

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Nebraska Public Service Commission, on its Own Motion, to Implement Standards for Verification of Broadband Service Provider Coverage and Speed Data

Application No. NUSF-133

ORDER OPENING DOCKET
AND SEEKING COMMENT

Entered: March 15, 2022

**COMMENTS OF QWEST CORPORATION d/b/a/ CENTURYLINK QC AND
UNITED TELEPHONE COMPANY OF THE WEST d/b/a CENTURYLINK**

Pursuant to Commission Order dated March 15, 2022 (“Opening Order”) in the above-referenced docket, Qwest Corporation d/b/a CenturyLink QC and United Telephone Company of the West d/b/a CenturyLink (collectively, “CenturyLink”) hereby respectfully provide the following comments on the Commission’s proposed standards for the verification of broadband service provider coverage and speed data pursuant to Neb. Rev. Stat. § 86-324.02, enacted in 2021, for recipients of ongoing high-cost support from the Nebraska Telecommunications Universal Service Fund (“NUSF”).

1. In its Opening Order, the Commission proposes to adopt the general framework, with adjustments, of USAC’s Performance Measures Model (hereinafter “PMM”) and seeks an analysis of potential crowdsourcing or consumer-initiated testing platform to compliment the formal PMM. In summary, Lumen supports the Commission’s adoption of the PMM testing platform but strongly cautions the Commission against relying too heavily on consumer-initiated testing results given that consumer cooperation has historically resulted in significant additional cost and delay in connection with the Connect America Fund (“CAF”).

2. Lumen has been involved in numerous speed testing initiatives in many of its 37 states with ILEC operations. Throughout this, Lumen has participated in line speed and latency

measurements performed four fundamentally different ways. The PMM testing platform is consistent with both the federal approach and Nebraska law.

I. Selection of Locations

3. The Commission proposes that the sample size for testing should be a Commission-identified statistically valid and unbiased sample of the provider's network. The Commission seeks comment on (1) how to determine locations for testing, (2) how to identify a statistically valid sample for meeting the requirement in Neb. Rev. Stat. § 86-324.02, (3) whether carriers should be required to file a list of locations with active subscribers and, if so, when and how frequently.

4. Lumen notes that Neb. Rev. Stat. § 86-324.02 requires "a random sample of locations of consumers who subscribe to services." Statute does not require a statistically valid random sample, nor does statute require a random sample of locations for which broadband service was made available. While this may sound like differences without distinction, it will have a substantial impact on the Commission's proposal. Likely, a pure statistically valid random sample size will not be feasible.

5. First, following common statistical concepts, a minimum sample size of 30 is often accepted as statistically valid; however, for the Commission's purposes, setting an objective definition of a statistically valid sample size is likely impossible due to the numerous factors impacting speed testing. In many situations there may not be 30 locations of consumers who subscribe to services, especially immediately at the end of the project within the timeframe for speed testing. Over time there may be sufficient customers, but this might take months depending upon the density and many other factors outside the control of the company such as availability of wireless or fixed wireless services and the contract provisions of those services.

Second, not only does a speed test require actual subscribing customers, but it also requires customers to consent to a speed test and allow field technicians onto the customer premises and utilize company-provided router/modem equipment. Realistically, not all consumers are comfortable with allowing company representatives onto their property, and not all customers use the company-provided router/modem equipment. Finally, it is not feasible to test locations where broadband service has been made available but the resident at that location has opted not to subscribe.

6. For the forementioned reasons, Lumen recommends that the Commission not adopt such a hardline rule for what constitutes a statistically valid sample size. Such specificity is neither required by statute nor is it realistic to implement. Instead, the proposed sample size the Commission put forward in the Nebraska Broadband Bridge Program of (a) 10 for 50 or fewer locations, (b) 10% for 51-500 locations and (c) 50 for more than 501 locations,¹ is reasonable and would ensure the Commission's objectives have been achieved. Lumen further recommends that if the initial test results indicate areas of concerns, the Commission can request the carrier to augment its testing at that time on a case-by-case basis to ensure the Commission's goals have been achieved.

II. Acceptable End Points of Testing

7. The FCC has identified acceptable end points for testing purposes and the Commission seeks comment on whether those should be adopted in Nebraska. Lumen suggests that there is no reason to reinvent the wheel. The FCC's parameters are workable and accomplish the Commission's objectives. Regarding acceptable alternative testing parameters, Lumen suggests the Commission allow such alternatives on a case-by-case basis upon full explanation and good

¹ NE PSC Application No C-5368, In the Matter of the Nebraska Public Service Commission, on its Own Motion, to Administer the Nebraska Broadband Bridge Program in the 2022 Program Year, Entered February 1, 2022, page 5.

cause showing by the carrier. It would not be prudent to exclude all unforeseeable circumstances.

III. Daily Test Period and Testing Intervals

8. The Commission seeks comment on whether the Commission should utilize the same daily test period as established by the FCC, which is a daily testing period between 6:00 p.m. and 12:00 a.m. local time, including weekends. One of the learnings of the Covid pandemic is that the busy period for broadband usage is between the 6:00 p.m. and 12:00 a.m. Consequently, this should be the adopted test period. If the test is successful during the busy period, it can reasonably be concluded that off-peak times can also accommodate the data traffic. Expanding the test period beyond this time is simply testing to test and will provide the Commission with no additional benefits.

9. In terms of test intervals, the Commission seeks comment on requiring a minimum of one download test and one upload test per testing hour at each subscriber test location for a minimum of one week in accordance with Neb. Rev. Stat. § 86-324.02. Lumen supports this proposal.

