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July 31, 2001

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JUL 31 2001

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Magalie R. Salas, Esq.  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Re: **Arbitration of Interconnection Agreement Between Verizon and Cox**  
**CC DOCKET NO. 00-249**

Dear Ms. Salas:

On behalf of our client Cox Virginia Telcom, Inc. ("Cox"), and in accordance with the Commission's procedural orders in the above-referenced proceeding, I transmit to you herewith an original and four copies of the direct testimony of Dr. Francis R. Collins in support of Cox's petition for arbitration of an interconnection agreement with Verizon Virginia Inc.

Please inform me if any questions should arise in connection with this submission.

Respectfully submitted,



J.G. Harrington

Counsel to Cox Virginia Telcom, Inc.

Enclosure

cc: As per the attached service list.

074

## CERTIFICATE OF SERVICE

I, Vicki Lynne Lyttle, a legal secretary at Dow, Lohnes & Albertson, PLLC do hereby certify that on this 31st day of July, 2001, copies of the foregoing letter and enclosure were served as follows:

### **TO FCC as follows (by hand):**

Dorothy T. Attwood, Chief (8 copies)  
Common Carrier Bureau  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Jeffrey Dygert  
Common Carrier Bureau  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Katherine Farroba  
Common Carrier Bureau  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

### **TO AT&T as follows:**

David Levy  
Sidley & Austin  
1722 Eye Street, NW  
Washington, DC 20006

Mark A. Keffer  
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Oakton, Virginia 22185

### **TO VERIZON as follows:**

Richard D. Gary  
Kelly L. Faglioni  
Hunton & Williams  
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Richmond, Virginia 23219-4074

Karen Zacharia  
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Arlington, Virginia 22201

**TO WORLDCOM as follows:**

Jodie L. Kelley, Esq.  
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Vicki Lynne Lyttle

**RECEIVED**  
**JUL 31 2001**  
FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

1  
2  
3  
Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

4 In the matter of )  
5 )  
6 Petition of Cox Virginia Telcom, Inc. )  
7 )  
8 For Arbitration of an Interconnection ) CC Docket No. 00-249  
9 Agreement with Verizon Virginia, Inc. )  
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16

17 **PETITION FOR ARBITRATION**  
18 **OF COX VIRGINIA TELCOM, INC.**

19 DIRECT TESTIMONY

20 OF

21 PROF. FRANCIS R. COLLINS, Ph.D.

22 ON BEHALF OF

23 COX VIRGINIA TELCOM, INC.

24 July 31, 2001



1 Exhibit A, attached to this testimony, is a more complete presentation of my  
2 qualifications to provide recommendations to the Federal Communications Commission  
3 (“FCC”) on these matters.

4 **3. PURPOSE OF TESTIMONY**

5 Q. DR. COLLINS, WHAT IS THE PURPOSE OF YOUR TESTIMONY?

6 A. My testimony is intended to provide information that demonstrates why the FCC should  
7 adopt the positions advocated by Cox Virginia Telcom, Inc. (“Cox”) in its negotiations  
8 with Verizon Virginia, Inc. (“Verizon”) (collectively, the “Parties”).

9 In order to follow the information which will be presented in this testimony, it is  
10 necessary to know that these negotiations were conducted under the guidance of, and  
11 pursuant to the technological and economic criteria established in, the Federal  
12 Telecommunications Act of 1996, Pub.L. 104-104, 110 Stat. 56 *et seq.* (“1996 Act”), and  
13 the implementing rules of the FCC.

14 **4. RECOMMENDATIONS TO THE FCC**

15 Q. DR. COLLINS, COULD YOU SUMMARIZE THE RECOMMENDATIONS  
16 CONTAINED THROUGHOUT YOUR TESTIMONY FOR THE FCC?

17 A. In summary, my recommendations are that the FCC accept the language in Cox’s Petition  
18 Exhibits 1 (Statement of Unresolved Issues) and 2 (Cox Interconnection Agreement) and  
19 Cox’s proposed language in Exhibit No. 3 (Summary-Disputed Issues), as amended by  
20 Cox’s July 19 filing of revised language for Issue I-5, and reject Verizon’s proposed

1 language for these issues. Cox's proposed language represents the best balance between  
2 the positions of Cox and Verizon on the issues, in light of the law and the circumstances  
3 presented in this proceeding. Additionally, Cox's proposed agreement will permit Cox to  
4 continue to make capital investments in Virginia and contribute to the robust telephone  
5 competition envisioned by the 1996 Act.

