

1 XAVIER BECERRA
 Attorney General of California
 2 PAUL STEIN
 Supervising Deputy Attorney General
 3 SARAH E. KURTZ
 Deputy Attorney General
 4 JONATHAN M. EISENBERG
 Deputy Attorney General
 5 JOHN D. ECHEVERRIA
 Deputy Attorney General
 6 P. PATTY LI, State Bar No. 266937
 Deputy Attorney General
 7 455 Golden Gate Avenue, Suite 11000
 San Francisco, CA 94102-7004
 8 Telephone: (415) 510-3817
 Fax: (415) 703-1234
 9 E-mail: Patty.Li@doj.ca.gov
 Attorneys for Defendants the State of California,
 10 Governor Gavin C. Newsom, and Attorney General
 Xavier Becerra
 11

12 IN THE UNITED STATES DISTRICT COURT
 13 FOR THE EASTERN DISTRICT OF CALIFORNIA
 14

15 **THE UNITED STATES OF AMERICA,**
 16
 Plaintiff,
 17
 v.
 18
 19 **THE STATE OF CALIFORNIA, et al.,**
 20
 Defendants.

2:18-cv-02660-JAM-DB
 2:18-cv-02684-JAM-DB

**DECLARATION OF DAVE SCHAEFFER
 IN SUPPORT OF OPPOSITION TO
 PRELIMINARY INJUNCTION MOTIONS**

Judge: The Hon. John A. Mendez
 Actions Filed: Oct. 1, 2018; Oct. 3, 2018

21 **AMERICAN CABLE ASSOCIATION,
 22 CTIA – THE WIRELESS
 ASSOCIATION, et al.,**
 23
 Plaintiffs,
 24
 v.
 25 **XAVIER BECERRA, in his official
 capacity as Attorney General of
 26 California,**
 27
 Defendant.
 28

1 I, Dave Schaeffer, hereby declare:

2 I make this declaration of my own personal knowledge and if called to testify, I could and
3 would testify competently to the matters stated herein. I declare the following in support of
4 Defendants' Opposition to the Motions for Preliminary Injunction in these consolidated matters.

5 **Cogent**

6 1. I am the Founder and Chief Executive Officer of Cogent Communications. In this
7 role, I supervise Cogent's operations, including the interconnection of Cogent's network with the
8 other networks that compose the global Internet. Interconnection is the process through which
9 networks exchange Internet data or traffic.

10 2. Cogent is a multinational Tier 1 Internet Service Provider (ISP) ranked as one of the
11 top five networks in the world. As a Tier 1 ISP and transit provider, Cogent carries Internet traffic
12 from other ISPs and from providers of Internet content, applications, and services (so-called
13 "edge providers") across thousands of miles to other ISPs, including residential, last-mile ISPs
14 like AT&T and Comcast, and to Cogent's own business customers. Cogent also offers high-speed
15 Internet access to business customers. Our Internet Protocol network spans North America,
16 Europe, and Asia and extends to South America, Australia, and Africa with over 90,000 miles of
17 high-speed fiber. Our network provides service to over 207 markets throughout 47 countries and
18 interconnects with over 7100 other networks, including those of customers and other Internet
19 providers.

20 **Importance of Interconnection for Consumers' Internet Experience**

21 3. Residential and small-business customers access the Internet using mass-market
22 Broadband Internet Access Service (BIAS) from BIAS providers such as Comcast or AT&T. A
23 BIAS provider's interconnection practices directly affect its customers' Internet experience and
24 their ability to access the content, applications, and services of their choice. The Internet is a
25 network of networks. A specific BIAS provider operates one of these networks and can transport
26 traffic between its own customers. But when selling BIAS, a BIAS provider sells access to the
27 entire Internet, not just its network. To deliver this service, a BIAS provider needs to interconnect
28

1 with other networks such as Cogent that deliver the traffic of the BIAS provider's customers to
2 and from the rest of the Internet.

3 4. For example, if a Comcast BIAS customer wants to watch a video from an online
4 video provider which is a Cogent customer, Comcast carries the request for the video over its own
5 network to an interconnection point, where it hands the request over to Cogent, which delivers it
6 to the online video provider. Cogent then delivers the requested video to an interconnection point
7 with Comcast, where it hands the video to Comcast, which delivers it over its network to the
8 customer who requested it.

9 5. When the amount of data being sent through an interconnection point exceeds the
10 point's interconnection capacity, congestion occurs. When two networks exchange traffic at an
11 interconnection point, data leaves the first provider's network through a door (so-called "port")
12 and travels through a connection or hallway (also called "cross-connect) to a door (so-called
13 "port") to the other provider's network. Data travels over the Internet in small chunks, called
14 packets. If the doors between the two networks are too small for the amount of traffic, some data
15 packets have to wait or never get through. The delayed and lost data packets slow and harm the
16 performance of applications, content, and services, especially bandwidth-heavy or delay-sensitive
17 ones, like video calls and online games. For example, an online video buffers, a game lags, or an
18 online video conference freezes. Thus, in order to fulfill its duty to its subscribers – fast access to
19 the entire Internet, a BIAS provider needs to interconnect with other networks, and those
20 connections need to be large enough for the traffic the BIAS provider's subscribers are
21 requesting.

22 **Interconnection Agreements**

23 6. When two parties agree to exchange traffic, they decide what traffic to exchange and
24 where, and whether the agreement is paid or not. Interconnection agreements typically fall into
25 two categories. In a transit relationship, the transit provider connects the customer to the entire
26 Internet, generally in exchange for a fee. So, for instance, a small ISP serving a town of 26,000
27 people would pay a transit provider to connect to the rest of the Internet. In a peering relationship,
28 the two parties only exchange traffic between themselves and their respective customers. In this

1 case, the small town network could peer with a network in the next town, so traffic between their
2 networks goes direct, rather than through a paid transit network. The parties can exchange traffic
3 without payment (so-called “settlement-free” peering), or one of them can pay the other (so-
4 called “paid” peering). More than 99.9% of peering agreements are unpaid, and this has been the
5 historical norm.¹

6 7. While all Internet networks, including the backbones that act like the Internet’s
7 highways, need to interconnect with other networks, SB 822 only affects interconnection with
8 BIAS providers for the exchange of Internet traffic originating from or designated for their BIAS
9 customers.²

10 8. The vast majority of BIAS providers do not receive compensation when they
11 interconnect with another party, and this has been the historical norm. They either pay transit
12 providers to connect to the larger Internet or exchange data with transit providers, content
13 delivery networks, or edge providers without payment.³

14 9. Only a small group of the largest mass-market ISPs in the U.S. – Comcast, AT&T,
15 Verizon, and CenturyLink – demand payment for interconnection. Before its merger with Charter
16 in 2016, Time Warner Cable was part of this group as well.⁴ These large BIAS providers are the
17 only ones with the market power to force their interconnection partners to pay for access to their
18 BIAS customers.

19 10. The largest BIAS providers demanding interconnection payments is a relatively
20 recent phenomenon. Historically, the largest mass-market ISPs, including AT&T and Comcast,

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22 ¹ Packet Clearing House (2016). *2016 Survey of Internet Carrier Interconnection Agreements*, p. 4,
available at <https://www.pch.net/resources/Papers/peering-survey/PCH-Peering-Survey-2016/PCH-Peering-Survey-2016.pdf>.

23 ² See SB 822 §3101(a)(9)&(b), §3100(l)&(m). SB 822 does not apply, for example, to interconnection
24 between two backbone networks.

25 ³ FCC (2016). In the Matter of Applications of Charter Communications, Inc., Time Warner Cable Inc., and
Advance/Newhouse Partnership For Consent to Assign or Transfer Control of Licenses and Authorizations, MB
Docket No. 15-149, FCC 16-59, para. 99, available at <https://www.fcc.gov/document/commission-approves-charter-twc-and-bright-house-merger> (“FCC Charter/TWC Order”).

26 ⁴ FCC Charter/TWC Order, para. 99. Since 2016, Time Warner Cable had been prohibited from charging
27 for interconnection under a condition imposed by the FCC in its order approving Time Warner Cable’s Merger with
Charter and Advance/NewHouse Partnership. (ibid., para. 132-134) The Court of Appeals for the D.C. Circuit struck
28 down the condition in August 2020. See Court of Appeals for the D.C. Circuit (2020, Aug. 14). *Competitive
Enterprise Institute, et al., v. FCC, No. 18-1281*, 2020 WL 4745272 (“D.C. Circuit Charter Decision”).

