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Via ECFS

August 9, 2016

Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

**Re: Special Access Rates for Price Cap Local Exchange Carriers,
WC Docket No. 05-25; Business Data Services in an Internet Protocol
Environment, WC Docket No. 16-143**

Dear Ms. Dortch:

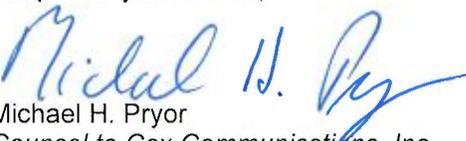
Pursuant to the procedures outlined in the Modified Protective Order, *Second Protective Order*, and *Data Collection Protective Order* in the below-referenced proceedings, Cox Communications, Inc. ("Cox") herein submits a redacted version of the attached comments in the above-referenced proceedings.

Cox has designated for highly confidential treatment the marked portions of the attached documents pursuant to the Data Collection Protective Order,¹ Second Protective Order,² and Data Collection Protective Order³ in WC Docket No. 05-25 and RM-10593.

Pursuant to the protective orders and additional instructions from Commission staff, Cox is filing a redacted version of the document electronically via ECFS, one copy of the Highly Confidential version with the Secretary, and sending two copies of the Highly Confidential version to Christopher Koves, Pricing Policy Division, Wireline Competition Bureau.

Please contact me if you have any questions or require any additional information.

Respectfully submitted,



Michael H. Pryor
Counsel to Cox Communications, Inc.

Attachment

¹ *Special Access for Price Cap Local Exchange Carriers*, Modified Protective Order, DA 10-2075, 25 FCC Rcd 15168 (Wireline Comp. Bur. 2010).

² *Special Access for Price Cap Local Exchange Carriers*, Second Protective Order, DA 10-2419, 25 FCC Rcd 17725 (Wireline Comp. Bur. 2010).

³ *Special Access for Price Cap Local Exchange Carriers*, Order and Data Collection Protective Order, DA 14-1424, 30 FCC Rcd 11657 (Wireline Comp. Bur. 2015).

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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
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Business Data Services in an Internet Protocol Environment)	WC Docket No. 16-143
)	
Special Access for Price Cap Local Exchange Carriers)	WC Docket No. 05-25
)	

REPLY COMMENTS OF COX COMMUNICATIONS, INC.

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August 9, 2016

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REPLY COMMENTS OF COX COMMUNICATIONS, INC.

Cox Communications, Inc. (“Cox”), by its attorneys, hereby submits its reply comments on the Commission’s *Further Notice* in the above-captioned proceeding.¹

I. Introduction and Summary

These reply comments focus on a limited number of significant issues raised by the comments, primarily the identification of appropriate product and geographic markets and the importance of tailoring any regulation adopted in this proceeding to curb demonstrable abuses of market power. The overly broad regulatory frameworks being proposed by Verizon and the CLECs extend well beyond any reasonable constraint of market power, and will impose unnecessary costs and harm consumers and competition by reducing facilities-based investment.

Cox supports the positions described in the comments filed by the National Cable & Telecommunications Association (“NCTA”). In particular, NCTA is correct to note that “technology neutrality” cannot and “never has been the basis for imposing rate regulation on companies that do not possess market power” and that there is no legal or policy basis to depart

¹ *Business Data Services in an Internet Protocol Environment*, WC Docket No. 16-143, Tariff Investigation Order and Further Notice of Proposed Rulemaking, FCC 16-54 (rel. May 2, 2016) (“*Further Notice*”). The reply comment deadline was extended to August 9, 2016 in an order issued on July 21, 2016. *Business Data Services in an Internet Protocol Environment*, Order, DA 16-830 (rel. July 21, 2016).

from the Commission's established dominant/non-dominant framework.² Even the most ardent proponents of regulation in this proceeding caution the Commission to limit any regulation to carriers exercising market power.

The most significant issue in this proceeding is determining how to analyze the Business Data Service ("BDS") market, which drives every other issue before the Commission. As shown below, the Commission should: refrain from *ex ante* rate regulation of non-dominant providers; preclude regulation of services that do not squarely fall within the Commission's proposed definition of BDS offerings; adopt appropriately sized geographic markets for analysis; and target any bandwidth thresholds for tiered regulation at levels that address where market power may actually be exercised and abused.

