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BEFORE THE PUBLIC UTILITY COMMISSION**

**OF OREGON**

UM 976

In the Matter of the Investigation of Rates )  
Charged by GTE Northwest Incorporated )  
to Provide Collocation to Requesting ) ORDER  
Telecommunications Carriers Pursuant to )  
the Telecommunications Act of 1996. )

**DISPOSITION: STIPULATIONS APPROVED**

**Background.** On June 2, 2000, the Public Utility Commission of Oregon (Commission) entered Order No. 00-292, initiating an investigation into rates charged by GTE Northwest Incorporated (now known as Verizon Northwest Inc.; hereafter “Verizon”) for collocation provided to requesting telecommunications carriers pursuant to the Telecommunications Act of 1996 (the Act). The investigation was designed to establish reasonable rates for collocation arrangements in conformance with rules and requirements established by the Federal Communications Commission (FCC) in its *Advanced Services Docket*, No. 98-147.<sup>1</sup>

Verizon submitted its initial collocation rate proposal on July 20, 2000. Amended rate proposals and cost studies were filed on October 27, 2000 and November 6, 2000. Verizon made further corrections to its rate proposal and cost study on January 15, 2001.

Pursuant to the procedural schedule adopted in this matter, the parties convened a series of cost study workshops to review Verizon’s proposed collocation rates and develop a list of disputed issues. The Issues List was filed with the Commission on February 6, 2001. Subsequent to that filing, the parties began settlement discussions to resolve the remaining issues.

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<sup>1</sup> *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket No. 98-147, First Report and Order and Further Notice of Proposed Rulemaking, 14 FCC Rcd 4761 (rel. Mar. 31, 1999) (*Advanced Services First Report and Order*); *aff’d in part and remanded in part sub nom. GTE Services Corp. v. FCC*, 205 F.3d 416 (D.C. Cir. 2000) (*GTE v. FCC*); Order on Reconsideration and Second Further Notice of Proposed Rulemaking, FCC 00-297 (rel. Aug. 10, 2000) (*Collocation Reconsideration Order*).

**May Stipulation.** On May 29, 2001, Verizon, AT&T Communications of the Pacific Northwest, Inc. (AT&T), and the Public Utility Commission Staff (Staff) filed a Proposed Stipulation and Joint Explanatory Brief (May Stipulation) designed to resolve all outstanding issues except Issues 5(b) and (c). Testimony in support of the May Stipulation was filed by Verizon and Staff, on September 12, 2001 and September 21, 2001, respectively. The May Stipulation and supporting testimony is attached to this order as Appendices A-C, and is incorporated herein by reference.

Under the terms of the May Stipulation, Verizon modified three cost study/pricing assumptions. First, Verizon reduced the rate of return in its cost study from 12.74 percent to 9.69 percent to reflect the Commission-approved rate of return in OPUC Order No. 98-388 in docket No. UT 141. Second, Verizon modified the depreciation rates in the study to reflect the Commission-approved depreciation rates in Order No. 98-150 in docket No. UM 840. The third and final change to the Verizon's cost study involves an increase in the fill factor. Rate elements that were originally based upon an assumption of four collocators have been increased to five collocators. Likewise, rate elements using a fill factor of five have been increased to a factor of six.

On September 17, 2001, a prehearing conference was convened by the Administrative Law Judge to discuss settlement of Issues 5(b) and 5(c), regarding remote collocation and remote adjacent collocation. At the conference, the parties agreed in principle to resolve those issues without an evidentiary hearing.

**January Stipulation.** On January 17, 2002, Verizon, AT&T and Staff filed a second stipulation (January Stipulation) regarding remote collocation and remote adjacent collocation.<sup>2</sup> The parties agree that Verizon shall apply the rate elements and prices agreed to in the May Stipulation (or any Commission-approved amendments to such prices) to requests for remote collocation, until the Commission establishes alternative prices for remote collocation in a proceeding specifically addressing such pricing. The agreed-upon rate elements and prices for remote collocation are set forth in Attachment 1 of the January Stipulation. The parties further agree that Verizon shall price requests for remote adjacent collocation on an individual-case-basis until the Commission establishes prices for remote adjacent collocation in a proceeding specifically addressing such pricing.

The January Stipulation further provides that Verizon shall keep records of the number of remote collocation arrangements and the number of remote adjacent collocation arrangements ordered, under construction or in place in Oregon, and shall provide those numbers to Staff or any party to this proceeding. Verizon shall also

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<sup>2</sup> The parties define "remote collocation" as the placement of CLEC equipment within an existing structure owned, leased, or otherwise controlled by Verizon at a remote location (*i.e.*, away from a central office) housing Verizon network facilities. "Remote adjacent collocation" is defined as the placement of CLEC equipment within a structure built or procured by the CLEC on property owned, leased, or otherwise controlled by Verizon adjacent to an existing structure at a remote location housing Verizon network facilities.

develop and file with the Commission, for approval, a proposed set of prices for remote collocation if and when there are ten (10) or more remote collocation arrangements ordered, under construction, or in place on Verizon premises in Oregon. The same requirement applies to remote adjacent collocation arrangements. Verizon's obligation to automatically develop and file such prices expires two years from the effective date of the Commission order approving the January Stipulation.

The January Stipulation further provides that Verizon may at any time develop and file, for Commission approval, proposed prices for remote collocation or remote adjacent collocation. AT&T agrees not to petition the Commission to begin a proceeding to address development of specific prices for remote collocation and/or remote adjacent collocation on Verizon premises in Oregon within two years of the effective date of a Commission order approving the January Stipulation. Absent a directive from the Commission, orders from the FCC, relevant court decisions, or changes in federal or Oregon law, Staff also agrees not to petition to commence such a proceeding within the two year period.

The January Stipulation is attached to this Order as Appendix D, and is incorporated herein by reference.

**Commission Disposition.** The Commission has reviewed the two stipulations together with the supporting testimony filed in this proceeding. We conclude that the terms of both stipulations are reasonable and should be approved. We further conclude that the proposed prices for the specified collocation elements are reasonable and consistent with the 1996 Act and applicable FCC requirements.

## ORDER

### IT IS ORDERED THAT:

1. The stipulations filed in this docket on May 29, 2001 and January 17, 2002, and attached to this order as Appendices A-D, are approved.
2. Consistent with the policy adopted by the Commission in dockets UT 138 and UT 139, the collocation prices adopted herein for Verizon shall function as default prices. Those prices shall be incorporated in an interconnection agreement arbitrated by the Commission pursuant to the Act, unless (a) Verizon and the requesting telecommunications carrier agree to different

collocation rates, or (b) one of the carriers demonstrates in the arbitration proceeding that there are special costs warranting different collocation rates. *See* Order No. 00-316 at 11.

Made, entered, and effective \_\_\_\_\_.

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**Roy Hemmingway**  
Chairman

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**Lee Beyer**  
Commissioner

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**Joan H. Smith**  
Commissioner

A party may request rehearing or reconsideration of this order pursuant to ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-014-0095. A copy of any such request must also be served on each party to the proceeding as provided by OAR 860-013-0070(2). A party may appeal this order to a court pursuant to applicable law.

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

In the Matter of the Investigation of Rates )  
Charged by GTE NORTHWEST )  
INCORPORATED to Provide Collocation ) UM 976  
to Requesting Telecommunications )  
Carriers Pursuant to the )  
Telecommunications Act of 1996 )

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**JOINT EXPLANATORY BRIEF AND PROPOSED STIPULATION 17  
OF VERIZON NORTHWEST, AT&T, AND STAFF**

Pursuant to OAR 860-014-0085(4), Verizon Northwest Inc. (Verizon),<sup>1</sup> AT&T Communications of the Pacific Northwest, Inc. (AT&T), and the Commission Staff (Staff) submit this Explanatory Brief concurrently with the attached Stipulation. With this filing, the foregoing parties propose to resolve all but one issue in the UM 976 proceeding.

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<sup>1</sup> As a result of the merger between GTE and Bell Atlantic, GTE Northwest Inc. is now called Verizon Northwest Inc.

1 Settlement negotiations began in earnest following the workshop held January 22-23,  
 2 2001. AT&T and the Western States Competitive Telecommunications Coalition (Coalition)<sup>2</sup>  
 3 were the only competitive local exchange carriers (CLECs) to attend the workshop, and were the  
 4 only parties other than Staff to take an active role in the discovery periods prior to the workshop.  
 5 AT&T and the Coalition identified five issues for negotiation. These issues, along with the  
 6 position of AT&T and the Coalition, were:

- 7 1. *Rate of return.* AT&T and the Coalition asked that the rate of return used in Verizon's cost  
 8 study be adjusted to reflect the Commission-authorized rate of 9.69%. *See* OPUC Order No.  
 9 98-388, UT 141 (entered Sept. 28, 1998).
- 10 2. *Depreciation lives.* AT&T and the Coalition requested that Verizon's cost study incorporate  
 11 the depreciation lives approved in the Commission's 1998 UM 840 order. *See* OPUC Order  
 12 No. 98-150 (entered April 13, 1998).
- 13 3. *Fill factor.* AT&T and the Coalition asked that Verizon's pricing summary for the Building  
 14 Modification cost element use a fill factor of five where Verizon had proposed a fill factor of  
 15 four, and a fill factor of six where Verizon had proposed a fill factor of five.
- 16 4. *Washington Utilities and Transportation Commission (WUTC) collocation decision.* AT&T  
 17 and the Coalition asked that Verizon incorporate portions of the WUTC's recent collocation  
 18 decision into its pricing of collocation in Oregon.<sup>3</sup> AT&T and the Coalition's  
 19 primary request was that the Building Modification price element, which Verizon proposed  
 20 as a single monthly-recurring cost, be converted into several individual non-recurring cost  
 21 elements.

22  
 23  
 24

25 <sup>2</sup>The Coalition originally consisted of Electric Lightwave, Inc., Advanced Te1Com Group, Inc., and McLeodUSA  
 26 Communications. However, since negotiations commenced, the Coalition has decided to cease participating in this  
 docket. Thus, while the Coalition actively participated in negotiations, no Coalition member seeks to continue its  
 participation in this proceeding.

<sup>3</sup>*See Thirteenth Supplemental Order; Part A Order Determining Prices for Line Sharing, Operations Support  
 Systems, and Collocation, WUTC Docket No. UT -003013 (Jan. 31, 2001).*

1    5. *Pricing for remote and adjacent off-site collocation.* Finally, AT&T and the Coalition  
2       requested that Verizon propose specific rates for remote and adjacent off-site collocation  
3       (rather than individual case basis pricing). For purposes of clarity, the negotiating parties  
4       consider remote collocation to be the placement of CLEC equipment within an existing  
5       structure owned, leased, or otherwise controlled by Verizon at a remote location (i.e., away  
6       from a central office) while adjacent off-site collocation is considered the placement of  
7       CLEC equipment within a structure built or procured by the CLEC on property owned,  
8       leased, or otherwise controlled by Verizon adjacent to an existing structure at a remote  
9       location.

10       Verizon and AT&T have come to agreement on the first four of these five issues. For the  
11       first three issues, Verizon has agreed to modify its cost study and pricing summary in the manner  
12       requested by AT&T (and the Coalition). Specifically, Verizon and AT&T agree that the  
13       following cost model elements should be used herein: (1) the Commission-approved 9.69% rate  
14       of return set forth in UT 141; (2) the Commission-approved depreciation lives set forth in UM  
15       840; and (3) every instance where a fill factor of "4" was used should be changed to a fill factor  
16       of "5," and in every instance where a fill factor of "5" was used should be changed to a fill factor  
17       of "6." For the fourth issue, Verizon offered to price the Building Modification element as  
18       several non-recurring elements rather than as a single monthly-recurring element. However,  
19       after considering revised pricing that included this change, AT&T agrees to the single Building  
20       Modification monthly-recurring element. Therefore, the agreement reached on the fourth issue is  
21       simply to retain the manner in which Verizon originally proposed to price Building Modification,  
22       including, however, those changes resulting from Verizon's agreement to issues 1-3, as  
23       described above. Therefore, issue 4 is not addressed in this Stipulation.

24       The attached Stipulation reflects the agreement that has been reached as to the first three  
25       issues. AT&T has agreed not to pursue the remaining issues that were included in the Issues  
26       List distributed by the Staff on February 6, 2001, other than the issue regarding pricing for

1 remote and adjacent off-site collocation. As a result, the attached Stipulation resolves each issue  
2 on the Issues List, and each issue raised by AT&T during negotiations, except for the  
3 remote/adjacent off-site pricing issue. The Staff has reviewed the proposed Stipulation and  
4 supports its adoption by the Commission.

5 At the time of this filing, the remote/adjacent off-site pricing issue remains the single  
6 unresolved issue between the parties. The rates that Verizon has proposed in this proceeding are  
7 intended for collocation at Verizon's central office facilities, including collocation at adjacent  
8 on-site structures. The parties agree that under the current FCC rules, Verizon is required to  
9 provide collocation at remote facilities in addition to collocation at its central office facilities.  
10 However, Verizon maintains that it should not be required to propose specific rates for remote  
11 and adjacent off-site collocation, while AT&T contends that Verizon should be required to  
12 propose specific rates. When Verizon receives a request for remote or adjacent off-site  
13 collocation, Verizon intends to price the request on an individual case basis (ICB).

14 At Administrative Law Judge Petrillo's suggestion in the telephone conference held on  
15 April 25, 2001, the negotiating parties have explored the manner in which this issue has been  
16 handled in other jurisdictions. The parties were not able to identify authority in any other  
17 jurisdiction giving guidance on this issue. Since the April 25th telephone conference, the  
18 negotiating parties have not moved closer to resolving this issue. As a result, a pre-hearing  
19 conference should be scheduled to arrive at a process for resolving this remaining issue.

20 The parties submitting this filing urge the remaining parties on the service list and the  
21 ALJ to support the attached Stipulation, so that all but a single issue in this proceeding can be  
22 resolved without extended litigation and a hearing.

23 ///

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26 ///

1 Respectfully submitted this 29<sup>th</sup> of May, 2001

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3 VERIZON NORTHWEST INC.

AT&T COMMUNICATIONS OF  
THE PACIFIC NORTHWEST, INC.

