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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.

Rulemaking 20-09-001

**ASSIGNED COMMISSIONER'S RULING**

Pursuant to the recently enacted Senate Bill (SB) 156, this Assigned Commissioner's Ruling opens a public comment process to collect recommendations for the locations for a statewide open-access middle-mile broadband network. Parties are requested to file and serve comments by August 27, 2021. The deadline for reply comments is September 7, 2021.

**1. Background**

On July 20, 2021, Governor Gavin Newsom signed SB 156 into law, initiating the creation of a statewide open-access middle mile network. The law requires California Public Utilities Commission (Commission) staff, in collaboration with relevant stakeholders, to provide the California Department of Technology a report that contains, among other items, locations for the statewide open-access middle-mile broadband network. The new law requires, among other items, the Commission to solicit and receive public comments, within 90 days of enactment, on a number of topics related to the network.

The Second Amended Scoping Memo in the instant proceeding, issued on August 2, 2021, adds certain issues associated with the implementation of SB 156 to the scope of this proceeding, including the process for collecting location and other information related to this statewide middle-mile network.

The lack of available middle-mile broadband infrastructure has been a major issue in connecting California's unserved and underserved communities. The statewide open-access middle-mile network included in SB 156 will be a foundational investment to ensure every Californian has access to broadband Internet service that meets the connectivity needs of today, and well into the future. Last-mile infrastructure relies on middle-mile to provide service to residents, large and small-businesses, schools, government offices, public safety agencies, and libraries. An open-access middle-mile network can provide the backbone for last-mile providers to serve residences and reduce costs of providing service for businesses and anchor institutions.

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, with sufficient capacity, and at affordable rates; 2) identify priority middle mile locations; 3) identify last mile and anchor institution network end users; and 4) take public comment on the 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. These requirements are summarized below.

- **Identify Existing Infrastructure:**
  - Identify current locations, routes, availability, technical performance characteristics, and other aspects of commercial sources of supply of middle-mile broadband network services.
  - Identify areas with no known middle-mile infrastructure that is open access, with sufficient capacity, and at affordable rates.

- **Identify Priority Routes:**
  - Identify priority statewide open-access middle-mile broadband network locations:
    - 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.
- **Identify Network End Users:**
  - Last Mile: Prioritize locations that enable last-mile connections to residences unserved by 25 Mbps downstream and 3 Mbps upstream.
    - Prioritize a geographically diverse group of projects in rural and urban areas.
    - Prioritize locations that achieve the greatest reductions in the amount of households unserved by broadband internet access service meeting federal and state standards.
  - Anchor Institutions: Prioritize service to entities that lack sufficient high-bandwidth connections, including, but not limited to, all of the following: elementary and secondary schools; community colleges and other institutions of higher education; government entities; healthcare institutions; libraries; public safety answering points and technologies to assist in the prevention or response to natural disasters, including, but not limited to, fairgrounds; and tribal lands.
- **Network Design and Operation:**
  - 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.

## 2. Definitions

“Middle Mile” refers to the high-capacity fiber-optic cables that traverse long distances (*e.g.*, 10s-100s of miles) to connect communities to the Internet backbone. These high-capacity lines are analogous to transmission lines for electric utilities, or aqueducts and rivers for water utilities. This is in contrast to the “Last Mile,” which refers to the wires or cables that connect a house to the nearest utility pole and connect a community to the middle mile. “Open-Access” refers to a network model that allows any entity to access and utilize the infrastructure at a fair market rate and in a non-discriminatory manner.

## 3. Issues for Public Comment

Parties are requested to file and serve comments on the issues discussed below by August 27, 2021. The deadline for reply comments is September 7, 2021.

### 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?webmap=e17e4e1c88b04792ab0a2c50aa1a19a3&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.
- 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?

- In the context of these comments, what is sufficient capacity and affordable rates?
  - 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?
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?
  - 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)?
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?
  - 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)?
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.<sup>1</sup> 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?
  - 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?
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.)?
  - Are additional exchange points necessary or strategic, and if so, where?
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?

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<sup>1</sup> For more information on IRUs, see [http://www.baller.com/wp-content/uploads/IMLA2016\\_-Lide\\_-dark-fiber-4-15-16.docx](http://www.baller.com/wp-content/uploads/IMLA2016_-Lide_-dark-fiber-4-15-16.docx)

- 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?

**IT IS RULED** that:

1. The comment period to respond to this ruling is set forth above.

This order is effective today.

Dated August 6, 2021, at San Francisco, California.

