

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



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Order Instituting Rulemaking  
Regarding Broadband Infrastructure  
Deployment and to Support Service  
Providers in the State of California.

Rulemaking 20-09-001

(Filed September 10, 2020)

**OPENING COMMENTS OF CELLCO PARTNERSHIP (U 3001 C) AND  
MCIMETRO ACCESS TRANSMISSION SERVICES LLC (U 5253 C)  
ON ASSIGNED COMMISSIONER'S RULING REGARDING STATEWIDE OPEN  
ACCESS MIDDLE MILE NETWORK**

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Dated: September 3, 2021

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Pursuant to the recently enacted Assembly Bill 156 and Senate Bill 156 (hereafter, SB 156), the Commission is directed to collect recommendations for the locations for a statewide open-access middle-mile broadband network and other information. Cellco Partnership dba Verizon Wireless and MCImetro Access Transmission Services LLC dba Verizon Business Access Transmission Services, for themselves and their California facilities-based operating company affiliates (collectively Verizon), provide the following comments.

### **INTRODUCTION**

This is the year of broadband. Not only did Governor Newsom sign SB 156 into law, initiating the creation of a statewide open-access middle mile network, but the California legislature is busy addressing a number of bills that are meant to expedite the deployment of wireless and wireline broadband infrastructure, such as SB 556 (adopting provisions to expedite the deployment of wireless broadband-facilitating small cells on street light and traffic signal poles), SB 378 (directing local government entities to adopt microtrenching policies that expedite the deployment of fiber that may be used for backhaul of wireless broadband traffic as well as wireline internet services), and AB 537 (which seeks to curtail avoidable delays in permit processing for wireless broadband-facilitating small wireless facilities). And the bipartisan infrastructure deal in Congress has a \$65 billion investment to ensure every American has access to reliable high-speed internet with an historic investment in broadband infrastructure deployment, which includes a \$2 billion investment in broadband in Tribal communities which were hit particularly hard by the COVID-19 pandemic.

This proceeding has focused almost exclusively on wireline or electric utility fiber providers. But SB 156 makes it abundantly clear that deployment of the middle mile network is not meant to choose particular technologies for the provision of high speed broadband internet access. Indeed, SB 156 specifically requires the Office of Broadband and Digital Literacy (hereafter, the Office) established pursuant to Government Code Section 11549.51 to consider data from “wireless communications service providers” in the planning and development of the open access network. Newly adopted Government Code Section 11549.54(i) provides as follows.

(i) (1) In the planning and development of the statewide open-access middle-mile broadband network, the office shall consider technical advice received from entities, ***including, but not limited to, wireless communications service providers***, wireline communications service providers, state agencies, local governments, nonprofit entities, tribes, educational institutions, organized labor groups, regional consortia, and, if applicable, a working group convened pursuant to paragraph (2).

Wireless broadband service is currently provided over both 4G LTE and 5G networks. Verizon fixed wireless access product, 5G Home, using millimeter wave or mid-band spectrum provides or will soon provide wireless broadband access at typical speeds that meet or exceed the 100 mbps downstream and 20 mbps upstream goal articulated in Section 281(f)(5). Verizon was the first company in the world to launch a commercial 5G mobile network, and it continues to aggressively accelerate and expand deployment of 5G services for wireless customers. And as a result of the recent FCC C-band (mid-band) spectrum auction, Verizon expects to make incremental 5G bandwidth available to 100 million people through this spectrum within 12 months of when we announced the results of the auction, which

was in March 2021. By 2024, after the remainder of the C-Band spectrum is cleared, more than 250 million people are expected to have access to Verizon's 5G Ultra Wideband service on C-Band spectrum.

The provision of high speed wireless broadband services, in short, cannot and should not be ignored. More to the point, the routes that the Commission recommends to CENIC, the Third Party Administrator (TPA) retained as a result of SB 156,<sup>1</sup> should include routes where last mile wireless service to underserved and unserved communities is made economically possible because of the deployment and use of the statewide open access middle mile network.

The key provisions of SB 156 require the Commission to: 1) identify existing middle mile infrastructure and areas with no known middle-mile infrastructure that is open access and with sufficient capacity; 2) identify priority middle mile locations; 3) identify last mile and anchor institution network end users; and 4) take public comment on considerations that would increase the attractiveness and usefulness of the statewide open-access middle-mile broadband network for wireline and wireless commercial internet service providers.

With this context, Verizon provides its comments to the questions raised in the ACR.

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<sup>1</sup> See State of California Retains CENIC California MMBI, LLC as California Middle-Mile Broadband Network Third-Party Administrator, September 2, 2021 (available at <https://www.businesswire.com/news/home/20210902005258/en/State-of-California-Retains-CENIC-California-MMBI-LLC-as-California-Middle-Mile-Broadband-Network-Third-Party-Administrator>).

