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

OPENING COMMENTS OF CHARTER FIBERLINK CA-CCO, LLC (U-6878-C) AND TIME WARNER CABLE INFORMATION SERVICES (CALIFORNIA), LLC (U-6874-C) ON THE AUGUST 6, 2021 ASSIGNED COMMISSIONER'S RULING

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Charter Fiberlink CA-CCO, LLC (U-6878-C) and Time Warner Cable Information Services (California), LLC (U-6874-C),[1] submit these opening comments in response to the Assigned Commissioner's Ruling, dated August 6, 2021 ("August 6 Ruling").[2]

I. INTRODUCTION

Charter is dedicated to closing the digital divide and supports initiatives aimed at bringing high-speed broadband to unserved communities throughout California.[3] To further advance broadband access objectives in California, Charter recommends modifying the proposed Anchor Build Fiber Highways proposal ("Middle Mile Proposal"), referenced in the August 6 Ruling, to ensure a more targeted focus on enabling last-mile connections to unserved

[1] Herein, the term "Charter" refers to the non-jurisdictional affiliates of Charter Fiberlink CA-CCO, LLC and Time Warner Cable Information Services (California), LLC. Charter reiterates its objection to the OIR's naming of its certificated affiliates as respondents in these proceedings insofar as neither of the named certificated entities provides broadband services and so have no direct interest in, or relevance to, this proceeding. Further, Charter also reiterates its prior objections to the extent the OIR seeks to include Charter's cable affiliates as respondents.

[2] These comments are filed on September 3, 2021, pursuant to the E-mail Ruling Extending Comment Deadline, dated August 20, 2021.

[3] Charter has invested billions of dollars in its network and technologies in California over the last several years, including approximately $1 billion in California in 2019 alone. Since 2016, Charter has brought high-speed broadband to tens of thousands of homes in California that previously lacked access to high-speed broadband.

communities lacking network facilities that can sustain high-speed broadband. The California Public Utilities Commission's ("Commission") Staff Report, required by Senate Bill 156, should take a "worst first" approach: that is, the Commission should first recommend middle-mile development to areas with the worst broadband access rather than expanding middle-mile availability in areas that are already flush with middle-mile fiber and last-mile connections.[4]

In identifying communities that lack middle-mile access, the Commission Staff should prioritize locations in lower density areas where network development is typically more costly and less economic, especially when encountering more challenging terrain, than in areas with high population density. Conversely, the Commission's Staff should avoid recommending diversion of resources toward highly-connected urban areas, where the rare unserved locations are typically due to factors unrelated to a lack of middle-mile infrastructure. At a minimum, the Staff Report must be based on accurate data—as it stands, there are data errors in Attachment 1 to the August 6 Ruling, which must be remedied in order for the Staff Report to be effective and compliant with the statutory directive. Finally, the Staff Report should take into account existing and near-term planned middle-mile networks in order to efficiently allocate resources.

Accordingly, Charter recommends specific revisions as set forth in **Attachment A**:

- Add middle-mile segments to unserved locations in majority-unserved counties and Census Designated Places ("CDPs") ignored by the Middle Mile Proposal; and
- Remove segments that duplicate currently available middle-mile fiber routes and pass through highly-connected areas currently served by high-speed broadband, including proposed routes in Los Angeles, Riverside, and Orange Counties.

Further, the Commission Staff Report should recommend prioritizing locations as follows:

[4] *See* Statement of Senator McGuire, Recording of August 18 Meeting of Middle-Mile Advisory Committee (2021), available at https://cdt.ca.gov/middle-mile-advisory-committee/middle-mile-past-meeting-resources/.

- Stage 1: prioritize routes to unserved areas of majority-unserved counties;
- Stage 2: prioritize routes to unserved areas of majority-unserved CDPs; and
- Stage 3: address all other unserved locations, without access to existing middle mile networks, and for which privately-funded network deployment is unlikely because low population density and/or challenging terrain would otherwise render last-mile projects uneconomic.

Below, Charter has provided comment on Issues 1 and 2 from the August 6 Ruling and provided further rationale for its recommendations.

II. ISSUE 1. IDENTIFYING EXISTING MIDDLE MILE INFRASTRUCTURE

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

1. The Proposed Routes Should be Revised to More Directly Address Unserved Communities, as Required by State and Federal Law.

State Law. Senate Bill ("SB") 156, as codified, requires the Commission Staff to produce a report recommending locations for a statewide open access middle-mile network to the California Office of Broadband and Digital Literacy ("OBDL").[5] The legislation requires the Staff Report to: [6]

1. **Identify** locations for the proposed middle-mile network "that will enable last-mile service connections" in communities with "no known [open access] middle-mile infrastructure…."[7]
2. **Prioritize** development of middle-mile routes to "enable last-mile connections to residences unserved by 25 mbps downstream and 3 mbps upstream"[8] in "areas with no known middle-mile network access" and "regions underserved by middle-mile

[5] Cal. Gov't. Code Section 11549.54(a).

[6] In addition to the Staff Report, the Commission also must "identify [and prioritize] state highway rights-of-way" but that effort is separate from the Staff Report identified above, and one that is submitted to the Department of Transportation, not OBDL.

[7] Cal. Gov't. Code Section 11549.54(b): "The commission shall identify statewide open-access middle-mile broadband network locations that will enable last-mile service connections and are in communities where there is no known middle-mile infrastructure that is open access, with sufficient capacity, and at affordable rates." (emphasis added).

[8] Cal. Gov't. Code Section 11549.54(d).

networks."[9]

The bill's legislative history reinforces this directive to prioritize routes that would connect unserved residences. When Governor Newsom's office announced the legislative proposal on July 12, 2021, it noted:

> This legislation will yield vital, broadened access for California families by prioritizing the *unserved and underserved* areas, facilities, households, and businesses that remain disconnected in the digital era.[10]

Thus, state law requires the Commission to focus its recommendations on the development of middle-mile routes that *enable* last-mile connections in unserved areas rather than middle-mile routes in areas for which middle-mile access is not the root cause of households' lack of broadband connectivity.