The Commission also must ensure that any regulation it adopts is consistent with the specific conditions in the BDS marketplace. This means that competitive providers should not be regulated and that the Commission should not adopt one-size-fits-all pricing for markets with varying levels of competition.

II. The Record Demonstrates That There Is No Basis to Regulate Cable Companies or Any Other New Entrants.

Consistent with more than three decades of Commission precedent, there is wide spread agreement in the record that the Commission should not impose regulation on cable companies or other competitive BDS providers. As NCTA noted, the Commission has no basis to impose rate regulation on nondominant carriers, and has not done so since the advent of the *Competitive Carrier* orders.³ Even INCOMPAS members, including the Joint CLECs and Windstream, support regulating only the "market leader" or "leading competitor" in each geographic market,

² Comments of the National Cable & Telecommunications Association, WC Docket No. 16-143, WC Docket No. 05-25 at 40-42 (dated June 28, 2016) ("NCTA Comments").

³ NCTA Comments at 30-33, 55.

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which they agree would be the incumbent local exchange carrier (“ILEC”).⁴ Their comments make clear that a “market leader” is simply the new name for a dominant carrier that is able to exercise market power and acts as price leader in the market.⁵

The record is also clear that cable companies do not have market power in any BDS market. Even though Cox and other cable companies continue to make substantial investments in new fiber deployment, their market share remains well below that of the incumbent LECs and other CLECs.⁶ And, as explained further below, there is no basis to infer that Cox or other cable companies possess ubiquitous BDS networks, either fiber-based networks or HFC-based networks. The record is totally devoid of any basis to regulate cable companies or other new entrants.

Those proposing to regulate all providers regardless of market power proffer no reasoned basis for inflicting the costs of rate regulation and forced network sharing across the BDS market. Verizon, for example, argues that rate regulation of competitors is warranted because some BDS providers might refuse to deal with Verizon if they were not subject to common

⁴ Comments of Birch Communications, Inc., Earthlink, Inc., and Level 3 Communications, LLC, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 57-60 (dated June 28, 2016) (“Joint CLECs Comments”) (supporting regulation of “leading competitor” in non-competitive markets and stating that no other provider should be rate-regulated); Comments of Windstream Services, LLC, WC Docket No. 16-143, WC Docket No. 05-25, RM-10593 at 39 (dated June 28, 2016) (“Windstream Comments”) (supporting regulation of “leading competitor” in non-competitive markets); Comments of INCOMPAS, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 4-5 (dated June 28, 2016) (noting that regulation must address market power). *See also* Comments Public Knowledge, *et al*, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 5, 8 (dated June 28, 2016).

⁵ *See* Joint CLECs Comments at 59 (noting that the market leader would have market power and competitors would be unable to price above the market leader).

⁶ *See, e.g.*, Comments of Comcast Corporation, WC Docket No. 16-153, WC Docket No. 15-247, WC Docket No. 05-25 at 20 (dated June 28, 2016) (“Comcast Comments”) (citing *Further Notice* at ¶ 218).

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carrier regulation.⁷ Even if Verizon were correct that carriers providing BDS are refusing to provide service to Verizon, that fact would not justify rate regulation. The obligation of a common carrier to deal with customers on a non-discriminatory basis exists whether or not the carrier is subject to rate regulation, a point the Commission has noted on many occasions (and, in fact, has used to justify decisions not to impose rate regulation).⁸ As a result, rate regulation has no impact on the question of whether a provider has to offer service to a particular customer. Equally important, Verizon acknowledges that “[i]f the dominant provider’s rates are regulated, competitive providers would be expected to match or undercut those regulated rates in order to attract customers.”⁹ In other words, Verizon agrees that regulating competitor rates is entirely unnecessary, but wants the Commission to regulate competitors anyway. This is nonsensical, and certainly cannot justify rate regulation of competitive providers.

Sprint somewhat echoes Verizon’s argument, claiming that rate regulation is warranted because all BDS are common carriers subject to sections 201 and 202 of the Act.¹⁰ Sprint’s argument, however, makes an incorrect assumption that all BDS providers are common carriers. Evidence in the record demonstrates otherwise.¹¹ But even if all BDS providers are common

⁷ Comments of Verizon, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 17-18 (dated June 28, 2016) (“Verizon Comments”).