4

5 By : \_\_\_\_\_

By : \_\_\_\_\_

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9

10 PUBLIC UTILITY COMMISSION OF  
11 OREGON STAFF

11

12 By: \_\_\_\_\_

13 Title: \_\_\_\_\_

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**STIPULATION**2 **RECITALS:**

3           1. The Public Utility Commission of Oregon (Commission) established the above-  
4 captioned proceeding on June 2, 2000 to investigate Verizon Northwest Inc.'s (Verizon's)  
5 pricing of collocation in Oregon. Verizon submitted an initial collocation rate proposal on July  
6 20, 2000, and submitted an amended rate proposal and cost study on October 27, 2000. Verizon  
7 submitted a further amended rate proposal and cost study on November 6, 2000. On January 15,  
8 2001, Verizon corrected several minor errors to its rate proposal and cost study in response to a  
10 data request from Commission Staff. This involved a change in the Fiber Cable Pull - Place  
11 Innerduct rate element, and the removal of a rounding function which had rounded the rate for  
12 each element up to an even dollar amount. The January 15, 2001 changes were not formally  
13 filed with the Commission, but were shared with all of the active parties. A workshop  
14 addressing Verizon's proposed collocation prices and supporting cost study was held on January  
15 22-23, 2001.

16           2.           Since the January workshop, Verizon, AT&T of the Pacific Northwest, Inc.  
17 AT&T, and the Western States Competitive Telecommunications Coalition (Coalition)  
18 (together, the "active parties") have worked to resolve a number of issues regarding Verizon's  
19 cost study and proposed collocation pricing. Since negotiations commenced, however, the  
20 Coalition has decided to cease participating in this docket. Thus, while the Coalition actively  
21 participated in negotiations, no Coalition member seeks to continue its participation in this  
23 Proceeding or sign this Stipulation. Verizon and AT&T have come to agreement on all but one  
24 issue. This Stipulation reflects the agreement reached.

25 **STIPULATION:**

26           Verizon and AT&T hereby agree and stipulate to the following:

1 1. The cost study and pricing summary submitted by Verizon on November 6, 2000 (as  
2 amended by Verizon's supplemental and revised response to Staff's Fourth Set of  
3 Data Requests dated January 15, 2001) shall be amended and modified as follows:

4 a. The rate of return used in the cost study shall be 9.69%.

5 b. The depreciation lives used in the cost study shall be those approved by the  
6 Commission in UM 840. *See OPUC* Order No. 98-150 (entered April 13, 1988).

7 c. Every instance in the pricing summary where a fill factor of "4" was used shall  
8 be changed to a fill factor of "5," and every instance where a fill factor of "5" was used  
9 shall be changed to a "6."  
10

11 In all other respects, Verizon's cost study and pricing summary shall be used to  
12 determine the rates shown in Attachment 1.

13 2. The collocation rates set forth in Attachment 1 to this Stipulation reflect the  
14 modifications set forth in Paragraph 1.

15 3. Each issue listed in the Issues List distributed by Staff on February 6, 2001 has been  
16 resolved and will not be raised or disputed by any party for the duration of this proceeding,  
17 except for Issues 5(b) and (c) regarding pricing for remote and adjacent off-site collocation.  
18 Issues 5(b) and (c) shall be resolved pursuant to a process determined by the Administrative Law  
19 Judge.  
20

21 4. The collocation rates contained in Attachment 1 are agreed to and shall be made  
22 available on a nondiscriminatory basis to all telecommunications carriers seeking to collocate at  
23 Verizon central office premises in Oregon.

VERIZON NORTHWEST INC - OREGON

SUMMARY

MRC FIXED ALLOCATOR:

9.00%

11/06/00

5/29/1001

Oregon

Proposed

Stipulation

Collocation Elements

NRC/MRC

Increment

Price

Price

Caged, Shared and Cageless Elements:

1 Engineering/Major Augment Fee	NRC	per occurrence	\$	1,129.00	\$ 1,128.54
2 Minor Augment Fee	NRC	per occurrence	\$	200.00	\$ 199.42
3 Access Card Administration	NRC	per card	\$	22.00	\$ 21.01
4 Cage Enclosure 25-100 SF	NRC	per cage	\$	4,778.00	\$ 4,777.47
5 Cage Enclosure 101-200 SF	NRC	per cage	\$	6,295.00	\$ 6,294.58
6 Cage Enclosure 201-300 SF	NRC	per cage	\$	7,812.00	\$ 7,811.68
7 Cage Enclosure 301-400 SF	NRC	per cage	\$	9,329.00	\$ 9,328.78
8 Cage Enclosure 401-500 SF	NRC	per cage	\$	10,846.00	\$ 10,845.88
9 Cage Enclosure Augment	NRC	per square foot	\$	14.00	\$ 13.94
10 BITS Timing	NRC	per project	\$	289.00	\$ 288.07
11 Overhead Superstructure	NRC	per project	\$	2,372.00	\$ 2,371.98
12 Facility Pull/Termination - Engineering	NRC	per project	\$	76.00	\$ 75.43
13 Facility Pull -Labor	NRC	per cable run	\$	211.00	\$ 210.08
14 DSO Cable Termination (Connectorized)	NRC	per 100 pair	\$	5.00	\$ 4.16
15 DS 1 Cable Termination (Connectorized)	NRC	per 28 pair	\$	2.00	\$ 1.04
16 DS3 Coaxial Cable Termination (Preconnectorized)	NRC	per termination	\$	2.00	\$ 1.04
17 DS3 Coaxial Cable Termination (Unconnectorized)	NRC	per termination	\$	11.00	\$ 10.40
18 Fiber Cable Pull - Engineering	NRC	per project	\$	607.00	\$ 606.30
19 Fiber Cable Pull - Place Innerduct	NRC	per linear foot	\$	3.00	\$ 1.63
20 Fiber Cable Pull - Labor	NRC	per linear foot	\$	1.00	\$ 0.72
21 Fiber Cable Pull - Cable Fire Retardant	NRC	per occurrence	\$	42.00	\$ 41.61
22 Fiber Cable Splice - Engineering Costs	NRC	per project	\$	31.00	\$ 30.32
23 Fiber Cable Splice	NRC	per fiber	\$	57.00	\$ 56.80
24 DC Power Cable	NRC	per 1 amp	\$	69.00	\$ 68.15
25 Facility Cable-DSO Cable (Connectorized) 100 pair	NRC	per cable run	\$	309.00	\$ 308.70
26 Facility Cable-DS 1 Cable (Connectorized)	NRC	per cable run	\$	287.00	\$ 286.62
27 Facility Cable-DS3 Coaxial Cable	NRC	per cable run	\$	78.00	\$ 77.75
28 Facility Cable-Shielded Cable (Orange Jacket)	NRC	per cable run	\$	32.00	\$ 31.12
29 Power Cable-Wire Power 1/0	NRC	per cable run	\$	87.00	\$ 86.65
30 Power Cable-Wire Power 2/0	NRC	per cable run	\$	126.00	\$ 125.63
31 Power Cable-Wire Power 3/0	NRC	per cable run	\$	139.00	\$ 138.57
32 Power Cable-Wire Power 4/0	NRC	per cable run	\$	172.00	\$ 171.34
33 Power Cable-Wire Power 350 MCM	NRC	per cable run	\$	293.00	\$ 292.92
34 Power Cable-Wire Power 500 MCM	NRC	per cable run	\$	409.00	\$ 408.24
35 Power Cable-Wire Power 750 MCM	NRC	per cable run	\$	629.00	\$ 628.09
36 Building Modification	MRC	per request	\$	186.00	\$ 119.66
37 Environmental Conditioning	MRC	per 1 amp	\$	3.00	\$ 1.55
38 Caged Floor Space	MRC	per square foot	\$	4.00	\$ 2.31
39 Relay Rack Floor Space	MRC	per linear foot	\$	14.00	\$ 9.83
40 Cabinet Floor Space	MRC	per linear foot	\$	19.00	\$ 13.30
41 Cable Subduct Space - Manhole	MRC	per project	\$	5.00	\$ 2.92
42 Cable Subduct Space - Subduct	MRC	per linear foot	\$	0.03	\$ 0.02
43 Cable Vault Splice - 48 Fiber-Material	MRC	per splice	\$	8.00	\$ 5.58
44 Cable Vault Splice - 48 Fiber-Utilization	MRC	per subduct	\$	1.00	\$ 0.62
45 Cable Vault Splice - 96 Fiber-Material	MRC	per splice	\$	23.00	\$ 15.94
46 Cable Vault Splice - 96 Fiber-Utilization	MRC	per subduct	\$	1.00	\$ 0.62
47 Cable Rack Space - Metallic	MRC	per cable run	\$	1.00	\$ 0.34
48 Cable Rack Space - Fiber	MRC	per innerduct foot	\$	0.01	\$ 0.01
49 DC Power Facility & Utility	MRC	per 1 amp	\$	13.00	\$ 9.68
50 Facility Termination - DSO	MRC	per 100 pair	\$	4.00	\$ 2.27
51 Facility Termination - DS 1	MRC	per 28 pair	\$	14.00	\$ 9.55
52 Facility Termination - DS3	MRC	per DS3	\$	9.00	\$ 6.59
53 BITS Timing	MRC	per port	\$	9.00	\$ 6.15

ORDER NO. 02-107

VERIZON NORTHWEST INC - OREGON

SUMMARY

MRC FIXED ALLOCATOR:

9.00%

11/06/00

5/29/2001

Oregon

Proposed

Stipulation

Collocation Elements

NRC/MRC

Increment

Price

Price

54 Adjacent On-Site Elements:

55 Adjacent-Engineering	NRC	per occurrence	\$ 958.00	\$ 958.00
56 Adjacent Fiber Cable Pull-Engineering	NRC	per project	\$ 607.00	\$ 606.30
57 Adjacent Fiber Cable Pull-Place Innerduct	NRC	per linear foot	\$ 3.00	\$ 1.63
58 Adjacent Fiber Cable Pull-Pull Cable	NRC	per linear foot	\$ 1.00	\$ 0.72
59 Adjacent-Cable Fire Retardant	NRC	per occurrence	\$ 42.00	\$ 41.61
60 Adjacent Metallic Cable Pull-Engineering	NRC	per project	\$ 607.00	\$ 606.30
61 Adjacent Metallic Cable Pull-Pull Cable	NRC	per linear foot	\$ 1.00	\$ 0.94
62 Adjacent Metallic Cable Splice-Engineering	NRC	per project	\$ 31.00	\$ 30.32
63 Adjacent Metallic Cable Splicing (greater than 200 pair)	NRC	per DSO/DS I pair	\$ 1.00	\$ 0.63
64 Adjacent Metallic Cable Splicing (less than 200 pair)	NRC	per DSO/DS 1 pair	\$ 3.00	\$ 2.14
65 Adjacent Fiber Cable Splicing-Engineering	NRC	per project	\$ 31.00	\$ 30.32
66 Adjacent Fiber Cable Splicing (48 fiber cable or less)	NRC	per fiber	\$ 57.00	\$ 56.80
67 Adjacent Fiber Cable Splicing (greater than 48 fiber)	NRC	per fiber	\$ 51.00	\$ 50.46
68 Adjacent Facility Pull-Engineering	NRC	per project	\$ 76.00	\$ 75.43
69 Adjacent Facility Pull - Per Foot Pull (labor)	NRC	per cable run	\$ 2.00	\$ 1.04
70 Adjacent Cable Termination-DSO-Cable Termination (Connectorized)	NRC	per cable run	\$ 5.00	\$ 4.16
71 Adjacent Cable Termination-DSO-Cable Termination (Unconnectorized)	NRC	per cable run	\$ 42.00	\$ 41.61
72 Adjacent Cable Termination-DS I Cable-Termination (Connectorized)	NRC	per cable run	\$ 2.00	\$ 1.04
73 Adjacent Cable Termination-DS I Cable-Termination (Unconnectorized)	NRC	per cable run	\$ 32.00	\$ 31.21
74 Adjacent Cable Termination-DS3 Coaxial-Termination (Connectorized)	NRC	per cable run	\$ 2.00	\$ 1.04
75 Adjacent Cable Termination-DS3 Coaxial-Termination (Unconnectorized)	NRC	per cable run	\$ 11.00	\$ 10.40
76 Adjacent Cable Termination-Fiber Cable-Termination	NRC	per cable run	\$ 57.00	\$ 56.80
77 Adjacent Subduct Space-Manhole	MRC	per project	\$ 5.00	\$ 2.92
78 Adjacent Subduct Space-Subduct	MRC	per linear foot	\$ 0.03	\$ 0.02
79 Adjacent Conduit Space (4" Duct)-Metallic-Manhole	MRC	per conduit	\$ 8.00	\$ 5.35
80 Adjacent Conduit Space (4" Duct)-Metallic-Conduit	MRC	per linear foot	\$ 0.04	\$ 0.03
81 Adjacent Facility Termination DSO Cable-Material	MRC	per 100 pair	\$ 4.00	\$ 2.27
82 Adjacent Facility Termination DS I Cable-Material	MRC	per 28 pair	\$ 14.00	\$ 9.55
83 Adjacent Facility Termination DS3 Cable-Material	MRC	per DS3	\$ 9.00	\$ 6.59
84 Adjacent Cable Vault Splice-Metallic DSO Cable (per 1200 pair)-Material	MRC	per splice	\$ 296.00	\$ 217.54
85 Adjacent Cable Vault Splice-Metallic DSO Cable (per 1200 pair)-Utilization	MRC	per cable	\$ 4.00	\$ 2.42
86 Adjacent Cable Vault Splice-Metallic DSO Cable (per 900 pair)-Material	MRC	per splice	\$ 216.00	\$ 158.43
87 Adjacent Cable Vault Splice-Metallic DSO Cable (per 900 pair)-Utilization	MRC	per cable	\$ 3.00	\$ 1.87
88 Adjacent Cable Vault Splice-Metallic DSO Cable (per 600 pair)-Material	MRC	per splice	\$ 143.00	\$ 104.90
89 Adjacent Cable Vault Splice-Metallic DSO Cable (per 600 pair)-Utilization	MRC	per cable	\$ 2.00	\$ 1.33
90 Adjacent Cable Vault Splice-Metallic DS I Cable-Material	MRC	per splice	\$ 31.00	\$ 22.11
91 Adjacent Cable Vault Splice-Metallic DS I Cable-Utilization	MRC	per cable	\$ 1.00	\$ 0.31
92 Adjacent Cable Vault Splice-Fiber Cable 48 Fiber-Material	MRC	per splice	\$ 8.00	\$ 5.58
93 Adjacent Cable Vault Splice-Fiber Cable 48 Fiber-Utilization	MRC	per subduct	\$ 1.00	\$ 0.62
94 Adjacent Cable Vault Splice-Fiber Cable 96 Fiber-Material	MRC	per splice	\$ 23.00	\$ 15.94
95 Adjacent Cable Vault Splice-Fiber Cable 96 Fiber-Utilization	MRC	per subduct	\$ 1.00	\$ 0.62
96 Adjacent Cable Rack Shared-Metallic DSO Cable-Utilization	MRC	per linear foot	\$ 0.01	\$ 0.01
97 Adjacent Cable Rack Shared-Metallic DSICable-Utilization	MRC	per linear foot	\$ 0.01	\$ 0.01
98 Adjacent Cable Rack Shared-Fiber Cable-Utilization	MRC	per innerduct ft	\$ 0.01	\$ 0.01
99 Adjacent Cable Rack Shared-Coaxial Cable-Utilization	MRC	per linear foot	\$ 0.01	\$ 0.01