6 **5. THE ARBITRATION PROCESS AND**  
7 **THE ISSUES IN DISPUTE**  
8

9 Q. DR. COLLINS, WOULD YOU BRIEFLY DESCRIBE THE NEGOTIATION  
10 PROCESS AS CONDUCTED WITH VERIZON?

11 A. The Verizon/Cox negotiations have taken place over an extended period of time. They  
12 began in July, 1999. These interactions have involved the exchange of documents, the  
13 mutual identification of issues and the negotiation of language. The negotiations have  
14 settled the vast majority, but not all, of the issues necessary to complete the Agreement.  
15 Cox is still open to continuing the negotiations with Verizon.

16 Cox believes that its positions, described more fully below, on the outstanding issues  
17 between the parties comport with the 1996 Act, the FCC's First Report and Order (the  
18 "First Local Competition Order") and Second Report and Order (the "Second Local  
19 Competition Order") in the 1996 local competition proceeding, the FCC's Advanced  
20 Services Order, other actions of the FCC (collectively "FCC Orders"), and the results of  
21 recent federal appellate court proceedings relating to those rules, specifically the Supreme  
22 Court's decision in *AT&T v. Iowa Utilities Board* and the recent decision of the United

1 States Court of Appeals for the Eighth Circuit in *AT&T* case in *Iowa Utilities Board v.*  
2 *FCC*, 219 F.3d 744 (2000) as they relate to these issues.

3 Q. DR. COLLINS, WHAT ARE THE REMAINING AREAS OF CONTROVERSY  
4 RESULTING FROM THE VERIZON/COX NEGOTIATIONS TO DATE?

5 A. Cox's Petition describes the issues that must be resolved in this proceeding. In summary  
6 these are as follows:

7 Issue I-1: The effect of the point of interconnection between Cox and Verizon on  
8 the compensation paid for delivery of Verizon's traffic to Cox's network;

9 Issue I-2: Whether Cox can be required to discount or eliminate its mileage-  
10 sensitive rate element for interconnection facilities leased by Verizon;

11 Issue I-3: Whether Cox can be compelled to furnish Verizon collocation at Cox's  
12 premises;

13 Issue I-4: Whether Verizon can dictate the volume of traffic on Cox trunk groups  
14 terminating at Verizon tandem offices;

15 Issue I-5: How the Commission's *ISP-Bound Traffic Order* should be  
16 implemented in the agreement between the Parties;

17 Issue I-6: Whether Verizon can insist that the parties adopt an infeasible means  
18 for determining whether traffic is local or toll in nature;

19 Issue I-7: Whether Verizon can require Cox to engineer and forecast Verizon's  
20 interconnection needs for the delivery of Verizon's traffic to Cox;

1 Issue I-8: Whether Verizon has the right and authority to intrusively monitor  
2 Cox's access to and use of CPNI made available to Cox through the agreement;

3 Issue I-9: Whether Verizon can use the agreement to establish caps on the rates  
4 and charges that Cox may tariff for its services, facilities and service  
5 arrangements;

6 Issue I-10: Whether Verizon can terminate the agreement during the pendency of  
7 good faith negotiations for renewal; and

8 Issue I-11 Whether Verizon can terminate the agreement for violation of OSS  
9 provisions using processes and timeframes shorter than those agreed to by both  
10 parties for all other instances of alleged non-compliance with this Agreement.

11 The following testimony presents the situation, as I understand it to currently exist, as to  
12 the issues identified above.

## 13 6.THE ISSUES IN DETAIL

14 **ISSUE I-1: VERIZON MAY NOT, THROUGH ITS DESIGNATIONS OF**  
15 **INTERCONNECTION POINTS OR BY DISCOUNTING THE COMPENSATION IT**  
16 **OWES COX, REQUIRE COX TO PAY FOR VERIZON'S DELIVERY OF VERIZON'S**  
17 **TRAFFIC TO COX'S NETWORK.**

18  
19 Q. DR. COLLINS, CAN YOU DESCRIBE ISSUE I-1?

20 A. In the language of Verizon, the Interconnection Point ("IP") is a point at which the party  
21 that receives traffic originating on the network of the other party assesses reciprocal  
22 compensation charges for the further transport and termination of that traffic. A Point of  
23 Interconnection ("POI") means the physical location where the originating Party's

1 facilities physically interconnect with the terminating Party's facilities for the purpose of  
2 exchanging traffic.

3 Verizon proposes that it be able to designate "geographically relevant" IPs based on the  
4 local calling areas of Verizon's customers. These IPs would be at every tandem in a  
5 LATA and, if Verizon operates only one tandem in a LATA, could be at every Verizon  
6 end office in the LATA. In Verizon's schema the IP and the POI do not have to be at the  
7 same location. This differentiation allows Verizon to provide for interconnection in  
8 compliance with the 1996 Act, that is at any technically feasible point, while at the same  
9 time collecting for the transport from their end and tandem office switches to that point of  
10 interconnection. That is, under Verizon's proposal, there are many possible POIs but the  
11 IPs are restricted to end office and tandem locations, with the further restriction that the  
12 carrier originating traffic to Verizon is required to either deliver to, or pay for the delivery  
13 of its traffic to, the Verizon IPs regardless of the geographical relationship of the POI to  
14 the IP.

