Exh. SB-1CT
Docket UT-240029
Witness: Sean Bennett
REDACTED

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of the **QWEST CORPORATION; CENTURYTEL OF WASHINGTON; CENTURYTEL OF INTERISLAND; CENTURYTEL OF COWICHE; AND UNITED TELEPHONE COMPANY OF THE NORTHWEST** **to be Competitively Classified Pursuant to RCW 80.36.320**	**DOCKET UT-240029**

TESTIMONY OF

SEAN BENNETT

STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

Staff's Competition Study and its Application to the Factors in RCW 80.36.320(1)

April 3, 2024

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I. INTRODUCTION

Q. Please state your name and provide your business address.

A. My name is Sean Bennett, and my business address is 621 Woodland Square Loop SE, Lacey, Washington, 98503. My business mailing address is P.O. Box 47250, Olympia, Washington, 98504-7250. My email address is sean.bennett@utc.wa.gov.

Q. By whom are you employed and in what capacity?

I am employed by the Washington Utilities and Transportation Commission (Commission) as an Acting Section Manager in the telecommunications section of the regulatory services division. At the Commission, I have primarily worked on tariff revisions, designation of Eligible Telecommunications Carriers, and universal service. The focus on universal service includes administering the Washington Universal Communications Services Program, working with small Incumbent Local Exchange Carriers (ILECs) and their broadband availability data, mapping telecom service territories and broadband buildout areas, and verifying that providers meet their UTC and federal broadband buildout obligation. My work also involves collaborating with the Washington State Broadband Office on the development of the 5-year Action Plan, Digital Equity, and the deduplication process to identify areas with a definable broadband buildout obligation.

Q. Would you please provide your educational and professional background?

A. I have a Bachelor of Arts degree in Psychology from the University of Washington and I have eight years of experience as a Regulatory Analyst with the Utilities and Transportation Commission. Prior to the Commission, I worked in the finance industry. I completed the National Association of Regulatory Utility Commissioners Rate School, the King County ArcGIS Pro training program, as well as the Environmental Systems Research, Inc. Spatial Data Science certification.

Q. Have you previously testified before the Commission?

A. Yes. I testified in Docket UT-161082 concerning the cancellation of the registrations of telecommunication companies that failed to file their annual report and pay their regulatory fees.

II. SCOPE AND SUMMARY OF TESTIMONY

Q. What is the purpose and scope of your testimony?

A. I respond to the petition filed by various CenturyLink entities (whom I will refer to collectively as CenturyLink in the singular when testifying about all of them together, and by individual entity name when referring to that entity in particular) on January 8, 2024, to seek competitive classification under RCW 80.36.320. I also respond to the testimony of Peter G. Gose, filed by CenturyLink on February 16, 2024.

Q. How have you organized your testimony?

A. The remainder of my testimony is broken into four sections. In Section III, I provide an overview of CenturyLink's petition and the law applicable to it, although I stress here that I am not a lawyer and that I do not offer legal opinion. In Section IV, I describe the telecommunications market in which CenturyLink operates and provide an overview of the possible alternatives to CenturyLink's voice services. I then, in Section V, describe the competition study created by Staff, which is Exhibit SB-2C, in order to assess whether CenturyLink's services are subject to effective competition. Finally, in Section VI, I will explain why each company's services are not subject to effective competition through an analysis of the statutory factors applicable to CenturyLink's petition. In doing so, I provide a granular, in-depth analysis concerning the competition CenturyLink faces in Washington based on the most recent (June 30, 2023) Broadband Data Collection (BDC) broadband availability data collected and published by the Federal Communications Commission (FCC) as well as a U.S. Census Bureau survey that includes data about mobile internet access inside homes.[1]

Q. Please summarize your recommendations.

A. Based on Staff's competition study and the associated analysis, Staff recommends that the Commission deny CenturyLink's petition. Staff's analysis identifies a significant number of customers who do not have affordable 25/3 Mbps internet availability, do not have mobile internet access, or do not have either. Staff's recommendation is a result of

[1] Components of Staff's Competition Study are compiled using a dynamic relationship-based dataset held within PowerBI, which is a data visualization program produced by Microsoft Corporation. To the extent that I reference the competition study in my testimony, I refer to snapshots of the dataset within the context of discussing specific factors.

its in-depth analysis for fixed voice service, fixed internet access availability, and mobile internet access. Staff concludes all five ILECs[2] *have significant captive customer bases* that lack reasonably available alternatives to CenturyLink's services. The ILECs, accordingly, are not subject to effective competition.

