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**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

**OPENING COMMENTS OF THE CORPORATION FOR EDUCATION NETWORK  
INITIATIVES IN CALIFORNIA (CENIC) TO THE ASSIGNED COMMISSIONER'S  
RULING**

Louis Fox  
President & CEO  
CENIC  
16700 Valley View Ave., #400  
La Mirada, CA 90638  
(714) 220-3455  
[lfox@cenic.org](mailto:lfox@cenic.org)

September 3, 2021

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**I. Introduction**

The Corporation for Education Network Initiatives in California (“CENIC”) respectfully submits these opening comments in the California Public Utilities Commission’s (“Commission” or “CPUC”) Assigned Commissioner’s Ruling (“ACR”) issued on August 6, 2021. This ACR initiates a public comment process to collect recommendations for the locations for a statewide open-access middle-mile broadband network, which follows the historic work of the Governor and Legislature in enacting SB 156. CENIC has a long history of working on middle mile projects and a focus on access and equity for its 12,000 institutional constituents. The non-profit runs several networks: the California Research and Education Network (“CalREN”) connecting education, research, library, health care, scientific and cultural organizations throughout California; the Western Regional Network, connecting research organizations in most of the

Western States and Hawai'i; Pacific Wave, an international peering fabric connecting the US research community with data, instruments, and research collaborations in Oceania and the Asia Pacific Region; and, formerly, National Lambda Rail, a national footprint network, privately owned, connecting a range of medical and scientific research partnerships throughout the US. As such, CENIC offers the following points for consideration.

## **II. Discussion**

### **A. Prioritization**

The federal and state governments have afforded a unique opportunity to make significant inroads to address the digital divide – with the further possibility of even greater resources to be available for broadband should the federal infrastructure bill be passed by Congress and signed by the President. Communities without access to high-speed broadband are faced with a variety of challenges that have made the business case long-suffering, and these public resources can significantly shift these dynamics. As such, at the forefront of this work should be on prioritizing the needs of California's most disenfranchised communities – including those in urban, rural, and tribal areas – and they should drive the state's initiative whether it be the last mile or middle mile efforts. Ultimately, the middle mile efforts connect to the last mile initiatives so, therefore, builds and acquisition of assets should coordinate in tandem. Middle mile that doesn't align with the need of last mile means communities will miss an opportunity to reap the maximum benefit of these one-time investments.

### **B. Leasing Existing Infrastructure**

With respect to Question 4 of the ACR, the Commission poses questions around whether Indefeasible Rights of Use ("IRUs") should be contemplated as a component of the statewide network. Long-term IRUs can provide affordable and accessible middle mile access for last mile

projects to flourish without a perpetual commitment (of time, and the permanent, significant cost of operation and maintenance) by the state. This is an important consideration given population trends in the state, according to one article:

“Although nothing is certain when predicting the future, one thing does seem highly probable: California will continue to grow, and to flourish. DOF forecasts expect the entire population of California to increase by approximately five million people every decade through 2050, and some cities are likely to double in size if they alter land use and height restrictions and allow for population density to increase per square mile.”<sup>1</sup>

Based on the above calculations, that could mean an additional fifteen million people residing in California by 2050. As a result, the landscape of communities in California should look much different than today – just as the 1990s represented a different population landscape compared to today. As some of the long-term IRUs near the end of their terms, all population centers and communities will be different, and the business case should be revisited. Long-term IRUs should be part of the state’s consideration for middle mile projects – to complement the other areas where fiber needs to be built.

### **C. Middle Mile Considerations**

CENIC would note that middle mile services can take on the form of various layers, from dark fiber at the physical layer to the full suite of service layers that could be provided with lit fiber services. All options, including the use of existing facilities, as discussed above, should remain on the table. There are still many unknown challenges to be faced, such as possible business case limitations, documented limitations regarding the availability of essential materials and equipment (due to current shortages experienced by manufacturers of both optical fiber and microprocessor chipsets), or other possible limitations within service areas that may be prioritized. These types of challenges could, in some cases, make the use of existing network facilities more timely and practical. Middle Mile considerations will also be dependent upon the

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<sup>1</sup> See <https://journal.firsttuesday.us/golden-state-population-trends/9007/> Published May 21, 2021.

location and operation of meeting points or internet exchanges on or along the route(s), as well as the providers who may take advantage of the network. Some of these unknowns can be further fleshed out when the last mile locations are coordinated as part of this effort as noted above. CENIC further notes that interconnection and interoperability practices (to allow consistent service quality for end-users) will be best served if common industry standards and practices regarding traffic exchange and management be applied between interconnecting providers. The networking design, engineering needs, and operating standards should be led with respect to what will constitute middle mile services, including what is necessary for route capacity.

### **III. Conclusion**

CENIC is grateful to have the opportunity to provide these opening comments in the public comment process for the open-access middle-mile broadband network. CENIC remains committed to achieving broadband digital equity for all Californians and ensuring robust broadband connectivity can be achieved for CENIC members and their patrons, students, staff, and faculty.

Respectfully submitted,

/s/ Louis Fox

Louis Fox  
President & CEO  
CENIC  
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