100 Miscellaneous Elements:

101 Collocation Space Report	NRC	per CO requested	\$ 1,218.00	\$ 974.02
102 Misc Svcs-Labor-Basic Bus Day-First 1/2 Hr	NRC	per Technician	\$ 42.83	\$ 42.83
103 Misc Svcs-Labor-Basic Bus Day-Each Additional 1/2 Hr	NRC	per Technician	\$ 21.41	\$ 21.41
104 Misc Svcs-Labor-OT Non-Bus Day - First 1/2 Hr	NRC	per Technician	\$ 100.00	\$ 100.00
105 Misc Svcs-Labor-OT Non-Bus Day - Each Addtl 1/2 Hr	NRC	per Technician	\$ 75.00	\$ 75.00
106 Misc Svcs-Labor-Premium Non-Bus Day - First 1/2 Hr	NRC	per Technician	\$ 150.00	\$ 150.00
107 Misc Svcs-Labor-Premium Non-Bus Day - Each Addtl 1/2 Hr	NRC	per Technician	\$ 125.00	\$ 125.00

Attachment 1 to Stipulation, Page 2 of 2

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON  
UM 976**

**In the Matter of the Investigation of Rates  
Charged by GTE Northwest Incorporated  
to Provide Collocation to Requesting  
Telecommunications Carriers Pursuant to  
the Telecommunications Act of 1996.**

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**ORDER**

**TESTIMONY OF BARBARA K. ELLIS**

**ON BEHALF OF VERIZON NORTHWEST INC.**

**September 10, 2001**

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**I. BACKGROUND INFORMATION AND SUMMARY**

**Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND TITLE.**

A. My name is Barbara K. Ellis. My business address is 600 Hidden Ridge Drive, Irving, Texas. I am employed by Verizon Communications as Consultant-- Costing. In this proceeding, I am representing Verizon Northwest Inc. ("Verizon" or the "Company").

**Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.**

A. I have been in my current position since 1997. In this capacity I am responsible for supporting my company's cost studies. Prior to joining GTE- now Verizon—I was employed by Texas New Mexico Power Company ("TNP") for 12 years, where I worked on retail and wholesale rates, demand forecasting, and resource planning. Prior to my employment in the electric industry, I was an Adjunct Professor in the Economics Department at the University of North Texas for two years. I have a Bachelor's Degree in Business Administration from Cameron University in Lawton, Oklahoma, and a Master of Science Degree in Economics from the University of North Texas in Denton, Texas.

VERIZON/2  
ELLIS/2

**Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE ANY REGULATORY COMMISSIONS?**

A. Yes. I have testified on behalf of GTE (now Verizon) companies in Illinois, Indiana Wisconsin, Washington, North Carolina and New Mexico on cost models. I also testified in New Mexico, Texas, and at the Federal Energy Regulatory Commission during my employment with TNP. As a witness in the electric industry, I gave testimony in various proceedings on retail rate design and revenue requirements, purchased power price forecasting, and cost model policy and input development.

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A. I am sponsoring Verizon's Expanded Interconnection Service Study ("EIS Study" or "Study") and the Stipulation reached in this docket which modifies the initial Study results. I discuss the cost model guidelines used to develop the Study and the methodology used to develop the inputs. With regard to the Stipulation, I discuss the changes agreed upon by the Parties and the modifications Verizon made to the Study to support the Stipulation. The Stipulation, along with a list of stipulated prices, is provided as Verizon Exhibit #4.

**Q. PLEASE BRIEFLY SUMMARIZE YOUR TESTIMONY.**

A. Verizon's collocation Study addresses caged, cageless, and adjacent forms of collocation at Verizon's central offices. This study complies with the FCC's rules. Intervenor's have agreed to the initial cost Study results as revised by the three

modifications stipulated to by the Parties. Thus, the Oregon Public Utility Commission ("Commission") should approve Verizon's modified Study and resulting prices supporting the Stipulation.

## II. COST MODEL GUIDELINES

### Q. WHAT GUIDELINES APPLY TO A COLLOCATION COSTS

A. A collocation cost study must be developed using engineering and economic assumptions that address Verizon's collocation policies and practices, as well as existing federal and state regulatory rules, regulations, and guidelines. The fundamental economic assumptions governing Verizon's collocation cost methodology are set forth in the FCC's First Report and Order implementing the Telecommunications Act of 1996 ("Local Competition Order"). That Order requires the use of a "cost-based pricing methodology based on forward-looking economic costs." (*Id.* at paragraph 620) It specifies that:

the price of a network element should include the forward-looking costs that can be attributed directly to the provision of services using that element, which includes a reasonable return on investment (i.e., "profit"), plus a reasonable share of the forward looking joint and common costs.  
(*Id.* at paragraph 673)

### Q. WHAT ECONOMIC COST METHODOLOGY DID THE FCC ADOPT?

A. In its Local Competition Order, the FCC prescribed the use of a Total Element Long Run Incremental Cost ("TELRIC") methodology to estimate the forward -looking

economic cost used for pricing collocation. However, the Eighth Circuit Court of Appeals has invalidated the FCC's TELRIC methodology and certain aspects of the FCC's pricing rules. The Eighth Circuit Court's order has been stayed pending resolution at the U.S. Supreme Court and therefore the TELRIC methodology remains effective at this time.

### III. ECONOMIC COST STUDY METHODOLOGY

#### Q. DOES VERIZON'S EIS COST STUDY MEET THE FCC'S GUIDELINES FOR A COST STUDY?

- A. Yes. Although Verizon has always opposed the FCC's TELRIC standard, Verizon's Study is an incremental analysis that sets forth the forward-looking costs to provide collocation. The appropriate cost methodology may change in the future depending upon the United States Supreme Court review of costing issues, as noted above.

#### Q. DOES THE EIS STUDY CORRECTLY MEASURE THE ELEMENTS REQUIRED TO PROVIDE COLLOCATION?

- A. Yes. All Verizon work activities and equipment requirements associated with the types of collocation addressed by the Study are identified in the Study and organized into cost elements. The Study presents cost results on a "per unit" basis. Units are the appropriate measure for each element, such as linear feet of cable or square feet of floor space. This approach allows Verizon the flexibility to develop

<sup>1</sup>*Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, First Report and Order, 11 FCC Rcd 15499 (1996)

rate elements that respond to customer needs. Rate elements are priced on either a recurring or nonrecurring basis.

**Q. HOW DOES VERIZON'S EIS STUDY DEVELOP INCREMENTAL COSTS?**

A. The EIS Study develops incremental costs in a manner consistent with the Local Competition Order's definition of incremental costs. The Study elements are based upon actual experience with collocation requests, both with regard to the type of CLEC requests made and the processes Verizon uses to provision the requested collocation arrangement. The cost elements are then used to develop the rate elements applicable to collocation and reflect the incremental costs to complete a collocation request.

**Q. PLEASE DESCRIBE THE TYPES OF COLLOCATION FOR WHICH VERIZON DEVELOPED COSTS.**

A. As noted previously, the EIS Study addresses caged, cageless, and adjacent forms of collocation at Verizon's central office, and does not address the costs of collocation or interconnection at other locations including remote terminals. Whether or not Verizon should be required to develop costs for collocation or interconnection at other facilities remains an open issue that will be determined in this proceeding.

**VERIZON/2  
ELLIS/6**

**Q. HOW ARE THE RESULTS OF THE EIS STUDY PRESENTED?**

A. A summary of the EIS Study for the state of Oregon is attached as Verizon Exhibit

#4. The complete Study filed with the Commission on November 6, 2000 includes a narrative describing the development costs, a glossary of terms, a summary of the cost and rate elements and the supporting workpapers.

**IV. EIS COST STUDY DEVELOPMENT**

**Q. WHAT PROCESS WAS USED TO DEVELOP THE COST ELEMENTS AND INPUTS IN THE EIS STUDY?**

A. The first step in the development of the Study entailed identifying the work effort and materials required to provision the various types of collocation. Verizon reviewed completed collocation arrangements and identified the typical activities common to each type of collocation. Since Verizon's provisioning of collocation space causes activities that Verizon would not perform for itself, the majority of the costs Verizon incurs to provision collocation space can be directly attributed to the requesting CLEC or allocated among CLEC's.

Next, Verizon identified the specific resources and the average length of time necessary to complete collocation provisioning . This methodology produces cost estimates to provision a typical collocation arrangement, using the FCC's prescribed costing methodology.

**Q. WHAT TYPES OF INPUTS ARE USED IN VERIZON'S EIS STUDY?**

A. The majority of inputs used in the EIS Study are related to labor and material. Labor costs are derived from the most recent Oregon loaded labor rates for the specific job skills required to perform the collocation activities, as well as the time required to perform these activities. Verizon used outside contractors, as well as its own employees, to provision collocation. Contractor labor costs are based upon Verizon's Oregon Single Source Provider ("SSP") contracts, which result from a competitive bidding process.

Material costs included in the Study are Oregon-specific and reflect Verizon's economies of scale. Material costs are from Verizon's material records and contain prices based on invoiced costs for inventoried items and current price quotes from third party vendors. Material costs also include shipping and handling, local sales tax, minor material, and other supply provisioning costs. This development of material inputs is consistent with the process Verizon uses to estimate costs for internal company projects and product offerings.

**Q. WHAT ADDITIONAL INPUTS ARE NEEDED TO CAPTURE ALL COLLOCATION COSTS?**

A. Aside from material and labor inputs, the Study must capture the costs associated with the CLEC's occupation of space in Verizon's central office including heating, ventilation, and air-conditioning ("HVAC") costs as well as maintenance and utility costs. Because Verizon's Study addresses collocation at Verizon's existing Oregon

central offices, it develops an average floor space cost based upon square footage of the Oregon central offices included in the Study. The average floor space cost includes building and land investment as well as maintenance and utility costs.

**V. STIPULATION**

**Q. PLEASE SUMMARIZE- THE ISSUES THAT HAVE BEEN STIPULATED TO IN THIS PROCEEDING THAT REQUIRE MODIFICATION TO THE COST STUDY OR PRICING ASSUMPTIONS.**

A. First, Verizon reduced the rate of return in the Study from 12.74% to 9.69% to reflect the Commission-authorized rate of return from OPUC Order No. 98-388 in Docket No. UT 141. Second, Verizon modified the depreciation rates in the Study to reflect the Commission-approved depreciation rates in OPUC Order No. 98-150 in Docket No. UM 840. The changes to the rate of return and depreciation rates affect the annual cost factors used in the cost Study to develop monthly recurring costs.

The last change to the Study reflects a modification of a pricing assumption wherein Verizon increased the fill factor by one. The rate elements that were originally based on 4 collocators have been increased to 5 and those elements using a fill factor of 5 have been increased to 6.

A summary of the agreed prices is attached to the Stipulation and includes a comparison to the rates originally proposed by Verizon. See Verizon Exhibit #3.

**Q. ARE THE STIPULATED TERMS MEANT TO HAVE APPLICATION BEYOND OREGON?**

A. No. The Stipulation was reached to settle disputed issues in Oregon in order to forego the expense and uncertainty of litigation. They do not represent terms any of the Parties would necessarily support or endorse for use in other states. Verizon specifically states that the stipulated terms have application only in Oregon, and cannot be construed as Verizon's position on these matters in any other jurisdiction.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes.

**STIPULATION**

**RECITALS:**

1. The Public Utility Commission of Oregon (Commission) established the above-captioned proceeding on June 2, 2000 to investigate Verizon Northwest's Inc.'s (Verizon's) pricing of collocation in Oregon. Verizon submitted an initial collocation rate proposal on July 20, 2000, and submitted an amended rate proposal and cost study on October 27, 2000. Verizon submitted a further amended rate proposal and cost study on November 6, 2000. On January 15, 2001, Verizon corrected several minor errors to its rate proposal and cost study in response to a data request from Commission Staff. This involved a change in the Fiber Cable Pull – Place Innerduct rate element, and the removal of a rounding function which had rounded the rate for each element up to an even dollar amount. The January 15, 2001 changes were not formally filed with the Commission, but were shared with all of the active parties. A workshop addressing Verizon's proposed collocation prices and supporting cost study was held on January 22-23, 2001.

2. Since the January workshop, Verizon, AT&T of the Pacific Northwest, Inc. (AT&T), and the Western States Competitive Telecommunications Coalition (Coalition) (together the "active parties" have worked to resolve a number of issues regarding Verizon's cost study and proposed collocation pricing. Since negotiations commenced, however, the Coalition has decided to cease participating in this docket. Thus, while the Coalition actively participated in negotiations, no Coalition member seeks to continue its participation in this proceeding or sign this Stipulation. Verizon and AT&T have come to agreement on all but one issue. This Stipulation reflects the agreement reached.