Q. Have you sponsored any exhibits in support of your testimony?

A. Yes. I sponsor Exhibits SB-2C through SB-27:

- Exh. SB-2C Staff's Competition Study
- Exh. SB-3 WA Commerce SBO TimeLine printed on 3-25-2024
- Exh. SB-4 Public FCC News Release on 3-20-2024
- Exh. SB-5 Staff's Affordability Survey
- Exh. SB-6 CenturyLink's response to UTC Staff DR No. 29
- Exh. SB-7 CenturyLink's response to UTC Staff DR No. 44
- Exh. SB-8 FCC Broadband Map "About" webpage
- Exh. SB-9 CenturyLink's response to UTC Staff DR No. 18
- Exh. SB10 Report Extract Urban and Rural areas "served" with broadband and 5G
- Exh. SB-11 Viasat's webpage for requesting services
- Exh. SB-12 Hughesnet's webpage for requesting services
- Exh. SB-13 Starlink's webpage for requesting services
- Exh. SB-14 DOR Voice Counts
- Exh. SB-15 US Census Bureau Population Estimates
- Exh. SB-16 CenturyLink's response to UTC Staff DR. No. 28
- Exh. SB-17 CenturyLink's response to UTC Staff DR. No. 34
- Exh. SB-18 National Broadband Fabric Data Dictionary.
- Exh. SB-19 CenturyLink's first supplemental response to UTC Staff DR No. 47

[2] CenturyTel of Cowiche, Inc., CenturyTel of Inter Island, Inc., CenturyTel of Washington, Qwest Corporation, and United Telephone Company of The Northwest.

- Exh. SB-20 CenturyLink's response to UTC Staff DR. No. 48
- Exh. SB-21C Map of the East Sound Wire Center and includes internet availability and Confidential CenturyLink subscriber locations
- Exh. SB-22C Confidential Normalized Violation and Cases per 1,000 Access Lines
- Exh. SB-23 Consumer Complaints over 5-Years (Table)
- Exh. SB-24 Consumer Complaints over 5-years (Graph)
- Exh. SB-25 DOJ HHI Guidelines
- Exh. SB-26 HHI Analysis Summary
- Exh. SB-27 CenturyLink's response to UTC Staff DR No.21

III. CENTURYLINK'S PETITION

Q. Please describe your understanding of CenturyLink's petition.

A. On January 8, 2024, CenturyLink filed a petition requesting that the Commission classify Qwest Corporation, CenturyTel of Washington, CenturyTel of Inter Island, CenturyTel of Cowiche, and United Telephone Company of the Northwest as competitive telecommunications companies under RCW 80.36.320.

Q. What is your understanding of RCW 80.36.320?

A. Again, I am not an attorney, and I am not testifying as a legal expert. With that said, as a regulatory analyst, my understanding of RCW 80.36.320 is to alter the regulatory treatment of a telecommunications company that demonstrates it is subject to effective competition. RCW 80.36.320 prescribes what the Commission should consider in determining whether a telecommunications company faces effective competition. It states that:

> Effective competition means that the company's customers have reasonably available alternatives and that the company does not have a significant captive customer base. In determining whether a company is competitive, factors the commission shall consider include **but are not limited to**:
>
> (a) The number and sizes of alternative providers of service;
>
> (b) The extent to which services are available from alternative providers in the relevant market;
>
> (c) The ability of alternative providers to make functionally equivalent or substitute services readily available at competitive rates, terms, and conditions; and
>
> (d) Other indicators of market power which may include market share, growth in market share, ease of entry, and the affiliation of providers of services."[3]

Q. What did CenturyLink file to support its petition?

A. CenturyLink initially filed a competition study to support its petition, then later filed testimony and exhibits sponsored by Peter Gose and Dr. Dennis Weisman. Mr. Gose's testimony concerns the competition study; Dr. Weisman's is largely about regulatory policy. I address my testimony to Mr. Gose and CenturyLink's competition study; staff witness Webber addresses Dr. Weisman's and Mr. Gose's testimony.