⁸ See, e.g., *Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations*, First Report and Order, 85 FCC 2d 1, ¶ 51(1980); *Developing a Unified Intercarrier Compensation Regime*, Declaratory Ruling, 26 FCC Rcd 1351, 1357-1358, ¶ 14 (2012) (declaring that incumbent and competitive local exchange carrier failure to route calls properly could be held to be unjustly or unreasonably discriminatory).

⁹ Verizon Comments at 17.

¹⁰ Comments of Sprint Corp., WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 91-92 (dated June 28, 2016) (“Sprint Comments”).

¹¹ See Comcast Comments at 61-71 (stating “the Commission cannot demonstrate that all BDS variants it intends to regulate are offered on a common carrier basis, as many such services ... in fact are offered on a private carrier basis”); Comments of Charter Communications, Inc., WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 17-20 (dated June 28, 2016) (noting “like many other new entrants in the BDS, Charter provides BDS through

carriers, which they are not, Sprint's argument fails because the Commission does not automatically impose *ex ante* rate regulation on any entity deemed to be a common carrier. To the contrary, the Commission has long rejected imposition of *ex ante* rate regulation of entities that otherwise may be found to be common carriers (or providers of telecommunications services under the 1996 Act) where such carriers lacked market power.¹²

III. The Commission's Analysis Must Start with a Proper Definition of the Relevant Product and Geographic Markets.

If, despite the substantial record evidence of a dynamic, growing BDS market characterized by declining prices, the Commission intends to nevertheless impose regulation, it must proceed with restraint. The first step in consideration of any regime of economic regulation is determining the nature of the market or markets involved. The Commission has taken some steps towards this effort, notably by defining BDS in the *Further Notice*.¹³ As the comments demonstrate, however, there is more work to be done, both in determining what services are BDS and in analyzing the level of competition in BDS submarkets.

A. The Commission Should Exclude EoHFC from the Product Market.

Initially, the Commission should exclude from the product market any service that does not fall within the Commission's proposed definition of BDS. Many commenters agree this is appropriate.¹⁴ The Commission's definition provides an appropriate screen: "dedicated point-to-

private-carriage agreements); NCTA Comments at 11-15 ("BDS services are customized, provided to and from specific locations with characteristics (including speed, reliability, volume and term) that often are the subject of negotiation with individual customers.").

¹² See, e.g., *Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, Order, 11 FCC Rcd 3271, 3274 ¶ 3 (1995).

¹³ *Further Notice* at ¶ 279.

¹⁴ See, e.g., Joint CLECs Comments at 37-38 (stating that BDS must be limited to services with service level agreements that support real-time applications and should exclude best-efforts services); Comments of TDS Metrocom, LLC, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 16 (dated June 28, 2016) ("TDS Metrocom Comments")

point transmission of data at certain guaranteed speeds and service levels using high-capacity connections.”¹⁵ This definition excludes best-efforts services and any other service that does not provide prescribed service quality guarantees for “bandwidth, reliability, latency, jitter and/or packet loss.”¹⁶ As several commenters have explained, this definition is appropriate because BDS users depend on quality guarantees to provide real-time services, such as transmission of wireless data.¹⁷ Services that are outside the definition of BDS should not be subject to any form of BDS regulation.

By this standard, Ethernet over HFC (“EoHFC”) services should not be treated as BDS or subject to BDS regulation. As Cox explained in its initial comments, Cox’s EoHFC offering **[BEGIN HIGHLY CONFIDENTIAL INFORMATION]**

[END HIGHLY CONFIDENTIAL INFORMATION]¹⁸ Cox **[BEGIN HIGHLY CONFIDENTIAL INFORMATION]**

[END HIGHLY CONFIDENTIAL INFORMATION]¹⁹ This makes EoHFC service more akin to a best-efforts service than to BDS, a conclusion that other parties affirm.²⁰ The parties that purchase BDS, in particular, note that they do not consider EoHFC a

(stating that best efforts services should not be classified as BDS); Windstream Comments at 25-28 (stating that best efforts services should not be classified as BDS).

¹⁵ *Further Notice* at ¶ 12. This definition is technology neutral and would include wireless technologies that provide BDS.

¹⁶ *Further Notice* at ¶ 279.

¹⁷ *See, e.g.*, Sprint Comments at 14.

¹⁸ Comments of Cox Communications, Inc., WC Docket No. 16-143, WC Docket No. 05-25 at 14-15 (Ethernet standards), 16 (lack of service quality guarantees) (dated June 28, 2016) (“Cox Comments”).

¹⁹ Cox Comments at 15.

