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.	R.20-09-001 (Filed September 19, 2020)

OPENING COMMENTS OF THE CITY AND COUNTY OF SAN FRANCISCO IN THE ASSIGNED COMMISSIONER'S RULING SEEKING RECOMMENDATIONS FOR THE LOCATIONS FOR A STATEWIDE OPEN-ACCESS MIDDLE-MILE BROADBAND NETWORK

Dated: September 3, 2021

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I. INTRODUCTION

In Senate Bill 156, the State of California established an ambitious initiative to develop a statewide open-access middle-mile network. The City and County of San Francisco ("City" or "San Francisco") appreciates the opportunity the California Public Utilities Commission ("Commission") has provided to the parties to this proceeding to comment on this critical middle-mile network initiative.

The statewide middle-mile/community anchor network will unlock a host of opportunities. Ensuring every community has access to a robust middle-mile network will allow communities throughout the State to tackle digital equity at a local level. It will enable local governments across the State to create new, more resilient information technology systems, by allowing critical public safety and financial systems to be backed-up outside of a home region for recovery purposes. In addition, tying all Californians to a single network will help local governments and institutions provide broadband access to all residents.

II. ISSUES FOR PUBLIC COMMENT

1. Identifying Existing Middle Mile Infrastructure

San Francisco has no comments on this issue at this time.

2. Priority Areas

- 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?
- 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)?

In general, the proportion of unserved households is a poor proxy for the availability of a middle-mile network capable of providing backhaul for a last mile network or reaching

community anchor institutions. While poor connectivity at the household level may be related to low levels of investment in both middle-mile and last-mile networks, establishing a definition of unserved household based solely on download speeds would not appropriately consider other requirements for a robust middle-mile network, such as upload speeds. A measure that does not consider upload speeds is not helpful for identifying a robust middle-mile network.

Finally, it is unclear that the count of unserved households contained in Attachment 1 is reliable. The count does not appear to fully consider the state of inside wiring. Particularly in multi-tenant buildings, households may not have access to broadband due to inadequate inside wiring. This may be a function of how the underlying data in Attachment 1 was collected.

The source of this data is not identified in Attachment 1 or the accompanying map. Because the underlying data appears to have collected to inform a program that sought to identify unserved rural and remote areas, it should be carefully reviewed before it is used for expanded purposes here. In addition, to the extent the table relies on carrier provided data it may not be reliable. Carriers would not necessarily have visibility into concerns over inside wiring. We recommend that the Commission rely on direct measures of the availability of open access middle mile networks

3. **Assessing the Affordability of Middle Mile Infrastructure**

- What are existing providers paying or charging for middle mile services?
- Are there other factors or sources of information the Commission should consider for determining whether these services are affordable?
- 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)?

In response to the second bullet point above, the Commission should seek information on affordability from community anchor institutions. Pricing information from carriers is important, but the Commission cannot ignore the experience of potential network users. Obtaining information from similar types of community anchor institutions spread throughout

the State would be invaluable. These community institutions could include libraries, sheriff's departments, county offices of education, and county offices of economic opportunity. Independent regional internet service providers could also be a valuable source of information.

4. Leasing Existing 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?
- 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?

To the extent possible, the State should use these funds to build its own network in order to ensure the investment will create an asset of lasting value for Californians—rather than purchasing IRUs from existing networks. This is especially true in the case of middle-mile networks intended to support last-mile networks. In the long term, IRUs will not provide a reliable basis for complementary investment in a last-mile network. While 20 years may seem like a long time, as soon as such an arrangement is made, the clock is ticking for the last-mile networks and community anchor institutions to think about a substitute. With that said, there may be instances where capacity is so constrained, such as the Bay Bridge, that leasing is the only option.

Prior to building a middle-mile network or negotiating IRUs, however, the State should consider potential existing public sources of connectivity for community anchor institutions. Many cities and counties, either through their municipal electric utilities or municipal fiber optic networks, have already established connections to critical community anchor institutions. As

publicly owned assets, these networks provide a way for the State to extend the reach of the middle-mile network to community anchor institutions in a long term, reliable manner at a very low cost.

5. Interconnection

San Francisco has no comments on this issue at this time.

6. Network Route Capacity

- How many strands of fiber should the network deploy for each route?
- Are there other requirements or standards the Commission needs to consider to determine sufficient capacity?
- Should the network also deploy additional conduit within each route for potential future expansion?
- Should these factors change based on the population density and distance from the core network?

For the routes identified in Attachment 1, San Francisco recommends a minimum of 316 strands of fiber for any middle-mile connections, and a minimum of 144 strands of fiber for connections to individual community anchor institutions. In our experience, there will be an increasing need for fiber, often for unexpected uses.

In 2002, San Francisco installed its first 96 strand count fiber optic ring connecting all of San Francisco's critical public safety locations. At that time, San Francisco believed this fiber would be ample for the foreseeable future. That has proven to not be the case. We are now in the process of pulling an additional 316 fiber count cable on this same route. For similar

reasons, when San Francisco is installing new fiber to City buildings today we will use 144 count fiber cables whenever it is feasible to do so.

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Respectfully submitted,

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