15 However, when Verizon originates traffic it does not want to pay for the delivery of its  
16 traffic from the terminating carrier's POIs to its IPs. Verizon wants the carrier that  
17 terminates Verizon's traffic to either carry the Verizon traffic from the Verizon POIs to  
18 the terminating carrier's IPs for free or to pay Verizon for all costs over that for a *de*  
19 *minimis* distance for Verizon's delivering the traffic which flows from Verizon's  
20 customers to the competitor's customers. Under Verizon's language for the Agreement,  
21 Cox would incur this liability.

1 Verizon has coined the term “geographically relevant” to describe this approach, and  
2 perhaps to mask that it would result in its competitors paying for both (originating and  
3 terminating) sides of traffic delivery. As a consequence, Verizon would pay an absolute  
4 minimum for the transport of Verizon’s originating traffic, while the new market entrants,  
5 such as Cox, pay the rest of the cost. This is in addition, of course, to Cox paying for the  
6 Cox-originated traffic as well.

7 Moreover, in LATAs with only one tandem, Verizon’s proposal would effectively  
8 invalidate any CLEC’s decision to interconnect at the tandem rather than each end office.  
9 Because Verizon and only Verizon would designate the “geographically relevant” IPs, a  
10 CLEC that chose to use tandem interconnection in that LATA would be subject at any  
11 time to having its decision overruled by a Verizon determination that the end offices  
12 should be the new “geographically relevant” points.

13 Verizon argues that its proposal will ensure that CLECs bear the economic burdens of  
14 their interconnection decisions. In reality, Verizon’s proposal will shift a  
15 disproportionate amount of the economic burden of interconnection to CLECs. Under  
16 the Verizon proposal, CLECs would be required to compensate Verizon (directly and  
17 through reductions in transport costs) whenever an IP is closer to Verizon’s customers  
18 than the POI. This shifts the burden of the costs of interconnection to the CLEC. This is  
19 inappropriate because Verizon and the CLEC are co-carriers. I am unaware of any  
20 circumstance in which Verizon makes similar demands of other ILECs, which  
21 demonstrates that this proposal is intended to impose a unique burden on CLECs.

1 In addition, under the concept of geographical relevance, Verizon wants new market  
2 entrants, such as Cox, to designate POIs and IPs that will emulate those of Verizon. This  
3 will, of course, also require the new market entrant to emulate the character of the  
4 Verizon network architecture, and this Verizon construct is another issue in the  
5 Arbitration. Not surprisingly, this requirement will also tend to maximize the capital cost  
6 for the competitor's (Cox's) network, decrease its efficiency, and increase the recurring  
7 unit cost for traffic transmission.

8 I also should note that this should not be a not a significant concern for Verizon in its  
9 interconnection with Cox. For the vast majority of the interconnection arrangements  
10 between Verizon and Cox, the distance between the boundary of the Verizon local calling  
11 area and the Cox IP is within the parameters that Verizon has proposed for "geographical  
12 relevance," and Cox expects that to be the case for the foreseeable future. In other words,  
13 the costs being borne by Verizon for lengthy interconnection links are not significant in  
14 its interconnection with Cox.

15 Q. DR. COLLINS, WHY IS IT SIGNIFICANT THAT THE VERIZON PROPOSAL  
16 WOULD FORCE NEW ENTRANTS TO MIMIC THE VERIZON NETWORK?

17 A. In essence, Verizon wants competing carriers to design their networks to match Verizon's  
18 legacy network. That is, Verizon wants CLECs to have as many IPs, with the same  
19 geographic spacing between them, as the Verizon network. This means that the  
20 competing carrier's networks will have to follow the same topology as Verizon's  
21 network. If the competing carriers' IPs are specified as being at their end office/tandem  
22 switches it follows that the geographic location of those switches will closely match those

1 of Verizon. As the FCC recognized in the First Local Competition Order, it would be  
2 economically inefficient for CLECs to mimic ILEC networks because telephone  
3 technology has advanced considerably since ILEC networks were created. As noted  
4 above, duplicating ILEC networks will increase the capital investment and recurring  
5 operating costs by orders of magnitude. These increased costs will raise the financial  
6 barrier to market entry for companies contemplating market entry and will significantly  
7 shorten the market presence of carriers already in the marketplace.

8 Q. WHAT SHOULD THE FCC DO TO ADDRESS THIS ISSUE?

9 A. The FCC has only to enforce the 1996 Act and its own implementing rules as they regard  
10 this issue – rules that have not been affected by any court action. In particular, the FCC  
11 should enforce the notion that interconnection between networks for the delivery of  
12 traffic should be required at any technically feasible point.