²⁰ *See, e.g.*, Joint CLECs Comments at 37-38; Sprint Comments at 14.

substitute for BDS, which demonstrates that it is not in the same product market.²¹

Consequently, EoHFC should not be treated as BDS.

Despite these facts, the Mid-Size ILECs continue to press for inclusion of EoHFC and misleadingly claim that cable providers can provide EoHFC with SLAs that include performance guarantees to any location connected over cable HFC plant to a Metro-Ethernet enabled headend.²² The erroneous claim forms the basis for their repeated mantra that cable companies can offer BDS in 22 times more census blocks that were reported in the 2013 data collection.²³ But as Cox thoroughly explained in its initial comments, and other cable companies confirm, EoHFC has limited capacity because it is provided over the same shared network used to provide cable and best efforts broadband services to residential customers and small businesses.²⁴ The shared nature of the network limits capacity and precludes offering robust performance guarantees.²⁵ Moreover, Cox explained that the HFC plant used to provide EoHFC is wholly separate from the fiber network deployed to provide true BDS services.²⁶ The Mid-Size ILECs

²¹ *See, e.g.*, Sprint Comments at 14. AT&T argues that EoHFC should be included in the evaluation of competitiveness of the product market for BDS, but does not argue that it should be regulated. Comments of AT&T Inc., WC Docket No. 16-143, WC Docket No. 05-25, RM-10593 at 43 (dated June 28, 2016).

²² Comments of CenturyLink, Inc., Consolidated Communications, Fairpoint Communications, Inc., and Frontier Communications Corp., WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 40-41 (dated June 28, 2016).

²³ Motion to Strike of CenturyLink, *et al*, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 3 (filed 17, 2016) (“Motion to Strike”); Supplement to Motion to Strike, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 6 (dated July 19, 2016); Comments of the United States Telecom Association, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket No. 05-25, RM-10593 at 19-20 (June 28, 2016). While there are numerous flaws in the data and in Professor Rysman’s analysis, the alleged failure of cable companies to identify every commercial location connected to cable company HFC plant is not one of them. As noted in the comments, EoHFC, even where available is an extremely limited offering. *See, e.g.*, Cox Comments at 14-19; Comcast Comments at 30-32.

²⁴ *See, e.g.*, Cox Comments at 14-19; Comcast Comments at 32.

²⁵ Cox Comments at 16-17.

²⁶ *Id.* at 10-11.

conflate the two networks to imply a level of ubiquity that simply does not exist.²⁷ The Commission should not impose rate regulation or forced sharing requirements on EoHFC.

B. If the Commission Adopts a Tiered Regulatory Framework, It Should Establish Reasonable Bandwidth Thresholds.

Verizon and various CLECs propose a tiered regulatory framework that would impose nationwide regulation on all BDS below either 50 Mbps or 100 Mbps and impose an overly broad and unworkable competitive market test that would result in regulation of BDS up to 1 Gbps virtually everywhere (*see* section C below). While Cox certainly agrees with the consensus among the commenters that BDS offered at speeds of 1 Gbps and higher should not be subject to regulation because the market for such services is competitive, excluding only these very high bandwidth BDS products would result in excessive regulation of all below 1 Gbps BDS products.²⁸

There is ample evidence in the record that carriers can and do deploy facilities for BDS well below 1 Gbps. Cox, for example, noted that under its near net program **[Begin Highly Confidential Information]**

[End Highly Confidential Information]²⁹ Moreover, Professor Rysman’s analysis, flawed as it is, found no evidence of incumbent LEC market power above 50 Mbps, and that “regulation of higher-end products is perhaps not necessary.”³⁰ The 2013 data also indicate

²⁷ Motion to Strike at 12.

²⁸ The Commission should be clear that the threshold for no regulation includes 1 Gbps service, not just services above 1 Gbps.

²⁹ Declaration of Ken Shelton on Behalf of Cox Communications, Inc. at ¶ 7 (dated June 27, 2016) (*attached to Cox Comments*).