IV. Consumer Input and Validation

10. The Commission also seeks comment as to how consumer-initiated speed testing might be encouraged and incorporated to measure the consumer experience. Any consumer-initiated speed testing requirement, however, would not be consistent with Neb. Rev. Stat. § 86-324.02 as a stand-alone testing platform. While this docket is specific to broadband projects supported by the NUSF, Lumen is concerned the Commission's intentions go beyond the scope of NUSF-funded projects, at least for price-cap regulated carriers. The overall level of NUSF-funded broadband projects are relatively small and may not warrant a comprehensive consumer-initiated

or crowdsourcing initiative. If the Commission's intent is more general and widespread than NUSF-funded broadband projects, a generic docket may be in order.

11. Specifically, the Commission invited comment on the following:

- Whether to require providers disseminate information to their subscribers about how they can test their broadband speeds and provide that information to the FCC and to the Commission;
- Whether and how to incentivize providers to initiate programs which would encourage consumer-initiated testing;
- Whether to encourage, as additional validation, testing from the customers' premises, either utilizing devices placed on the customer side of network equipment, or via the customer's modem;
- Whether to incentivize providers to offer equipment that can conduct speed tests in a manner that meets the Commission's standards;
- Whether to incentivize the use of pilot programs such as the one brought forth by researchers from the University of Nebraska-Kearney, and if so, how many tests should be conducted in order for the data to be considered statistically valid;
- Ways to inform consumers about broadband performance testing and how they can participate in the process; and
- What minimum criteria for validity of data should be adopted if consumer-initiated tests are conducted and results submitted to the Commission, including how the Commission should safeguard individual subscriber data and whether this information should be shared both publicly with the FCC and other entities.

12. Lumen suggests that the time is not yet ripe for the Commission to undertake a comprehensive consumer-initiated or crowdsourced testing platform. While Lumen recognizes the desire to measure consumer input for NUSF-funded projects, crowdsourcing and consumer-initiated testing have significant challenges that may compromise the reliability of meaningful test results. In short, consumer-initiated testing may result in skewed outcomes because of

unanticipated variables on a consumer-by-consumer basis. As an initial matter of concern, customers may not recall which service tier they have subscribed. Second, any speed test should be performed using a verified speed testing server/platform to ensure consistent results. Third, significant speed degradation could occur if the customer is not using the appropriate modem and router. Fourth, the end-user testing device – whether it is a computer, laptop, tablet, or phone – must have the capacity to operate at the subscribed speeds as many devices are simply not capable of processing higher speeds. This in turn gives rise to the question of how the Commission will verify what equipment any given consumer is using to perform testing. Finally, steps must be taken to ensure all other web applications are not inadvertently interfering with the speed test, including but is not limited to wi-fi connections, other devices and applications that may be operating in the background unbeknownst to the tester. E.g. The Commission cannot be expected to monitor how many times a teenager left Netflix running in the background while the test is performed. Unlike telecommunication companies that will test from their data hub to the customer's premises, the customer would presumably be using a third-party website to perform testing, and neither the Commission, the consumer, nor the company can control or account for potential delays on the route to said third-party website, which may involve multiple backbone networks.

Lumen is not suggesting crowdsourcing or consumer-initiated speed testing cannot be useful; rather, Lumen suggest that any such initiative be placed in proper context. Consumer-initiated speed testing results can be an indicator for a carrier to perform additional testing although reaching firm conclusions based on this testing platform is not realistic for fiber-based connections. For example, for fiber to the premises connections, consumer-initiated speed testing may be useful to identify on a customer-specific basis if there are equipment problems

with the company's fiber electronics or the customer router. As such, poor speed results could indicate a need for the company to perform a remote test to determine which end of the connection is causing the problem. However, reaching broader conclusions using consumer-initiated testing are not realistic for fiber-based connections, and because any NUSF supported projects are likely to be fiber-based projects, developing a crowdsourcing initiative for DSL-based applications is a moot point and inefficient use of Commission resources.

V. Subscription-Based or Publicly Collected Speed Test Resources

13. The Commission next seeks comment on using other subscription-based or publicly collected speed test resources, such as Ookla data, to validate speed test information collected from carriers; whether the Commission utilize other sources or contract with a third-party vendor to conduct randomized testing, and if so, what vendors the Commission should consider.

14. Lumen suggests that such an initiative is not needed at this time and the Commission only consider this option if the other enacted testing procedures do not provide comprehensive results sufficient to ensure the carriers are providing the requisite speeds for the project areas. Testing, regardless of type, has inherent costs. Unless there arises a demonstratable need to perform such a test, the public would be best served if the limited funding available for broadband is spent on building and maintaining a robust network rather than paying third parties to perform a function that carriers are already capable of satisfying.

VI. Ongoing Testing

15. Finally, the Commission invited comment as to the extent to which provider-initiated speed tests may be required on an on-going basis, including whether it is feasible for a provider to automatically conduct speed testing from the provider's own premises. Specifically,

- Is it feasible for a provider to automatically conduct speed testing from the provider's own premises? If not, why not?
- What barriers exist to prevent providers from conducting tests at the provider's nodes, offices, or directly outside a subscriber's home? At what locations can provider-initiated tests feasibly be conducted?

16. Lumen understands the Commission's questions to mean remote testing. Lumen can perform remote speed testing at a customer premises without the customer's direct involvement; however, this remote testing can only be performed if the customer is using a company-provided modem. Lumen is unable to perform remote speed testing if the customer opts to use their own modem. Lumen is also unable to perform any speed test directly outside a subscriber's home because all necessary connectivity equipment is located inside the home or business for security and weather protection.

Dated this 14th day of April, 2022.

QWEST CORPORATION d/b/a CENTURYLINK
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 14th day of April 2022, a true and correct copy of the foregoing was served via electronic mail to:

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