13 That is, the IPs should be, as Cox proposes, at each party's central office when the  
14 terminating traffic levels justify it and the traffic is directly routed to that end office, and  
15 each party should bear its own costs in delivering its traffic to those IPs. Once the traffic  
16 is on the network of the terminating carrier, that carrier should complete the call at the  
17 appropriate mutual compensation rates. The FCC should reject Verizon's proposal and  
18 accept the proposed language of Cox.

1 **ISSUE I-2: VERIZON MAY NOT REQUIRE THAT COX ELIMINATE ITS MILEAGE-**  
2 **SENSITIVE RATE ELEMENT AS A COMPONENT OF ITS ENTRANCE FACILITIES**  
3 **RATE.**

4 Q. IN DESCRIBING ISSUE I-2, YOU INDICATED THAT VERIZON WANTED TO  
5 ELIMINATE OR DISCOUNT COX’S MILEAGE SENSITIVE RATE ELEMENT FOR  
6 CONNECTING FACILITIES – SO-CALLED “ENTRANCE FACILITIES”. CAN YOU  
7 EXPLAIN THIS ISSUE?

8 A. Entrance facilities, typically one way telecommunication trunk groups, are used to  
9 connect networks at a switching office to which traffic is being terminated for the  
10 exchange of traffic between those networks. These facilities have a number of traffic  
11 transmission supporting components, which are aggregated into groups called chargeable  
12 elements. In turn, these chargeable elements can be further divided into those for which a  
13 flat or fixed monthly rate applies, independent of distance, and those for which there is a  
14 distance sensitive charge. Verizon charges for both the flat rate and distance sensitive  
15 components but is attempting to force Cox to eliminate Cox’s distance sensitive charges.  
16 Cox’s position is that these charges should be applied on an even-handed basis. Cox  
17 either transports the Cox traffic itself for termination to the Verizon IP/POI or pays  
18 Verizon for both the distance sensitive and non-sensitive components when leasing an  
19 entrance facility from Verizon. When the situation is reversed, the chargeable elements  
20 should apply to Verizon. Verizon is improperly seeking a one-sided discount by paying  
21 only one of them – the non-distance-sensitive component.

22 Verizon claims that its proposal is reasonable because Cox has refused to permit Verizon  
23 to construct or otherwise acquire its own transport facilities to the Cox switch, but that is

1 not the case. Under Cox's proposed language, either party would be able to self-  
2 provision interoffice transport facilities if it so desired, up to the entrance facility point  
3 for Cox's switching office(s). Thus, Verizon would be able to decide whether it was more  
4 economical to self-provision or use Cox's facilities for all but a few miles of the overall  
5 facilities used for such an interconnection. Under Verizon's proposal, Verizon would  
6 have no incentive to self-provision, even if the actual costs of self-provisioning were less  
7 than the costs of Cox's facilities, because Cox would bear the economic burden of  
8 transporting Verizon's traffic.

9 In this context, it also is important to remember how the Parties interconnect today.  
10 Under the current agreement, the Parties negotiated a supplemental agreement to  
11 establish a mid-span meet, which they now use to exchange a substantial amount of their  
12 traffic. The Parties have agreed to incorporate provisions for mid-span meets in their  
13 new agreement as well, at section 4.4 of the agreement. Such an arrangement permits  
14 Verizon to control its costs and to engineer and provision its own facilities and it will  
15 continue to be able to do so in the future.

16 Q. WHAT SHOULD THE FCC DO WITH RESPECT TO THIS ISSUE?

17 A. The FCC should rule that Verizon, as a co-carrier, is not entitled to any mandated  
18 discounts from Cox for transport of Verizon traffic. Doing so would be consistent with  
19 the clear intent of the 1996 Act and the FCC's own Implementation Orders regarding this  
20 issue. Such a ruling also would mean that the Parties would have parallel rate structures  
21 for entrance facilities, instead of one structure for Verizon and another for Cox. Note  
22 again that the Cox rate structure follows the same pattern as the Verizon rate structure

1 that Cox is required to pay, with respect to this issue. Thus, the FCC should reject  
2 Verizon's proposed language.

3 **ISSUE I-3: 47 U.S.C. § 251(C)(6) AND 47 C.F.R. § 51.223(A) DO NOT PERMIT VZ-VA**  
4 **TO COMPEL COX TO FURNISH VZ-VA COLLOCATION AT COX FACILITIES IN**  
5 **THE SAME MANNER THAT VZ-VA, AS AN ILEC, IS COMPELLED TO FURNISH**  
6 **COLLOCATION TO COX AT VZ-VA FACILITIES.**

7 Q. DR. COLLINS, CAN YOU DESCRIBE ISSUE I-3, WHICH ADDRESSES  
8 COLLOCATION FOR VERIZON AT COX'S FACILITIES?

9 A. Neither the 1996 Act nor the FCC's Orders require new market entrants to provide  
10 collocation to other carriers. It is an obligation that has, by law, only been levied against  
11 incumbent carriers such as Verizon and yet Verizon has insisted that the Agreement  
12 contain language that obligates Cox to provide collocation. On the other hand, Cox has  
13 offered a number of interconnection possibilities to Verizon, any of which is suitable for  
14 the purpose.