³⁰ *Further Notice* at ¶ 244; Dr. Marc Rysman, *Empirics of Business Data Services* at 212 (Apr. 2016) (*attached as Appendix B of the Further Notice*) (“Rysman White Paper”). The CLECs that otherwise wholly embrace Professor Rysman’s analysis when its purports to show market

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substantial deployment has occurred for BDS below 1 Gbps. The 2013 data shows that CLECs have deployed fiber to nearly 250,000 buildings, yet the data reflects only 37,481 total observations (ILEC plus CLEC) for services over 1 Gbps.³¹ The reasonable inference is that CLECs have deployed fiber to hundreds of thousands of buildings at bandwidths less than 1 Gbps. As Professor Rysman notes, “competitive providers are a robust presence” in fiber-based BDS.³²

A fair reading of the data would suggest that, to the extent market power over BDS remains, it is confined to very low bandwidths and likely just DS1 BDS. The number of observations in the 2013 data collection confirms that DS1 circuits remain by far the predominant BDS product in the market and that this product is provided largely by the incumbent LECs. Professor Rysman’s White Paper shows 2,132,847 observations for DS1 BDS in the 2013 data, compared to 206,945 for DS3 BDS, 259,054 for 45-1024 Mbps, and only 37,481 for BDS above 1024 Mbps or roughly 1 Gbps.³³ According to this data, there are more than four times as many DS1 circuits being provided than all other BDS products combined. It is therefore reasonable to focus regulatory efforts on DS1 circuits, which also is the central focus of much of the CLEC advocacy. It is also reasonable to assume that the proliferation of DS1 circuits underlies that 2013 data’s purported showing that incumbent LEC are the only provider

power are sharply critical of the same analysis when it purports to demonstrate lack of market power. *See, e.g.*, Windstream Comments at 6-7; Joint CLECs Comments at 21- 35.

³¹ Rysman White Paper at 225, Table 8 (Apr. 2016) (*attached as Appendix B of the Further Notice*) (showing 221,249 buildings served only by CLEC fiber and another 27,866 serviced by both CLEC and ILEC fiber). *See also id.* at Table 11 (showing number of observations by bandwidth).

³² *Id.* at 212.

³³ *Id.* at 214.

in a substantial majority of buildings.³⁴ A large number of buildings have levels of demand that only require one or a few DS1-level circuits to satisfy. If there remains a source of market power in the BDS market, it plainly appears to be with respect to incumbent LEC provision of DS1 circuits. Any bandwidth threshold below which all BDS would be regulated should therefore be set at the DS1 level and, where necessary to curb market power and is cost-effective, Ethernet equivalents to DS1 level circuits.

C. A Competitive Market Test Requiring Four Providers in a Census Block Would Lead to Excessive Regulation.

The CLECs claim that a competitive market test should be applied to bandwidths below 1 Gbps because their ability to build out at those intermediate levels of demand vary. But the competitive market they propose would result in regulation of BDS below 1 Gbps virtually everywhere – in more than 99% of census blocks. Such excessively broad regulation is inconsistent with substantial evidence of competitive entry at lower bandwidths. It would also create an administrative nightmare as companies sought to track benchmark pricing at the census block level and both industry and the agency sought to assess the regulatory environment (potentially including a challenge process) in hundreds of thousands of census blocks. Finally, consumers too may be confused and frustrated by an extreme patchwork of rates.

1. Census Block Geographic Markets Are Much Too Small and Distort the Perceived Level of Competition in a Market

This excessive regulation stems from the competitive market test criteria advocated for by Verizon and the CLECs, which are overbroad on at least two dimensions – the number of providers (four) they would require before finding a market competitive and the geographic area

³⁴ *Id.* at 211. Another significant number of locations are served by CLECs using DS1 UNEs obtained from the incumbent LECs. When UNE-based BDS is counted, which it should, the number of buildings served by only ILECs drops to 57% from 77%, and the number of buildings with two providers nearly doubles, from 21.8% (not counting UNEs) to 39.4%, counting UNEs.

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(census blocks or buildings) to be assessed. Even though the number of census blocks with BDS demand is small relative to the total number of census blocks in the country, the absolute number of census blocks that would be subject to regulation under the four actual provider test likely would be well above 600,000. The Rysman White Paper reports approximately 650,000 census blocks in the 2013 data with reported locations out of a total of 11,166,336 census blocks. Professor Rysman also finds that only 0.63 percent of census blocks have an incumbent LEC plus three or more competitive providers, meaning that virtually all census blocks would be subject to regulation for BDS up to 1 Gbps under the CLECs' proposed test.³⁵

Use of census blocks would lead to the same difficulties the Commission recognized that could arise using a building-by-building approach.³⁶ In fact, the number of census of blocks subject to regulation (600,000+) would significantly exceed the number of all commercial locations in the U.S. served by fiber (487,085), as reported in the data collection.³⁷ These facts confirm that the Commission was right to worry about the administrability of a test based on the extremely small size of census blocks, which could lead to the same patchwork of different regulatory obligations.

