BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Broadband Infrastructure Deployment and to Support Service Providers in the State of California.	))))	Rulemaking No. 20-09-001

RACE TELECOMMUNICATIONS, LLC (U-7060-C)

COMMENTS ON SB 156 MIDDLE MILE ISSUES

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Pursuant to Rules 6.2 of the Commission's Rules of Practice and Procedure and the schedule set in the Assigned ALJ's Email ruling extending comment deadline, August 20, 2021 ("Scoping Memo"), Race Telecommunications, LLC ("Race") files its Opening Comments on the Senate Bill (SB) 156 middle mile issues. Race notes it is not responding to all of the questions posed.

1. **Identifying Existing Middle Mile Infrastructure: Attachment A provides a list of the state routes proposed for the statewide open access middle mile network, referred to as the "Anchor Build Fiber Highways." These routes may also be viewed on an ArcGIS map, which can be found here: https://www.arcgis.com/home/webmap/viewer.html?w ebmap=e17e4e1c`88b04792a b0a2c50aa1a19a3&extent=- 126.1445,34.5234,-113.5981,41.1113**

- **What routes, if any, should be modified, removed from consideration, or revised? Provide an explanation for these suggestions.**

Race find that the list of state routes in Attachment A seems very extensive, and may be overinclusive with current existing middle-mile facilities. The Commission should attempt to narrow the network to ensure it is only built where it is necessary.

One issue to consider, however, is whether any existing middle-mile facilities are in fact available for lease by any last mile provider at an affordable rate. Thus, when the Commission considers where to place open access middle-mile facilities by the new statewide operator, it should not allow incumbents to claim that all their middle-mile facilities should negate any new middle-mile facilities, if the facilities are unavailable (for physical space reasons, or not dark

fiber is available), not subject to open access, or only available at rates that are above market rates (which Race defines as the prevailing rate in the closest urban center).

- **Are there existing middle mile routes that are open access, with sufficient capacity, and at affordable rates on the county highway routes listed in Attachment A?**

There are existing middle mile routes in the State, but always the question is: (1) availability of necessary capacity; (2) timeframe of availability; and (3) cost (not all are affordable). There is plenty of fiber that runs along state and county highways that pass areas with unserved and underserved populations, but lacking an entry point to tap that fiber makes access to the fiber expensive. Given the number of the unserved households, the ROI may not "pencil out" to serve these small communities.

- **In the context of these comments, what is sufficient capacity and affordable rates?**

As to capacity, on Day One, Race recommends that the statewide middle-mile network platform should be able to provide dark fiber, 10 gigabit (G), 100G and 400G wavelength services. This would provide immediate value to last mile providers with some "headroom" for traffic growth. As to rates, Race recommends that the rates be comparable to middle mile rates in nearly urban areas in the State.

- **For routes that are identified as being open access, with sufficient capacity, and at affordable rates, how should the Commission verify these claims (e.g., should Communications Division send a data request for service term sheets, rates, approximate dark fiber, lit fiber, and conduit capacity, etc.)? Are there any other criteria that should be used to verify these claims?**

Race finds acceptable a data request so long as the nonpublic, confidential information is kept confidential except for any public materials, such as tariff rates. Please note that pricing is unregulated in this area.

2. Priority Areas: Federal funding must be encumbered and spent in a limited time period. Additionally, unserved and underserved areas of the state are in substantial need of broadband infrastructure investment.

- **Is it 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?**

Race posits that the assumption is an oversimplification. There are many reasons why an area may be unserved, in addition to insufficient middle-mile network access. One key factor is low population density such that the cost of bringing in broadband facilities to that small community is not economic. (This is a situation where federal and state programs providing infrastructure, operations, and maintenance cost grants are critical, similar to the traditional high-cost fund subsidies provided to telephone companies to build rural telephone facilities through Universal Service Fund programs. Race observes that it is quite possible that fiber runs through, or close to, unserved / underserved rural and remote communities, but it is simply not economic for last mile providers to serve very small communities, e.g., 20 homes, if the cost of the middle-mile is higher than the revenues that can be achieved from that community even over a 5-to-10-year timeframe.

Other factors could include low digital literacy and digital adoption rates in very rural, remote, or Tribal areas.

- **What other indicators, if any, should the Commission use to identify priority statewide open-access middle-mile broadband network locations (i.e., built expeditiously, areas with no known middle-mile network access, regions underserved by middle-mile networks, regions without sufficient capacity to meet future middle-mile needs)?**

Potential indicators should include: (1) high number or percentage of unserved or underserved locations; (2) no or limited last mile providers; (3) data collected by Commission indicates a lack of middle-mile close to the unserved or underserved communities; (4) low Digital Adoption or Digital Literacy statistics in the County; (5) more than 50% of residents whose income is at or below 100% of the federal poverty rate. Tribal Nations should also receive priority if they lack speeds of 100 Mbps. download and 20 Mbps. upload.

3. Assessing the Affordability of Middle Mile Infrastructure: A key consideration is determining the cost of various middle mile services. Through identifying the costs of these services in California, as well as across the country and globe the Commission can identify a threshold whereby services can be considered reasonably affordable.

- **What are existing providers paying or charging for middle mile services?**

Race declines to respond to this question which requests confidential information.