Federal Law. Funding for the proposed middle-mile network will be provided, in part, by the federal Coronavirus State and Local Fiscal Recovery Funds.[11] These funds must be deployed in accordance with federal requirements. The Department of Treasury's Fiscal Recovery Funds Frequently Asked Questions ("FAQs") articulate the need to focus on middle-mile and last-mile development that reaches unserved populations.[12] For instance, the FAQs include the following questions and answers:

6.5. What types of broadband projects are eligible?

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[9] Cal. Gov't. Code Section 11549.54(c).

[10] Press Release, Governor Newsom, Legislative Leaders Announce Historic Broadband Budget Bill (July 12, 2021), https://www.gov.ca.gov/2021/07/12/governor-newsom-legislative-leaders-announce-historic-broadband-budget-bill/ (emphasis added).

[11] California Budget Act of 2021, A.B. 28, 2021–2022 Sess. § 19.55 (Cal. 2021) (appropriating $7 Billion from the American Rescue Plan Act for internet connectivity). *See also* Department of Finance, Letter to Assembly Budget Committee 1 (May 14, 2021) (proposing Control Section 19.50 to appropriate $2 billion in 2021-22 "to build out an open access middle-mile broadband network.").

[12] U.S. Dept. of Treasury, *Frequently Asked Questions*, Coronavirus State and Local Fiscal Recovery Funds (July 19, 2021), https://home.treasury.gov/system/files/136/SLFRPFAQ.pdf.

> Projects must also be *designed to serve unserved or underserved households and businesses*, defined as those that are not currently served by a wireline connection that reliably delivers at least 25 Mbps download speed and 3 Mbps of upload speed.[13]

6.8. For broadband infrastructure investments, what does the requirement that infrastructure "be designed to" provide service to unserved or underserved households and businesses mean? [6/17]

> …states and localities should use funds to deploy broadband infrastructure projects whose objective is to provide service to unserved or underserved households or businesses.[14]

6.10. May recipients use payments from the Funds for "middle mile" broadband projects? [6/17]

> Yes. Under the Interim Final Rule, recipients may use payments from the Funds for "middle-mile projects," but Treasury encourages recipients to focus on projects that will achieve last-mile connections....[15]

The law is clear that funding must target projects in unserved areas, and only projects that would lead to last-mile connections.

2. The Commission Staff Report Should Target Areas For Which Lack of Middle-Mile Drives Lack of Broadband Access.

SB 156 directs the Commission to prioritize routes in "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."[16] While SB 156 appears to contemplate that a segment could be deployed in an urban area, there is nearly ubiquitous high-speed broadband availability and robust existing middle-mile in most urban areas. Further, as discussed below, many of the segments in urban areas in the Middle Mile Proposal would not accomplish the goal

[13] Id. at p. 28 (emphasis added).

[14] Id. at p. 29 (emphasis added).

[15] Id. at p. 29.

[16] Cal. Gov't Code § 11549.54(c).

of reducing the limited number of unserved households in urban areas. The Commission's focus must be in areas where lack of middle-mile is the key barrier to last-mile connection. As the Commission has recognized, "[t]he high cost of building middle-mile networks is a barrier for service providers to enter new markets, especially in *rural and Tribal areas*…."[17]

The Middle Mile Proposal does not appear to fully address the statutory requirements to focus on areas that need it most, instead proposing to build middle-mile fiber throughout the state without regard for existing availability of middle-mile and last-mile service. As presented in **Attachment A**, for many of the state's CDPs in which the majority of households are unserved, presumably, in part because of the lack of middle-mile availability, none of the fiber segments of the Middle Mile Proposal come within 10 miles of the CDP. Some of the many examples of these left-behind CDPs include: Mad River, Trinity County; Searles Valley, San Bernardino County, and Ponderosa, Tulare County. These CDPs have several common traits, including low-population density and challenging terrain.

It is critical that the Commission Staff Report identify and prioritize the "worst first," *i.e.*, communities without access to existing middle mile networks, low availability rates, and for which privately-funded network build-out is unlikely because low population density and challenging terrain render last-mile projects uneconomic.[18] The above-mentioned CDPs present

[17] *See, e.g.*, Decision Modifying Data Submission Requirements and Requiring Open Access for California Advanced Services and Fund Projects, D.21-03-006, at p. 10 (March 4, 2021) (emphasis added); Approval of funding for the grant application of Frontier California, Inc. (U-1002-C), from the California Advanced Services Fund (CASF) up to the Amount of $1,458,886 for the Lytle Creek Project for unserved areas in San Bernardino County, Resolution T-17613, at p. 3 (July 12, 2018) (finding middle-mile facilities indispensable for accessing last mile infrastructure "due to the project's terrain and location, and because there is no other wireline facilities provider in the project area.").

[18] Other states that recently developed open access middle-mile networks, such as Kentucky and Massachusetts, prioritized underserved and distressed regions, or regions lacking middle-mile access. In Kentucky, deployment began in the eastern, Appalachian region, and the Massachusetts open access middle-mile network was deployed in the western and north-central regions of the state. *See* KentuckyWired FAQs, Kentucky Communications Network Authority (2017),

exactly these conditions that the Middle Mile Proposal should be targeting.