1 paid transit providers to connect to the rest of the Internet. But over the last 15 years, as these
2 ISPs built out their network infrastructure and increased the numbers of subscribers through
3 mergers and subscriber growth, they have leveraged their exclusive control over large numbers of
4 subscribers to extract better terms from their interconnecting partners. Initially, their goal was to
5 stop paying for transit; more recently, their goal has been to be paid for interconnection.

6 11. Cogent’s experience with Comcast is an example of these developments. Originally,
7 Comcast paid transit providers for access to the Internet. But as the size of Comcast’s network
8 grew through mergers, acquisitions and consolidation with other ISPs, it forced global Tier 1
9 transit networks like Cogent into settlement-free peering.⁵

10 12. Subsequently, Comcast (as well as the other four largest mass-market U.S. ISPs:
11 Time Warner Cable, AT&T, Verizon, and CenturyLink) tried to pressure edge providers, content
12 delivery networks, and transit providers to pay them new, recurring fees as a condition of
13 exchanging traffic. Upending industry norms, where a BIAS provider either pays to connect its
14 customers to the rest of the Internet or exchanges traffic with its interconnection partners
15 settlement-free, these providers sought payment for accepting the data their customers had
16 requested and delivering it over their network to the customers who requested it.

17 **The 2012-2015 Interconnection Disputes**

18 13. The emergence of sustained congestion on the connections between large transit
19 providers and the largest mass-market ISPs – Comcast, Time Warner Cable, AT&T, Verizon, and
20 CenturyLink – prior to the adoption of the 2015 Open Internet Order was a significant departure
21 from the ordinary course of business in the interconnection market.⁶ At the time, Cogent was

22 ⁵ Comcast built its own backbone network, which only spans the United States. As a multinational Tier 1
23 network that reaches nearly every other network on the Internet, Cogent generally only peers settlement-free (as
opposed to being paid for transit) with other large networks that have an international reach.

24 ⁶ The facts described in this section have been documented in detail for each of the BIAS providers in
25 question. *See* Cogent (2014). *Comments*, GN Docket No. 14-28 (filed Mar. 21, 2014), p. 18 (detailing Verizon’s
26 practices of allowing congestion at interconnection points), available at <https://www.fcc.gov/ecfs/filing/6017608925>;
27 Cogent (2014). *Petition to Deny*, MB Docket No. 14-57 (filed Aug. 25, 2014), p. 27 (detailing Comcast’s practices of
28 allowing congestion at interconnection points), available at <https://www.fcc.gov/ecfs/filing/6018318046>; Cogent
(2014). *Comments*, MB Docket No. 14-90 (filed: Sept. 16, 2014), pp.12-15 (detailing AT&T’s practices of allowing
congestion at interconnection points), available at <https://www.fcc.gov/ecfs/filing/6019235698>; Cogent (2015). *Reply*
Comments, MB Docket No. 14-90 (filed: Jan. 7, 2015), pp. 14-16 (same), available at
<https://www.fcc.gov/ecfs/filing/60001007494>; NY State AG (2017). *Complaint, NY v. Charter*, Case No.

1 interconnecting with these BIAS providers either through settlement-free peering or through
2 BIAS providers paying Cogent for transit.

3 14. Historically, settlement-free peers work together to increase interconnection capacity
4 between their networks in order to avoid congestion. When additional capacity is required due to
5 increasing traffic between peers, the peers cooperate to increase the size of the connection
6 between the two networks to avoid congestion. Interconnection partners typically take turns in
7 widening that connection by adding an additional optical cable between their network equipment.
8 The partners generally alternate paying for this cable (i.e. the hallway between the doors into the
9 two networks), which typically runs between \$200-\$300 per month. When extra ports (i.e.
10 additional doors between the networks) are needed on one or both sides of the connection, these
11 can be added for a capital expense of less than \$10,000. Industry practice is to increase capacity
12 when an interconnection point reaches 70% capacity during peak hours. This ensures that the
13 connections between the interconnecting networks do not get congested and then lose data.

14 15. Around 2012, as demand for online content was growing rapidly and Netflix was
15 becoming popular, several of the largest mass-market ISPs – Comcast, AT&T, Verizon, Time
16 Warner Cable and CenturyLink – attempted to unilaterally change this model. As Cogent
17 attempted to deliver increasing amount of videos (Netflix became a Cogent customer in 2012)
18 and traffic from other Cogent customers to these large ISPs, the five large BIAS providers refused
19 to cooperate in upgrading the connections into their networks, which would remove the
20 congestion, unless Cogent paid them recurring fees. These payment demands went far beyond the
21 actual costs of widening the connection. For instance, one of our competitors, Level 3, told the
22 FCC that these ISPs frequently demanded as much in payment for access to a single ISP’s
23 subscribers as Level 3 was charging its clients to reach the entire Internet.⁷

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25 _____
26 450318/2017, Supreme Court of NY, County of NY (filed Feb. 1, 2017), paras. 292-302 (detailing Time Warner
27 Cable’s practices of allowing congestion at interconnection points with Cogent) (“NY AG Charter Complaint”),
28 available at https://ag.ny.gov/sites/default/files/summons_and_complaint.pdf.

⁷ Level 3 (2017). *Comments*, GN Docket No. 17-108 (filed: July 17, 2017), p. 9, available at
<https://www.fcc.gov/ecfs/filing/107171850225629>.

1 16. Cogent refused to acquiesce to these demands. There was no valid justification for the
2 change in position of the BIAS providers. The costs to upgrade interconnection capacity are
3 minimal and had been routinely shared before.⁸ But Cogent had never paid BIAS providers for
4 accepting the traffic their own customers requested and delivering that traffic to these customers;
5 BIAS providers are already paid for this service by their own customers.

6 17. Traffic flowing through these connections continued to grow due to the ISPs'
7 customers' demand, and the interconnections grew more and more congested, even though both
8 Cogent's network and the BIAS providers' networks on the other side had ample capacity to carry
9 the traffic. (Think of two fast-moving eight-lane highways that are connected by only one lane –
10 the congestion is caused by the connecting road, not the highways.)

11 18. Contrary to assertions in AT&T and Comcast's declarations, Cogent made good faith
12 attempts to negotiate to alleviate this congestion. In fact, in March of 2014, Cogent offered to pay
13 not just its own, but also the ISPs' capital costs associated with adding capacity to the connections
14 between Cogent and the networks of AT&T, Comcast, Time Warner Cable and Verizon.⁹ None
15 accepted the offer, underscoring the absence of any cost justification for their decisions. Instead,
16 they simply continued to allow congestion to occur.

17 19. Cogent's data from this time shows that for many months some ports operated at
18 capacity for long periods of the day. Content requiring more bandwidth, such as streaming video
19 and VoIP calls experienced increased delay and packet loss as it was transferred to the ISPs'
20 networks. As a result, the ISPs' customers were often unable to watch online video at all. But
21 increased delay and packet loss ultimately affects all applications, content, and services traveling
22 over the connection.¹⁰ Cogent business customers whose employees used Comcast as their
23 residential ISP had difficulty connecting to their corporate networks from home. Schools couldn't

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25 ⁸ See para. 14 above.

26 ⁹ See Cogent (2014). *Cogent Offers to Pay Capital Costs Incurred by Major Telephone and Cable*
27 *Companies Necessary to Ensure Adequate Capacity*, Press Release (Mar. 21, 2014), available at
28 <https://www.cogentco.com/en/news/press-releases/631-cogent-offers-to-pay-capital-costs-incurred-by-major-telephone-and-cable-companies-necessary-to-ensure-adequate-capacity>.

¹⁰ On the impact of congestion at interconnection points on customers' Internet experience, see also para. 5 above.

1 upload their payroll data, websites loaded more slowly, and online calls dropped.¹¹ Simply put,
2 our customers and customers of the ISPs engaging in this strategy were harmed because they paid
3 for but did not get a fast connection to the entire Internet.

4 20. Despite waves of bad press and widespread consumer outrage at slow Internet speeds,
5 ISPs did not stop this behavior.

6 21. Cogent was not the only transit provider affected by this tactic. As an extensive
7 public study of interconnection during this time concluded, “customers of Access ISPs AT&T,
8 Comcast, Centurylink, Time Warner Cable, and Verizon” experienced “sustained performance
9 degradation experience” as a consequence of the interconnection problems “when their traffic
10 passed over interconnections with Transit ISPs Cogent Communications (Cogent), Level 3
11 Communications (Level 3), and XO Communications (XO).”¹² For all providers that didn’t pay
12 up, including Cogent, the problems only ended with the adoption of the 2015 Open Internet
13 Order, which subjected the interconnection practices of mass-market ISPs to legal protections and
14 FCC oversight.