Q. Before turning to Staff's Competition Study, do you have any concerns about the methods used in CenturyLink's study?

A. Yes. Although I discuss problems with the data or specific methods used to identify competitors below, there are four larger errors with CenturyLink's analysis that I would like to discuss here before diving into those details.

[3] RCW 80.36.320(1) (emphasis added).

Q. What is the first error with CenturyLink's analysis?

A. CenturyLink does not accurately portray the number of locations and their associated units within its service territory. In Exh. SB-16, CenturyLink states that it used an internal wire center map rather than the public-facing ILEC Exchange Boundary Map (ILEC Map) to identify the "locations" within its combined study area. Using the ILEC Map to identify locations within the CenturyLink study area, Staff identified 967 locations consisting of 1,236 units that do not have an associated wire center. Their distribution between the CenturyLink ILECs is shown in Table 1.

Table 1: Missing Units within CenturyLink Study

Company	Grand Total
CenturyTel of Cowiche, Inc.	5
CenturyTel of Inter Island, Inc.	282
CenturyTel of Washington	163
Qwest Corporation	786
Grand Total	**1,236**

There are 1,236 units that CenturyLink excluded from its analysis. Of these, 847 units are without affordable 25/3 Mbps (or faster) internet service. These units are included in Staff's analysis at the operating entity level.

Q. What is the second error?

A. CenturyLink's analysis does not include the number of "units" for each location.[4] Instead, CenturyLink completes its analysis on locations (also known as broadband serviceable locations). The FCC defines a broadband serviceable location (BSL) as a "business or residential location in the United States at which mass-market fixed broadband internet service is, or can be, installed."[5] As presented in Exh. SB-18, each BSL includes a unit count that is an estimate of the number of residential and non-residential units within the location.

This means that a four-unit apartment building would count as one location or BSL but consists of four units. This distinction is important to the measurement of how many households or businesses have reasonably available alternatives.

Q. What is the third error staff identified?

A. CenturyLink allocated locations to a wire center based on whether or not the locations were within a hex area with a center contained within a wire center.[6] This means that a location within a hex area whose center was not within a wire center was not allocated to a wire center. That means that locations within the CenturyLink service area are not included in its analysis. The difference between CenturyLink and Staff Location counts, and the associated units is shown by company in Table 2 below. This table, along with data by wire center is found on the LocationSumComparison tab of Exh. SB-2C.

[4] *See* Exh. SB-17.
[5] See Fed. Comm'cns Comm'n, About the Fabric: What A Broadband Serviceable Location (BSL) Is and Is Not, *available at* https://help.bdc.fcc.gov/hc/en-us/articles/16842264428059-About-the-Fabric-What-a-Broadband-Serviceable-Location-BSL-Is-and-Is-Not (last visited Apr. 2, 2024).
[6] *See* Exh. SB-17.

Table 2: CenturyLink and Staff comparison of Locations and Units

Company	CenturyLink Locations	Staff Locations	Staff Units
CENTURYTEL OF COWICHE, INC.	2,152	2,167	2,371
CENTURYTEL OF INTER-ISLAND, INC.	11,479	11,546	15,288
CENTURYTEL OF WASHINGTON	160,792	161,035	186,342
Missing From CenturyLink Analysis	-	967	1,236
QWEST CORPORATION	1,518,123	1,543,923	2,334,380
UNITED TELEPHONE COMPANY OF THE NORTHWEST	68,250	68,217	80,975
Grand Total	1,760,796	1,787,855	2,620,592

Staff believes the correct information is important so that the Commission can make an informed decision. If the Commission is provided bad data that overstates, or understates, the number of units with or without access, the Commission's determination may have a much larger impact than anticipated to each company's customers. Depending on how the data falls (whether the undercounted units are served or unserved with affordable service) can even impact the conclusion that the Commission comes to.