15 Cox permits certain customers to house equipment at its premises for specific purposes.  
16 None of these purposes, however, is the interconnection of the networks of two local  
17 exchange carriers.

18 The provision of collocation is not symmetrical under the 1996 Act or the FCC's rules for  
19 good reason. Adding demands on CLECs for facility space and supporting infrastructure  
20 that would be introduced by requests for collocation from incumbent carriers would be  
21 extremely burdensome. In particular, requiring CLECs to provide physical collocation  
22 would add additional burdens on management, construction/implementation and capital  
23 investment. Among other things, collocation would require changes in the design of

1 CLEC switch locations – including the size of the facilities required – to accommodate  
2 the equipment needed by collocating ILECs.

3 The incumbents, on the other hand, have huge networks already in place upon which the  
4 increases in traffic due to released latency and first time customers will offset losses in  
5 traffic levels due to the competitive losses of customers. Additionally, because central  
6 office and tandem office switching and transmission equipment has become much  
7 smaller over the past decade, ILECs have significant amounts of spare space, spare  
8 power, and spare infrastructure support mechanisms in legacy buildings. To the extent  
9 that an ILEC does have space constraints, the Commission’s rules accommodate those  
10 constraints.

11 Congress and the FCC recognized these and many other considerations when they  
12 determined that only ILECs would be subject to the collocation obligation. While  
13 Verizon suggests that it would be “unfair” to require collocation only of ILECs, Congress  
14 and the Commission already have made that decision, and with good reason. Both  
15 Congress and the FCC recognized that the burdens of collocation would be relatively  
16 small for ILECs and relatively large for CLECs. Further, they also recognized that  
17 CLECs faced many obstacles to entering the local exchange marketplace and that, to  
18 create a fair competitive environment, it was necessary to balance some of the ILECs’  
19 advantages (such as near-100% market share and name recognition) with regulations that  
20 were not perfectly symmetrical. What Verizon asks now is for the arbitrator in this  
21 proceeding to upset that balance.

1 Q. WHAT WOULD YOU RECOMMEND THAT THE FCC DO ABOUT THIS ISSUE?

2 A. I recommend that the FCC remind Verizon that new market entrants, such as Cox, are not  
3 required to provide collocation to the incumbents, and that language addressing that issue  
4 can be included in the agreement only by mutual consent. Absent that mutual consent  
5 (which does not exist), it is inappropriate for Verizon to insist on collocation rights. The  
6 FCC should reject Verizon's proposal and accept Cox's proposed language.

7 **ISSUE I-4: SECTION 251(C)(2) OF THE ACT DOES NOT PERMIT VERIZON TO**  
8 **DICTATE THE VOLUME OF TRAFFIC ON A TRUNK GROUP USED BY COX TO**  
9 **SEND TRAFFIC TO A VERIZON TANDEM SWITCH FOR TERMINATION TO A**  
10 **VERIZON END OFFICE.**

11 Q. ISSUE I-4 CONCERNS VERIZON'S EFFORTS TO USE THE INTERCONNECTION  
12 AGREEMENT TO FORCE COX TO ENGINEER COX'S NETWORK IN  
13 ACCORDANCE WITH VERIZON'S INTERNAL LEGACY NETWORK  
14 ENGINEERING GUIDELINES. WHAT ARE THE CIRCUMSTANCES  
15 SURROUNDING THIS ISSUE?

16 A. As background to this issue, it is important to know that the new market entrants,  
17 including Cox, often employ network architectures that are different from the legacy  
18 network architecture used by ILECs. As a consequence, the engineering technological  
19 and economic guidelines for network expansion are significantly different for the new  
20 versus the legacy networks.

21 Cox's network implementation and expansion guidelines are different than those of  
22 Verizon, and if Cox were to be forced to use Verizon's legacy guidelines to expand the  
23 Cox network, it would simply be inappropriate. Therefore Cox, when delivering traffic

1 to Verizon for transmission through the Verizon tandem switches, either to a Verizon  
2 subtending end office or to another Carrier, needs to do so using efficient transmission  
3 vehicles – such as DS-3 over fiber optic cable, which is the standard connection in Cox’s  
4 network.