3. The Proposal Would Divert Potentially Hundreds of Millions of Dollars Away from Unserved Rural Communities, and into Highly-Connected Urban Areas.

a. *The Proposal Envisions Devoting Significant Resources for Areas With Ubiquitous High-Speed Broadband Offerings, Such As Los Angeles County.*

While a $3.25 billion budget for middle-mile network development is significant, the current Middle Mile Proposal may leave many truly unserved, generally rural, communities without middle-mile access. The Middle Mile Proposal consists of approximately 8,823 miles of fiber. At an average cost of $455,000 per mile, as determined by the California Legislative Analyst's Office ("LAO"), completing the proposed middle-mile network would require at least $4.01 billion.[19] Further, the OBDL may consider undergrounding at least a portion of the network, in line with state policy that encourages and favors undergrounding fiber infrastructure in order to enhance reliability.[20] Undergrounding will increase broadband deployment costs, further underscoring the importance of targeting middle-mile development and deployment

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https://kentuckywired.ky.gov/about/Pages/faq.aspx (noting construction of Kentucky Wired began in Eastern Kentucky "because improved broadband service is one of the priorities of the SOAR, Shaping Our Appalachian Region, initiative."); Middle Mile Network, Massachusetts Broadband Institute (2020), https://broadband.masstech.org/middle-mile-network.

[19] According to a May 2021 Legislative Analyst's Office budget and policy post, building an open access middle-mile network near state highways would cost approximately $4 billion. The post explains: "This cost estimate uses a statewide average cost per mile that is based on past California Department of Transportation (Caltrans) projects that installed fiber-optic cables (either as standalone projects or in combination with other construction activities). The number of miles to install is based on the total length in miles of the state's highways, with some of the length removed to account for existing or planned broadband infrastructure projects. The product of the statewide average cost per mile and the total length in miles of the state's highways equals the estimated total cost of the middle-mile network." *See* Legislative Analyst's Office, *Preliminary Comments on the Governor's May Revision Proposal for Broadband Infrastructure* (May 24, 2021), https://lao.ca.gov/Publications/Report/4440.

[20] *See, e.g.*, Proposed Decision, Phase I Decision Revising Electric Rule 20 and Enhancing Program Oversight, R.17-05-010 at pp. 12, 24 (Apr. 7, 2021) (preserving and considering "opportunities to improve the Rule 20 program" to promote undergrounding of electric utility and telecommunications facilities).

efforts to unserved areas lacking middle-mile access.

As an example of unnecessarily diverting resources, despite the need and requirement to target funding to the "worst first," for the current Middle Mile Proposal, 496.88 miles of fiber are located in Los Angeles County. At the LAO's estimated cost of $455,000 per mile, this amounts to an allocation of approximately $226 million for middle-mile fiber development in Los Angeles County alone. Meanwhile, Los Angeles County has one of the highest existing percentages of served households in the state. 100 Mbps service is available to 99.4% of Los Angeles County residents, and 25/3 Mbps service is available to 99.5% of the population of the county.[21] Further, the vast majority of Angelinos have a choice of high-speed broadband from multiple ISPs.[22] Not surprisingly, Los Angeles County features well-developed middle-mile commercial networks available for lease from numerous communications infrastructure providers, as discussed in Section II(B)(1), below.

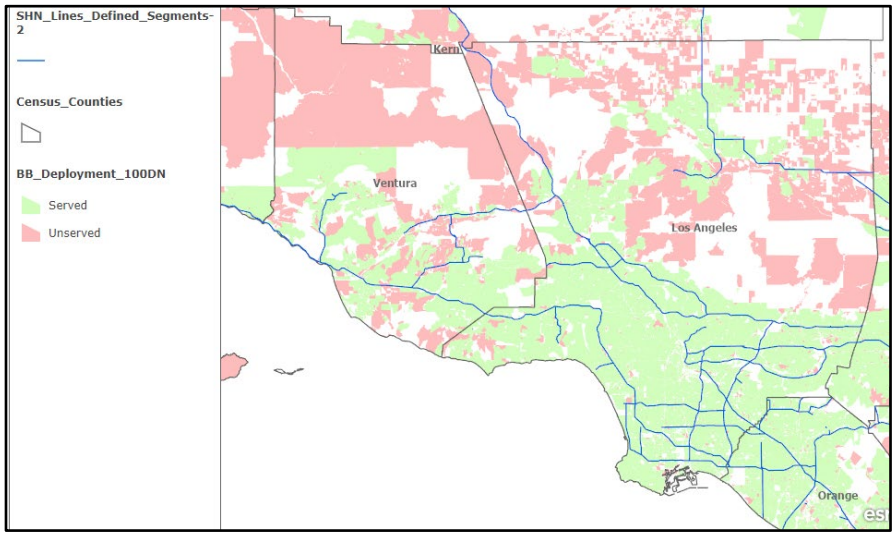
The enormous proposed investment in Los Angeles County middle-mile is entirely unnecessary, as demonstrated by Figure 1 below, which shows the proposed middle-mile routes (in blue) clustered in areas of Los Angeles County with near ubiquitous high-speed broadband availability. The figure shows served census blocks in green and unserved census blocks in red.

[21] Opening Comments of Charter Fiberlink CA-CCO, LLC (U-6878-C) and Time Warner Cable Information Services (California), LLC (U-6874-C) on the Assigned Administrative Law Judge's May 28, 2021 Ruling 13, R.20-09-001 (July 2, 2021).

[22] *Id.* at p. 28.

Figure 1 –Proposed Middle Mile Routes in Los Angeles County Where High-Speed Broadband Service is Available

Map of Los Angeles County[23]



At most, 0.5% of the residents in Los Angeles County may lack access to high-speed broadband, but that does not justify running approximately 500 miles of fiber segments through the County and prioritizing such redundant middle-mile fiber over areas that are unserved because of a lack of middle-mile network access.

As detailed further below, unserved households in Los Angeles County generally fall into two categories. Either the households are in remote areas of the County with challenging terrain, such as Hasley Canyon or Lake Hughes. These areas that could be served with support from public funding, such as the California Advanced Service Fund ("CASF") program, which could provide last-mile connections to the abundant middle-mile routes already existing in the County.