15 22. Comcast claims that the congestion at its interconnection points with Cogent ended
16 after Netflix entered into a paid direct interconnection agreement with Comcast in February 2014
17 (Klaer, para. 27). That’s not accurate. Even after the Comcast-Netflix agreement, congestion
18 remained. First, Netflix did not immediately move all of its traffic to direct interconnection.
19 Secondly, Cogent had many other customers beyond Netflix. The congestion issues with Comcast
20 were not resolved until after the 2015 Open Internet Order was adopted.

21 23. At the same time, the five BIAS providers were the only ones engaging in this
22 strategy. Cogent experienced no similar congestion issues with other broadband ISPs – in

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24 ¹¹ See also Susan Crawford (2014, Oct. 30). Jammed: The Cliff and the Slope, *Wired*,
<https://www.wired.com/story/jammed/> (explaining how congested interconnection facilities between transit and
25 BIAS providers harm individual and business broadband users).

26 ¹² See M-Lab (2014, Oct. 28), *ISP Interconnection And Its Impact On Consumer Internet Performance*, p.
4, available at <https://www.measurementlab.net/publications/isp-interconnection-impact.pdf> (“M-Lab Report”).
27 Similarly, the lawsuit by New York State’s Attorney General against Spectrum/Time Warner Cable documents
28 extensive congestion at the interconnection points between Spectrum/Time Warner Cable’s top backbone and transit
providers XO, Tata, Level 3, NLayer, Cogent, and between Spectrum/Time Warner Cable and content delivery
network Akamai (NY AG Charter Complaint, para. 277, Table 8).

1 particular Charter and Cox – even though they "experienced percentage increases in traffic from
2 Cogent that were similar to the large consumer ISPs."¹³

3 24. That is not surprising. An investigation by the New York Attorney General found this
4 was a deliberate business strategy that had the byproduct of harming consumers. These five BIAS
5 providers were the only ones with the market power to use a “degradation by congestion” strategy
6 to force interconnection partners into paying them for access to their BIAS customers. Lacking
7 that power, other BIAS providers cooperated in upgrading capacity at interconnection points on
8 their end to provide their customers with the Internet speeds they were paying for.

9 25. Comcast’s and AT&T’s declarations try to create the impression that Cogent and
10 other intermediary networks intentionally created the congestion (Paradise, para. 26, Klaer, para.
11 27). This mischaracterizes Cogent’s and Netflix’s actions during this time period.¹⁴

12 ¹³ See Cogent (2014). *Declaration of Joseph Farrell*, MB Docket No. 14-57 (filed Aug. 25, 2014), para.
13 137, available at <https://www.fcc.gov/ecfs/filing/6018318046>. See also NY AG Charter Complaint, para. 299 and
14 Chart 5 (“As depicted in Chart 5 below, the average peak hour packet loss for traffic carried by Cogent to Spectrum-
15 TWC subscribers from 2014 through 2015 was far higher than the packet loss experienced by subscribers to another
16 major New York-area cable ISP that maintained sufficient port capacity with Cogent.”); M-Lab Report, pp. 13-14
(explaining that, at the same time there was congestion at Cogent’s interconnection points with AT&T, CenturyLink,
Comcast, Time Warner Cable, and Verizon at measurement points in Dallas and Los Angeles, “customers of Access
ISP Cox did not experience a significant pattern or degree of degraded download throughput when connecting across
Cogent sites.”).

17 ¹⁴ Several of the quotes in AT&T’s and Comcast’s declarations discussing the congestion problems between
18 2012 and 2015 (Paradise, fn. 6; Klaer, para. 26, fn. 3-6) are either misleading, taken out of context, or perfectly
19 compatible with Cogent’s description of the congestion problems. For example, footnote 6 in the Paradise declaration
20 cherry-picks a quote from a Nick Feamster blog post to try to make the argument that Netflix caused the congestion.
21 However, if you read the blog post and his comment (linked below), Feamster’s account is the same as Cogent’s:
22 Comcast’s interconnection points were congested, resulting in poor performance for applications like Netflix. See,
23 e.g., Nick Feamster (2015, March 25). Why Your Netflix Traffic is Slow, and Why the Open Internet Order Won’t
(Necessarily) Make It Faster, *Freedom to Tinker*, <https://freedom-to-tinker.com/2015/03/25/why-your-netflix-traffic-is-slow-and-why-the-open-Internet-order-wont-necessarily-make-it-faster/>
(“Because most consumers do not have
choice in broadband Internet providers, Comcast arguably (and, empirically speaking, as well) has more market
leverage: They can afford to ask Netflix to pay for that direct link—a common Internet business relationship called
paid peering—because they have more market power. This is exactly what happened, and once Netflix paid Comcast
for the direct peering link, congestion was relieved and performance returned to normal.”) and <https://freedom-to-tinker.com/2015/03/25/why-your-netflix-traffic-is-slow-and-why-the-open-Internet-order-wont-necessarily-make-it-faster/#comment-19670>
(“The cause of the slowdown is congestion”).

24 Similarly, the notion that “the incidence of ‘persistently congested transit links . . . – regardless of cause –
25 implies clear motivation for large players to engage in direct peering negotiations’ (i.e., direct interconnection
26 agreements)” (Klaer, para. 26, citing a paper by Dhamdhere et al.) proves Cogent’s point. It captures the essence of
27 the BIAS providers’ strategy described in this declaration – letting unpaid connections between transit providers and
28 the BIAS provider congest so that edge providers whose applications suffer from congestion have an incentive to
switch from using a transit provider to deliver the traffic requested by the BIAS provider’s customers to paying for
direct interconnection with the BIAS provider to avoid the congestion on the unpaid connections.

See also fn. 18 below (discussing the claim Cogent created Netflix performance problems by prioritizing

1 26. First, edge providers and the transit providers delivering traffic to BIAS providers do
2 not “dump” traffic on BIAS providers’ networks. All of the traffic transit providers deliver is
3 traffic requested by the BIAS providers’ customers. Traffic from Cogent’s network to the BIAS
4 providers’ networks went up rapidly, because the number of BIAS customers increased and the
5 amount of data those customers requested went up because, like everyone else, they were doing
6 more and more on the Internet. ,¹⁵¹⁶

7 27. Second, Cogent did not “abruptly dump” traffic on the networks of the affected BIAS
8 providers in question without notice. When Cogent took on Netflix as a transit customer in 2012,
9 Netflix coordinated the move with all of the affected BIAS providers, but the congestion of
10 interconnection points was limited to Comcast, AT&T, Verizon, Time Warner Cable, and
11 CenturyLink.¹⁷

12 28. Third, the cause of the congestion and resulting performance problems for the traffic
13 coming in through these connections was BIAS providers’ refusal to cooperate in upgrading
14 interconnection capacity to reflect the increase in the amount of traffic their customers were
15 requesting.¹⁸ Both BIAS and transit provider networks had (and continue to have) sufficient

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some of the traffic leaving its network in Klaer, para. 27 and Paradise, fn. 6).

17 ¹⁵ See also NY AG Charter Complaint, paras. 265-266 (“Throughout the Relevant Period [i.e. from January
18 1, 2012 to February 1, 2017], subscribers’ demand for online content continued to grow exponentially, causing traffic
19 flowing through Spectrum-TWC’s interconnection points to grow by 40% or more each year. To keep up with this
20 exponential growth in traffic, Spectrum-TWC needed to regularly add ports to its interconnection points to meet the
21 growing content demands of its subscribers.”)

22 ¹⁶ Comcast also makes the odd argument that Cogent sold its service at a discount which then caused more
23 traffic over Cogent’s interconnection points with Comcast. (Klaer para. 27) But the overall level of traffic flowing
24 into Comcast is solely determined by how Comcast subscribers use the Internet connection they pay Comcast for.
25 Even if Comcast was correct about Cogent’s competitive pricing, this would not impact or increase the overall level
26 of traffic flowing into Comcast. The traffic levels would remain the same; that traffic would just be routed through
27 Cogent instead of through multiple other transit providers. In fact, that is arguably easier for Comcast as they can
28 deal with fewer and larger connections. It is akin to monitoring a single entrance to a building rather than one
hundred.