**STIPULATION:**

Verizon and AT&T hereby agree and stipulate to the following:

1. The cost study and pricing summary submitted by Verizon on November 6, 2000 (as amended by Verizon's supplemental and revised response to Staff's Fourth Set of Data Requests dated January 15, 2001) shall be amended and modified as follows:
  - a. The rate of return used in the cost study shall be 9.69%.
  - b. The depreciation lives used in the cost study shall be those approved by the Commission in UM 840. See OPUC Order No. 98-150 (entered April 13, 1988).
  - c. Every instance in the pricing summary where a fill factor of "4" was used shall be changed to a fill factor of "5," and every instance where a fill factor of "5" was used shall be changed to a "6."

In all other respects, Verizon's cost study and pricing summary shall be used to determine the rates shown in attachment 1.

2. The collocation rates set fourth in Attachment 1 to this Stipulation reflect the modifications set fourth in Paragraph 1.
3. Each issue listed in the Issues List distributed by Staff on February 6, 2001 has been resolved and will not be raised or disputed by any party for the duration of this proceeding, except for Issues 5(b) and (c) regarding pricing for remote and adjacent off-site collocation. Issues 5(b) and (c) shall be resolved pursuant to a process determined by the Administrative Law

Judge.

4. The collocation rates contained in Attachment 1 are agreed to and shall be made available on a nondiscriminatory basis to all telecommunications carriers seeking to collocate at Verizon central office premises in Oregon.

Verizon Expended Interconnection Services Cost  
Study

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## **Overview of Cost Study**

### **Introduction**

The purpose of this document is to describe the process and methodology used in the costing of Single Cage, Shared Cage, Cageless, and Adjacent On-Site Expanded Interconnection Services (EIS) processes in Verizon central services. EIS is also known as "collocation" and will be referred to as such throughout this overview. A team of Verizon Costing personnel collaborated with a variety of Subject Matter Experts (SME) within Verizon to complete this study. This study conforms with the provisions of the Federal Communications Commission (FCC) CC Docket No. 98-147 First Report Order and Further Notice of Proposed Rulemaking adopted March 18, 1999 as FCC 99-48.

### **Study Results**

The results of the collocation cost study are based on actual costs of recent collocation activities are shown on the summary of Costs worksheets contained in this section (Section 1). The summary section depicts the non-recurring costs and the monthly recurring costs for collocation as a convenience to the users. Cost recovery methodology regarding the termination of a non-recurring or monthly recurring cost is a business decision made by the pricing group.

### **Cross Connects**

The placement of metallic cross connects (jumpers) associated with Local Service Requests for UNE's (Unbundled Network Elements) is not part of this collocation cost study. The Wholesale Non-recurring Cost Study that is filed incorporates the cost for this activity. The Cross Connect (jumper) Section contains a copy of the jumper information.

### **Description of Collocation Types**

This study addresses five types of collocation identified by Verizon- Single Cage, Shared Cage, Subleased Cage, Cageless and On-Site Adjacent collocation. (See Collocation Drawing No. 1 for additional details). A Competitive Local Exchange Carrier (CLEC) requesting collocation in a Verizon central office will be referred to as a collocator throughout this document.

### **Single Cage Collocation**

Single Caged collocation provides the CLEC with a dedicated caged floor space. This enables one collocator to locate its main transmission equipment in a segregated portion of Verizon's central office called a cage. The cage is in a

secured area, and the collocator has direct access to the collocation area to install, maintain and repair its equipment.

### **Shared Collocation**

A Shared Cage collocation arrangement is a caged collocation space shared by two or more CLEC's pursuant to costs and conditions by the CLEC occupying the cage. One of the collocators considered the Host collocator (HC) and the other collocator(s) sharing the same area with the Host collocator are referred to as the Guest collocator (GC). The Host collocator is responsible for the ordering and payment of all shared cage charges ordered from Verizon and for the collection of the payments from the GCs. The Host collocator (HC) is responsible for the collection of the NRC's and for ordering and payment of all shared cage charges ordered from Verizon. Each collocator establishes a separate account with Verizon for LSR activity to request UNE's. Non-recurring charges associated with the Shared Caged arrangement will be allocated on the percentage of total floor space utilized by each CLEC. Verizon will allow shared collocation in its wire centers or access tandems, where feasible, for interconnection purposes or access to Unbundled Network Elements (UNEs).

### **Sublease Collocation**

This form of collocation is where a collocator determines that it has a surplus space in its contracted cage space and Verizon agrees to permit the contracting collocator to sublease the surplus space to a third party Guest Collocator (GC). The collocator would sublease the floor space to the Guest Collocator pursuant to terms and conditions agreed between the collocator and the Guest Collocator.

### **Cageless Collocation**

This form of collocation is where an arrangement in "whole equipment bay/cabinet" increments utilizing a non-partitioned area in a Verizon central office with direct access to the collocation area for the collocator(s) to install, maintain and repair its equipment. One or more collocators may jointly occupy the Cageless collocation area.

### **Adjacent On-Site Collocation**

On-Site collocation is only utilized when no physical space exists in the requested Verizon central office for any of the other forms of collocation. This method utilizes a separate building constructed on Verizon's property that the collocator will install, repair, and maintain their equipment. Access to Verizon's central office is not necessary in this case since all of the collocator's equipment is located in the adjacent building and all the necessary work the collocator performs related to interconnecting to Verizon's central office is completed there.

**Miscellaneous Services**

Miscellaneous Services are activities that are a part of the collocation cost study and may have applications associated with any collocation activity, or may stand alone as an individual activity. The inclusion of these activities to ensure that costs were available if these activities were needed. Miscellaneous Services include:

- BITS Timing
- Premise Space Report
- Cable

**Common Tables**

The common tables' section is where all the tables that are used throughout the study are placed. These tables are found in the calculations on various work sheets in the cost study. The components are:

- COEI Time Study (HPU)
- Material Loadings Annual Cost Factors
- Single Source Provider Rates
- Loaded Labor Rates.

**Study Structure**

The Study is structured as follows:

- Section 1- Summary of Costs
- Section 2- Single/Shared/Subleased Cage Costs
- Section 3- Cageless Costs
- Section 4- Adjacent On-Site Costs
- Section 5- Miscellaneous Services
- Section 6- Workpapers
- Section 7- Common Tables
- Section 8- Cross Connect (Jumper)

Where appropriate, each of the above sections is formatted for the user's convenience by grouping cost elements with non-recurring and recurring costs.

## **Non-recurring Cost Study Elements**

### **Introduction**

The study develops Non-recurring collocation costs for Verizon's operation. All source data are specific to the study unless they state otherwise specified. Costs are actual costs of recent collocation activities and are based on collocation provisioning standards currently being utilized by Verizon. In cases where historical data was needed to provide the basis for analysis, data was drawn from the most recent collocation projects data available. Verizon account teams developed all Non-recurring costs for the various forms of collocation contained in this section.

The cost elements and the costing methodologies for the cost elements are described flowing this introduction.

### **Engineering Cost**

This cost includes time spent by Verizon personnel and engineering a specific Collocator's project. The personnel included in this cost are Central Office (CO) Equipment Engineering, Outside Plant (OSP) Engineering and Land and Building Engineering. The cost for the Land and Buildings Engineer includes all of the time incurred by the Engineer for the entire project. The costs for the CO Equipment Engineer and OSP Engineer include the time spent on the initial site audit, the project kickoff meeting and project status meetings. All other Equipment Engineering and OSP Engineering time incurred on a collocation project is captured in the explicable cost element.

The following is a brief description of the RIT team meetings that take place during a collocation project:

### **Initial Site Audit**

Once the Collocator submits an application for collocation, Verizon must perform an Initial Site Audit. If the application is for physical collocation, the purpose of this initial walkthrough is to determine the answers to the following questions:

1. What are Verizon's future needs for this office?
2. Is there sufficient space for physical collocation?
3. If sufficient space is available, where is the best location for the collocation area?
4. What building modifications are necessary to provide collocation?
5. Do sufficient DC power facilities exist in the CO to accommodate collocation?

If the application is for virtual collocation the CO Equipment Engineer visits the site to determine if there is space for virtual collocation and the best location.

### **Project Kickoff Meeting**

After the Collocator makes a final decision to collocate in a specific CO and submits half of the Non-recurring costs, the project officially begins. As a starting point for the project, Verizon will have a Kickoff meeting for that project. The purpose of the Kickoff Meeting is to discuss internal Verizon and outside contractor timelines for completing the project and to resolve any outstanding issues related to the collocation project.

### **Status Meetings**

Once the work in the CO has started, the parties involved will meet for status meetings. The purpose of the status meetings is to resolve any issues/ problems identified since the work began. There will always be one status meeting, depending on the complexity of the project there will be at least three and possible more. The amount of interaction between the parties involved will determine the number of status meetings required.

### **Building Modification Cost**

The physical building modification cost includes all costs associated with modifying the CO in order to accommodate a Collocator. There may be two external contractors involved in this process, an engineering firm and a general contracting firm.

The engineering firm's involvement is twofold. First, the engineer is responsible for identifying, at a high level, the building modifications necessary to accommodate the Collocator. Secondly, the engineer works with an architect to create blueprints that detail the necessary construction to the Collocation area. The general contracting firm uses these drawings in order to plan the actual construction and identify the necessary subcontractors.

The general contractor is responsible for completing the necessary construction for the building modification portion of the project, including hiring and coordinating all necessary subcontractors. Due to the variability of the collocation projects, there are several building modification cost elements presented in this study. Each cost element presented is the average cost incurred when underlying work is completed for a project. Not all cost elements will be incurred on each project. Each cost element was calculated based on the most recent collocation projects completed in California and Texas. These two state costs were brought to an average cost based on the National Construction Estimator. This average cost was then utilized to develop a state specific cost

based on the National Construction Estimator. The following is a description of each of the building modification cost elements:

## **Security Access**

### **Access Card Administration**

This cost is an administrative cost associated with providing access cards to collocators in order to be able to access central offices to perform work activities. The card activities identified are for ordering the cards, assignment, filing, programming, distribution, replacement, and changes.

## **Electrical**

### **Cage Grounding Bar**

A cage ground bar will be placed in the collocators caged in area. This is an extension from the floor ground bar. This cost includes the material and labor cost associated with placing the cable and cage ground bar in the caged area. (See Collocation Drawing No. 4 for additional details).

### **Lighting Fixture**

This cost element is for the installation of one electrical light four-foot in length. The cost includes the material and labor to install the lighting equipment. The light may be controlled by a manual switch or a motion detector.

### **Electrical Outlet**

This cost element is to place one electrical outlet for the collocator use in their specific collocation area. This cost includes the material and labor to place one outlet.

### **Floor Grounding Bar**

The floor grounding bar is located in the collocation area and is used to provide ground potential to each collocator. The floor ground bar is grounded back to the main central office ground. This cost includes all material and labor to place a cable from the main ground source to the collocation area. PVC conduit is used to enclose this ground wire. (See Collocation Drawing No. 4 for additional details).

## **Site Modifications**

Site Preparation The site preparation cost represents the cost to remodel, repair or rehabilitate the CO in order to provide collocation. Also included is the cost to clean up any associated debris caused by the site preparation.

**Dust Partition**

The dust partition (Plastic Curtain) cost represents the cost to place a temporary dust curtain around the construction area. The purpose of the curtain is to protect the existing equipment in the CO from dust and debris produced during construction projects.

**Ventilation Ducts**

This cost represents the cost for minor duct modifications (HVAC - Minor). (See Collocation Drawing No. 16 for additional details).

**Overhead Superstructure**

The cable racking cost includes all engineering, labor and materials to install new overhead superstructure in the CO. Due to variability of the cable racking necessary from project to project, the cost is calculated in one-foot increments of cable racking. This cost is calculated to provide overhead cable rack from existing Verizon racking - shared to a specific collocator's location. This racking is dedicated to the specific collocator's location and is based on a cost per foot. The cost is for 24-inch cable racking. The engineering time is for writing the work order, determine what is needed to provide the racking, order all equipment, update the records, and close the work order when complete. Central Office Equipment Installer loaded labor rates were used based on the COEI HPU's time to install cable racking. All costs were calculated on a per foot basis. (See Collocation Drawing No. 8 and No. 9 for additional details).

**Cage Enclosure**

The cage enclosure cost element includes the labor and materials to recover all of the costs incurred in constructing the Collocator's cage. Building the cage is the general contractor's responsibility. Cage enclosure costs have been developed for four different cage sizes. These cage sizes are based on 25 square foot increments, 25 to 50 square feet, 51 to 75 square feet, 76 to 99 square feet, and 100 and over square feet of floor space. The cage fencing is cost on a per square foot of fencing needed to enclose the cage area. The cost of the fencing material is determined by the average amount of fencing needed to enclose the fencing area, based on the square footage of floor space. There are certain fixed costs associated with cage construction regardless of the amount of fencing placed. These fixed costs were taken into consideration when calculating these costs for the various size cages.

The primary components included in the cage enclosure cost are the cage fencing and the cage entry gate (3' by 7' gate). The cage fencing and entry gate components includes the labor and materials necessary to construct the actual wire mesh cages and the entry gate to the cage.

The cage enclosure cost element is derived from actual collocation projects in California and Texas.

### **DC Power Cable**

This cost includes the pulling of the power cable from the BDFB (Battery Distribution Fuse Bay) to the collocator's specific location. If the collocator prefers to purchase the power cable from Verizon, the amount of this purchase would be included in the total cost. In order to terminate the power cable, a connector tap must be placed on each end of the cable. The termination cost includes the cost of the connector tap and the time to place the tap. The placement of the tap is based on the COEI HPU's. The cost of the connector tap is from Verizon's GTEAMS material system. The engineering time associated with the provisioning of power is based on SME estimates. This activity includes checking power requirements to available power, drafting a work order, ordering equipment/material, updating records, and then closing the work order when the work activity is complete. Travel time for the COEI Installer is based on one hour and is included in this cost element. (See Collocation Drawing No. 2 for additional details).

### **Cable Pull Cost**

#### ***Fiber Cable Pull***

The fiber cable pull cost includes four cost elements (4):

1. Engineering the cable pull
2. Placing innerduct within the Verizon CO
3. Pulling the cable
4. Cable Fire Retardant

The engineering for the cable pull cost element is the time incurred by the Outside Plant Engineer on the project. This is to check and assign facilities, draw up and issue a work order, direct the work activity, record updates, process invoices and close out the work order.