/s/ MARTHA GUZMAN ACEVES  
Martha Guzman Aceves  
Assigned Commissioner

# **ATTACHMENT 1**



## Anchor Build Fiber Highways and Broadband Served Status by County

These routes may also be viewed on an ArcGIS map, which can be found here:

<https://www.arcgis.com/home/webmap/viewer.html?webmap=e17e4e1c88b04792ab0a2c50aa1a19a3&extent=-126.1445,34.5234,-113.5981,41.1113>

County	Total Households	Unserved Households at 100 Mbps	Unserved Households % at 100 Mbps	Highway Routes
<b>California</b>	13,271,554	673,344	5.1%	1, 2, 3, 4, 5, 5S, 6, 7, 8, 9, 10, 10S, 12, 13, 14, 14U, 15, 15S, 16, 17, 18, 20, 22, 22U, 23, 24, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 65, 66, 67, 68, 70, 71, 72, 73, 74, 75, 76, 78, 79, 80, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 94, 95, 96, 97, 98, 99, 101, 101U, 104, 105, 107, 108, 110, 111, 112, 113, 114, 115, 116, 118, 119, 120, 121, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 142, 144, 145, 146, 147, 149, 150, 151, 152, 153, 154, 155, 156, 158, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 172, 173, 174, 175, 177, 178, 178S, 180, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 197, 198, 199, 200, 201, 202, 203, 204, 205, 207, 210, 210U, 211, 213, 215, 216, 217, 218, 219, 220, 221, 222, 223, 225, 227, 229, 232, 233, 236, 237, 238, 241, 242, 243, 244, 245, 246, 247, 253, 254, 255, 259, 260, 261, 262, 265, 267, 269, 271, 273, 275, 280, 281, 282, 283, 284, 299, 330, 371, 380, 395, 405, 505, 580, 605, 680, 710, 780, 805, 880, 880S, 980
<b>Alameda</b>	579,058	11,898	2.1%	13, 24, 61, 80, 84, 112, 123, 185, 205, 238, 260, 262, 580, 680, 880, 880S, 980
<b>Alpine</b>	434	367	84.5%	4, 88, 89, 108, 207
<b>Amador</b>	14,760	9,632	65.3%	16, 26, 49, 88, 104, 124
<b>Butte</b>	80,141	8,657	10.8%	32, 70, 99, 149, 162, 191
<b>Calaveras</b>	18,368	4,761	25.9%	4, 12, 26, 49
<b>Colusa</b>	7,510	4,419	58.8%	5, 16, 20, 45
<b>Contra Costa</b>	396,099	6,772	1.7%	4, 24, 80, 123, 160, 242, 580, 680
<b>Del Norte</b>	10,009	976	9.8%	101, 197, 199
<b>El Dorado</b>	75,383	19,716	26.2%	49, 50, 88, 89, 153, 193
<b>Fresno</b>	314,417	34,236	10.9%	5, 33, 41, 43, 63, 99, 145, 168, 180, 198, 201, 269
<b>Glenn</b>	10,437	3,704	35.5%	5, 32, 45, 162
<b>Humboldt</b>	56,874	10,063	17.7%	36, 96, 101, 169, 200, 211, 254, 255, 271, 283, 299
<b>Imperial</b>	50,597	5,458	10.8%	7, 8, 78, 86, 98, 111, 115, 186
<b>Inyo</b>	8,200	1,517	18.5%	6, 127, 136, 168, 178, 190, 395