[23] HWY Defined Segments as of August 2021 ("SHN Lines Defined Segments – 2") (Aug. 19, 2021) (last visited on Sept. 2, 2021), https://www.arcgis.com/home/item.html?id=d23cf41e406d466fab3454 d8198-86455; CA fixed broadband deployment 100DN Dissolved ("BB_Deployment_100DN") (June 14, 2021) (last visited on Sept. 2, 2021), https://www.arcgis.com/home/item.html?id=57394dbc94aa48bab7b 9727c4d708707.

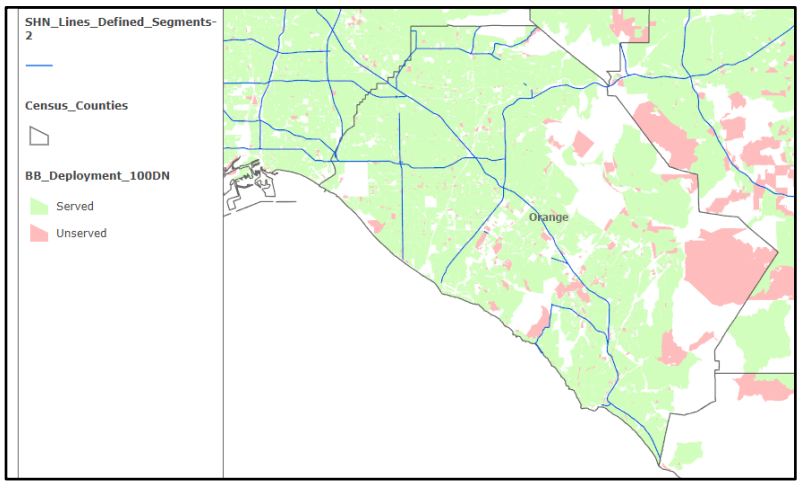
The second category consists of households in more densely-populated areas in which ISPs have faced connection challenges because of barriers to last-mile deployment from property owners, utility pole owners, and local permitting agencies, as discussed further below in Section II(A)(3)(c). For this second category, no amount of additional middle-mile will address this problem; rather, the state must address these issues separately with targeted policy.

Los Angeles County is just one of several highly-connected urban counties where the Middle Mile Proposal seeks to add duplicative routes. For example, the Middle Mile Proposal includes 145.14 route miles in Orange County, at a cost of $66 million; 305.57 route miles in San Diego County, at a cost of $139 million; and 422.55 route miles in Riverside County, at a cost of $192 million. According to FCC data, as of June 2020, 98.5% of the population in Orange County, 97.8% of the population in San Diego County, and 97.0% of the population in Riverside County were served at a download speed of at least 100 Mbps.[24] Figure 2 below shows proposed middle-mile routes running through the served areas of Orange County and Riverside County.

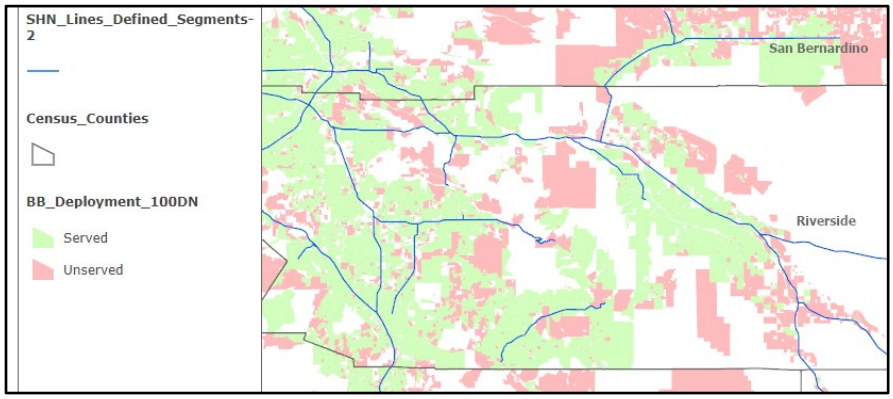
[24] *Fixed Broadband Deployment*, Federal Communications Commission (last visited Aug 31, 2021), https://broadbandmap.fcc.gov/#/.

Figure 2 –Proposed Middle Mile Routes in Served Areas of Orange and Riverside Counties

Map of Orange County[25]



Map of Riverside County[26]



The Commission Staff Report should be limited to identifying locations without access to existing middle mile networks, low availability rates, and for which privately-funded network build-out is unlikely because of low population density and challenging terrain, as discussed above. To the extent, the Commission Staff Report recommends middle-mile routes in highly-

[25] *See* footnote 22.

[26] *See* footnote 22.

connected urbans areas, which it should not, then at a minimum the OBDL should prioritize deployment to the majority-unserved counties and CDPS in Stages 1 and 2, as referenced above.

b. *The Middle Mile Proposal's recommended fiber segments in Los Angeles County and other urban areas fail to meet statutory requirements.*

Importantly, *none* of the Middle Mile Proposal fiber segments in Los Angeles County would meet the criteria of Government Code Section 11549.54(c), or the unserved prioritization under Section 11549.54(d).

Section 11549.54(c) requires the Commission to prioritize middle-mile network development in areas such as "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." As **Attachment B** shows, expansive middle-mile fiber networks run through Los Angeles County and other highly-connected urbans areas from multiple communications infrastructure providers, including Crown Castle, Zayo, Lumen, and Edison Solutions. The ecosystem of middle-mile network provision in these highly-connected urban areas would likely sustain growing broadband needs for years to come, and so meet none of 11549.54(c)'s characteristics for priority middle-mile development. As discussed below, additional middle-mile fiber routes in urban areas such as Los Angeles County would not necessarily "enable last-mile connections" given that broadband service limitations in those areas are unrelated to middle-mile availability.

c. *Additional middle-mile routes in highly-connected urban areas would not solve last-mile problems that drive lack of access in these areas.*

As discussed above, the Middle Mile Proposal includes numerous fiber segments that run directly through communities that currently have high-speed broadband access and also have additional middle-mile fiber capacity available for lease from communications infrastructure

providers.[27] While there may be rare instances in which a small percentage of urban households are unserved, the record in this proceeding is clear that middle-mile is not the problem in such cases. For example, as demonstrated below (and **Attachment B**), thousands of miles of middle-mile fiber are available for lease in Los Angeles and other urban areas.