The cost element for placing innerduct is the cost to run the innerduct, in which the cable (fiber) is placed, from the cable vault to the Collocator's cage. This cost is developed based on Verizon's internal CO Equipment Installers Hours per Unit (HPU).

The cost element for pulling the cable is the cost of pulling the Collocator's cable (fiber) into the Verizon CO vault and then through the innerduct on to the Collocator's cage and is costed on a per foot of cable pulled. In a collocation

arrangement, it is the Collocator's responsibility to run its cable from its network to the first manhole outside the designated Verizon CO. Also, it is the Collocator's responsibility to provide the additional cable for the distance between the manhole and the Collocator's cage. Verizon will pull the cable from the manhole to the Collocator's cage inside the CO. If there is no manhole outside of the CO, Verizon will determine a point to which the Collocator will need to provide its cable. Verizon will then be responsible for pulling the cable from that point to the Collocator's cage.

The work times for pulling cable are based on Verizon's Single Source Provider (SSP) costs. It is the Collocator's responsibility to provide the cable; therefore the cost only includes the labor to pull the cable, innerduct cost and placement. (See Collocation Drawing No. 11 for additional details).

The cable fire retardant activity is associated with filling the space around cables extending through walls or floors, with a non-flammable material, to prevent fire from spreading from one room to another. This activity is performed when either DC power cable or transmission cable is run between floors or through a wall. The CO Equipment Installers must first remove the existing cable fire retardant when pulling power or transmission cable between floors or through walls. Once the cable has been pulled through the wall or between floors, the cable fire retardant material must be placed back in and over the hole. The number of hours assigned to perform this task does not vary, regardless of the type of cable or where the hole was drilled. CO Equipment Installers in California provided the estimated time for the cable fire retardant activity.

The cost for cable fire retardant is developed based on the average number of hours required by CO Equipment Installers to secure the holes between rooms with fire retardant material and then multiplied by the loaded labor rate of the CO Equipment Installers. The labor rates were taken from the Verizon Loaded Labor Rates for the state studied. (See Collocation Drawing No. 8 for additional details).

### ***Metallic Cable Pull***

The metallic cable pull cost applies in the adjacent collocation situations. This cost is for pulling the collocators metallic cable from the first manhole outside the central office into the cable vault. The collocator will provide sufficient cable to bring the cable into the cable vault where a splice will need to be made to central office type cable. The central office cable (stub) is connected to a protector that will be mounted to the vertical side of the frame. This is necessary to provide

protection to the central office from stray voltages that may be induced on metallic cable.

The pull costs are based on SSP rates for the Study State. These pull rates are broken down into two sizes of cables. The rate is based on the diameter size of the cable, smaller or greater than 1.5 inches in diameter.

The engineering costs are for an Outside Plant Engineer to investigate the pull, make assignments of the conduits, estimate lengths, write a work order, order necessary material, arrange for the pull, update records, and close the work order when complete.

Separate cable fire retardant activities will occur when the cables must pass through floors or walls within the central office. (See Collocation Drawing No. 12 for additional details).

## **Cable Splice**

### ***Fiber Cable Splice***

The costs provided in this element is when the collocator requests Verizon splice the fiber cable, that has been pulled into the central office. This splice may be requested to be in the cable vault or in the collocator's cage at the collocator's equipment. These costs are based on the SSP rates for the studied state for splicing fiber cable only. (See Collocation Drawing No. 11 for additional details).

### ***Metallic Cable Splice Costs***

This cost is based on metallic cable that is being spliced and the SSP rates for the studied state.

Metallic splicing is based on the number of pairs in the cable to be spliced. The break point in this cost is at less than 200 pair and over 200 pair. The cost is on a per pair basis.

When metallic cable is brought into the central office it must be connected to a protector that is mounted on the vertical side of the main distribution frame. Cables from this protector (stub) are extended to the cable vault and are spliced to the Outside Plant cable.

The engineering labor is for an Outside Plant Engineer to engineer the splicing of the cable. This will involve writing a work order, providing any instruction, and updating the records. (See Collocation Drawing No. 12 for additional details).

**Facility Pull**

This is the labor cost of running the interconnection wire from the collocation cage to the block or panel. The facility pull can be a DSO, DS1, or DS3 type cable or innerduct. A separate cost is developed for each. (See Collocation Drawings No. 1, No. 11 and No. 12 for additional details).

Labor cost are reflected for establishing a DSO (100 pair), DS1 (28 pair), and DS3 coax cable (interconnection). This cost represents the labor cost of running interconnection wires between the collocation cage and Verizon's network (MDF or DSX panel).

The cost for running the interconnection wire was determined from CO Equipment Installation HPUs. The length of this wire pull varies among COs based on the relative proximity of the collocation cage to Verizon's point of termination, and the type of interconnection (DSO, DS1, or DS3) requested by the collocator. This element was developed in one-foot increments for each type of cable being pulled. Additionally, we have assumed in our time estimates when terminating these cables, that the cables supplied by the collocator will be pre-assembled connectorized cables. (See Collocation Drawing No. 13 for additional details). If Verizon must place a connector on the coaxial cable (DS-3), the termination cost will be greatly increased. The times for pulling these lines was obtained from the CO Equipment Installation HPU listing. The cost of pulling each type of cable has been broken down into one-foot increments.

A final labor component of Facility Pull is the engineering cost of the facility cable pull. This is a consolidated engineering cost based on the average number of hours required by Verizon CO engineers to develop all facility pulls, draw the plans, write work orders, order any necessary equipment, make record updates, and then close the work order when complete.

All installation and engineering hours were multiplied by the corresponding loaded labor rate. These labor rates were taken from *Verizon Telephone Operations Labor and Overhead Rates Year-To-Date Calculated Rates through December 1997*.

**Relay Rack Installation**

If a collocator prefers to purchase a relay rack, engineering, and installation from Verizon the costs for these activities are available. The relay rack equipment is Verizon's standard relay rack and the cost is taken from Verizon AMS. This cost

includes all miscellaneous hardware necessary to mount the relay rack. The engineering for the placement of the relay rack is a SME estimate from the Network Design group of engineers whose responsibility it is to engineer this type of equipment. The installation time is taken from the COEI HPU table. Travel time for the installer is calculated for one hour.

As an option, a 10-position fuse panel can be installed in the relay rack.

All installation and engineering hours were multiplied by the corresponding loaded labor rate. These labor rates were taken from *Verizon Telephone Operations Labor and Overhead Rates Year-To-Date Calculated Rates through December 1997*.

### **Cabinet Installation**

If a collocator requests that Verizon provide an equipment cabinet, engineering, and installation for the cabinet the following costs would be incurred. The telecommunications cabinet is the standard cabinet used by Verizon and the cost is from GTEAMS. Material loadings are applied to this equipment.

Engineering costs are from SME's who are responsible for engineering this type of equipment. The installation hours are from Central Office Equipment Installers who install this type of equipment. The installer's time includes time to inventory the equipment and make sure all equipment is there. Use the engineered prints to locate the area the cabinet will be placed. Make the installation per Verizon practices for cabinet placement. Two employees are necessary for a safe and proper installation of the cabinet. The cabinet is a bulky item and must be placed in an exact spot, therefore requires two installers. The travel time for this activity is for two employees also.

All installation and engineering hours were multiplied by the corresponding loaded labor rate. These labor rates were taken from *Verizon Telephone Operations Labor and Overhead Rates Year-To-Date Calculated Rates through December 1997*.

**Miscellaneous Services****BITS Synchronized Timing**

The Non-recurring costs associated with the installation of an access port are based on the time and material to place shielded cable from the port to the collocator's equipment. Labor time is based on Central Office Equipment Hours per Unit and the loaded labor rate for a Central Office Equipment Installer. The engineering time is based on the time to make port equipment assignments, the creation of a work order, and the update of records when the work order is complete.

**Premise Space Reports**

At the request of a collocator, Verizon will make an analysis for caged or cageless types of collocation of a specific central office. This report will provide to the requesting collocator a detailed report indicating the available collocation space within that specific central office. This report will include information on existing occupied space and future requirements for space within the central office. The report fee is assessed per request, per central office. The premise space report is not required prior to the submission of a collocation application.

**Cable Costs**

The costs for facility, power and ground cables are from GTEAMS and then material loadings are added to the cost. The material loading is comprised of freight, sales tax, and supply provisioning costs.

***Facility Cables***

This cost is for cables for facility pulls when the collocator elects to purchase the cables from Verizon rather than provide the cables to Verizon for the facility pull.

The facility cables are connectorized cables for plugging into the terminal connecting equipment or blocks. The cables are in specific lengths and pair sizes.

The cost for DS3 coax is based on the GTEAMS cost per linear foot with material loading applied.

The cost for shielded cable (orange jacket) is based on GTEAMS cost per linear foot with material loadings applied. This shielded cable is used when a shield is necessary to eliminate interference. This type of cable is used when a BITS port is requested.

***Power Cables***

The power cables are flexible power wire cables that are used in the provisioning of power from the BDFB (Battery Distribution Fuse Bay) to the collocators individual cage, relay rack, or cabinet location. These power cable costs are based on linear feet taken from GTEAMS with the appropriate loadings applied. These power cables are also used in certain applications of provisioning as a ground cable.

***Ground Cables***

The wire ground is based on a #6 awg ground wire (cageless application) that is used in the grounding of the relay rack or cabinet to the floor ground bar. The cost is based on linear feet taken from GTEAMS and has the appropriate material loading applied.

## Monthly recurring Cost Study Elements

### Introduction

The purpose of this document is to describe Verizon's collocation process and the costing methodologies that have been employed to develop Monthly recurring costs relating to collocation activities. The summary of these costs can be found in Section 1.

This overview is based on exploratory field visits conducted by Verizon personnel to several central offices (COs) and phone conversations with regional headquarters employees for further clarification. Verizon personnel documented the processes based on these observations and interviews with Verizon subject matter experts (SMEs). Consistent with the long-run time horizon of the study, the costing of those processes has been adjusted to reflect any known and measurable expected changes in Verizon collocation policies or changes in technology.

The cost elements and the costing methodologies for the cost elements are described following in this overview and represent the cost elements that can occur for any of the five types of collocation - Single Cage, Shared Cage, Sublease Cage, Cageless and Adjacent On-Site. (See Collocation Drawing No. 1 for additional details).

### Floor Space

This is the cost to provide environmentally conditioned floor space to the collocator based on an average cost per square foot plus an amount for shared square feet. Environmentally conditioned space is that which has proper humidification and temperature controls to house telecommunications equipment. The cost includes only that which relates directly to the land and building space itself.

This cost was determined by examining the building investment amounts, square footage, and monthly maintenance/ utility expenses of a selected sample of central offices of varying technology and size utilized by Verizon across the state. Land costs are based on original investment value.

These selected COs were used in calculating an average cost per square foot used in the cost study. Each CO was examined with reference to the original investment amount in its building relative to the date of investment, as well as all other incremental investments. The investments were obtained from the

Property Operations: Asset Management Property Systems (AMPS) Database and were brought to a present value by using the R.S. Means Index Factor. The R.S. Means Index is used to convert National Average building costs at a particular time to the approximate building costs for some other time. For each new investment made in a CO, the R.S. Means Index for the year of the investment was used to calculate the investment in present day dollars. The total building investment for each CO was then divided by the square footage of the CO to determine an investment amount per square foot. Land costs were gathered from the same set of COs, but the original land investment values for the COs were used because a land index to calculate land investment present value did not exist. These original land investments are conservative costs compared to the present value of the land. Land values were also calculated on a per square foot basis and added to the per square foot building values.

In order to annualize the investment for each CO, the land and building investment amounts were multiplied by the land and buildings annual cost factors (ACFs), which were obtained from Verizon financial calculations. The building investment amount was then adjusted for major HVAC costs that were not included in the separate cost element called, "Environmental Conditioning".

The monthly maintenance and utility expenses for each CO were taken from actual year-end 1998 expense reports. These reports were obtained from Cost Analysis reports pulled from the File Manager Database. The compiled reports summarized expenses in the following categories: Building Maintenance, Recurring Contract Services, Janitorial and Utilities. The electric expense portion of the Utility Expense was excluded from this section because it is costed separately for the DC Power Utility cost element. The maintenance and utility expenses (exclusive of the electric utility) were combined to arrive at a total maintenance and utility expense for each CO. These expenses for each CO were divided by the square footage of the CO to develop the monthly maintenance and utility cost per square foot.

The Monthly recurring cost for floor space per CO was determined by combining the annualized investment cost per square foot and the maintenance and utility expense per square foot for each CO, averaging the annual cost of the COs and dividing by twelve (months per year).

The cost per square foot of each of the COs was analyzed in order to exclude any outlier costs. First, the mean of the costs and the standard deviation of the costs were calculated. Then any cost per square foot that was more or less than two standard deviations from the mean were excluded (outliers). Finally, the average of the cost was calculated excluding the outliers.

The average cost per square foot for floor space is used to develop the cost for any of the forms of collocation that involve floor square footage in this study.

A shared access cost is added to the cost per square foot for the use of hallways, rest rooms and breakrooms, and staging area (if appropriate). The shared access area is calculated using sixteen central offices from selected states. To estimate the hallway area, the square root of the buildings total square footage was calculated to obtain estimated walking length, and then multiplied by three-foot wide walkway. The three feet is a conservative estimate of the width of a hallway that would be in a central office. Actual building prints were pulled for the sixteen locations to measure the square footage for rest rooms, staging areas (if applicable), and breakrooms. These total square footages were then added together. This total was then divided by the total square footage of the studied sixteen buildings to gain the percent of the shared access areas to the total buildings square foot. The cost per square foot was then multiplied by this percent to get a cost per square foot for the shared access area. This calculated shared access amount is then added to the cost per square foot to provide a total cost per square foot. The total amount is then divided by twelve to obtain the cost per square foot per month. This shared access space is for use by all collocators and Verizon personnel to gain access to their equipment.