County	Total Households	Unserviced Households at 100 Mbps	Unserviced Households % at 100 Mbps	Highway Routes
<b>Kern</b>	275,340	16,038	5.8%	5, 14, 33, 43, 46, 58, 65, 99, 119, 155, 166, 178, 178S, 184, 202, 204, 223, 395
<b>Kings</b>	44,561	6,031	13.5%	33, 41, 43, 137, 198, 269
<b>Lake</b>	26,639	4,324	16.2%	20, 29, 53, 175, 281
<b>Lassen</b>	9,419	3,673	39.0%	36, 70, 139, 147, 299, 395
<b>Los Angeles</b>	3,370,663	60,752	1.8%	1, 2, 5, 5S, 10, 10S, 14, 14U, 18, 22, 23, 27, 39, 57, 60, 66, 71, 72, 90, 91, 101, 105, 107, 110, 118, 126, 134, 138, 164, 187, 210, 213, 405, 605, 710
<b>Madera</b>	46,123	11,362	24.6%	41, 49, 59, 99, 145, 152, 233
<b>Marin</b>	104,975	3,987	3.8%	1, 37, 101, 131, 580
<b>Mariposa</b>	8,156	6,613	81.1%	41, 49, 120, 132, 140
<b>Mendocino</b>	35,552	9,673	27.2%	1, 20, 101, 101U, 128, 162, 175, 222, 253, 271
<b>Merced</b>	81,710	13,571	16.6%	5, 33, 59, 99, 140, 152, 165
<b>Modoc</b>	3,820	3,493	91.4%	139, 299, 395
<b>Mono</b>	5,585	1,033	18.5%	6, 89, 120, 158, 167, 182, 203, 395
<b>Monterey</b>	127,010	7,484	5.9%	1, 25, 68, 101, 146, 156, 183, 198, 218
<b>Napa</b>	49,085	3,478	7.1%	12, 29, 37, 80, 121, 128, 221
<b>Nevada</b>	42,746	12,891	30.2%	20, 49, 80, 89, 174, 267
<b>Orange</b>	1,053,731	53,039	5.0%	1, 5, 22, 22U, 39, 55, 57, 72, 73, 74, 90, 91, 133, 142, 241, 261, 405, 605
<b>Placer</b>	148,860	15,397	10.3%	20, 28, 49, 65, 80, 89, 174, 193, 267
<b>Plumas</b>	8,496	6,879	81.0%	36, 49, 70, 89, 147, 284
<b>Riverside</b>	746,160	27,820	3.7%	10, 15, 60, 62, 71, 74, 78, 79, 86, 91, 95, 111, 177, 215, 243, 371
<b>Sacramento</b>	548,097	20,552	3.7%	5, 12, 16, 50, 51, 80, 99, 104, 160, 220, 244, 275
<b>San Benito</b>	19,022	1,003	5.3%	25, 101, 129, 146, 152, 156
<b>San Bernardino</b>	646,226	33,335	5.2%	2, 10, 15, 18, 38, 40, 58, 60, 62, 66, 71, 80, 83, 95, 127, 138, 142, 173, 188, 189, 210, 210U, 215, 247, 259, 330, 395
<b>San Diego</b>	1,159,439	46,511	4.0%	5, 8, 15, 15S, 52, 54, 56, 67, 75, 76, 78, 79, 94, 125, 163, 188, 282, 805
<b>San Francisco</b>	373,404	3,288	0.9%	1, 35, 80, 82, 101, 280
<b>San Joaquin</b>	234,766	14,896	6.3%	4, 5, 12, 26, 33, 88, 99, 120, 132, 205, 580
<b>San Luis Obispo</b>	108,803	10,575	9.7%	1, 33, 41, 46, 58, 101, 166, 227, 229
<b>San Mateo</b>	265,689	3,307	1.2%	1, 9, 35, 82, 84, 92, 101, 114, 280, 380
<b>Santa Barbara</b>	150,976	6,627	4.4%	1, 101, 135, 144, 150, 154, 166, 192, 217, 225, 246
<b>Santa Clara</b>	645,764	18,907	2.9%	9, 17, 25, 35, 82, 85, 87, 101, 130, 152, 156, 237, 280, 680, 880
<b>Santa Cruz</b>	97,831	3,245	3.3%	1, 9, 17, 35, 129, 152, 236
<b>Sierra</b>	70,895	16,729	23.6%	49, 89

County	Total Households	Unservd Households at 100 Mbps	Unservd Households % at 100 Mbps	Highway Routes
<b>Shasta</b>	1,380	1,380	100.0%	5, 36, 44, 89, 151, 273, 299
<b>Siskiyou</b>	19,631	7,526	38.3%	3, 5, 89, 96, 97, 139, 161, 265
<b>Solano</b>	152,102	7,320	4.8%	12, 29, 37, 80, 84, 113, 128, 505, 680, 780
<b>Sonoma</b>	188,767	8,677	4.6%	1, 12, 37, 101, 116, 121, 128
<b>Stanislaus</b>	173,951	12,407	7.1%	4, 33, 99, 108, 120, 132, 140, 165, 219
<b>Sutter</b>	32,178	2,841	8.8%	20, 70, 99, 113
<b>Tehama</b>	24,970	12,879	51.6%	5, 32, 36, 89, 99, 172
<b>Trinity</b>	6,159	4,551	73.9%	3, 36, 299
<b>Tulare</b>	140,758	24,463	17.4%	43, 63, 65, 99, 137, 190, 198, 201, 216, 245
<b>Tuolumne</b>	22,783	1,946	8.5%	49, 108, 120, 132
<b>Ventura</b>	276,161	9,365	3.4%	1, 23, 33, 34, 101, 118, 126, 150, 232
<b>Yolo</b>	75,419	6,335	8.4%	5, 16, 45, 50, 80, 113, 128, 275, 505
<b>Yuba</b>	26,845	6,342	23.6%	20, 49, 65, 70

(END OF ATTACHMENT 1)