The difficulty of reaching unserved households in dense urban areas primarily results from fundamental challenges related to infrastructure access. For example, property managers play a significant role in preventing deployments to unserved Californians. Charter has encountered numerous instances in which property managers, acting as gatekeepers, prevent Charter from accessing, and extending broadband service to, multi-dwelling units ("MDUs") and mobile home parks.[28] Such interactions with property managers leave MDU and mobile home park residents without broadband access, even though nearby high-speed broadband facilities exist and could easily be deployed.[29] For instance, Charter's experience with mobile home park owners reveals that owners often deny Charter access to build broadband infrastructure to connect lessees residing in their mobile home parks.[30] For example, Charter was awarded funding for three CASF projects in 2019.[31] Charter formally withdrew one of those projects due

[27] *See infra* Section II(B)(1).

[28] Charter OIR Opening Comments at p. 34 (July 2, 2021).

[29] Id.

[30] Resolution T-17680: Conditional approval of $1,377,174.97 in funding for three grant applications of Charter Communications Operating, LLC on behalf of its affiliated entities Spectrum Pacific West, LLC; Charter Fiberlink CA-CCO, LLC (U-6878-C); and Time Warner Cable Information Services California, LLC (U-6874-C) from the California Advanced Services Fund 4 (Dec. 20, 2019), https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M322/K691/322691585.PDF.

[31] Resolution T-17680: Conditional approval of $1,377,174.97 in funding for three grant applications of Charter Communications Operating, LLC on behalf of its affiliated entities Spectrum Pacific West, LLC; Charter Fiberlink CA-CCO, LLC (U-6878-C); and Time Warner Cable Information Services California, LLC (U-6874-C) from the California Advanced Services Fund 4 (Dec. 20, 2019), https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M322/K691/322691585.PDF.

to its inability to obtain right of entry needed to construct and a second project may suffer a similar fate. As a result, these communities remain unserved even though there middle mile facilities exist and funding was available for last mile construction. A 2019 FCC report recognized that the level of coordination and cooperation required between broadband providers, building owners, and tenants may make broadband deployment more difficult in MDUs.[32]

Los Angeles County and other urban areas boast numerous existing middle-mile routes, yet, they still face last-mile connection challenges in rare instances, and no amount of additional middle-mile routes will enable those last-mile connections. Simply put, rather than building redundant middle-mile facilities, the Commission should instead focus its middle-mile development recommendations on: (1) deploying middle-mile fiber in areas where it is truly needed, as described above in Section II(A)(2); and (2) addressing barriers to access arising from non-middle-mile limitations and challenges. To that end, the Commission should revise the recommended middle-mile routes to remove fiber segments from areas with ample and widely-available middle-mile routes and high rates broadband availability as set forth in **Attachment A**.

B. Question: 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?

1. There Are Thousands of Miles of Middle-Mile Fiber with Sufficient Capacity Available for Commercial Lease at Market-Based Rates throughout California; Duplicating These Routes Would be Wasteful.

Private infrastructure providers, which supply dark and lit fiber to ISPs, have already deployed thousands of miles of fiber routes in the state. Many of these middle-mile routes traverse and serve urban areas for which the Commission now proposes to add even more

[32] Steven Kauffman and Octavian Carare, *An Empirical Analysis of Broadband Access in Residential Multi-Tenant Environments*, p.2 (July 2019), https://docs.fcc.gov/public/attachments/DOC-358298A1.pdf.

middle-mile fiber. Communications infrastructure providers such as Crown Castle, CENIC, Zayo, Digital West, Lumen, and Edison Solutions, as well local governments (such as Pasadena and Santa Monica) run thousands of miles of fiber, especially through urban areas like Los Angeles County. These providers offer service at market rates, and publicly available maps of various fiber routes are available and should be taken into consideration when recommending allocation of money and resources to already served areas.

In identifying locations for middle-mile development, the Commission should prioritize "communities where no known middle-mile infrastructure that is open access, with sufficient capacity, and at affordable rates." First, SB 156 defines "open access" as equal non-discriminatory access to eligible entities on a technology and competitively neutral basis. Nearly all of the communications infrastructure providers listed above are certificated public utilities, and so, by law, their services are non-discriminatory to the extent the services are offered as a regulated service.[33] Second, communications infrastructure providers that offer middle-mile services advertise high capacity offerings.[34] Third, it is unclear what is meant by the word "affordable." The Commission has not defined that term in the context of middle-mile fiber, but we note that there is a competitive market, and many middle-mile providers have submitted filings, approved by Commission Staff, indicating that at least the Commission believes the rates

[33] *See* Cal. Pub. Util. Code §§ 453 and 454.

[34] *See, e.g.*, *Mapbook*, Zayo (2021), https://www.zayo.com/global-network (offering "[r]eliable, high-capacity connectivity"); *News Details: Data Center Firm DataBridge Sites Selects Crown Castle To Provide Network Service For Its Customers*, Crown Castle (2020), https://www.crowncastle.com/news/data-center-firm-databridge-sites-selects-crown-castle-to-provide-network-service-for-its-customers (noting "Crown Castle's optical network. . . provides secure, high capacity bandwidth. . .").

to be "reasonable."[35]

Attachment B contains an illustrative list of additional communications infrastructure providers whose middle-mile fiber routes provide connectivity to highly-connected urban areas throughout California.