#### **Floor Space for Relay Rack**

For cageless collocation the cost of the square footage for the placement of the relay rack is calculated on the following formula. The standard rack used is 24 15/16 inches wide and has guard rails that have a length of 15 inches. The space in front and rear of a relay rack must be kept open in order to work on equipment placed in the rack. The space in front and back of the relay rack is divided by two (2) because the work area is used by equipment on both sides of the aisle. The aisle is considered to be 36 inches width in front and back which is divided by two (2) giving 18 inches as the width of the aisle in the calculation. The depth of the space is then considered to be:

15 inches for the equipment (guard rail to guard rail)

18 inches in the front of the rack for aisle space

18 inches in the rear of the rack for aisle space

This is a total of fifty-one (51) inches of depth. The width of the rack is considered to be 24 15/16 inches. These calculations are used to determine the total square footage occupied, and this total is then divided by the width footage of the relay rack to provide a square footage per linear foot. This provides the collocator to request space on a linear foot basis. The linear footage is based on the number and size relay racks to be placed. (See Collocation Drawing No. 6 for additional details).

**Floor Space for Cabinet**

For cageless collocation the collocator may choose to place a telecommunications cabinet in the collocation area to house the telecommunications equipment. In consideration of the floor space for this cabinet, the standard cabinet used by Verizon was used to determine the floor space that would be occupied. The dimensions of the cabinet are 29 inches by 33 inches. An aisle way must be available in the front and rear of the cabinet as passage way and work area. The normal width of an aisle is 36 inches. The aisle can be used by technicians working on equipment on either side of the aisle, so in the calculation the aisle width is divided by two (2).

The following dimensions were considered in the calculation of floor space for the cabinet:

- 29 inches width
- 33 inches depth
- 18 inches front aisle
- 18 inches rear aisle

A calculation using this information was completed to provide the total square footage of the area. This square footage was then determined on a linear foot basis. In this manner the collocator can request linear footage based on the size or number of cabinets that will be placed in the cageless collocation area. If the cabinet requires side ventilation this floor space can be accommodated for in the total linear footage requested. (See Collocation Drawing No. 7 for additional details).

**Cable Space**

This is the material cost of the space that the cable occupies within the manhole/conduit system.

All material costs were obtained from Verizon Advanced Materials System (GTEAMS) in generating 1998 actual costs. Verizon labor costs were calculated by multiplying the time estimates from the Broadgauge Units file by the appropriate Verizon 1997 Loaded Labor Rate. Costs from the SSP file was used in determining the costs associated with those activities that vendors may provide. The overall cost was determined by calculating the manhole, conduit material and installation costs for the cable space.

The manhole material costs were calculated by taking the original cost of a manhole and breaking it down to a cost per conduit and then to the cost per subduct. The calculation considers three (3) subducts per conduit.

Manhole installation costs were calculated by first taking the average time and labor rate to install the manhole. This was then broken down to a cost per conduit and then to a cost per subduct labor cost and added to the core drilling cost to arrive at a total manhole installation cost per conduit and per subduct.

The conduit material cost was calculated by taking the cost per foot per duct. This total was then broken down to a per subduct basis. The distance from the manhole to the CO can differ greatly depending on the particular CO. Therefore, the material cost for the conduit and subduct is based on a cost per foot.

Conduit installation costs were determined by gathering the trenching, concrete, and restoration costs per conduit on a per foot basis. These costs were obtained from current SSP rates for the study state. A typical installation of conduit was used to generate this cost. This cost was then calculated on a per subduct basis.

A material loading factor was applied to the Cable Space material cost in order to account for other relevant costs. This factor was taken from the *Fact Finder System: Material Loading Factors-1998*, and accounted for sales tax, supply provisioning, and other minor material costs. The material loadings were then added to the Cable Space material. This amount is added to the labor costs to arrive at a total Cable Space cost. The ACF was then applied to the total cost in order to calculate the annual recurring cost for the Cable Space cost element. The annual recurring amount was then divided by twelve to obtain the monthly cost. (See Collocation Drawing No. 11 and No. 12 for additional details).

#### **DC Power Facility**

This is the material and labor cost to provide DC power to the collocator's area. Included is power cable to extend power from the power plant to the collocator's area, along with the associated fuse panels, relay racks, distribution bays, and a portion of the existing power plant. The power plant consists of batteries, rectifiers, main fuse panels, electrical connections and backup generators to the main power source.

The power plant for a central office was calculated using current estimates for power plant equipment and labor for central office base units by line size. The individual state exchanges were identified by line size and used as a weighted percentage to the line size in the power plant calculation. This calculation was used to determine the cost of the equipment and labor for the state on a per amp basis. These dollars per amp are then converted to a 40-amp increment.

Power Cable refers to cable that is needed to extend power from the main power distribution panel to a BDFB (Battery Distribution Fuse Bay) in the collocation area. (See Collocation Drawing No. 2 and No. 3 for additional details). The pulling of this cable is based on the Central Office Equipment HPU's (Hours per Unit), times an estimated footage of 125 feet, times the loaded labor rate for a Central Office Equipment Installer (Labor group 101). The power cable cost is for a 750 mcm flexible power wire cable and is taken from Verizon's GTEAMS system. Each cable requires a connector tap on each end for termination. The labor to connect the connector tap is based on the Central Office Equipment HPU's and the loaded labor rate for a Central Office Equipment Installer. The cost of the connector tap is from Verizon's GTEAMS system. These costs are then divided by the engineering capacity of the BDFB that the power cable feeds, 480 amps. This provides a common cost per amp.

The cost of a BDFB (Battery Distribution Fuse Bay) is based on a RELTEC model 1293B2 equipped for 600 amps. The cost includes the relay rack, common equipment, metering panels, and fuse panels. This unit is provisioned by "A" and "B" power feeds. These costs are then broken down to a cost per amp based on the engineering maximum capacity (80%) of the BDFB, or 480 amps. This provides a common cost per amp.

The hours to engineer and install the BDFB are based on SME's (Subject Matter Experts) information gathered from field forces that install this type of equipment. The engineering hours are applied to the loaded labor rate of a Central Office Engineer and the installation hours are applied to the loaded labor rate of a Central Office Equipment Installer. These costs are then divided by the BDFB size engineering capacity, 480 amps. This provides a common cost per amp.

Material loadings are applied to the cost of the power cable and BDFB within the study. The material loadings for the power plant are included in the calculations. The material loadings are taken from the *Fact Finder System: Material Loading Factors-1998*, and account for sales tax, supply provisioning, and other minor material costs. An ACF is applied to these costs to provide an annual cost, which is then divided by twelve to give the Monthly recurring cost.

When provisioning power, distance from the main power source is critical due to loss incurred in the cables. So ICB-Core Drills may be necessary to reach the collocation area via the best and shortest route. There is a separate cost element for cable fire retardant that will apply for each core drill made or wall or floor that is passed through.

**DC Power Utility**

This is the monthly utility expense to power the termination equipment.

This cost was determined by first establishing a set amperage rating of equipment and a voltage rating of equipment to be used by collocators. By multiplying the amp rating by the volt rating and dividing by 1000, a total equipment power requirement was calculated.

Power engineers used a Lorain model V2OOD50 Rectifier in calculating the input-output ratios and efficiency factors for a current power facility. The power output voltage was calculated for the current type of rectifier that would be purchased by Verizon today, rather than the type of equipment that may be found in an existing Verizon CO. This has the effect of lowering the ratio of input to output power and thus reducing the overall cost of the utility cost element. This is because current equipment is more efficient than equipment that was manufactured in the past, which is what will be found in current central offices.

The cost of commercial electricity was determined from actual electricity costs and kilowatt-hours used in Verizon facilities in the study state throughout 1998. This rate was taken from electricity expenses incurred only in the study state. The hourly cost to power the equipment was calculated by multiplying the cost of commercial electricity by the equipment power requirement. The hourly cost was then multiplied by the efficiency and heat loss factor (ratio of input power to output power) in determining the Monthly recurring cost for DC power utility.

**Facility Termination**

This is both the labor and material cost of the Main Distribution Frame (MDF) 100 pair termination block and the DSX facility termination panel. The facility termination can be a DS-0, DS-1, or DS-3. A separate cost is developed for each. (See Collocation Drawing No. 15 for additional details).

This cost was determined by calculating the total material and labor cost for establishing a DS-0 (100 pair), DS-1 (28 pair), and DS-3 coaxial interconnection. This includes the cost of the cross connect panels, termination blocks and a space occupation cost of the blocks and panels.

For each type of interconnection, a material cost was first established. All material costs were obtained from the Verizon Advanced Material System (GTEAMS) as of year-end 1998. In the case of the DS-0 interconnection, the cost for a 100 pair termination block was required. Additionally, the cost of the MDF was calculated on a 100 pair DS-0 basis. This study only looks at DS-Os up to the

point of their termination on the MDF and does not include the cross connections to Verizon unbundled network elements (UNEs) or services. Therefore, only one half the cost of the MDF was included in this study.

The DS-1 interconnection required costing out a 56 circuit DSX panel, and then breaking the cost down on a per circuit basis. This panel would be fully utilized when deploying four cables each having 28 pairs (2 Transmitting and 2 Receiving). For costing DS-3s, a 20 circuit DSX chassis (broken down on a per circuit basis) and a DS-3 module were required. This panel would be fully utilized when deploying all 20 modules.

The labor cost for establishing the facility termination was broken down into engineering and installation activities. Labor rates were taken from actual *Verizon Telephone Operations Labor and Overhead Rates Year-To-Date Calculated Rates through December 1997*. The time per occurrence was based on the standard labor hours to engineer and install termination blocks and DSX panels for interconnection purposes. The number of hours required for engineering and installation were multiplied by the corresponding labor rates to determine the total labor cost for each.

Core-drilling activities may not be necessary for each collocator and thus costs will be incurred on an individual case basis.

A material loading factor (when appropriate) corresponding to the interconnection's adjusted material cost was used to calculate the total material cost for each facility termination. This material total was then added to the adjusted labor (engineering and installation) cost in arriving at the total investment amount. Annual cost factors were applied to the total investment amount for each type of facility termination to annualize the cost. These totals were then broken down on a monthly basis.

### **Building Modification Costs**

#### **Card Reader/Controller**

In physical collocation arrangements it may be necessary to install a card reader/ controller, or a card reader, to provide the Collocator with secured access to the facility. These costs are presented on an equipment type basis or modification. (See Collocation Drawing No. 10 for additional details).

#### **Environmental Conditioning**

Costs necessary to provide conditioned space within the central office where the collocator s equipment will be placed. This cost element is based on an industry-wide calculation to equate the cost of one DC amp to air conditioning.

## **Cable Vault Splice Elements**

### ***Fiber Cable Vault Splice***

This cost is for the splice closure that would be needed when a fiber splice is made in the cable vault. The closures are based on the size of the fiber cable being spliced. One splice closure can hold 48 fibers and the next closure can hold up to 96 fibers. These closure costs are from Verizon's GTEAMS system and are the type of closure currently being used by Verizon. Material loadings are added to the material costs, an ACF is applied to get an annual cost, and this cost is then divided by twelve to obtain the cost per month. (See Collocation Drawing No. 11 for additional details).

### ***Metallic Cable Vault Splice***

This cost is for the metallic splice closure that would be needed to splice metallic cable in the cable vault. This splice is necessary when outside plant cable is brought into the central office. The outside plant cable is spliced to central office type cable and protection is placed on the main distribution frame, vertical side. This protection is needed to ensure that stray voltage does not enter the central office via the metallic cable.

The type of protection on the frame is the type of connectors Verizon is currently using, Cook type C-388 connector. The protector modules used are for transmission of analog or digital signals. The cost for this equipment is from GTEAMS. The space the connector occupies on the main distribution frame is figured on a per 100 pair basis. This was calculated by taking the cost of the frame and associated labor and the number of metallic cable pairs that could be terminated on the vertical side of the frame.

Material loadings are calculated on the material used, an ACF is used to calculate the annual cost, and this is divided by twelve to obtain the cost per month.

These costs were calculated for various size cables that may be brought into the central office by a collocator. (See Collocation Drawing No. 12 for additional details).

### **Cable Vault Splice - Utilization**

The cable vault utilization is the area that a collocator's cable occupies in the vault. This was figured based on the size, diameter, of the collocator's cable. The diameter of the cable was obtained from the manufacture specifications for the

pair size of the metallic cable. For fiber cable the outside diameter of the subduct was used.

The cost of a cable vault was obtained first and then the area within the vault that unistrut, fixtures that the cable is place on, occupies within the vault. The size of the cable then was used to calculate the area that the cable occupies within the area provided by the unistrut. The vault and cable occupancy was calculated on a cubic foot basis. (See Collocation Drawing No. 14 for additional details).

**Cable Rack Shared**

This cost is based on the area that a collocator's cable will occupy when run in the central office superstructure to the MDF or DS-X panel or collocator to collocator. The quantity of cables that could be placed on a 24 inch size cable rack was estimated by the Network Design engineering group. The diameter of the central office cable was then used to determine the amount of space occupied by the cable on a foot of cable rack. The DS-0 and DS-X cables were calculated based on the diameter of the cables. The outside diameter of innerduct was used to calculate fiber cable. This cost was figured as a monthly rate and based on the length of the cable. (See Collocation Drawing No. 9 and No. 14 for additional details).

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## Miscellaneous Services

### **BITS**

Building Integrated Timing Supply (BITS) is a central office timing system that provides a common source for the frequency and phase synchronization, necessary in any digital transmission network. BITS clocks are devices used to provide timing and synchronization information to the equipment elements of a digital transmission system or network. The clocks are embedded within switching or transport equipment, or in stand-alone synchronization equipment such as Timing Signal Generators (TSG) and Primary Reference Sources (PRS). The BITS timing system provides a robust, simple to administer, and trouble-shoot network of clocks of known quality and performance characteristics. BITS system ensures that network synchronization, if correctly installed, provides the necessary level of performance demanded by a growing digital network.

The BITS concept requires that all digital equipment in a physical structure must receive timing from the BITS/TSG clock. This BITS/TSG clock is the most accurate and stable clock in the structure, and is the only clock that receives timing from another PRS office. The BITS clock receives primary (A) and secondary (B) timing reference from another office of higher or same stratum levels, and must be traceable to a PRS. The primary reference serves as the active reference and the secondary reference as the alternate should the active reference fail.