5 The DS-3 transmission medium can support 672 voice channels (28 DS-1s) at optimum  
6 transmission, technological, and economic performance levels. These channels are  
7 capable of carrying 21,900 CCS of traffic at a peaking factor of 1.5 and at the service  
8 levels Cox has chosen to provide high quality service to its customers (Reference: Neal-  
9 Wilkinson trunk capacity tables for full access trunk groups). The closer the loaded  
10 capacity is to 672 channels, the more efficiently the system is used. If the DS-3 capable  
11 system is used for far fewer voice channels, the system is used inefficiently and the per  
12 channel capital investment and recurring cost rises, increasing Cox’s cost of business  
13 operations.

14 Verizon has insisted that when the traffic loading on a newly installed DS-3 system from  
15 Cox to Verizon’s tandem office reaches 24 channels of capacity, equivalent to a DS-1, for  
16 traffic to any specific end office, Cox must install a separate trunk group to that end  
17 office. If Cox were to voluntarily comply, or the FCC were to force Cox to comply, it  
18 would mean extending Cox’s network in an extremely inefficient manner and would be  
19 force-fitting Verizon’s legacy network engineering guidelines on the Cox network. The  
20 end result would be to decrease the traffic carrying capacity of a newly installed DS-3 to  
21 463 and not 21,900 CCS when computed at the same service level and for the same  
22 trunking parameters. This is a decrease in Cox’s network efficiency, which is a costly  
23 increase in per traffic unit costs.

1 Verizon has argued that its approach is necessary to prevent tandem exhaust, but it has  
2 yet to provide Cox with any data indicating either that tandem exhaust is imminent on  
3 any relevant tandem or that the costs of increasing capacity are greater than the revenues  
4 Verizon will obtain for the provision of tandem switching to Cox and other carriers.  
5 Indeed, Cox recognizes that Verizon is entitled to recover its costs for providing tandem  
6 switching and may obtain higher tandem switching rates if it can demonstrate that the  
7 costs of increasing capacity to avoid tandem exhaustion have increased its overall tandem  
8 switching costs. For these reasons, Verizon would be fully compensated for any costs it  
9 might incur as a result of any CLECs' decisions not to use direct trunking to Verizon end  
10 offices.

11 Q. HOW WOULD VERIZON'S PROPOSAL AFFECT COX'S ABILITY TO FOLLOW  
12 SOUND TRAFFIC ENGINEERING PRACTICES?

13 A. A new market entrant's network traffic undergoes significant changes and fluctuates  
14 widely from day to day and week to week. These changes and fluctuations occur because  
15 the customer base typically is in a state of active flux. New customers are added and  
16 their traffic levels and patterns (incoming and outgoing) are simply unknown. During the  
17 early phases of entry in a specific market, the traffic contribution of a few large  
18 customers could double the total traffic on the network.

19 Good traffic engineering practices dictate that the traffic which will terminate to Verizon  
20 during this period of time be terminated at Verizon's tandem switches so as to then be  
21 routed to the Verizon customers served by the end-offices that subtend those tandem  
22 switches, as well as to other carrier's networks. The best traffic engineering dictates that

1 Verizon should provide one interconnection point per LATA, the tandem, and then  
2 terminate the traffic on its network as is appropriate. This approach evens out  
3 fluctuations in traffic and minimizes the costs of facilities for all affected carriers.

4 When the traffic is stabilized and the daily/weekly fluctuations are less than 10 to 20  
5 percent of the average, direct trunks should be installed between the end-offices that  
6 originate and terminate significant amounts of traffic on a daily basis. A typical  
7 benchmark measure of traffic for this trigger point to occur would be fifteen to twenty  
8 DS-1s, or traffic that would require trunks that could carry between 360 and 480  
9 simultaneous calls.

10 The worst traffic engineering practice would be for the new market entrant to attempt to  
11 guess where the sources and sinks of traffic will be and to then install trunking capacity  
12 between these locations. If the guesses are incorrect, the cost of provisioning and  
13 operating these empty trunks will quickly raise the operating costs such that the company  
14 cannot be profitable. Therefore, it is critical to engineer the network and its topology  
15 very carefully in the first years of operation.

16 Verizon is insisting that direct trunking be used when traffic generated by a CLEC is  
17 equivalent to the trunk capacity for only 24 simultaneous calls to the same end office.  
18 Even if this made sense, and it does not, in the early stages of growth the traffic may  
19 reach 24 simultaneous calls between end-offices for a short period of time and then drop  
20 back. If VZ/VA is allowed to control this issue and force its inefficient traffic  
21 engineering practices on its competitors, the end result will be increased costs for CLECs.  
22 They will incur these unnecessary costs for capital investment for new trunks, for

1 network planning and design, for depreciation and for the operating costs associated with  
2 the unnecessary trunks.