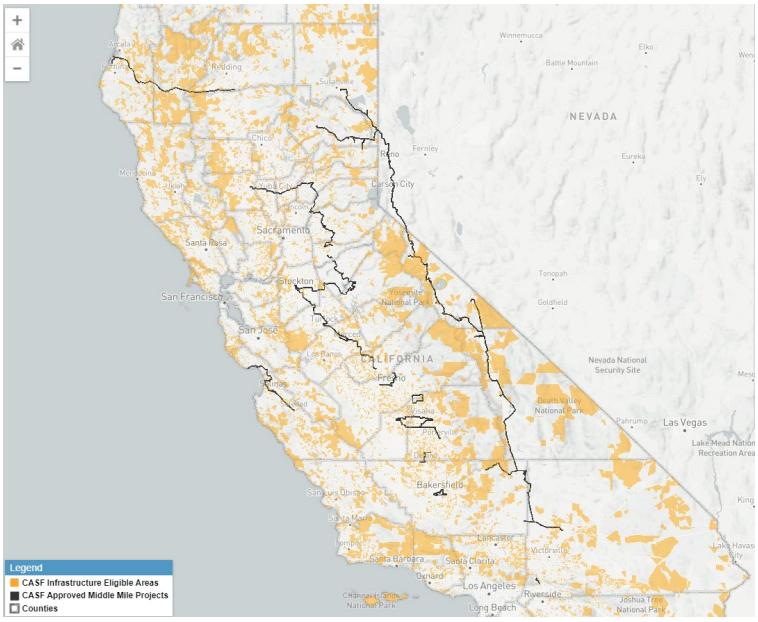
2. Hundreds of Miles of Publicly-Funded Middle-Mile Networks Exist in California.

In addition to the numerous middle-mile routes discussed above, both the state and federal government have funded numerous open access middle-mile projects in California.[36] Figure 3 below shows CASF middle-mile routes. The Middle Mile Proposal would duplicate many of these routes including routes in Monterey County and in Kern County, near Bakersfield. The Commission should consider allocating resources for middle-mile development to areas that are not—or will not in the future be—served by CASF middle-mile routes.

[35] *See, e.g.*, *In the Matter of the Application of NextG Networks of California, Inc. for a Certificate of Public Convenience and Necessity to Provide Limited Facilities-Based and Resold Competitive Local Exchange, Access and Interexchange Service*, Opinion at p. 1, Decision 03-01-061 (Jan. 3, 2003) (granting NextG Networks, now Crown Castle, a CPCN and authorizing "service under the rates, charges, and rules" set forth in CPCN); *Application of Digital West Networks, Inc. for a Certificate of Public Convenience and Necessity to Provide Facilities-Based and Resold Competitive Local Exchange Telecommunications Services*, Decision Granting Digital West Networks, Inc. a Certificate of Public Convenience and Necessity In Order To Provide Full Facilities-Based and Resold Compet[i]tive Local Exchange Service at p. 1, Decision 17-08-027 (Aug. 24, 2017) (granting Digital West a CPCN and authorizing "service under the rates, charges, and rules" set forth in the CPCN).

[36] California Interactive Broadband Map, https://www.broadbandmap.ca.gov/ (last visited Sept. 2, 2021).

Figure 3 – CASF Approved Middle Mile Projects



III. ISSUE 2. PRIORITY AREAS

A. Question: 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?

1. Where the Majority of a County is Unserved, it Can be Assumed that Additional Resources are Necessary to Address Unserved Locations.

As an initial matter, when providing its first Staff Report to OBDL, the Commission should focus on priority areas, which can be revised in subsequent reports under the statute. As noted above, the Staff Report should prioritize as follows: Stage 1 — prioritize routes to unserved areas of majority-unserved counties; Stage 2 — prioritize routes to unserved areas in majority-unserved CDPs; and Stage 3 — address all other unserved locations that lack access to existing middle mile networks, and for which privately-funded network deployment is unlikely because low population density and/or challenging terrain render last-mile projects uneconomic.

Charter agrees that it is generally reasonable to assume counties with a disproportionately high number of unserved households, could benefit from additional resources to ensure

connectivity, though Charter is not aware whether the primary insufficient middle-mile network access is the main culprit, necessarily. Conversely, certain locations in urban areas may also feature high rate of unserved households; however, such areas typically do not lack middle-mile network access. Rather, such areas typically suffer from other deployment challenges. It is often the case that when pockets of an urban county are largely unserved by fixed broadband, that is because infrastructure access issues as discussed above in Section 3(c).

2. The Commission Should Ensure Accurate Data When Evaluating Locations and Use Statutory-Designated Speed Thresholds.

As an initial matter, in identifying unserved areas, the Commission must be careful to use accurate data. It appears that Attachment 1 of the August 6 Ruling contains data errors. For example, the Attachment lists Shasta County as being 100% unserved. Charter serves Shasta County and can therefore confirm that this data is inaccurate. Indeed, the Commission's Interactive Broadband map lists Shasta County as having 76.4% served households.[37]

Additionally, Charter notes that the Commission should adhere to relevant statutory directives. Although the August 6 Ruling focuses on soliciting feedback from counties regarding whether they are unserved by broadband speeds of "100 Mbps download,"[38] the statute directs the Commission to "prioritize locations that enable last-mile connections to residences unserved by *25 [M]bps downstream and 3 [M]bps upstream*."[39] The Commission's recommendations should incorporate the speed threshold identified in the statute.

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[37] California Public Utilities Commission, *EOY 2019 CA Fixed Broadband Deployment Analysis by Household* (Aug 10, 2021) (last visited on Sept. 2, 2021), https://public.tableau.com/app/profile/cpuc/viz/EOY2019BroadbandDeploymentAnalysisByHousehold/County.

[38] Order Instituting Rulemaking Regarding Broadband Infrastructure Deployment and to Support Service Providers in the State of California, R.20-09-001, Assigned Commissioner's Ruling (Aug.6, 2021) at p. 5, Attachment 1 – Anchor Build Fiber Highways and Broadband Served Status by County (indicating "Unserved Households at 100 Mbps").

[39] SB 156 § 3, 11549.54(d) (emphasis added).