This cost was determined by calculating the total material and labor cost for establishing BITS within a central office. This cost includes the common control equipment and associated port cards. Port cards are for DS1 or CC (Composite Clock) signal delivery. The system is installed with 100 ports for connectivity so a cost was developed for a cost per port. Appropriate material loading is applied on the equipment investment. The ACF is calculated to bring the investment to a cost per year and the total is divided by twelve months to get a cost per month per port.

The standard BITS unit used by Verizon was used to determine equipment and labor costs. This unit is a Telcom Solution's DCD-519/2E equipped with GPS system. The engineering and installation labor are estimates from SME's (Subject Matter Experts) in Verizon's Network Design group. (See Collocation Drawing No. 17 for additional details).

STAFF/1  
HARRIS/1

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Tom Harris. My business address is 550 Capitol St., NE, Suite 215,  
3 Salem, Oregon 97301.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am a Senior Telecommunications Analyst for the Public Utility Commission of  
6 Oregon (PUC). I have been employed by the PUC for twenty-five years, and since  
7 July 1984, I have been a telecommunications analyst involved in telecommunications  
8 regulation.

9 **Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?**

10 A. On May 29, 2001, Verizon Northwest Inc. (Verizon) and AT&T Communications of  
11 the Pacific Northwest, Inc., (AT&T) filed a stipulation which resolved some of the  
12 issues in docket UM 976. Attachment 1 to that stipulation listed rates as of  
13 May 29, 2001, for over one hundred elements of collocation in Verizon's premises.  
14 This testimony expresses staffs support for the stipulation.

15 **Q. DOES STAFF RECOMMEND THAT THE COMMISSION ADOPT THE  
16 STIPULATION?**

17 A. Yes.

18 **Q. DID STAFF SIGN THE STIPULATION?**

19 A. Yes.

20 **Q. DOES THE STIPULATION RESOLVE ALL ISSUES IN DOCKET UM 976?**

21 A. No. Two issues, which are essentially one issue with two parts, still remain. They  
22 are issues 5(b) and 5(c) from staff's February 6, 2001, letter to the parties in UM 976.  
23 The issues are listed below. The ALJ has set a schedule for addressing issues  
24 5(b) and 5(c). By signing the stipulation, the three signatories acknowledged that all  
25 issues except 5(b) and 5(c) were either resolved or dropped.

26 **Q. DESCRIBE THE ISSUES IN DOCKET UM 976.**

27 A. The parties to UM 976 developed twelve issues in the workshop held on  
28 January 22-23, 2001. The issues were memorialized in a letter, dated

1 February 6, 2001, which I sent to all parties, as well as the ALJ. For convenience the  
2 issues are repeated here.

3 **Docket UM 976**

4 **ISSUES LIST**

- 5
- 6 1. What is the appropriate rate of return?  
7
  - 8 2. What are the appropriate depreciation lives for the following?  
9 a. Buildings  
10 b. Digital and Electronic Switching Equipment  
11 c. Circuit Equipment  
12 d. Underground Cable - Metallic  
13 e. Underground Cable - Fiber  
14 f. Conduit Systems  
15
  - 16 3. What is the appropriate rate for the contribution amount for monthly  
17 recurring charges?  
18
  - 19 4. What is the appropriate fill factor? (That is, what is the appropriate  
20 average for the number of CLECs that will collocate in Verizon's  
21 premises?)  
22
  - 23 5. Should Verizon be required to develop costs and prices for the following  
24 types of collocation?  
25 a. Virtual collocation  
26 b. Adjacent offsite collocation  
27 c. Remote collocation  
28
  - 29 6. What is the appropriate Hours per Unit (HPU) for pulling power and  
30 grounding cable? (That is, is 0.25 hours per foot appropriate to use for  
31 pulling power and grounding cable?)  
32
  - 33 7. What are the appropriate lengths to use for average cable runs for the  
34 following?  
35 a. Shielded cable  
36 b. DSO cable (metallic)  
37 c. DS1 cable (metallic)  
38 d. DS3 coaxial cable  
39 e. DSO, DS1, DS3 fiber cable  
40 f. Power cable  
41 g. Ground cable  
42 h. Lighting fixture electric wire and conduit

- 1  
2 8. For Adjacent Cable Rack Shared - Utilization, should Verizon use the  
3 actual cost per foot per month or increase costs to one cent (\$0.01) per  
4 foot per month?  
5  
6 9. Should Verizon develop costs and prices for different types and size  
7 core drills or use Individual Case Basis (ICB)?  
8  
9 10. What is the appropriate number of hours of labor to use for DS1  
10 termination to OSP connectors?  
11  
12 11. What are the appropriate numbers of hours of labor to use for the  
13 following Premise Space Reports?  
14 a. Comprehensive evaluation  
15 b. Limited evaluation  
16 c. Annual evaluation  
17  
18 12. What are the appropriate hourly labor rates for Misc. Services Labor?  
19

20 **Q. WHAT IS THE STATUS OF THE ISSUES ACCORDING TO THE STIPULATION?**

21 A. Issues 1, 2, and 4 were resolved by the stipulation. Issues 5(b) and (c) are still being  
22 contested in this docket. The signatories dropped the other issues. For Issues 6, 7,  
23 10, and 11, staff is satisfied that Verizon's cost studies reflect reasonable numbers of  
24 hours per unit to install different items and reasonable cable lengths. The hours per  
25 unit and cable lengths are inputs to the cost studies. Verizon provided explanations  
26 or workpapers, which seemed reasonable, as supporting backup for the costs. For  
27 Issues 3, 8, 9, and 12, staff concludes that changes to the cost studies, which might  
28 have resulted from resolution of those issues, would not result in significant changes  
29 to rates for collocation elements, or that the collocation elements which would be  
30 affected are not material to the competitive providers' overall costs of collocation.

31 Issue 5(a) was a competitive provider issue. However, AT&T did not raise it  
32 when negotiating the stipulation. Verizon reports that virtual collocation is available  
33 through its FCC tariffs.

Staff/1  
Harris/4

1 **Q. ARE COLLOCATION RATES IN THE STIPULATION DIFFERENT FROM**  
2 **COLLOCATION RATES PREVIOUSLY FILED BY VERIZON IN DOCKET UM 976?**

3 A. Yes. Verizon filed collocation rates along with a supporting cost study and  
4 workpapers in July 2000. The company filed amended rates, cost studies and  
5 workpapers in October 2000, November 2000, and on January 15, 2001. The rate  
6 for every collocation element listed in the stipulation is the same as or lower than the  
7 previously filed price for that element. When the stipulated changes to rate of return,  
8 depreciation lives, and fill factors are used as inputs to Verizon's cost study, the  
9 result is lower rates for some collocation elements and no change for other elements.

10 For the collocation rates submitted in January 2001, Verizon did not round rates  
11 up to the next dollar, as it had done in earlier filings. In some cases that resulted in  
12 minor rate reductions, and in other cases it resulted in significant rate reductions. For  
13 example, by not rounding up to the next dollar, Verizon reduced the nonrecurring rate  
14 for DS1 Cable Termination from \$2.00 to \$1.04.

15 Overall, there are 105 collocation elements with rates attached to the  
16 stipulation. Comparing the stipulation rates with those filed in November 2000, I find  
17 that eleven (11) collocation elements have the same prices, forty-six (46) show minor  
18 (less than 20%) reductions, and forty-eight (48) elements show significant (greater  
19 than 20%) reductions.

20 **Q. DO YOU BELIEVE THE COLLOCATION RATES IN THE STIPULATION**  
21 **ARE REASONABLE?**

22 A. Yes. Since rates for collocation in the stipulation are the same as or lower than  
23 previous rates, and since they are acceptable to AT&T and Verizon, I believe that  
24 they are reasonable.  
25

1 **Q. WHAT ARE THE IMPLICATIONS IF THE COMMISSION ADOPTS THE**  
2 **STIPULATION?**

3 A. Staff believes that if the Commission adopts the stipulation then the Commission will,  
4 in effect, be approving Verizon's rates for collocation as the default rates for Verizon  
5 in Oregon. In future interconnection agreements between Verizon and competitive  
6 providers, there may be cases where the parties agree to use rates which are the  
7 same as or different from the default rates, or there may be cases where they cannot  
8 agree on collocation rates. If they cannot agree, the party who wants collocation  
9 rates that differ from the default rates will have the burden to demonstrate why the  
10 Commission should approve its interconnection agreement with different collocation  
11 rates.

12 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

13 A. Yes.

**UM 976**

**STIPULATION REGARDING OPEN ISSUES 5(B) AND (C)**

**RECITALS:**

1. The parties to this stipulation are the Commission Staff (Staff), Verizon Northwest Inc. (Verizon), and AT&T of the Pacific Northwest, Inc. (AT&T).
2. The Public Utility Commission of Oregon (Commission) established the above-captioned proceeding on June 2, 2000, to investigate Verizon Northwest Inc.'s (Verizon's) pricing of collocation in Oregon. On February 6, 2001, Staff distributed an Issues List for the proceeding listing the twelve issues identified by the parties during the workshop held on January 22-23, 2001. On May 29, 2001, Staff, Verizon, and AT&T jointly submitted a Stipulation (the "May 29 Stipulation") seeking to resolve all of the issues except for issues 5(b) and (c). The May 29 Stipulation generally addressed the pricing for collocation arrangements at Verizon's central office premises in Oregon. Verizon and Staff have since submitted testimony in support of the May 29 Stipulation.
3. Issues 5(b) and (c) ask whether Verizon should be required to develop costs and prices for remote collocation and remote adjacent collocation.<sup>1</sup> The parties have agreed upon the following definitions to describe remote collocation and remote adjacent collocation:

*Remote collocation:* The placement of CLEC equipment within an existing structure owned, leased, or otherwise controlled by Verizon at a remote location (*i.e.*, away from a central office) housing Verizon's network facilities.

*Remote adjacent collocation:* The placement of CLEC equipment within a structure built or procured by the CLEC on property owned or leased, or

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<sup>1</sup> The parties originally referred to remote adjacent collocation as "adjacent off-site collocation" in this proceeding. After the parties learned that other jurisdictions had used the term "adjacent off-site" to refer to different arrangements than intended in this proceeding, the parties agreed to replace that term with "remote adjacent collocation."

otherwise controlled by Verizon to an existing structure at a remote location housing Verizon network facilities.

The Staff, Verizon, and AT&T have reached agreement regarding Issues 5(b) and (c) and enter this Stipulation to memorialize that agreement.

**STIPULATION:**

The parties to this Stipulation agree and stipulate to the following terms in order to settle issues 5(b) and (c) without hearings, as allowed by OAR 860-014-0085:

1. This Stipulation is entered into to resolve and settle disputed issues before the Commission in UM 976. It does not represent a statement or agreement by any party that the agreed-to rate elements and pricing can or should be used in any other jurisdiction. Further, it does not represent a statement or agreement by any party that the terms herein are consistent or inconsistent with the Telecommunications Act of 1996 (the Act), the implementing orders of the Federal Communications Commission (FCC), or the establishment of cost-based rates. Rather, this Stipulation is an agreement to settle disputed matters in this proceeding in order to avoid the expense and uncertainty of litigation. This Stipulation does not constitute an "agreement" under Section 252(a)(1) of the Act.

2. The parties agree that Verizon shall apply the rate elements and prices agreed to in the May 29 Stipulation (or any future Commission-approved amendments to such prices) to requests for remote collocation, until the Commission establishes alternative prices for remote collocation in a proceeding specifically addressing such pricing. Those rate elements and prices are appended hereto as Attachment 1. Should the Commission not adopt the May 29 Stipulation, or should the Commission materially modify the May 29 Stipulation, any party hereto shall have the right to withdraw from this Stipulation.

1 3. The parties agree that Verizon shall price requests for remote adjacent  
2 collocation on an individual-case-basis until the Commission establishes prices for remote  
3 adjacent collocation in a proceeding specifically addressing such pricing.

4 4. Verizon shall keep records of the number of remote collocation arrangements  
5 and the number of remote adjacent collocation arrangements ordered', under construction place<sup>3</sup> in Oregon.  
6 Upon request, Verizon shall provide those numbers to Staff or to any party  
7 to this proceeding, Docket UM 976. If and when there are ten (10) or more remote collocation  
8 arrangements ordered, under construction or in place on Verizon premises in Oregon, Verizon  
9 shall develop and file with the Commission, for approval, a set of proposed prices for remote  
10 collocation. If and when there are ten (10) or more remote adjacent collocation arrangements  
11 ordered, under construction or in place on Verizon premises in Oregon, Verizon shall develop  
12 and file with the Commission, for approval, a set of proposed prices for remote adjacent  
13 collocation. The obligation to automatically develop and file such prices shall expire two (2)  
14 year's from the effective date of a Commission order approving this Stipulation.

15 5. Verizon may at any time develop and file with the Commission, for approval, a  
16 set of proposed prices for remote collocation or remote adjacent collocation. No party to this  
17 proceeding, except Verizon or Staff, shall petition the Commission to begin a proceeding to  
18 address development of specific prices for remote collocation and/or remote adjacent  
19 collocation on Verizon premises in Oregon within two (2) years of the effective date of  
20 Commission order approving this Stipulation. Absent relevant directives from the Commission

21  
22  
23  
24 \_\_\_\_\_  
The term "ordered" shall mean that the collocating carrier has made a final decision to collocate at a specific remote location and has submitted to Verizon the applicable partial payment of the non-recurring costs (NRCs).

25 <sup>3</sup> The term "in place" shall mean that construction of the arrangement is complete and ready for operation.

to Staff, orders from the FCC, relevant court decisions, or changes in relevant federal or Oregon law, Staff will not petition the Commission to begin a proceeding to address development of specific prices for remote collocation and/or remote adjacent collocation on Verizon premises in Oregon within two (2) years of the effective date of a Commission order approving this Stipulation. Any person may petition the Commission to commence a proceeding to address the pricing of remote collocation and/or remote adjacent collocation on Verizon premises in Oregon two (2) years or more from the effective date of a Commission order approving this Stipulation

6. All issues listed in the Issues List distributed by the Staff on February 6, 2001 shall be deemed resolved by this Stipulation and the May 29 Stipulation.