Q. What was the fourth error?

A. It appears that CenturyLink's analysis does not include the Clarkston exchange which consists of the Lewiston-Sherwood wire center. This error is matters for the reasons I just discussed: the Commission requires good data to reach a proper conclusion here.

Q. What does Staff's analysis show when Staff corrects for the errors?

A. It shows that the company drastically underestimates the number of customers without reasonable alternatives, or any alternatives, to CenturyLink's services.

IV. CENTURYLINK'S OPERATING ENVIRONMENT

Q. Could you provide a brief history of CenturyLink as a telecommunication services provider?

A. CenturyLink is one of the successors to the Pacific Northwest Bell Company which operated as a monopoly provider of telephone service in Washington state prior to the Telecommunications Act of 1996. Over the years, Pacific Northwest Bell was rebranded as US West, Qwest, CenturyLink, and, most recently, Lumen.

Q. What regulated services does CenturyLink offer?

A. The companies at issue here are the legacy CenturyLink ILECs. They provide traditional, copper-based voice services (Plain Old Telephone service or POTS) as well as voice over internet protocol (VoIP) services.

Q. Can you provide an overview of alternatives to CenturyLink's services in Washington?

A. There are three primary alternatives to CenturyLink's POTS service. One is POTS service provided by an entity other than CenturyLink. The other two are internet based: fixed (location-based) and mobile (person based) internet access. Both of these use VoIP. Interconnected (fixed) VoIP uses various serving architectures – copper, fiber, cable, fixed wireless – to offer service; nomadic VoIP includes mobile voice (CMRS) cellular phones.[7]

[7] Fed. Comm'cns Comm'n, Voice over Internet Protocol, *available at* https://www.fcc.gov/general/voice-over-internet-protocol-voip-0– (last visited Mar. 30, 2024); *accord* Gose, Exh. PJG-1T at n.13.

Q. Are there limitations on the use of VoIP as an alternative to CenturyLink's services?

A. Yes. VoIP is a legitimate alternative service if the underlying speeds are sufficient to reliably offer service. Unfortunately, there are many areas without sufficient access and availability. Working with National Telecommunications and Information Administration Broadband Equity, Access, and Deployment (BEAD) Program funding, the Washington State Broadband Office[8] prepared the Washington State BEAD Five-Year Action Plan and identified 236,000 unserved (below 25/3 Mbps) and 80,000 underserved (below 100/20 Mbps and above 25/3 Mbps) businesses and residences without fixed broadband availability.[9] Similarly, within Washington state there are an estimated 167,379 households without internet access (fixed and mobile).[10]

Q. CenturyLink witness Gose testifies that customers may use VoIP with internet speeds as low as 56Kbps. Does Staff agree?

A. No. Staff Witness Mr. Webber explains why an internet connection of 25/3 Mbps is necessary for VoIP to serve as a reasonable alternative to CenturyLink's services.

[8] *See* Exh. SB-3.

[9] Wash. State Dept. of Commerce, Five Year Action Plan: Broadband Equity, Access, and Deployment Program, at 26, available at https:// deptofcommerce.app.box.com/s/yr03ll1kw1rpd7x4w4wk0z5g6gdah90n (last visited Mar. 30, 2024). These figures measure fixed internet availability to the home or business. Mobile internet availability is not considered to identify locations without fixed internet access. BEAD does not consider satellite or unlicensed fixed wireless service to be reliable.