## DISCUSSION

### I. Identifying Middle Mile Infrastructure

The ACR provides a list of the state routes proposed for the statewide open access middle mile network which it refers to as the “Anchor Build Fiber Highways” and asks what routes, if any, should be modified, removed from consideration, or revised. While this exercise may be useful given the extensive number of routes identified in Attachment A to the Ruling, SB 156 also calls upon the Commission to solicit comments on routes that would increase the attractiveness and usefulness of the statewide open-access middle-mile broadband network for commercial internet service providers. Specifically, Government Code Section 11549.54(f)(1), enacted by SB 156, provides as follows.

(f) (1) The commission shall solicit and receive public comments within 90 days of the effective date of this section with respect to both of the following:

(A) The current locations, routes, availability, technical performance characteristics, and other aspects of commercial sources of supply of middle-mile broadband network services.

(B) The locations, routes, technical performance characteristics, network design, regeneration points, interconnection points and tie-ins, and other design, technical, business, and operational considerations ***that would increase the attractiveness and usefulness*** of the statewide open-access middle-mile broadband network for commercial internet service providers.

Verizon recommends that the Commission specifically seek route information from commercial internet service providers that from their perspective would increase the attractiveness and usefulness of the middle mile network for the purposes of meeting the goals of SB 156 to reach unserved and underserved areas. To that end, Verizon is ready to work with staff to provide such information.

## II. Identification of Priority Areas

The ACR notes that federal funding must be encumbered and spent in a limited time period and further notes that unserved and underserved areas of the state are in substantial need of broadband infrastructure investment. With this in mind, the ACR asks whether it is reasonable to assume counties with a disproportionately high number of unserved households (e.g., 50% or more unserved at 100 Mbps download) are areas with insufficient middle-mile network access. While the use of a proxy like 50% or more unserved is not unreasonable, the metric of 100 Mbps may be called into question because it is not fully consistent with the legislation that asks the Commission to prioritize based on a 25 mbps up / 3 mbps down metric. Government Code Section 1159.54 provides as follows:

(c) The commission shall identify priority statewide open-access middle-mile broadband network locations, including areas that can be built expeditiously, areas with no known middle-mile network access, regions underserved by middle-mile networks, and regions without sufficient capacity to meet future middle-mile needs.

(d) In identifying priority statewide open-access middle-mile broadband network locations pursuant to subdivision (c), ***the commission shall prioritize locations that enable last-mile connections to residences unserved by 25 mbps downstream and 3 mbps upstream. . . .***

That said, the goal of the middle mile network appears to be to facilitate last mile projects that meet a 100/20 mbps metric, at least with regard to last mile projects funded by the California Advanced Services Fund. Indeed, the legislation amends Public Utilities Code Section 281 to specifically require as follows:

(f)(5) Projects eligible for grant awards shall deploy infrastructure capable of providing broadband access at speeds of a minimum of 100 mbps downstream and 20 mbps upstream . . . .

Therefore, it is not entirely objectionable to use a 100 mbps metric in prioritizing funding for middle mile routes.

The ACR also asks whether there are other indicators that it should use to identify priority statewide open-access middle-mile broadband network locations. The examples the Commission provides all are good indicators, such as those routes that can be built expeditiously, areas with no known middle-mile network access, regions underserved by middle-mile networks, and regions without sufficient capacity to meet future middle-mile needs.

In addition, the Commission should consider areas where wireless coverage may be poor today. For example, there are remote mountainous areas with permanent or transient populations or areas that first responders need to access that are a challenge to cover, especially without wireline-based backhaul. In this regard, some communities are covered by microwave based backhaul, a technology that has less capacity capabilities than fiber. Replacing these microwave backhaul aggregation points with fiber-based backhaul should be prioritized and considered “low hanging fruit” as it can result in large swaths of underserved communities quickly becoming adequately served, especially as mid-band spectrum based service is deployed in the next several years.

### **III. Affordability of Middle Mile Infrastructure**

The ACR postulates that by identifying the costs of middle mile access in California, as well as across the country and globe, the Commission can identify a threshold whereby services can be considered reasonably affordable. Verizon believes that this question is misplaced. From a commercial internet service



provider (ISP) perspective, the issue for the Office and TPA is to determine commercially reasonable rates to charge ISPs to access the middle mile network, keeping in mind the goal of Government Code Section 11549.54(f)(1) to “increase the attractiveness and usefulness of the statewide open-access middle-mile broadband network for commercial internet service providers.”

The TPA has highly experienced and sophisticated leadership that will be able to determine the proper rate to charge for access through Indefeasible Rights of Use (IRU) term leases of 20 to 30 years, as contemplated by SB 156 Section 11549.57(c).<sup>2</sup> Rates should be based on costs, plus some reasonable rate of return for the program, not “fair market” or other potentially scarcity-based pricing methodologies.

#### **IV. Leasing Dark Fiber Through IRUs**

The ACR asks for comments on a number of issues related to the state’s leasing of access to existing middle mile facilities using IRUs, as follows.

- If there is existing open access communications infrastructure with sufficient capacity to meet the state’s needs, should the state purchase IRUs from that network?
- Is there any value in the state purchasing an IRU from the network if capacity is already available?
- If the state relies on IRUs for the development of the statewide network, will the generational investment that this funding provides be diminished when the IRU leases end 20 to 30 years later? Will existing networks run out of spare capacity?