3 Q. DR. COLLINS, WHAT SHOULD THE FCC TO DO ABOUT THIS ISSUE?

4 A. In the spirit of compromise, Cox has offered to initiate direct trunking to a Verizon end  
5 office when the traffic level three DS-1s (72 channels and 1,851 CCS against the system  
6 potential of 21,900 CCS) instead of one DS-1 (24 channels and 463 against 21,900 CCS).  
7 Although this is still less than 10 percent of the capacity of typical Cox trunk facilities, it  
8 is a compromise that Cox has offered to settle this issue. Especially in light of this  
9 compromise proposal, I recommend that the FCC not force Cox to use Verizon's legacy  
10 network engineering guidelines for the expansion of Cox's network. This can be  
11 accomplished by the FCC establishing the level of three DS-1s as the trigger point for  
12 requiring direct Verizon end office or other carrier network connectivity. The FCC  
13 should adopt Cox's language for this issue and reject the Verizon proposal.

14 **ISSUE I-5: VERIZON MAY NOT REFUSE TO INCLUDE IN THE AGREEMENT AN**  
15 **ADEQUATE DESCRIPTION OF THE RATES, TERMS AND CONDITIONS**  
16 **APPLICABLE TO THE PARTIES' IMPLEMENTATION OF THE FCC'S ISP ORDER,**  
17 **INCLUDING PROVISIONS ADDRESSING THE FOLLOWING QUESTIONS:**

18 (A) **WHAT PROVISIONS SHOULD THE PARTIES MAKE FOR CHANGES IN**  
19 **THE REQUIREMENTS OF THE ISP ORDER THROUGH APPEAL,**  
20 **RECONSIDERATION OR OTHER LEGAL OR REGULATORY ACTION?**

21 (B) **SHOULD THE SPECIFIC RATES OF COMPENSATION FOR ISP-BOUND**  
22 **TRAFFIC PAID BY THE PARTIES DURING THE TERM OF THE**  
23 **RENEWAL AGREEMENT BE ZERO, A RATE EQUAL TO THE CAP OR A**  
24 **RATE SOMEWHERE IN BETWEEN ZERO AND THE CAP?**

25 (C) **WHAT MECHANISM SHOULD BE USED BY THE PARTIES IN**  
26 **CALCULATING THE AMOUNT OF TRAFFIC IN EXCESS OF THE 3:1**

1           **RATIO; WHAT DATA SHOULD BE EXCHANGED BY THE PARTIES FOR**  
2           **USE IN MAKING THIS CALCULATION; WHAT TIME PERIODS**  
3           **SHOULD THESE DATA COVER; AND WHEN SHOULD ANY SUCH DATA**  
4           **EXCHANGE TAKE PLACE?**

5           **(D) SHOULD SPECIFIC TERMS BE ADOPTED TO GOVERN THE**  
6           **IMPLEMENTATION OF THE GROWTH CAPS ON COMPENSABLE ISP-**  
7           **BOUND TRAFFIC, INCORPORATING AN ACTUAL NUMBER BASED ON**  
8           **THE PARTIES' TRAFFIC FOR THE FIRST QUARTER OF 2001, AND**  
9           **SHOULD THAT CAP BE APPLIED ON AN ANNUAL BASIS?**

10          **(E) WHAT DEFINITIONS ARE NEEDED TO IMPLEMENT THE ISP ORDER?**

11          Q.       ISSUE I-5 CONCERNS IMPLEMENTATION OF THE FCC'S *ISP-BOUND TRAFFIC*  
12                *ORDER*. HOW SHOULD THE AGREEMENT ADDRESS THIS ISSUE?

13          A.       The *ISP-Bound Traffic Order* sets new rules for intercarrier compensation when carriers  
14                are exchanging otherwise local traffic bound for Internet service providers ("ISPs"). In  
15                general, these rules provide for compensation to be set at one of two different levels,  
16                depending on the ratio of traffic exchanged between the parties to an interconnection  
17                agreement. The rules create an integrated set of requirements for ISP-bound traffic and  
18                other locally-routed traffic. Like the FCC's earlier order on this issue, the *ISP-Bound*  
19                *Traffic Order* is the subject of several appeals in the United States Court of Appeals for  
20                the District of Columbia Circuit, and it is likely that those appeals will be addressed after  
21                this proceeding ends but during the time the interconnection agreement between Cox and  
22                Verizon will be effective.

23                Because the *ISP-Bound Traffic Order* is not self-effectuating, Cox has proposed language  
24                that will implement the specific requirements of the *ISP-Bound Traffic Order* for traffic  
25                exchanged by Cox and Verizon. Generally, Cox proposes to include the following

1 provisions in the agreement: (1) specific rates for terminating ISP-bound traffic; (2) a  
2 mechanism for differentiating ISP-bound traffic from other traffic and a process for  
3 applying that mechanism; (3) procedures for applying the traffic growth caps; (4)  
4 procedures for implementing any changes that are made in the requirements by future  
5 legal or regulatory action; and (5) definitions of terms to match those used in the *ISP-*  
6 *Bound Traffic Order*.