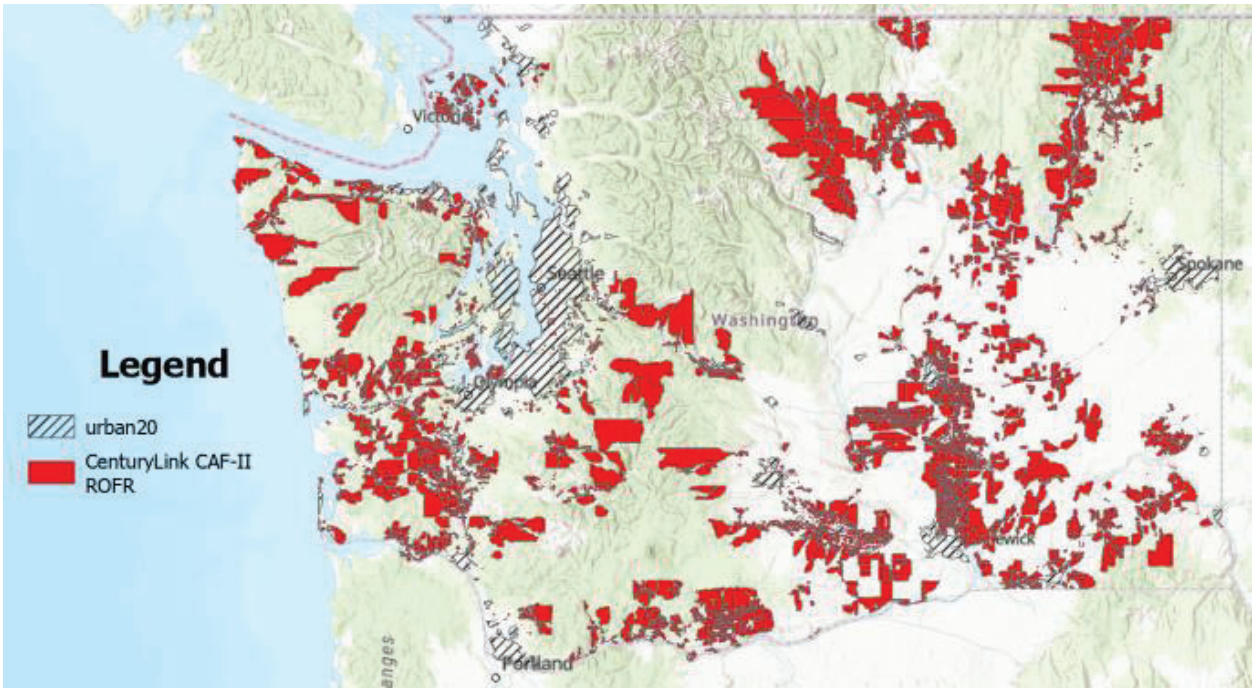
[10] Source: U.S. Census Bureau, American Community Survey, Table B28002, 2022 5-Year Estimates, *available at* https://data.census.gov/table/ACSDT5Y2022.B28002?q=Telephone,%20Computer,%20and%20Internet%20Access&g=040XX00US53 (last visited Mar. 31, 2024). These figures measure households without fixed internet access AND without fixed mobile internet access. *Id.*

Q. Has the federal government taken steps to improve internet access in Washington?

A. Yes. The FCC has implemented multiple programs intended to do just that since the Commission approved CenturyLink's Alternative Form of Regulation in 2014.[11] These include the Connect America Fund (CAF-II) Right of First Refusal (ROFR),[12] which provides support based on a fiber-to-the-premise cost model which required deployment of 10/1 Mbps to supported locations.[13] CenturyLink received over $160 million in CAF II (ROFR) support between 2015 and 2021 and deployed 10/1 Mbps broadband and voice access to 63,335 primarily rural locations, which are shown in red in Figure 1 below (black diagonal are urban areas).[14]

[11] *See generally in re Petition of the CenturyLink Companies*, Docket UT-130477, Order 04 (Jan 9, 2014).
[12] Universal Service Administrative Co., CAF Disbursements and Locations Search, *available at* https://opendata.usac.org/stories/s/CAF-disbursements-and-locations-search/nzbc-zgrs (last visited Mar. 30, 2024).
[13] Fed. Commc'ns Comm'n, Connect America Cost Model (CACM): Model Methodology, *available at* https://www.fcc.gov/wcb/CAM%20v.4.2%20Methodology.pdf, pages 18-19 (last visited March 31, 2024). This cost model was subsequently used as the maximum support amount in both Auction 903 and 904.
[14] *See generally* Wash. State Office of Financial Mgmt., Census Geographic Files, *available at* https://transition.fcc.gov/wcb/CAM43_Supported_Locations.zip (last visited Mar. 30, 2024).