7. Should the Commission not adopt this Stipulation, or should the Commission materially modify this Stipulation, any party hereto shall have the right to withdraw from this Stipulation.

IT IS SO AGREED.

PUC STAFF  
By: \_\_\_\_\_

Stephaine Andrus \_\_\_\_\_  
Signature

Assistant Attorney General  
Title

VERIZON NORTHWEST INC.  
By: \_\_\_\_\_

Renee M. Willer \_\_\_\_\_  
Signature

Regulatory Manager  
Title

STIPULATION REGARDING OPEN ISSUES 5(B) AND (C) -- Page 4 of 5

**APPENDIX D**  
**Page 4 of 7**

1 AT&T OF THE PACIFIC NORTHWEST, INC.

2

3 BY: \_\_\_\_\_  
4 Signature

Rebecca B. DeLook  
Print Name

Senior Attorney  
Title

ORDER NO. 02-107

VERIZON NORTHWEST INC-OREGON		SUMMARY		
MRC FIXED ALLOCATOR:	9.00%			11/06/005/19/2001
Oregon		Proposed	Stipulation	
Collocation Elements	NRC/MRC	Increment	E1112	
Caged, Shared and Cageless Elements:				
1 Engineering/Major AugmentFee	NRC	per occurrence	\$ 1,129.00	\$ 1,128.54
2 Minor Augment Fee	NRC	per occurrence	\$ 200.00	\$ 199.42
3 Access Card Administration	NRC	per card	\$ 22.00	\$ 21.01
4 Cage Enclosure 25-100 SF	NRC	per cage	\$ 4,779.00	\$ 4,777.47
5 Cage Enclosure 101-200 SF	NRC	per cage	\$ 6,295.00	\$ 6,294.58
6 Cage Enclosure 201-300 SF	NRC	per cage	\$ 7,812.00	\$ 7,811.68
7 Cage Enclosure 301-400 SF	NRC	per cage	\$ 9,329.00	\$ 9,328.78
8 Cage Enclosure 401-500 SF	NRC	per cage	\$ 10,846.00	\$ 10,845.88
9 Cage Enclosure Augment	NRC	per square foot	\$ 14.00	\$ 13.94
10 BITS Timing	NRC	per project	\$ 289.00	\$ 288.07
11 Overhead Superstructure	NRC	per project	\$ 2,372.00	\$ 2,371.98
12 Facility Pull/Termination - Engineering	NRC	per project	\$ 76.00	\$ 75.43
13 Facility Pull -Labor	NRC	per cable run	\$ 211.00	\$ 210.08
14 DSO Cable Termination (Connectorized)	NRC	per 100 pair	\$ 5.00	\$ 4.95
15 DS I Cable Termination (Connectorized)	NRC	per 28 pair	\$ 2.00	\$ 1.94
16 DS3 Coaxial Cable Termination (Preconnectorized)	NRC	per termination	\$ 2.00	\$ 1.94
17 DS3 Coaxial Cable Termination (Unconnectorized)	NRC	per termination	\$ 11.00	\$ 10.40
18 Fiber Cable Pull - Engineering	NRC	per project	\$ 607.00	\$ 606.30
19 Fiber Cable Pull - Place Innerduct	NRC	per linear foot	\$ 3.00	\$ 2.94
20 Fiber Cable Pull - Labor	NRC	per linear foot	\$ 1.00	\$ 0.97
21 Fiber Cable Pull - Cable Fire Retardant	NRC	per occurrence	\$ 42.00	\$ 41.61
22 Fiber Cable Splice - Engineering Costs	NRC	per project	\$ 31.00	\$ 30.32
23 Fiber Cable Splice	NRC	per fiber	\$ 57.00	\$ 56.80
24 DC Power Cable	NRC	per 1 amp	\$ 69.00	\$ 68.15
25 Facility Cable-DSO Cable (Connectorized)100 pair	NRC	per cable run	\$ 309.00	\$ 308.70
26 Facility Cable-DSI Cable (Connectorized)	NRC	per cable run	\$ 287.00	\$ 286.62
27 Facility Cable-DS3 Coaxial Cable	NRC	per cable run	\$ 78.00	\$ 77.75
28 Facility Cable-Shielded Cable (Orange Jacket)	NRC	per cable run	\$ 32.00	\$ 31.12
29 Power Cable-Wire Power 1/0	NRC	per cable run	\$ 87.00	\$ 86.65
30 Power Cable-Wire Power 2/0	NRC	per cable run	\$ 126.00	\$ 125.63
31 Power Cable-Wire Power 3/0	NRC	per cable run	\$ 139.00	\$ 138.57
32 Power Cable-Wire Power 4/0	NRC	per cable run	\$ 172.00	\$ 171.34
33 Power Cable-Wire Power 350 MCM	NRC	per cable run	\$ 293.00	\$ 292.92
34 Power Cable-Wire Power 500 MCM	NRC	per cable run	\$ 409.00	\$ 408.24
35 Power Cable-Wire Power 750 MCM	NRC	per cable run	\$ 629.00	\$ 628.09
36 Building Modification	MRC	per request	\$ 186.00	\$ 185.66
37 Environmental Conditioning	MRC	per 1 amp	\$ 3.00	\$ 2.94
38 Caged Floor Space	MRC	per square foot	\$ 4.00	\$ 3.96
39 Relay Rack Floor Space	MRC	per linear foot	\$ 14.00	\$ 13.86
40 Cabinet Floor Space	MRC	per linear foot	\$ 19.00	\$ 18.80
41 Cable Subduct Space - Manhole	MRC	per project	\$ 5.00	\$ 4.92
42 Cable Subduct Space - Subduct	MRC	per linear foot	\$ 0.03	\$ 0.02
43 Cable Vault Splice-48 Fiber-Material	MRC	per splice	\$ 8.00	\$ 7.88
44 Cable Vault Splice - 48 Fiber-Utilization	MRC	per subduct	\$ 1.00	\$ 0.98
45 Cable Vault Splice-96 Fiber-Material	MRC	per splice	\$ 23.00	\$ 22.86
46 Cable Vault Splice - 96 Fiber-Utilization	MRC	per subduct	\$ 1.00	\$ 0.98
47 Cable Rack Space - Metallic	MRC	per cable run	\$ 1.00	\$ 0.98
48 Cable Rack Space - Fiber	MRC	per innerduct foot	\$ 0.01	\$ 0.01
49 DC Power Facility & Utility	MRC	per 1 amp	\$ 13.00	\$ 12.84
50 Facility Termination - DSO	MRC	per 100 pair	\$ 4.00	\$ 3.96
51 Facility Termination - DSI	MRC	per 28 pair	\$ 14.00	\$ 13.86
52 Facility Termination - DS3	MRC	per DS3	\$ 9.00	\$ 8.91
53 BITS Timing	MRC	per port	\$ 9.00	\$ 8.91

ORDER NO. 02-107

VERIZON NORTHWEST INC - OREGON  
MRC FIXED ALLOCATOR: 9.00%  
Oregon

Collocation Elements

11/06/00  
Increment

5129/2001  
Proposed  
Price

SUMMARY  
Stipulation  
Price

54 Adjacent On-Site Elements:

55	Adjacent-Engineering	NRC	per occurrence	\$	958.00	\$	958.00
56	Adjacent Fiber Cable Pull-Engineering	NRC	per project	\$	607.00	\$	606.30
57	Adjacent Fiber Cable Pull-Place Innerduct	NRC	per linear foot	\$	3.00	\$	1.63
58	Adjacent Fiber Cable Pull-Pull Cable	NRC	per linear foot	\$	1.00	\$	0.72
59	Adjacent-Cable Fire Retardant	NRC	per occurrence	\$	42.00	\$	41.61
60	Adjacent Metallic Cable Pull-Engineering	NRC	per project	\$	607.00	\$	606.30
61	Adjacent Metallic Cable Pull-Pull Cable	NRC	per linear foot	\$	1.00	\$	0.94
62	Adjacent Metallic Cable Splice-Engineering	NRC	per project	\$	31.00	\$	30.32
63	Adjacent Metallic Cable Splicing (greater than 200 pair)	NRC	per DSO/DS I pair	\$	1.00	\$	0.63
64	Adjacent Metallic Cable Splicing (less than 200 pair)	NRC	per DSO/DSI pair	\$	3.00	\$	2.14
65	Adjacent Fiber Cable Splicing-Engineering	NRC	per project	\$	31.00	\$	30.32
66	Adjacent Fiber Cable Splicing (48 fiber cable or less)	NRC	per fiber	\$	57.00	\$	56.80
67	Adjacent Fiber Cable Splicing (greater than 48 fiber)	NRC	per fiber	\$	51.00	\$	50.46
68	Adjacent Facility Pull-Engineering	NRC	per project	\$	76.00	\$	75.43
69	Adjacent Facility Pull - Per Foot Pull (labor)	NRC	per cable run	\$	2.00	\$	1.04
70	Adjacent Cable Termination-DSO-Cable Termination (Connectorized)	NRC	per cable run	\$	5.00	\$	4.16
71	Adjacent Cable Termination-DSO-Cable Termination (Unconnectorized)	NRC	per cable run	\$	42.00	\$	41.61
72	Adjacent Cable Termination-DS I Cable-Termination (Connectorized)	NRC	per cable run	\$	2.00	\$	1.04
73	Adjacent Cable Termination-DS I Cable-Termination (Unconnectorized)	NRC	per cable run	\$	32.00	\$	31.21
74	Adjacent Cable Termination-DS3 Coaxial-Termination (Connectorized)	NRC	per cable run	\$	2.00	\$	1.04
75	Adjacent Cable Termination-DS3 Coaxial-Termination (Unconnectorized)	NRC	per cable run	\$	11.00	\$	10.40
76	Adjacent Cable Termination-Fiber Cable-Termination	NRC	per cable run	\$	57.00	\$	56.80
77	Adjacent Subduct Space-Manhole	MRC	per project	\$	5.00	\$	2.92
78	Adjacent Subduct Space-Subduct	MRC	per linear foot	\$	0.03	\$	0.02
79	Adjacent Conduit Space (4" Duct)-Metallic-Manhole	MRC	per conduit	\$	8.00	\$	5.35
80	Adjacent Conduit Space (4" Duct)-Metallic-Conduit	MRC	per linear foot	\$	0.04	\$	0.03
81	Adjacent Facility Termination DSO Cable-Material	MRC	per 100 pair	\$	4.00	\$	2.27
82	Adjacent Facility Termination DS 1 Cable-Material	MRC	per 28 pair	\$	14.00	\$	9.55
83	Adjacent Facility Termination DS3 Cable-Material	MRC	per DS3	\$	9.00	\$	6.59
84	Adjacent Cable Vault Splice-Metallic DSO Cable (per 1200 pair)-Material	MRC	per splice	\$	296.00	\$	217.54
85	Adjacent Cable Vault Splice-Metallic DSO Cable (per 1200 pair)-Utilization	MRC	per cable	\$	4.00	\$	2.42
86	Adjacent Cable Vault Splice-Metallic DSO Cable (per 900 pair)-Material	MRC	per splice	\$	216.00	\$	158.43
87	Adjacent Cable Vault Splice-Metallic DSO Cable (per 900 pair)-Utilization	MRC	per cable	\$	3.00	\$	1.87
88	Adjacent Cable Vault Splice-Metallic DSO Cable (per 600 pair)-Material	MRC	per splice	\$	143.00	\$	104.90
89	Adjacent Cable Vault Splice-Metallic DSO Cable (per 600 pair)-Utilization	MRC	per cable	\$	2.00	\$	1.33
90	Adjacent Cable Vault Splice-Metallic Dst Cable-Material	MRC	per splice	\$	31.00	\$	22.11
91	Adjacent Cable Vault Splice-Metallic DSI Cable-Utilisation	MRC	per cable	\$	1.00	\$	0.31
92	Adjacent Cable Vault Splice-Fiber Cable 48 Fiber-Material	MRC	per splice	\$	8.00	\$	5.58
93	Adjacent Cable Vault Splice-Fiber Cable 48 Fiber-Utilization	MRC	per subduct	\$	1.00	\$	0.62
94	Adjacent Cable Vault Splice-Fiber Cable 96 Fiber-Material	MRC	per splice	\$	23.00	\$	15.94
95	Adjacent Cable Vault Splice-Fiber Cable 96 Fiber-Utilization	MRC	per subduct	\$	1.00	\$	0.62
96	Adjacent Cable Rack Shared-Metallic DSO Cable-Utilization	MRC	per linear foot	\$	0.01	\$	0.01
97	Adjacent Cable Rack Shared-Metallic DS1 Cable-Utilization	MRC	per linear foot	\$	0.01	\$	0.01
98	Adjacent Cable Rack Shared-Fiber Cable-Utilization	MRC	per innerduct ft	\$	0.01	\$	0.01
99	Adjacent Cable Rack Shared-Coaxial Cable-Utilization	MRC	per linear foot	\$	0.01	\$	0.01

100 Miscellaneous Elements:

101	Collocation Space Report	NRC	per CO requested	\$	1,218.00	\$	974.02
102	Misc Svcs-Labor-Basic Bus Day-First 1/2 Hr	NRC	per Technician	\$	42.83	\$	42.83
103	Misc Svcs-Labor-Basic Bus Day-Each Additional 1/2 Hr	NRC	per Technician	\$	21.41	\$	21.41
104	Misc Svcs-Labor-OT Non-Bus Day - First 1/2 Hr	NRC	per Technician	\$	100.00	\$	100.00
105	Misc Svcs-Labor-OT Non-Bus Day - Each Add'l 1/2 Hr	NRC	per Technician	\$	75.00	\$	75.00
106	Misc Svcs-Labor-Premium Non-Bus Day - First 1/2 Hr	NRC	per Technician	\$	150.00	\$	150.00
107	Misc Svcs-Labor-Premium Non-Bus Day - Each Add'l 1/2 Hr	NRC	per Technician	\$	125.00	\$	125.00

Attachment 1, Page 2 of 2

May 10, 2001

APPENDIX D  
Page 7 of 7