7 Verizon's proposed language refers only to the requirements of the *ISP-Bound Traffic*  
8 *Order*, stating that the parties' rights and obligations regarding compensation for ISP-  
9 bound traffic are governed by that decision. Verizon erroneously believes that this order  
10 is self-effectuating and that the renewal agreement need not contain detailed provisions  
11 directing its implementation. Rather, the *ISP-Bound Traffic Order* leaves various matters  
12 for the negotiating parties to resolve. By refusing to resolve these matters in the  
13 agreement, Verizon is promoting protracted controversy over the implementation of the  
14 order. Both parties need such provisions to guide their activities.

15 Further, by virtue of its refusal to negotiate how to implement the *ISP-Bound Traffic*  
16 *Order*, Verizon is attempting to relegate compensation for ISP-bound traffic to a place  
17 outside the regulatory environment, where Cox would have no recourse. This approach  
18 is contrary to the integrated compensation regime adopted in the *ISP-Bound Traffic*  
19 *Order*, which covers both ISP-bound and other locally-routed traffic.

20 First, Verizon's proposed language fails to account for the possibility that the *ISP-Bound*  
21 *Traffic Order* might be overturned on appeal. In Verizon's view, the general provision in  
22 the agreement is adequate to address any change in requirements that may occur as a

1 result of future legal or regulatory action. Cox disagrees. The issue of compensation for  
2 ISP-bound traffic has been remanded to the Commission by the courts on one occasion,  
3 and there is a possibility that a future holding may necessitate a change in the parties'  
4 rights and obligations with respect to such compensation. Cox believes it prudent to  
5 define how the parties will address such changes.

6 Second, the actual rate that the Parties will pay for exchanging ISP-bound traffic is not  
7 established by the *ISP-Bound Traffic Order*. It merely sets caps on the rates that can be  
8 charged for handling such traffic, leaving to the Parties the question of what specific rates  
9 will apply. Accordingly, the Parties are required to either fix such an actual rate through  
10 negotiation or arbitrate the issue. Cox believes that the agreement should contain the  
11 actual rates. Verizon's proposal simply to refer to the caps in the order falls substantially  
12 short in instructing the parties of the actual rate that they will pay for ISP-bound traffic.

13 Third, the *ISP-Bound Traffic Order* adopts a 3:1 ratio for differentiating between ISP-  
14 bound traffic and other traffic, but does not adopt a mechanism for the Parties' use in  
15 applying this ratio. The Commission did not need to take this extra step because such a  
16 mechanism involves the practices under which parties bill each other and these practices  
17 vary by party. It is left to Cox and Verizon to determine which principles and procedures  
18 will be effective and efficient in view of their billing practices.

19 Fourth, the agreement must address the traffic growth caps set by the *ISP-Bound Traffic*  
20 *Order*. The actual baseline cap for 2001 can be calculated based on the traffic already  
21 exchanged by the parties during the first quarter of 2001. The only action required for  
22 establishing the actual baseline cap for 2001 is for Cox and Verizon simply to compare

1 their respective traffic information and reach agreement on that number. Cox believes  
2 that such action should be taken now, that the baseline cap for 2001 should be agreed to  
3 and that it should be set forth in the agreement. There is no reason to defer this action  
4 until some later date when the data are no longer fresh, as Verizon's proposal suggests.  
5 This action should be taken now.

6 Finally, the Parties must resolve issues relating to the definitions to be used in the  
7 provisions governing ISP-bound traffic. In this instance, Verizon takes a different tack,  
8 asserting that the renewal agreement should define terms relating to the *ISP-Bound*  
9 *Traffic Order*. However, Verizon's proposals bear only a tangential relationship to the  
10 Commission's intent in the order. For example, Verizon would define the term "Internet  
11 Traffic" to include any traffic that touches the Internet, and then use that term in ways  
12 that depart widely from the order's use of the term "ISP-bound traffic." If the definition  
13 and usage of this term proposed by Verizon were adopted, it could have long-range and  
14 indeterminate effects on the Parties' rights and obligations. Cox agrees that definitions  
15 should be added to the agreement to give effect to the requirements of the *ISP-Bound*  
16 *Traffic Order*.

17 Q. WHAT CAN THE FCC DO TO RESOLVE THIS DIFFERENCE BETWEEN  
18 VERIZON AND COX?

19 A. I recommend that the FCC approve the language used to address this issue provided by  
20 Cox in the July 27<sup>th</sup> revised Joint Decision Point List in this proceeding. This language  
21 will provide a clear and balanced treatment of the issue that correctly implements the  
22 *ISP-Bound Traffic Order*.