Generally speaking, the concept of using IRUs for the state’s middle mile network is inconsistent with the funding of \$4 billion provided by SB 156 for the “the

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<sup>2</sup> This section provides that “[w]here feasible, the office shall consider if the term of access to dark fiber shall be no less than a 20-year indefeasible right to use.”

development, acquisition, construction, maintenance, and operation of a statewide open-access middle-mile broadband network.” In simple words, it does not appear that SB 156 authorizes the Office to lease the network. Instead, it is supposed to build it. But if SB 156 is interpreted to allow the Office to enter into leases, it still is not likely to make sense for the Office or TPA to obtain IRUs. The TPA would likely face market-based rates for those IRUs (as would any commercial operator). If the route is competitive (meaning, multiple network operators offer fiber on an IRU basis over the route), then presumably the market-based rates are as well. There is no need for the Office or TPA to purchase (and try to resell) IRUs on a competitively-functioning route. If the route is not competitive (meaning there is only a single provider of capacity on an IRU basis between the desired end points), it similarly makes little sense for the Office or TPA to procure an IRU at rates that presumably reflect scarcity-based pricing. If it did so, the TPA could only increase middle-mile usage by offering that capacity at a lower rate, effectively subsidizing the difference in rates. While this might be a viable short term strategy early on to speed the creation of an open access statewide middle mile network, the TPA would presumably target such routes for construction of new capacity.

Thirty year IRUs are unlikely to diminish the value of the investment because 30 years may be near the end of the fiber infrastructures’ useful life. With regard to capacity, there are two different types of capacity. There is the fiber capacity (number of strands in a sheath) and lit capacity (electronics on either end of the fiber). The statewide network could certainly run out of fiber capacity depending on how fibers are allocated. One solution to this is to deploy a second (or third, or fourth) pathway for additional fiber cables to be placed at a later time without

having to dig new trenches to place new conduits. Conduit banks with multiple conduits can often be deployed with little additional marginal cost over the deployment of a single conduit. The existence of empty conduit capacity would dramatically decrease the costs of future fiber deployments. In terms of lit capacity, most providers should have a path to upgrade electronics over time to deliver evermore lit capacity to their last mile networks.

## **V. Interconnection Issues**

The ACR recognizes that the statewide network will need to connect with other networks in order to deliver services. This will include interconnecting with private ISP networks. In this regard, the ACR asks at what points should the state network interconnect with other networks. This is of course a key consideration that the Commission can only really obtain preliminary information about at this point. The TPA will need to work with ISPs to determine specific tie-in points.

In general, however, the fiber network should have interconnection points in cities and towns at existing or newly built aggregation points, like hubs or central technical facilities. These locations could be completely passive with nothing more than racks for fiber patch panels or they could be sized to accommodate racks of active gear for ISPs.

In addition, there are other strategic locations between cities/town that should be cared for when planning. This could include cell sites, power plants, dams, and other critical infrastructure installations. This can be accomplished by creating actual splice points at these locations and/or leaving fiber slack coils for future splicing and breakout.

## **VI. Network Capacity Issues**

The ACR also acknowledges that the state will need to determine the amount of capacity to build into the network to meet existing and future demand. It therefore asks how many strands of fiber should the network deploy for each route and whether there are other requirements or standards the Commission needs to consider to determine sufficient capacity. There is no one answer for this because there are many factors that go into sizing fiber cable, such as the number of providers that need to be supported, the types of services to be offered, the size of the conduit to be used and the desired distance between splice locations, for example. Verizon nevertheless recommends that the TPA consider placing cable with 864 fiber count, as doing so may provide sufficient capacity for many uses.

In addition, however, the network should also deploy additional conduit within each route for potential future expansion. Most of the investment is in digging the trench, not the material cost for the conduit. This extra duct can be used in the short term for maintenance<sup>3</sup> or as a secondary path for augmentation or future lateral work.

A second duct does add cost when you add up the many miles anticipated. There will need to be an analysis looking at the tradeoffs between the number of miles possible with two ducts against the number of miles possible with one duct. At a minimum, there should be additional ducts at critical intersections like railroads, bridges, and river crossings. The state could also consider subdividing the duct it

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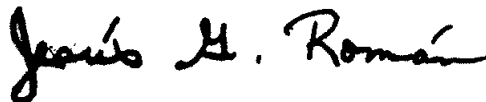
<sup>3</sup> If the primary conduit's fiber is damaged, a new repair section of fiber cable can be temporarily placed in the spare conduit while the primary conduit is properly serviced.

places with inner-duct, which can create multiple pathways through a single duct and greatly reduce the future costs of deploying new fiber, which could more easily be deployed through the inner-ducts.

### **CONCLUSION**

SB 156 properly recognizes that reaching unserved and underserved areas is more important than ever. The statewide open access middle mile broadband network will be a pivotal tool for internet service providers to reach areas that previously could not be justified in terms of cost. Verizon stands ready to contribute its expertise and opinions not only to the Commission, but to the Third Party Administrator and the new Office Broadband and Digital Literacy.

Respectfully submitted,



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