¹⁷ Netflix (2014). *Ken Florance Reply Declaration*, MB Docket No. 14-57, (Dec. 23, 2014), paras. 38-41
(describing coordination of Netflix’s move to Cogent with Comcast in more detail), available at
<https://www.fcc.gov/ecfs/filing/60001006451> (“Florance Reply Declaration”). Ibid., para. 41 (“Netflix did not
migrate its traffic on Comcast’s network alone; we did so with traffic bound for nearly every ISP in the United States.
Netflix’s migration of traffic onto the networks of Tata, Telia, NTT and Cogent in 2012, for example, was
coordinated well ahead of time with all affected ISPs. With the exception of Comcast, AT&T, and Verizon, no
terminating ISP objected or issued any concerns, including much smaller terminating ISPs that have more limited
technical capabilities than does Comcast.”).

¹⁸ Cogent cannot augment interconnection capacity unilaterally. Unable to remove the congestion without
the BIAS provider’s cooperation, Cogent took reasonable steps to manage its network. Comcast tries to blame

1 capacity to accept and deliver the increased amount of bandwidth-intensive content the BIAS
2 providers' end users were demanding, and the affected BIAS providers could have resolved the
3 congestion problem by cooperating in upgrading the interconnection points at a small cost. The
4 BIAS providers in this group simply chose not to do so.

5 29. Comcast's and AT&T's declarations assert that it is not commercially or technically
6 viable for them to degrade the connections into their network to force their interconnection
7 partners into paying for access to the BIAS providers' customers, because it would require them
8 to let all routes into their networks congest. History proves otherwise.¹⁹ For this strategy to work,
9 the BIAS provider only needs to congest all unpaid routes into the network that are offered by
10 providers who are willing and able to take on additional traffic; it does not need to congest routes
11 already subject to access charges or unpaid routes offered by providers that are unwilling or
12 unable to take on additional traffic.²⁰ For example, in 2013, Netflix was using all of the major
13 transit providers, six overall, who had settlement-free peering agreements with the BIAS
14 providers and were willing and able to take on Netflix as a customer, to deliver its data to BIAS
15 providers, and all of them became congested because of the BIAS providers' refusal to increase
16 interconnection capacity without being paid access charges.²¹ As Netflix has explained, all other
17 providers were unwilling to take on Netflix as a customer or were already paying access

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20 Cogent for the Netflix slowdown by pointing to Cogent prioritizing some of the traffic leaving its network once the
21 interconnections were congested (Klaer, para. 27), a network management technique Cogent used in an attempt to
22 *alleviate the effects of the congestion that the ISPs' refusal to upgrade interconnection capacity had created*. The
23 technique was a *response to the existing congestion*; it *did not create* the congestion. Comcast claiming that this
24 network management caused the slowdown for its customers is like breaking your hiking companion's leg then
25 accusing them of slowing you down because they use crutches.

22 ¹⁹ See, e.g., NY AG Charter Complaint, paras. 299-302, 311-318, 325-329 (congestion on transit links
23 motivated Netflix and Riot Games, the online gaming company behind popular game League of Legends, to directly
24 interconnect with TWC and start paying TWC for access to its customers in June 2014 (Netflix) and August 2015
25 (Riot Games), which resolved the congestion for Netflix after August 2014 and Riot Games after August 2015, but
26 not for Cogent, for which congestion remained until after it signed an agreement with TWC in October 2015
27 following the adoption of the FCC's 2015 Open Internet Order). See also, Netflix (2015). Reply Comments, MB
28 Docket No. 14-90, pp. 3-5 (describing Netflix's experience with AT&T) ("Netflix AT&T/DirecTV Reply
Comments"), available at <https://www.fcc.gov/ecfs/filing/60001007524>.

²⁰ For example, a provider who has a settlement-free peering agreement with one of the large BIAS
providers who charge for interconnection when traffic is out of balance may not want to take on additional traffic to
get out of balance.

²¹ Netflix AT&T/DirecTV Reply Comments, pp. 5-8; Florance Reply Declaration, para. 14, 22-32.

1 charges.²² Thus, while there were uncongested routes into the affected BIAS providers' network,
2 these were either not available to Netflix or would have required Netflix to pay an access charge.

3 30. Comcast and AT&T's declarations assert that interconnection degradation is not a
4 problem because there are many routes to and from any large BIAS provider's network. Thus,
5 they contend that the competitive market for transit and content delivery network services allow
6 edge providers to easily switch routes. But switching routes does not solve the problem. History
7 shows that when a BIAS provider is intentionally causing congestion by refusing to upgrade
8 interconnection points, edge providers cannot solve the problem by switching routes to a different
9 door. That's a fool's errand. In that case, the BIAS provider will simply let the new route congest.

10 **ISPs' Incentives to Engage in this Strategy**

11 31. While Comcast and AT&T assert in their declarations that interconnection has been a
12 well-functioning market that has flourished for more than two decades without "prescriptive
13 regulation by the FCC or other regulatory authorities," this was certainly not true from 2012 to
14 2015. Prior to the adoption of the 2015 Open Internet Order, the largest consumer-facing ISPs
15 intentionally degraded the service received by their subscribers for years, despite promising
16 subscribers fast access to the entire Internet. That's the opposite of a well-functioning market.

17 32. The New York Attorney General documented that, with respect to two of the BIAS
18 providers involved, the problems the customers of these BIAS providers were experiencing were
19 the result of a "deliberate business decision to use congestion to strong-arm backbone providers
20 and edge providers into paying for access" to BIAS providers' customers.²³ The BIAS providers'
21 customers "were effectively pawns in the company's deliberate strategy to extract fees from
22 backbone and content providers in exchange for granting access to" these customers.²⁴ That
23 investigation ended with a \$174M settlement.

24 33. It is easy to see why BIAS providers want interconnection partners to pay them new
25 fees – converting unpaid settlement-free interconnection agreements into agreements in which the

26 ²² Florance Reply Declaration, para. 14, 22-32.

27 ²³ State of New York (2017). *Comments*, FCC WC Docket No. 17-108 (filed May 23, 2017), p. 7 ("NY AG
Comments"), available at <https://www.fcc.gov/ecfs/filing/10717583023587>.

28 ²⁴ NY AG Charter Complaint, paras. 269, 279-291 (describing Spectrum-Time Warner's strategy).

1 BIAS provider is paid increases the BIAS provider's profits. An email from a TimeWarner
2 executive put it plainly: "[...] We really want content networks paying us for access."²⁵

3 34. Refusing to upgrade interconnection capacity in order to force interconnection
4 partners to pay degrades the quality of their customers' Internet access. From the offending ISPs'
5 perspective, this strategy nevertheless makes sense because external content is less able to
6 compete with ISP-controlled content not impacted by congestion at interconnection points. Thus,
7 this strategy allows the ISPs to favor their own content and applications, including traditional
8 television services or on-demand video services. BIAS providers that did not have services that
9 competed with over-the-top content did not allow congestion to occur.

10 35. Thus, the BIAS provider benefits either way: if an affected online video provider
11 refuses to pay, it is less able to compete with the BIAS provider's video services; and if it does
12 pay, the fee increases the online video provider's costs, while boosting the BIAS provider's
13 revenue.

14 **Market Failures in the Interconnection Market**

15 36. Only a small group of the largest mass-market ISPs in the U.S. – Comcast, AT&T,
16 Verizon, and CenturyLink – are being paid as part of some of their interconnection agreements.
17 The largest BIAS providers were able to pressure some of their interconnection partners into
18 paying for access to their BIAS subscribers because they were able to exploit market failures
19 when there was no oversight over interconnection.

20 37. First, while all BIAS providers have a so-called terminating access monopoly over
21 access to their subscribers, only the largest BIAS providers control access to so many customers
22 that edge providers cannot afford to lose access to these customers. The only way to get to a
23 Comcast customer is via Comcast's network, giving Comcast a monopoly over access to its
24 subscribers ("terminating access monopoly"), and Comcast controls access to 27% percent of the
25 U.S. broadband market.²⁶ All BIAS providers have a terminating access monopoly over access to
26

27
28 ²⁵ NY AG Charter Complaint, paras. 280-284 (quote in para. 284, emphasis omitted).

²⁶ <https://www.leichtmanresearch.com/about-1245000-added-broadband-in-2q-2020/>.

1 their subscribers, but only a few are large enough to force interconnection partners into paid
2 agreements. No online company can just decide not to serve Comcast customers.

3 38. Second, the BIAS providers have been able to degrade their customers' broadband
4 Internet access service as a bargaining tactic, because the lack of competing BIAS providers, high
5 switching costs, and information asymmetries prevent their customers from leaving.²⁷ Simply put,
6 even technically adept consumers can't tell whether slowdowns are caused by applications, their
7 home equipment, or their ISP, and even when they want to switch, it's hard to do and there are
8 few alternatives, if any. In short, congestion appears to have been profitable.