B. Question: 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)?

The statutory directive set forth in SB 156 and Cal. Gov't. Code Sections 11549.54(c) and (d) is to deploy middle-mile networks in order to further last-mile connectivity in underserved areas. The Commission's development of an open access middle-mile network must be guided by the objective of enabling last-mile connections in unserved communities.

Accordingly, the Commission should focus its recommendations on the deployment of middle-mile to unserved areas (1) where an absence of middle-mile exists and (2) where the fixed costs of deploying middle-mile infrastructure to an unserved community renders the deployment of a last-mile network in that community uneconomical. In practice, this means that the Commission Staff's recommendations should focus on the delivery of middle-mile connections to communities that are both geographically remote or obstructed by challenging terrain *and* have sufficient population density to support a business case for last-mile network deployment. These forms of isolation are exactly the characteristics that the Middle Mile Proposal should prioritize when designing network segments. These isolated communities are those unlikely to be served *because of* the economic challenges associated with deploying middle-mile infrastructure.

IV. CONCLUSION

Charter remains committed to closing the digital divide and supports efforts to expand high-speed broadband access to unserved communities throughout the state. Under SB 156, the Commission must provide a recommendation that prioritizes development of middle-mile routes to "enable last-mile connections to residences unserved by 25 mbps downstream and 3 mbps." Thus, Charter urges the Commission to focus its recommendations on development of an open

access middle-mile network on enabling last-mile connections to truly unserved communities. Absent such focus, the Commission risks making recommendations to expend limited resources on the development of middle-mile fiber networks that do nothing to extend access to Californians who lack broadband access.

The Middle Mile Proposal risks duplicating existing middle-mile networks and attempts to address last-mile challenges with redundant middle-mile development in urban areas flush with middle-mile infrastructure. Deploying middle-mile fiber in such areas will not address limitations of last-mile access. For example, Los Angeles County and other urban areas that have very high broadband availability, and a low proportion of unserved households, do not need expanded middle-mile development. Middle-mile build-out in such areas will not resolve broadband access challenges for unserved households in those areas, and therefore, the Commission's recommendations should not prioritize middle-mile development in those areas. The Commission should focus its middle-mile development recommendations on those areas of the state in which lack of middle-mile networks is truly the bottleneck to broadband access.

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Respectfully submitted,

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Attachment A

Proposed Modifications to Middle Mile Proposal

Illustrative List of Segments to Add

Middle-mile segments should be added to locations with a majority of the CDP unserved are located 10 miles or more beyond the proposed middle-mile network, including the following CDPs:

- Mad River, Trinity County: 100% of households are unserved (108 unserved households)
- Searles Valley, San Bernadino County: 87% of households are unserved (438 unserved households)
- Diablo Grande, Stanislaus County: 51% of households are unserved (111 unserved households)
- Ponderosa, Tulare County: 100% of households are unserved (6 unserved households)

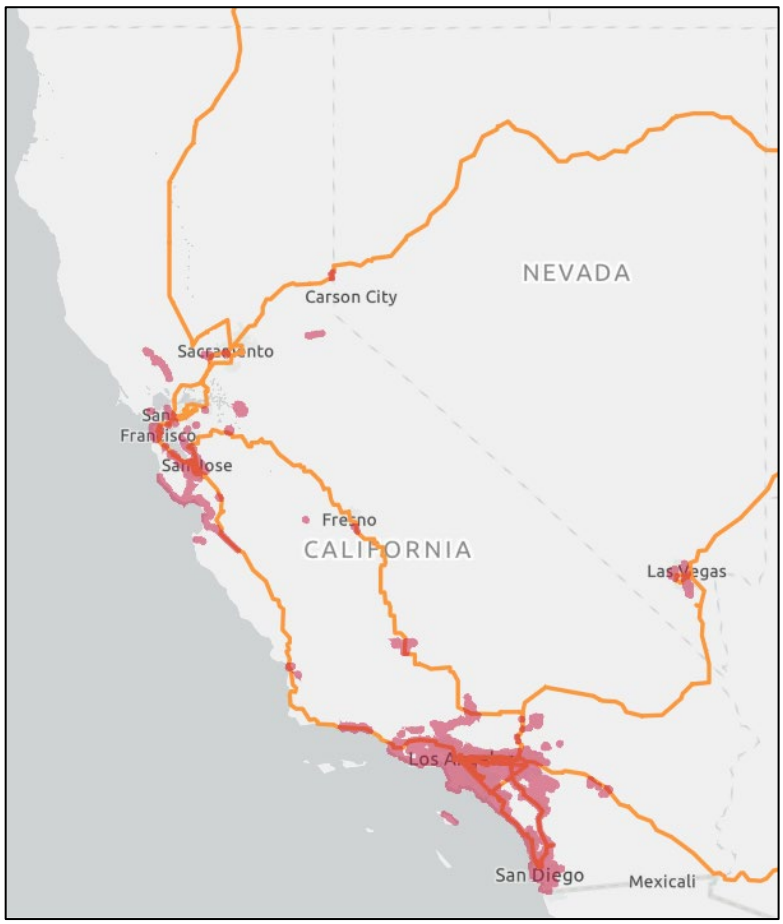
Illustrative List of Segments to Remove of De-Prioritize

- Segments along Routes 60, 215 in Riverside County
- Segments along Route 5 in San Diego County
- Segments along Routes 5, 22, 91, 405 in Orange County
- Segments along Routes 1, 5, 91, 105 in Los Angeles County