Figure 1: CenturyLink - CAF-II ROFR Funded Census Blocks



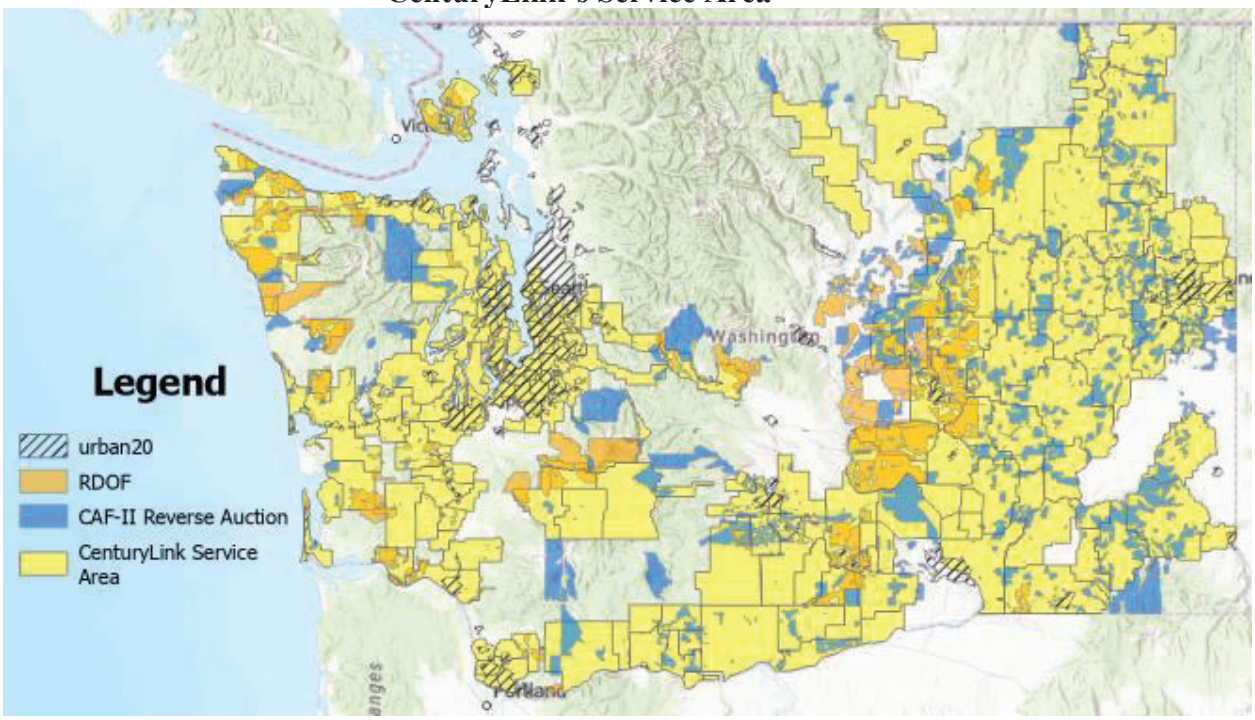
More recently, the FCC offered CAF-II (Auction 903) support to deploy 25/3 Mbps to extremely high-cost unserved areas, and Rural Digital Opportunity Fund (Auction 904) support to deploy 100/20 Mbps (or faster, including 1,000/500 Mbps or Gigabit Service) to unserved areas.[15] These support mechanisms help deploy broadband internet connectivity to primarily rural home or business locations where there is typically no ongoing competition (other than the initial bidding wars that go on during the auction itself).[16] Figure 2, below, shows funded RDOF and CAF-II census blocks within the CenturyLink service area.[17] Please note that in the map below, the black hatch lines represent urban areas, yellow reflects CenturyLink's service area, orange indicates

