs to process the databases into customer demand units, referred to in Docket No. UT-023003 as clusters, but which are similar to distribution areas.

Termination – see definition for Reciprocal Compensation.

Total Element Long Run Incremental Cost (TELRIC) – this is the costing methodology the Federal Communications Commission (FCC) has established for purposes of developing rates for Unbundled Network Elements (UNEs).

Traffic-sensitive rate – the switching UNE rate has usually been a bifurcated rate, composed of a traffic-sensitive or per-Minute-of-Use (MOU) rate and a non-traffic sensitive, flat rate. The bifurcated rate addresses the fact that some switching costs increase with the number of calls flowing through a switch. For example the size of the switch may need to be larger to accommodate high usage peaks. On the other hand, some switching costs do not vary with usage and can be recovered through a flat rate.

Transport – the carriage of traffic between wire centers.

Turner Price Index (TPI) – a telecommunications industry price index used to update historical costs.

Umbilical – the cable link between a host switch located in a wire center and a remote switch. A remote switch module expands the geographic area that can be served by a host switch. The remote switch has no central processor and depends on the host switch for all processing functions of calls that travel through the remote.

Unbundled Network Elements (UNEs) – the basic components of an ILEC telephone network that are purchased by CLECs from the ILEC so that the CLECs may provide telecommunications service to CLEC end-use customers.

Vertical switch features – functions that a switch performs other than the basic function of routing a call, usually without the need to add additional programming or hardware. Examples of such features are speed dialing and call-forwarding.

VzCost – Verizon's cost model. Actually Verizon's cost model consists of a number of cost modules, such as VzLoop or SCIS. These modules develop plant investment inputs to VzCost, which in turn calculates UNE rates. For ease of reference, the whole Verizon loop modeling system is referred to as VzCost. The switching model is referred to as SCIS.

Wire center – a place where a switch is located.

VII. APPENDIX B

To match the 5% line count reduction ordered by the Commission in paragraph 160 of this Order, the number of switched lines in the 'Unit Costs' tab of HM 5.3's Density Zone output file was reduced by 5%. The following traffic-related inputs in the 'Inputs' tab of the Density Zone output file were also reduced by 5%:

Table X - 'Input' Tab Adjustments

Local DEMs, thousands
Intrastate DEMs, thousands
Interstate DEMs, thousands
Local call completion fraction
Total local calls attempted
Total intraLATA calls completed
Total interLATA calls completed - intrastate
Total interLATA calls completed - interstate

	Annual Cost	Units		Unit Cost	
End office switching	$ 41,521,552	903,463		$ 3.83	total switch cost per line per month
Non-Usage Related	14,877,172	903,463	switched lines	$ 1.37	per line/month
Usage-Related	26,644,380	19,554,671,925	actual minutes	$ 0.00136	per actual minute
Signaling network elements	$ 1,516,160				
Links	256,352	235	links	$ 90.75	per link per month
STP	1,095,710	13,592,140,373	TCAP+ISUP msgs	$ 0.00008	per signaling message
SCP	164,098	672,916,540	TCAP queries	$ 0.00024	per query
Transport network elements					
Dedicated Transport including Special	$ 6,254,794	1,074,558	trunks	$ 0.49	per DS-0 equivalent per month
Transport	6,254,794	1,074,558	trunks	$ 0.00005	per minute
Special	-	-	trunks		
Transmission Terminal	24,323,683	1,074,558	trunks	$ 1.89	per DS-0 equivalent per month
				$ 0.00019	per minute
				$ 0.00024	total per minute
Common Transport	$ 734,194	948,148,074	minutes	$ 0.00059	per minute per leg (orig or term)
Transmission Terminal	467,959	948,148,074	minutes	$ 0.00038	per minute
				$ 0.00096	total per minute
Direct Transport	$ 2,742,116	5,718,719,980	minutes	$ 0.00048	per minute

Transmission Terminal		2,651,457	5,718,719,980	minutes	$	0.00046 per minute
					$	0.00094 total per minute
Tandem switch	$	1,278,546	802,060,365	minutes	$	0.00159 per minute
Operator systems	$	5,619,099				
Public Telephones	$	932,309				
Total (w/ Public)	$	285,875,155				
Total cost of switched network elements (w/o Public)	**$**	**24.78** per line/month				