9 39. Prior to the adoption of the FCC's 2015 Open Internet Order, there was no efficient
10 remedy for this situation. While the 2010 Open Internet Order prohibited BIAS providers from
11 charging a fee for access to their BIAS customers, this only applied to Internet traffic as it travels
12 over the BIAS provider's network.²⁸ The 2010 protections did not apply to interconnection,
13 leaving BIAS providers free to circumvent the Order's protections where data entered their
14 network. Congestion, despite the harm it was causing to consumers, thus became a market
15 equilibrium.

16 **Impact of the 2015 Open Internet Order**

17 40. The adoption of the 2015 Open Internet Order resolved the congestion problems
18 plaguing BIAS subscribers, edge providers, and transit networks. Like the FCC's 2010 Open
19 Internet Order, the 2015 Order prohibited ISPs from charging edge providers a fee for access to
20 the ISPs' subscribers.²⁹ The 2015 Order classified BIAS as a Title II telecommunications service.
21 The FCC clarified that Sections 201 and 202 of the Communications Act, which apply to all
22 providers of telecommunications services and prohibit "unreasonable" practices and
23 discrimination, also applied to BIAS providers' interconnection practices and agreements.³⁰ The

24 _____
25 ²⁷ Evidence evaluated by the FCC during its review of the merger between Charter and Time Warner Cable
26 showed that consumers did not switch away from Comcast and Time Warner Cable during the time period when
27 Netflix's performance was degraded due to the congestion of interconnection points with Comcast and Time Warner
28 Cable. See FCC Charter/TWC Order, para. 111 and footnotes 367-369 (discussing empirical evidence).

²⁸ FCC 2010 Open Internet Order, paras. 24-26, 67, fn. 209.

²⁹ FCC 2010 Open Internet Order, paras. 24, 67; FCC 2015 Open Internet Order, paras. 113, 120.

³⁰ FCC 2015 Open Internet Order, paras. 193, 195.

1 FCC further explained it would use these provisions to ensure that BIAS providers did not use
2 interconnection practices and agreements to evade the FCC's Open Internet rules.³¹

3 41. Soon after the 2015 Open Internet Order was approved, BIAS providers (including
4 Comcast and AT&T) that had steadfastly refused to increase interconnection capacity began
5 operating again in good faith, and worked with transit providers like Cogent and Level 3 to add
6 necessary capacity. Within a year of the Order's adoption, Cogent entered into new agreements
7 with essentially every major BIAS provider with which it had previously had congestion issues.
8 But this was possible only because the 2015 Open Internet Order enabled the FCC to act. While
9 the majority of these agreements were negotiated in the shadow of the new regulatory framework
10 without Cogent having to refer to the FCC's power to review disputes, in one case, Cogent had to
11 begin the filing a formal complaint under Section 208, which was enough to get the BIAS
12 provider to negotiate a congestion-relieving arrangement.³²

13 42. We are very concerned that if SB 822 is enjoined, mass-market ISPs will return to
14 these practices, once again harming millions of Internet users, edge providers and other network
15 providers in the process.

16 **Impact of Enjoining SB 822**

17 ***Alleged Harms Caused by SB 822***

18 43. Like the 2010 and 2015 Open Internet Orders, SB 822 prohibits BIAS providers from
19 charging edge providers a fee for access to their BIAS customers, including for delivering
20 Internet traffic to and from the BIAS providers' customers.³³ And like the 2015 Open Internet
21 Order, SB 822 prohibits BIAS providers from evading the bill's net neutrality protections through
22 interconnection practices.³⁴

23 44. Allowing these provisions to be enforced will not create irreparable harms; it will
24 prevent them.

25 ³¹ FCC 2015 Open Internet Order, para. 206.

26 ³² Specifically, Cogent sent the BIAS provider a certified letter, as required by 47 C.F.R. § 1.721(a)(8),
identifying the dispute and explaining that it intended to file a complaint with the Commission if the dispute could
not be resolved.

27 ³³ ³³ FCC 2010 Open Internet Order, paras. 24, 67; FCC 2015 Open Internet Order, paras. 113, 120; SB 822
§3101(a)(3)&(b).

28 ³⁴ FCC 2015 Open Internet Order, paras. 193, 195, 206; SB 822 §3101(a)(9)&(b).

1 45. Enforcement of these provisions only affects a small number of BIAS providers. Only
2 the three largest BIAS providers and CenturyLink charge interconnection fees, and they (as well
3 as Time Warner Cable) are the only ones who have used congestion to force more partners into
4 these arrangements. The overwhelming majority of BIAS providers face zero risk from
5 enforcement of a law that they already comply with because it is good for their customers.

6 *Inability to Enter into Paid Interconnection Agreements*

7 46. The ISP plaintiffs claim that they will be irreparably harmed if SB 822's provisions
8 are interpreted to prohibit BIAS providers from charging edge providers, content delivery
9 networks, and transit providers for access to their customers. That is not the case.

10 Loss of Benefits from Direct Interconnection Agreements with Edge Providers

11 47. The ISPs' declarations and motion for preliminary injunction imply that such an
12 interpretation would make it impossible for them to realize the benefits of direct interconnection
13 agreements with edge providers.³⁵

14 48. That is not correct. The claimed technical benefits of direct interconnection flow from
15 direct interconnection as such; they are not dependent on the BIAS provider being paid for
16 interconnection, and nothing in SB 822 prohibits edge providers and BIAS providers from
17 entering into direct interconnection agreements that are unpaid.³⁶ Again, that's what all other
18 BIAS providers do.³⁷

19 Loss of Income

20 49. Prohibiting large BIAS providers from charging fees for access to their subscribers as
21 a condition of interconnection is not a problem. Only a few large BIAS providers have been able
22 to leverage their terminating access monopoly and market power over a large number of

23 ³⁵ See, e.g., ISP PI Motion, p. 24-25; Klaer, paras. 10, 20, 30.

24 ³⁶ See also SB 822 §3101(9), 2nd sentence ("Nothing in this paragraph shall be construed to prohibit
Internet service providers from entering into ISP traffic exchange agreements that do not evade the prohibitions
contained in this section and Section 3102.")

25 ³⁷ See also Netflix (2014). *Ken Florance Declaration*, MB Docket No. 14-57, (Aug. 25, 2014), para. 60
26 ("Only the four largest terminating access networks in the United States - Comcast, AT&T, Verizon, and Time
Warner Cable - charge Netflix terminating access fees. Comcast, TWC, Verizon, and AT&T are the exception to
27 Netflix's rule of not paying terminating access fees."), available at <https://www.fcc.gov/ecfs/filing/6018319947>
28 ("Florance Declaration"); Netflix (2014), *Petition to Deny*, MB Docket 14-57, (Aug. 25, 2014), p. 49 ("Globally,
Netflix delivers its traffic without exchange of payment to 99 percent of terminating access networks."), available at
<https://www.fcc.gov/ecfs/filing/6018319947>.

1 subscribers into paid interconnection agreements, and they were only able to do so recently. They
2 are the only ones affected by such an interpretation.

3 50. These paid agreements are an industry and historical outlier. Prohibiting BIAS
4 providers from charging a fee for access to their subscribers would simply revert back to the
5 historical norm.

6 51. Prohibiting BIAS providers from charging a fee for access to their subscribers does
7 not create an unfair allocation of costs. BIAS providers' interconnection partners have always
8 paid their share of the costs of upgrading interconnection capacity at interconnection points. SB
9 822 does not change that.

10 52. Transit providers bear the cost of delivering data to the BIAS provider's doorsteps,
11 and so do edge providers, whether they deliver traffic over their own network infrastructure or
12 pay a transit provider to do so. Edge providers like Netflix already deliver their traffic to the
13 interconnection point closest to the BIAS provider's customer who requested the data. As a result,
14 the edge provider pays the costs of carrying the data over long distances, and transit providers like
15 Cogent and Level 3 have consistently offered to do the same.³⁸ The BIAS provider only has to
16 pay for transporting the traffic the last step – from the interconnection point closest to the
17 customer to the customer.

18 53. Instead, the large BIAS providers want to be paid for accepting the data their
19 customers have requested and delivering it to them, even though they are already paid for this
20 service by their BIAS subscribers.

21 54. Cogent believes that it is every network operator's responsibility to ensure that its
22 network has enough capacity to deliver its service at the speeds it has promised to its customers.
23 For example, the volume of Internet traffic carried by Cogent has increased approximately 400
24 percent over the past five years - from approximately 48 Exabytes to 190 Exabytes per year.³⁹
25 Cogent has accommodated that increase with capital expenditures averaging \$44.7 million per
26 year.