[15] Fed. Commc'ns Comm'n, Auction 904: Rural Digital Opportunity Fund, *available at* https://www.fcc.gov/auction/904 (last visited Mar. 31, 2024).
[16] The FCC's challenge process is intended to rule out areas where there is already an unsubsidized competitor.
[17] RDOF and CAF-II reverse auction funded census blocks only. Census blocks won by bidders that do not receive support have been removed.

funded RDOF census blocks that overlap CenturyLink's study area, and blue represents CAF-II reverse auction supported areas.[18] While competition continues to increase in urban cores, ongoing federal support mechanisms are still necessary to help connect individuals within rural areas. Accordingly, the FCC also will likely launch a Mobility Fund[19] in the near future to deploy 5G mobile service, and, depending on the success of BEAD, it will still have funding available to implement RDOF Phase II Support using its granular broadband availability data and new mapping functionality to deploy broadband services to unserved areas (both via reverse-auction mechanisms) in the next several years.

[18] Census blocks were combined at a CBG level for bidding. All CBGs that partially overlap CenturyLink's study area are included.
[19] Exh. SB-4.

Figure 2: FCC High-Cost Supported census blocks within CenturyLink's Service Area



Q. Is Washington also taking steps to improve internet access?

A. Yes. As I mentioned above, the state is rolling out its BEAD programs.[20] The Washington State Broadband Office, housed within the Washington State Department of Commerce, which administers the state BEAD effort, intends to deploy over $1.2 billion dollars to support the deployment of broadband. But while Washington is moving forward with its BEAD program, deployment won't start until early 2025 at the earliest and several years beyond that at the latest.

[20] Wash. State Dept. of Commerce, Internet for All in Washington, *available at* https://www.commerce.wa.gov/building-infrastructure/washington-statewide-broadband-act/internet-for-all-wa/ (last visited Mar. 30, 2024).

Q. Why is this support for telecommunications deployment notable?

A. The fact that governmental support is necessary for the deployment of facilities and the provision of service is indicative of market failure. It is an implicit recognition that the transformation to market-based regulation has thus far failed to provide for universal service.

V. STAFF'S COMPETITION STUDY

Q. Has Staff compiled a competition study to assess whether the CenturyLink ILECs face effective competition from these alternatives as identified by the Company's witness Peter Gose?

A. Yes, Staff created the enhanced competition study that includes two datasets: one accessible via Power BI (for data analytics), and the other with ArcPRO (a geographic information system, or GIS program used for geospatial analytics). These datasets allow Staff to identify – by CenturyLink operating entity and wire center– broadband availability to each BSL and its associated units.[21]

Q. How did staff create the competition datasets and what do the datasets consist of?

A. At its core, it consists of the "Broadband Serviceable Location Fabric" (Fabric) which is a set of all locations in the United States and its territories where fixed broadband internet

[21] The Commission entered into a commercial license agreement with CostQuest Associates, developer of the FCC's fabric, so that provider-reported and FCC-published internet availability can be tied directly to locations and their associated units. Using this data in this proceeding is a permitted use and only derivative data reports may be published publicly. A party to this proceeding can access the underlying data only after reviewing the License Agreement and Order Form and by executing the Authorized User form, sending it to GC@costquest.com with a CC to jeff.roberson@atg.wa.gov.

access service is or could be installed. The Fabric allows broadband availability data filers, the FCC, and other stakeholders to work from a single, standardized list of locations for the Broadband Data Collection (BDC). The FCC contracted with CostQuest Associates to create the Fabric."[22] Staff accessed the commercial fabric from CostQuest Associates and the broadband availability data from the FCC's website.