The Commission however stated its belief that census blocks might be workable because it "anticipated that areas adjacent to a census block will often have similar business density and facilities-based competitor characteristics resulting in a similar determination as to the level of competition."³⁸ The record indicates that the Commission's assumption is incorrect, as a map

³⁵ Rysman White Paper at 213. Professor Rysman includes both CLECs and cable companies in the term competitive provider. Rysman White Paper at 199. He also appears to count as a competitive provider at a location or in census block CLECs providing BDS using UNEs. *See id.* at 199, 201 (noting number of buildings served by CLECs using UNEs).

³⁶ *Further Notice* at ¶ 289.

³⁷ *Id.* at 223.

³⁸ *Further Notice* at ¶ 289.

submitted by TDS Metrocom demonstrates. **[Begin Highly Confidential Information]**

[End Highly Confidential Information]³⁹ If the Commission is to avoid imposing extreme administrative burdens, it should adopt a geographic market much larger than census blocks, such as counties or zip codes.

The small size of census blocks creates yet another difficulty. Many census blocks outside of urban areas contain only a single BDS customer. Using census blocks as the relevant market would thus create a substantial number of single customer/single supplier markets that would skew the use of concepts such as market leaders. If the Commission decides to use a small geographic area such as a census block or census tract, it should adopt a minimum BDS demand threshold before including that geographic market in the regulatory framework.

2. Requiring Four Actual Providers to Avoid Regulation Is Unrealistic and Unnecessary.

The Commission should also reject proposals that would require four or more providers actually providing service in a market, which proponents would define as the building or census block, before concluding an area is competitive and hence free from rate regulation. Requiring the presence of four providers that are actually serving a customer in a census block would ensure regulation in virtually every census block with BDS demand. This is because, as noted above, census blocks are extremely small, sometimes encompassing no more than a single building (and often containing only one customer), and the number of building or census blocks generating sufficient demand to support four or more facilities-based providers is exceedingly small, as noted above. Thus, the combination of applying a four provider test to small

³⁹ See TDS Metrocom Comments at Exhibit 1.

geographic markets like census blocks results in regulation of BDS, at least up to 1 Gbps, virtually everywhere.⁴⁰

There is little justification for requiring the presence of four providers to ensure competitive pricing for BDS. The primary rationale is tied to the Rysman analysis that prices continue to fall as the presence of providers increases to four or more companies. But this in no way justifies an assumption that a competitive price is only reached once four providers are in the market. The Commission's own data analysis shows that price levels are reduced by any competition, and that, while the impacts may be greater as additional competitors enter the market until full competition is achieved, price constraining effects occur as soon as one competitor enters the market.⁴¹ As a result, there is a significant difference between a market with only an ILEC providing BDS and a market with one or more competitors.

In this context, if the same rate regime and, in particular, the same initial price cuts, were imposed on both markets with no competition and on markets with some level of competition, the impacts would be significant. While the rates in the non-competitive markets might be driven to "competitive" levels,⁴² imposing the same rate reductions on markets that were partially competitive would have the effect of driving rates in those locations below competitive

⁴⁰ In determining the number of providers in the geographic market, the Commission should, at a minimum, ensure that all providers that offer BDS are counted as providers, regardless of technology. Thus, in addition to counting the incumbent, CLECs and cable companies offering BDS, the Commission should count fixed wireless BDS services (including new 5G services as they are deployed) and dark fiber providers.

⁴¹ *Further Notice* at ¶ 238 (citing Rysman White Paper). Professor Rysman finds the even the presence of one competitor can constrain ILEC prices. Rysman White Paper at 231 ("the effect of one competitor is negative and significant"). While additional competitors may still correlate to lower prices, there is no basis to assume that the lower price achieved by the presence of one or two competitors is any less of a "competitive price" than the price with four or more competitors.