27 ³⁸ Florance Declaration, para. 14.

28 ³⁹ Exabytes are 10^{18} bytes. So Cogent's Internet traffic volume for the past year was 190 Exabytes =
190,000 Petabytes = 190,000,000 Terabytes.

1 55. Given that BIAS providers promise, and their subscribers pay for, access to all lawful
2 Internet content, those BIAS providers should be expected to bear the costs of upgrading their
3 own infrastructure to provide the connectivity they have marketed and sold to their customers.
4 That's what the vast majority of BIAS providers do today.

5 56. The large BIAS providers claim that they are entitled to be paid for access to their
6 subscribers because their subscribers consume more data than they send. They only want to enter
7 into settlement-free peering agreements if the amount of traffic they send to and receive from a
8 particular interconnection partner is roughly equal. They claim this is industry-standard, but it is
9 not. The overwhelming majority of interconnection agreements between BIAS providers and
10 edge providers are settlement-free, even though the edge providers generally send more data to a
11 BIAS provider's customers than they receive from them.

12 57. Settlement-free peering is appropriate when both parties each receive sufficient value
13 from the exchange. When a BIAS provider interconnects with an edge provider, content delivery
14 network, or transit provider, an imbalance in traffic ratios does not mean that the exchange is not
15 valuable to the BIAS provider.

16 58. First, all of the traffic (including the out-of-balance traffic) that edge providers,
17 content delivery networks, or the transit providers acting on their behalf deliver to a BIAS
18 provider, is traffic requested by the BIAS provider's customers. Accepting and delivering that
19 traffic is essential if the BIAS provider wants to fulfill its obligation to its customers. Thus, the
20 traffic is highly valuable to both the BIAS provider and its customers.

21 59. Second, the traffic imbalance is a direct consequence of how BIAS providers have
22 built their networks. BIAS customers have always downloaded more data than they send, and
23 BIAS providers have designed their networks so customers can download more than they
24 upload.⁴⁰ Reflecting these use patterns, most BIAS plans are asymmetric, too: consumers receive
25

26
27 ⁴⁰ That's because many of the content and applications that residential consumers use receive more data
28 than they send. For example, requesting a website or an online video only requires a small amount of data; receiving
the actual website or video in response to the request involves a significantly larger amount of data.

1 higher download speeds than upload speeds.⁴¹ As a result, a BIAS network necessarily receives
2 more traffic for its BIAS customers from the Internet than these customers send to the Internet.⁴²

3 60. Prohibiting the few BIAS providers that currently charge for interconnection from
4 doing so is unlikely to increase prices for their BIAS customers. The theory of two-sided markets
5 predicts that BIAS providers only have an incentive to use increased profits from charging one
6 side of the market (here: a BIAS provider's interconnection partners) to lower prices on the other
7 side of the market (here: the BIAS provider's BIAS customers), if the other side of the market is
8 competitive.⁴³ In other words, how much a BIAS provider charges its BIAS customers is
9 primarily related to the amount of competition in the market for BIAS. When there is little
10 competition, as there is in the market for BIAS, subscribers pay more without regard to the ISPs'
11 actual costs. Given the lack of competition, BIAS providers have no incentive to pass savings on
12 to subscribers but instead will retain them as profits.⁴⁴

13 61. Due to the harms from access charges and the congestion created in order to extract
14 them, banning BIAS providers from charging their interconnection partners for access to their
15 customers is socially beneficial. Since the largest BIAS providers have terminating access
16 monopolies, their ability to charge access fees is not limited by market forces.⁴⁵ If the only way
17 for Zoom to reach a Comcast customer is through Comcast, Comcast can charge monopoly

18
19 ⁴¹ For example, Comcast's current BIAS plans offer subscribers download speeds that are between 8 and 40
20 times higher than the same plan's upload speed. The only exception is Comcast's most expensive plan, which
21 provides the same upload and download speed (2 Gigabits per second) for \$299 per month. See
22 <https://www.cabletv.com/xfinity/Internet> (listing the download and upload speeds for all of Comcast's current BIAS
23 plans).

24 ⁴² In fact, BIAS networks punish customers who actually use their plan's meager upload capacity. See, e.g.
25 Jon Brodtkin, (2020, June 8). Cox slows Internet speeds in entire neighborhoods to punish any heavy users: Cox
26 warns customers to lower usage, imposes 10Mbps upload limit on "gigabit" plan, *Ars Technica*,
27 [https://arstechnica.com/tech-policy/2020/06/cox-slows-internet-speeds-in-entire-neighborhoods-to-punish-any-
28 heavy-users/](https://arstechnica.com/tech-policy/2020/06/cox-slows-internet-speeds-in-entire-neighborhoods-to-punish-any-heavy-users/).

⁴³ Armstrong, M. (2006). Competition in Two-Sided Markets, *Rand Journal of Economics*, Volume 37,
Issue 3, pp. 669-670, 677-689.

⁴⁴ See also FCC Charter/TWC Order, para. 121 and fn. 390 (same).

⁴⁵ A BIAS provider's ability to charge monopoly prices for access to its subscribers is not limited by
26 competition in the transit market. The fact that there are multiple avenues to reach a BIAS provider's network does
27 not mean the price BIAS provider can charge for direct interconnection is constrained. All transit providers and other
28 third parties need to interconnect with a BIAS provider to reach its customers because the ISP has a terminating
access monopoly. This means it can charge as much as the law will allow and deep pockets can pay. It doesn't matter
if it charges the content provider directly or it charges the transit provider who then must charge the content provider.

1 prices. This is borne out by the FCC, which found that per-user access fees increase with the
2 overall number of subscribers.⁴⁶ In other words, the larger the number of subscribers an ISP has,
3 the higher a fee it charges for access to each subscriber.

4 62. Access charges at the point of interconnection increase the costs for edge providers,
5 either directly (if they interconnect directly) or because their transit providers, which operate in a
6 competitive market, pass these fees through to them.⁴⁷ This decreases innovation and
7 disproportionately harms startups and smaller online players. The harm is not limited, however, to
8 software companies. Access fees charged to transit networks and content delivery networks are
9 passed back to their customers, which include school districts, government agencies, court
10 systems and brick-and-mortar businesses of all stripes, and thus increase costs for all sectors of
11 the economy.

12 Incentives of Edge Providers and Transit Providers

13 63. AT&T claims that SB 822 will lead large edge providers and transit providers to
14 demand settlement-free interconnection at points of their choosing, and that this would effectively
15 require BIAS providers to deliver their data across the country at no cost to the interconnection
16 partner (Paradise, para 38). This assertion misrepresents Cogent's position and the
17 interconnection proposals it has supported. In exchange for settlement-free interconnection,
18 Cogent has consistently offered to deliver traffic to an interconnection point reasonably close to
19 the location of the ISP customer who requested the data.

20 64. Prohibiting BIAS providers from charging interconnection partners for access to their
21 subscribers would not remove edge providers' incentives to "keep traffic volume efficient" or use
22 digital compression (Paradise, paras 20, 21, 37). Edge providers design and deliver their
23 applications, content, and services to use as little bandwidth as possible, since there are significant
24 costs to transmit (or have another network transmit) their data to the BIAS providers' networks.

25 _____
26 ⁴⁶ FCC Charter/TWC Order, para. 115.

27 ⁴⁷ Edge providers do not save money by directly interconnecting with a BIAS provider who charges them a
28 fee for access to the BIAS provider's customers, because the edge provider still needs to pay for transporting the
traffic to the BIAS provider's doorstep over its own infrastructure or pay a transit provider and/or content delivery
network to do so. See Florence Reply Declaration, para. 12 ("Netflix's net costs increase as a result of paying
Comcast the terminating access fee it demands.")

1 These costs increase with the amount of traffic, which provides ample incentives to choose
2 efficient traffic delivery methods. In addition, many Internet users have data caps; therefore they
3 prefer content, applications, and services that use as little data as possible. Furthermore, software
4 engineers work relentlessly to reduce the data load of every application because quick loading
5 times are critical for winning customers and serving those on slow connections.

6 65. Such a ban would not motivate edge providers or transit providers to “dump”
7 additional traffic on the BIAS providers’ networks or incentivize transit provider to increase the
8 amount of transit they sell to the BIAS providers’ networks, since edge providers and transit
9 providers only deliver data that the BIAS providers’ customers have requested. Transit providers
10 will not be able to sell transit to Comcast’s or other BIAS providers’ networks at high margins,
11 because the market for transit is competitive.