Attachment B

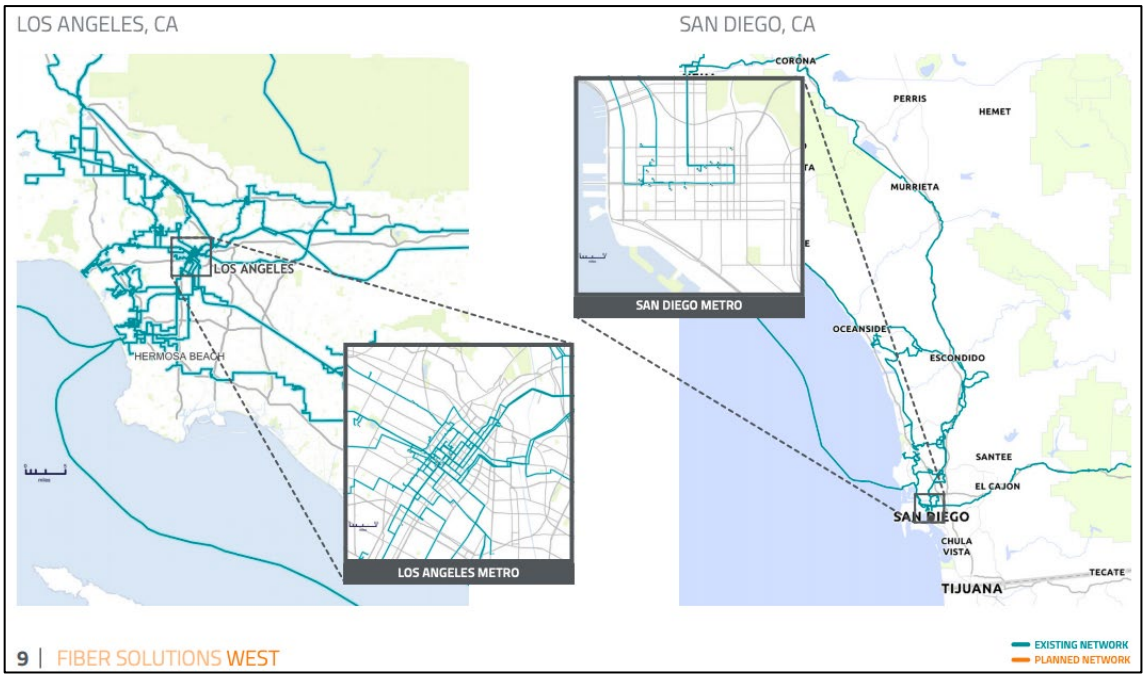
Illustrative List of Existing Commercially-Available Middle Mile Networks

Crown Castle[40]



[40] *Infrastructure Solutions*, Crown Castle (last visited Sept. 2, 2021), https://www.crowncastle.com/infrastructure-solutions/?level=5&center=-120.33109,39.76635.

Zayo[41]

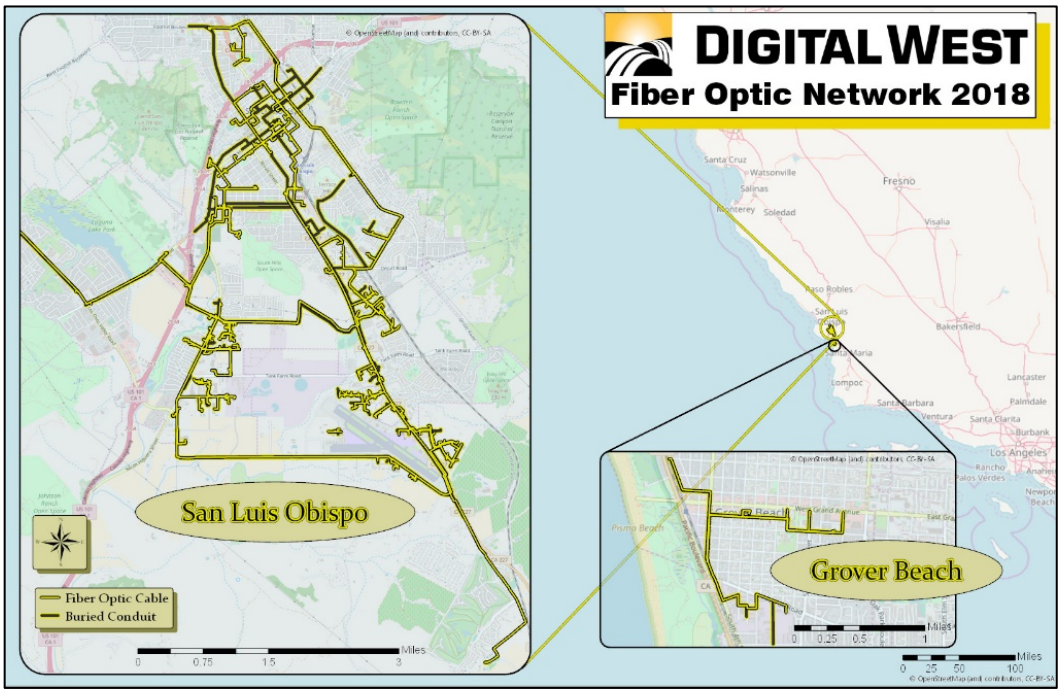


[41] Zayo, *Mapbook* (2021), https://zayo.com/global-network.

Southern California Edison Carrier Solutions[42]

[42] Southern California Edison Fiber, *Dependable Fiber Internet in Los Angeles County* (2021) (last visited Sept. 2, 2021), https://www.edisoncarriersolutions.com/fiber-internet-los-angeles. Edison Solutions operates over 6,000 route miles, much of which is concentrated in LA.

Digital West[43]



[43] Digital West, *San Luis Obispo* (2021) (last visited Sept. 2, 2021), https://www.digitalwest.com/partnerships/municipalities/city-of-san-luis-obispo/.

Lumen[44]

[44] Lumen, *Global Network* (July 2020) (last visited Sept. 2, 2021) , https://assets.lumen.com/is/content/Lumen/lumen-global-network-maps?Creativeid=c9f994c3-02ae-4e20-ade0-f9725a9355c0.

CENIC[45]

[45] CENIC's CalRen primarily serves research and educational institutions, but it provides 8,000 route miles of fiber for such institutions. CENIC, *Network Maps* (last visited Sept. 2, 2021), https://cenic.org/network/operations/maps.