- **Are there other factors or sources of information the Commission should consider for determining whether these services are affordable?**

It is possible that the State of California's CalNet contract[1] may provide some information on middle-mile costs from major incumbent local exchange carriers (ILEC). These costs may not necessarily "affordable" however. ILEC rates are subject to federal interconnection rules, but despite this, the ILEC rates tend to be high.

- **Is it reasonable for the costs of these services to change depending on the location where the service is provided (i.e., rural vs urban)?**

There may be a slight variation but there should not be a large variation by location. Once the system is built, all locations are considered "on net".

4. Leasing Existing Infrastructure: Indefeasible Rights of Use (IRUs) are long term leases (generally 20 to 30 years) for unrestricted, legal capacity on a communications network for a specified period of time. These contracts generally obligate the purchaser to pay a portion of the operating costs, and the costs of maintaining the infrastructure.

- **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?**

Yes, the use of existing infrastructure should be used when available, for purpose of speed and cost of deployment. There is no reason to overbuild existing open access middle mile, unless there is a specific need for a second path for redundancy, due to limited paths into a particular geographic community.

- **Is there any value in the state purchasing an IRU from the network if capacity is already available?**

Yes, being able to provide transport service from A to Z is key, and traversing an area with existing capacity is commonly where interconnections between networks will happen, e.g., at data centers and Internet Exchange Points. Race sees potential for value in the statewide

[1] https://cdt.ca.gov/services/calnet-services/

network providing access via an IRU given the statewide network will have an open access policy and the underlying network may not.

- **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?**

Race recommends that it would not be practical to rely solely on a leased IRU network for the purpose of the statewide middle-mile network. The statewide middle-mile network would be at a disadvantage once the IRU leases expire in 20-30 years. There are many areas where new middle-mile facilities are necessary to bring last-mile Internet service at 100 Mbps. speeds to communities, particularly in areas such as the far North Coast and Northwest sector of the state, parts of the Central Valley, the Central Coast and other rural coastal regions, and the Southeast area of the state. Further, while 100 Mbps. speed is adequate for consumers and small business in 2021, anchor institutions and large businesses need gigabit speed. Every year, consumer data needs increase. Finally, it is very hard to predict what technology changes will occur in 20-30 years, given the vast changes we have seen in the last decade alone.

5. Interconnection: The statewide network will need to connect with other networks in order to deliver services.

- **At what points should the statewide network interconnect (e.g., to other networks, servers, etc.).**

Race recommends the statewide network connect with other networks in strategic data centers. This will afford the statewide network the ability to interconnect with hundreds of carriers as well as direct connect with the world's largest Content Delivery Networks (CDNs) -- such as Netflix / YouTube / Google / Akamai -- through private and public peering as well as the ability to provide access to services such as Amazon Web Services, Direct Connect, Google Cloud Interconnect, and Microsoft Azure ExpressRoute. Interconnections are our customers' extension to other parts of the world through a virtual experience.

Below is a list of building that are purpose built for interconnection and house some of the largest Internet exchange points in the United States. Race recommends that the statewide network should interconnect at these important Internet exchange points:

- 624 S. Grand Ave., Los Angeles, CA 90017 (Coresite LA1)
- 600 W 7th St, Los Angeles, CA 90017 (Equinix LA1)
- 55 S. Market St., San Jose, CA 95113 (Coresite SV1)
- 11 Great Oaks Blvd, San Jose, CA 95119 (Equinix SV1, SV5, SV10)
- 200 Paul Ave., San Francisco, CA 94124 (Digital Realty SFO010)
- 1200 Striker Ave, Sacramento, CA 95834 (Raging Wire (NTT) CA2, CA3)

- **Are additional exchange points necessary or strategic, and if so, where?**

Race would leave it to the TPA to monitor demand for additional exchange points and have discretion where to place them additional exchange points.

6. Network Route Capacity: The state will need to determine the amount of capacity to build into the network to meet existing and future demand.

- **How many strands of fiber should the network deploy for each route?**

For any routes that are being physically built on the statewide network. Race recommends a minimum of Single Mode 288 fiber count should be used, with 432 fiber count preferred which will help "future proof" the statewide network.

- **Are there other requirements or standards the Commission needs to consider to determine sufficient capacity?**

Any conduit or fiber being built should be designed using an access design method to be able to interconnect at midpoints frequently. Transport is typically built with few interconnect points along a path and thus, frequently require the interconnection to be done at regeneration sites. This practice creates issues where fiber may pass through an area but access to the fiber is not physically available and or financially feasible.

- **Should the network also deploy additional conduit within each route for potential future expansion?**

Yes, Race recommends 2 x 2-inch conduits minimum with 4 x 2-inch conduits preferred, with vaults every 1,000 feet. It is important to have vaults every 1,000 feet so it is cost efficient to access the fiber by last mile providers.

- **Should these factors change based on the population density and distance from the core network?**

Race believes its recommendation immediately above constitutes a "happy medium" and is workable regardless of population density and distance from the core network.

WHEREFORE, Race respectfully requests that this Commission consider its input while gathering the data relating to the establishment of a state Middle Mile network.

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/s/ Carlos Alcantar

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