12 *Impact of SB 822’s Interconnection Provisions on Internet Traffic Not Subject to SB 822*

13 66. Plaintiffs claim that complying with different state net neutrality laws is not possible.
14 But state net neutrality laws do not pose any inherent problems. The Internet is a worldwide
15 network. Internet access service is already subject to different net neutrality laws in different
16 countries (e.g., Canada, Mexico, and the U.S. all have different net neutrality regimes), and BIAS
17 providers who offer BIAS to customers in different countries have no problem complying with
18 these laws. Having to comply with a net neutrality law in California – the fifth largest economy in
19 the world – is no different. Cogent, like every other global transit provider, complies with the
20 laws of every location in which we operate in.

21 67. SB 822 only applies to broadband Internet access service “provided to customers in
22 California.”⁴⁸ The plaintiffs assert that BIAS providers can’t comply with SB 822’s
23 interconnection provisions at a particular interconnection point without having to also follow SB
24 822 with respect to Internet traffic not subject to SB 822. This is not the case. They can do so if
25 (1) SB 822’s interconnection provisions are interpreted to apply to Internet traffic to and from
26 BIAS customers in California, regardless of where in the U.S. the interconnection point is
27

28 ⁴⁸ See SB 822 §1301(a)&(b), §1300(b),(h),(i),(o)&(p).

1 located, as well as if (2) SB 822 is interpreted to apply only to data packets to and from BIAS
2 customers in California that are exchanged at interconnection points in California.

3 68. AT&T's declaration asserts that if SB 822 is interpreted to apply to traffic exchanged
4 at interconnection points, regardless of where in the U.S. the interconnection point is located,
5 AT&T would be forced to comply with SB 822's provisions for all interconnection agreements
6 across the country, "even for traffic that never touches California." (Paradise, para. 5). But that is
7 not the case, legally or technically. Legally, SB 822 only applies to the exchange of traffic to and
8 from customers in California.⁴⁹ Technically, a BIAS provider exchanging traffic with an
9 interconnection partner can limit compliance to traffic sent to or from a California user, while not
10 adhering to SB 822's interconnection provisions with respect to traffic not sent to or from a
11 California user.

12 69. For example, if SB 822 is eventually interpreted to prohibit BIAS providers from
13 charging their interconnection partners a fee for interconnection traffic originating from or
14 terminating in California no matter where in the U.S. that traffic is exchanged, BIAS providers
15 could simply refrain from charging their interconnection partners for that traffic, while continuing
16 to charge for traffic not originating from or terminating in California. This is technically and
17 commercially feasible today. For example, a BIAS provider could simply measure the amount of
18 Internet traffic that is to or from California exchanged with an interconnection partner at a
19 specific interconnection point, as common networking equipment allows it to do. The BIAS
20 provider could then not charge for data to and from California customers, while continuing to
21 charge for the rest. This method would not require BIAS providers to technically segregate the
22 traffic based on the state it was sent to or received from.

23 70. AT&T's declaration asserts that "[i]t would be impossible any time in the foreseeable
24 future to identify – let alone segregate - the terabytes of Internet data exchanged at these
25 interconnection facilities on the basis of the state jurisdictions where individual Internet packets
26 originated or are headed." (Paradise, para. 5; see also Klaer, para. 16). That is not correct. This is
27 technically and commercially feasible today. For example, if SB 822 were to be interpreted to

28 ⁴⁹ See SB 822 §3101(a)(9), §3100(l)&(m).

1 prohibit BIAS providers from degrading Internet traffic to and from California by letting
2 interconnection points congest in order to extract an access charge, regardless of where in the
3 U.S. the interconnection point is located, a BIAS provider could make sufficient interconnection
4 capacity available to data packets traveling to and from California, while limiting interconnection
5 capacity for traffic not subject to SB 822, which is technically and commercially feasible today.
6 In fact, one of Cogent's international interconnection partners provides limited interconnection
7 capacity at an interconnection point for traffic to and from a specific European country, while
8 providing a much larger amount of interconnection capacity at the same interconnection point for
9 traffic to and from other countries.

10 71. The same methods could be used to limit compliance with SB 822's interconnection
11 provisions to just Internet traffic subject to SB 822, if the law is interpreted to apply only to data
12 packets to and from California that are exchanged in California. In that case, BIAS providers
13 could simply use the methods described above at interconnection points in California, but not at
14 interconnection points in other states.

15 72. Interpreting the scope of SB 822's interconnection provisions to be limited to
16 interconnection points located in California would not create an incentive for edge providers,
17 content delivery networks, and transit providers to exchange traffic destined for places other than
18 California at interconnection points within California.⁵⁰ That's because (1) SB 822's
19 interconnection provisions only apply to the exchange of Internet traffic destined for or
20 originating from a BIAS provider's end users in California, and (2) BIAS providers can limit
21 compliance with SB 822's interconnection provisions to the traffic protected by SB 822. Thus, a
22 BIAS provider's interconnection partners would have no incentive to suddenly transport their
23 non-California bound Internet traffic to interconnection points in California and exchange it there,
24 because they would not gain any benefit from doing so.

25 73. Under this interpretation, providers delivering traffic for a BIAS provider's California
26 customers might prefer to hand off their California-bound traffic at an interconnection point in
27 California to be protected by SB 822. That is actually a benefit. In this case, interconnection

28 ⁵⁰ See Klaer, para. 34; Paradise, paras. 5, 33.

1 partners who currently exchange California-bound Internet traffic at an interconnection point in
2 another state, such as New York, would instead transport that data to an interconnection point in
3 California and exchange it there. That's great because the BIAS provider is saved the expense of
4 transporting the data to California itself and saves bandwidth on its backbone.

5 74. Comcast claims accommodating such a change would require Herculean efforts
6 (Klaer, para. 35). In fact, the requirements are not much different than accommodating normal
7 growth in internet traffic. For instance, hot new apps such as TikTok or Zoom appear regularly,
8 causing new traffic flows that have to be accommodated. Upgrading interconnection points with
9 existing partners is routine; it takes less than one week. Finally, if there's one true thing about the
10 internet, it is that the amount of traffic flowing next month will be bigger than the amount of
11 traffic this month. Even if some interconnection capacity in New York is freed up by California-
12 bound traffic being rerouted to an interconnection point in California, that extra capacity in New
13 York is not going to remain unused for very long.⁵¹

14 ***Harms Caused by Enjoining SB 822***

15 75. The largest BIAS providers have a history of manipulating – and the ability and
16 incentive to manipulate – interconnection points in a manner that injures BIAS subscribers'
17 ability to access the applications, content, and services of their choice.

18 76. If SB 822 is enjoined, the problems that plagued the interconnection market before
19 the FCC's 2015 Open Internet Order and the harms they inflicted on consumers and edge
20 providers are likely to return in California. Cogent experienced these harms first-hand when a few
21 large BIAS providers, including Comcast and AT&T, abused their market dominance and control
22 over access to their millions of subscribers starting in 2012. The harms to everyday Americans,
23 our customers, and edge providers only stopped when the FCC asserted its authority in the 2015
24 Open Internet Order and declared that BIAS providers could not evade net neutrality at the point
25 of interconnection.

26
27 ⁵¹ Cisco estimates that Internet traffic will continue to grow 26% a year. See
28 https://www.cisco.com/c/dam/m/en_us/solutions/service-provider/vni-forecast-highlights/pdf/Global_2021_Forecast_Highlights.pdf.

1 77. As before 2015, absent SB 822, nothing prevents these ISPs from exploiting their
2 market power over their BIAS subscribers and letting the doors into their networks congest to
3 force their interconnection partners to pay up. Since 2015, their ability and incentive to use these
4 tactics have only grown. Because of consolidation and subscriber growth, the largest ISPs are
5 even larger than they were in 2015, which gives them more leverage over edge providers.⁵² Most
6 BIAS providers still face little, if any competition, making it possible for them to degrade service
7 to their own customers to extract tolls from edge providers. And at higher speeds, cable
8 companies are increasingly the only game in town, and, few can, in the middle of a pandemic,
9 afford to miss classes and work in the downtime caused by switching residential services.

10 78. With customers cutting the cord in record numbers,⁵³ the ISPs' incentives to hurt
11 over-the-top online video services have only gotten stronger. The largest ISPs all have their own
12 video services, including traditional cable TV offerings and over-the-top online video services
13 such as HBO Max, created after AT&T spent \$108B to buy Time Warner. These services give
14 these ISPs incentives to harm competing video services by slowing them down at points of
15 interconnection or increasing their costs through fees for access to the ISPs' BIAS subscribers.
16 This reduces cord-cutting and drives subscriptions to their online video services, while harming
17 competitors via higher costs and loss of subscribers, which is why they do it if the law allows
18 them to.