⁴² This assumes that the Commission accurately determined what the market rate would be in a non-competitive market, which would be a difficult and uncertain undertaking.

levels. This inevitably would affect the investment incentives of competitors and ILECs alike. In addition to reducing investment by existing competitors, such rate reductions also would discourage entry by new competitors, essentially freezing the level of competition in partially competitive markets.⁴³ All of these impacts are contrary to the Commission's express goals of encouraging investment in and increasing deployment of BDS.⁴⁴

The Commission can avoid these impacts by tailoring any price reductions to individual market conditions and specifically recognizing the differences in price levels that its own analysis has found between markets with no competition and markets with some competition. It specifically should avoid across-the-board percentage cuts, such as those advocated by Sprint. Further, benchmarks should not assume that future price changes will be uniform across different types of markets, but instead, should recognize that many of benefits of competition accrue from the first and second competitor to enter a market.⁴⁵

The requirement that each of four providers actually be serving at least one customer in a census block also ignores the effects of potential competition from nearby fiber. CLECs claim that only nearby splice points, not nearby fiber runs, should be considered in determining potential competition because laterals run between the location and a splice point. The CLECs further claim that, because the Commission lacks information on the specific location of splice points, the Commission should use actual connections in a census block as a proxy for splice points. But this argument converts the concept of potential competition into actual competition.

⁴³ If the price reductions were significant enough, they could set prices below cost in partially competitive markets, which could drive existing competitors out of those markets.

⁴⁴ *Further Notice* at ¶¶ 1, 270.

⁴⁵ Indeed, in the context of services purchased through RFPs or bidding processes, the existence of any competition has significant effects on pricing that are not dependent on the number of additional competitors. *See Cox Comments* at 20, 22-23; *Declaration of Jeremy Bye and Larry Steelman on Behalf of Cox Communications, Inc.* at ¶¶ 26-27 (dated June 27, 2016) (*attached* to Cox Comments).

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Moreover, the Commission does not need to know the precise location of each carrier splice point to account for potential competition. Standard network engineering and practice indicate that carriers will typically create many closely-spaced splice points in areas with potential BDS demand. Furthermore, the location of current splice points should not be determinative because adding new splice points is not overly burdensome and each new extension of fiber creates additional splice points. In short, the lack of specific information today about the location of all splice points is simply an insufficient justification to require the actual connection to a location in a market before counting a BDS provider as potential entrant.

Finally, with respect to any test that the Commission might adopt that turns on the number of competitors in a market, it is critical the Commission count all providers that are or reasonably could compete for BDS customers. This should include dark fiber providers as well as fixed wireless technologies, which, with the advent of 5G technologies, will soon be able to provide very fast services with low latency to business customers.

Two recent actions confirm that 5G fixed wireless BDS will soon be available commercially. Verizon recently announced completion of its 5G radio specification which will allow vendors and network operators to develop interoperable solutions.⁴⁶ Verizon states that its 5G fixed wireless services will deliver “several gigabits per second throughputs and single millisecond latencies.”⁴⁷ If these performance standards are provided with guarantees, Verizon’s planned 5G services, would fall squarely within the Commission’s BDS classification.

⁴⁶ News Release, Verizon, Verizon is First U.S. Carrier to Complete 5G Radio Specifications: Precommercial Trials Continue Full Steam Ahead (July 11, 2016), *available at* <http://www.verizon.com/about/news/verizon-first-us-carrier-complete-5g-radio-specifications-pre-commercial-trials-continue-full>.

⁴⁷ *Id.*

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The Commission further enabled Verizon's 5G deployment by approving its request to lease substantial spectrum holdings from XO's wholly owned subsidiary NextLink that will cover all or parts of 289 CMAs covering 63 percent of the U.S. population.⁴⁸ Pointing to Verizon's promised "aggressive schedule in developing 5G technology," the Commission found the arrangement to be in the public interest.⁴⁹

Verizon intends to replace high capacity wireline services to businesses and homes and used as backhaul for its high density network and to begin commercial deployment by the end of next year. Under the Commission's technology neutral approach, providers BDS utilizing 5G services should be counted when assessing the level of competition in a market. At a minimum, the Commission should count Verizon as a potential competitor wherever it leases Nextlink spectrum.

⁴⁸ Application of Cellco Partnership d/ba/ Verizon Wireless and Nextlink Wireless, LLC For Consent to Long-Term *De Facto* Transfer Spectrum Leasing Arrangement, Memorandum Opinion and Order, DA 16-838 (rel. July 25, 2016).

⁴⁹ *Id.* at ¶¶ 23-25.

IV. Conclusion

For all of these reasons, the Commission should adopt rules consistent with these reply comments.

Respectfully submitted,

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