19 79. An injunction would not preserve the status quo. As AT&T and Comcast make clear,
20 they have expiring interconnection agreements that they want to convert to or keep as paid
21 agreements. Enjoining SB822 will allow them to start causing congestion at interconnection
22 points as a cudgel in these negotiations, causing harms to our customers, edge providers, and tens
23 of millions of Californians who rely on these BIAS providers to get online.

25 ⁵² For example, from 2016 to 2020, Comcast added more than 5.6 million BIAS subscribers, growing 24%.
26 Today, it controls access to about 27% of broadband subscribers nationwide. See
27 <https://www.leichtmanresearch.com/wp-content/uploads/2018/03/LRG-Research-Notes-2016-06.pdf> and
<https://www.leichtmanresearch.com/about-1245000-added-broadband-in-2q-2020/>. The T-Mobile/Sprint merger
reduced the number of national competitors in the market for mobile BIAS from four to three.

28 ⁵³ More than 37% of wireline broadband homes in the U.S. no longer subscribe to a linear pay TV service.
<https://www.nexttv.com/news/37-of-us-broadband-homes-have-cut-the-cord>.

1 80. These are not hypothetical concerns. When it became clear that the FCC was going to
2 eliminate net neutrality, Comcast stopped upgrading its connections with Cogent after July 2017.
3 As a result, the connections between Cogent's and Comcast's networks started to congest,
4 harming Comcast's subscribers who were trying to connect with Cogent's customers. For
5 example, Comcast customers had trouble downloading software from one of Cogent's customers,
6 a small Portland software company called Panic.⁵⁴ Right after SB 822 was passed, in October
7 2018, Comcast started to cooperate again in expanding capacity at interconnection points.⁵⁵

8 81. The danger is particularly pronounced in the case of Charter, the nation's second
9 largest BIAS provider with more than 3 million California subscribers. In its 2016 order
10 approving the merger of Charter and Time Warner Cable, the FCC banned the merged company
11 from charging for interconnection.⁵⁶ The FCC found that such arrangements harmed both the
12 merged company's subscribers and edge providers and were unnecessary for the merged
13 company's business. Indeed, over the four years of the ban, Charter has added millions of BIAS
14 subscribers and remained quite profitable.

15 82. But in August, Charter was freed from this restriction, due to a federal court ruling.⁵⁷
16 This decision came as Charter is petitioning the FCC to remove these restrictions, arguing that it
17 should have the same right as Comcast, AT&T, and other large ISPs to charge edge providers and
18 other networks for interconnection.⁵⁸

19 83. Before 2015, Time Warner Cable was willing and able to use its millions of
20 subscribers as pawns in this game, slowing their online videos, conference calls, and
21

22 ⁵⁴ See Brodtkin, Jon (2018, Mar. 9). When slow downloads hit an app developer, only Comcast customers
23 suffered, *Ars Technica*, available at [https://arstechnica.com/information-technology/2018/03/comcast-and-cogent-
24 fight-again-and-customers-lose-with-slow-downloads/](https://arstechnica.com/information-technology/2018/03/comcast-and-cogent-fight-again-and-customers-lose-with-slow-downloads/); Cabel (2018, Mar. 5). The Mystery of the Slow Downloads,
Panic Blog, available at <https://panic.com/blog/mystery-of-the-slow-downloads/>.

25 ⁵⁵ Comcast did not upgrade its connections with Cogent between July 2017 and October 2018.

26 ⁵⁶ The Order also required it to cooperate in upgrading interconnection capacity to prevent congestion when
27 necessary. FCC Charter/TWC Order, Appendix B, Attachment 1.

28 ⁵⁷ See D.C. Circuit Charter Decision.

⁵⁸ See Charter (2020, June 17). *Petition of Charter Communications, Inc.*, WC Docket No. 16-197,
available at
[https://ecfsapi.fcc.gov/file/10617776920059/Charter%20Merger%20Conditions%20Sunset%20Petition%20\(6-17-
20\).pdf](https://ecfsapi.fcc.gov/file/10617776920059/Charter%20Merger%20Conditions%20Sunset%20Petition%20(6-17-20).pdf).

1 entertainment despite promising and charging them for fast speeds to everything on the Internet.⁵⁹
2 If SB 822 is enjoined, Charter will be free to return to Time Warner Cable's old ways and use
3 congestion to demand payments from interconnection partners, harming its millions of California
4 customers.⁶⁰ In 2016, the FCC found that the merger would only increase the merged company's
5 ability to do so and allow it to charge even higher fees for access to its subscribers on a per-
6 subscriber basis.⁶¹ Today, Charter is even larger.⁶²

7 84. In sum, if SB 822 is enjoined, Charter and the other largest BIAS providers will be
8 free to use congestion at the doors into their networks to force edge providers and transit
9 networks to pay for access – regardless of the deep harm that would cause to the Internet
10 ecosystem, the millions of businesses that need reliable access to compete in the free market, and
11 the millions of Californians who would be paying for, but not receiving, fast access to the entire
12 Internet.

13 85. The harms were severe before 2015; today, the effect of congestion at interconnection
14 points would be disastrous. Due to the pandemic, millions of Californians are working from home
15 and attending school virtually. For almost all Californians, the Internet has become the main
16 connection to the outside world, making reliable access to the Internet a literal lifeline. As we saw
17 in 2015, the first victims of congestion at interconnection points are online video, online video
18 conferencing, online calls, and remote access to work, which are all particularly vulnerable to
19 congestion. In 2015, these services were important; in 2020, they are literally our economy, our
20 education system, and even our courts. On top of this, California is in the midst of a record-
21 breaking fire season, where people's lives and health depend on online access to critical services
22

23 ⁵⁹ NY State Comments, pp. 6-8.

24 ⁶⁰ In 2016, 66% of the merged company's customers seeking BIAS with at least a 25 Mbps download speed
had no alternative option for BIAS at that speed (FCC Charter/TWC Order, para. 67), making it impossible for them
25 to switch to another provider in response to poor Internet quality due to congestion at interconnection points.

26 ⁶¹ FCC Charter/TWC Order, paras. 115, 120-121, 129.

27 ⁶² Since 2016, Charter has added more than 8.5 million additional broadband subscribers and added 850,000
new subscribers in the second quarter of 2020 alone and controls access to 26% of broadband subscribers nationwide.
Today, it is almost equivalent in size to Comcast. See [https://www.leichtmanresearch.com/wp-](https://www.leichtmanresearch.com/wp-content/uploads/2018/03/LRG-Research-Notes-2016-06.pdf)
28 [content/uploads/2018/03/LRG-Research-Notes-2016-06.pdf](https://www.leichtmanresearch.com/about-1245000-added-broadband-in-2q-2020/), p. 7; [https://www.leichtmanresearch.com/about-](https://www.leichtmanresearch.com/about-1245000-added-broadband-in-2q-2020/)
1245000-added-broadband-in-2q-2020/. In 2016, 66% of the merged company's customers seeking BIAS with at
least a 25 Mbps download speed had no alternative option at that speed. FCC Charter/TWC Order, para. 67.

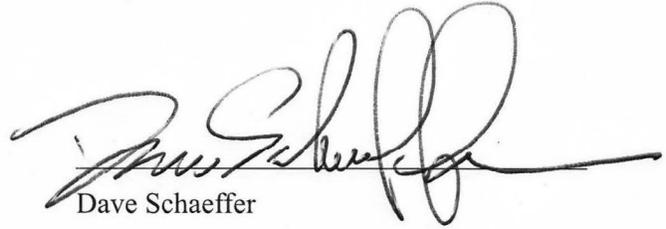
1 like air quality readings, fire maps, local news, online neighborhood groups, and evacuation
2 warnings.

3 86. Cogent works hard on its customers' behalf to make sure that every Californian, no
4 matter what BIAS provider they use, can get the data they need as quickly as possible. This year,
5 maybe more than ever, we realize how critical that work is. And we know from experience, that if
6 SB 822 is enjoined, the largest BIAS providers, being paid by millions of Californians, could
7 refuse to cooperate and let congestion return. That was unacceptable in 2015; in 2020, it is
8 inexcusable.

9 87. We ask the court to prevent this harm from returning and help us help Californians.

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I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on September 15, 2020, at Washington, D.C..

A handwritten signature in black ink, appearing to read "Dave Schaeffer", with a long horizontal flourish extending to the right.

Dave Schaeffer

Chief Executive Officer

Cogent Communications, Inc.