Q. Why and how did Staff characterize the broadband serviceable locations (BSL) found in the Fabric?

A. Understanding customer characteristics of these locations is vital to ensure that vulnerable or disenfranchised populations are not disproportionally impacted. Staff identified each BSL as either residential or business; rural or urban, and tribal or non-tribal; if applicable, Staff also designated them as receiving RDOF or CAF-II support.[23]

Q. Did Staff look to whether alternative services were available at each of the locations it identified?

A. Yes, Staff found that each of the relevant providers offers different internet speeds and charges a different price for that service, so Staff developed an analysis structure that can take internet speed ranges and internet prices into account. For prices charged by alternative providers, Staff completed an online broadband availability survey to capture

[22] *See generally* CostQuest Assoc., FCC Broadband Serviceable Location Fabric Resource Center, *available at* https:// www.costquest.com/broadband-serviceable-location-fabric/ (last visited Mar. 30, 2024).
[23] The residential and business identifiers are included in the "Fabric." All other characteristics are associated with geographical shapefiles that were spatially joined to the locations and units (points) within their boundary.

the consumer prices for mass market internet service.[24] I have provided the survey as Exhibit SB-5.

Q. What methodology did Staff employ when creating the survey found in Exhibit SB-5?

A. Staff:

- Identified all providers reporting internet availability within the combined CenturyLink study area;
- Completed online searches and when necessary, used a providers FCC Registration Number and the FCC's registration number search, to identify providers;
- Identified the "base" price (excluding any introductory or ongoing discounts) for each provider's internet service with a speed of 4/1/ Mbps (or higher), 25/3 Mbps (or higher), and 100/20 Mbps;
- Input the price for a given speed (if the provider did not offer one of the above speeds a "-" was input for that price);
- Left the relevant field blank if the company did not list an internet price on its website or staff was unable to locate a provider;
- Listed a provider as Mass Market, Enterprise, or Public Utility District (PUD) Wholesale provider based on its website or the service provided;[25]

[24] Report and Order Establishing the Digital Opportunity Data Collection, 86 F.R. 18124, 18127 (Apr. 7, 2021) (explaining that the FCC declines to collect non-mass market business broadband services such as might be purchased by healthcare organizations, schools and librarys, government entities, and other enterprise customers).
[25] When an entity provides service using the network of another entity that has the obligation to file BDC data, the FCC requires the network owner to file the BDC data. Fed. Commc'ns. Comm'n, BDC FAQS, *available at*

- Identified the PUD reseller with the lowest priced internet service (online) based on a search of each's website, with that price applied to the PUD.
- Compared each provider's speed price to two benchmarks, the first being CenturyLink's highest actual residential rate of $39.00 price (including a $6.50 subscriber line charge only assessed by ILECs), and the second benchmark being $55.13, which is the FCC's Reasonable Comparability Voice Benchmark as discussed by Staff Expert Witness Webber.[26]
- Indicated, for each speed offered, whether the price offered by the alternative provider is "Below CenturyLink" if the price is below CenturyLink's current rate, "Below FCC Benchmark" if the price is below $55.13, and "Above FCC Benchmark" if the price is above $55.13. Providers with a "-" in the price show as "Above FCC Benchmark" since they don't offer the service and providers with blank data in the price show as "Below CenturyLink" as Staff was unable to determine if this data should be removed.

Q. What did Staff do with this survey that specifically identified the service speeds and related charges for the services?

https://help.bdc.fcc.gov/hc/en-us/articles/7682769466395-Broadband-Data-Collection-BDC-FAQs (last visited Mar. 30, 2024).

[26] Fed. Commc'ns Comm'n, Wireline Competition Bureau and Office of Economics And Analytics Announce Results of 2024 Urban Rate Survey for Fixed Voice and Broadband Services, Posting of Survey Data and Explanatory Notes, and Required Minimum Usage Allowance for Eligible Telecommunications Carriers, *available at* https://docs.fcc.gov/public/attachments/DA-23-1172A1.pdf (last visited Apr. 1, 2024).

A. Based on the survey result, Staff identified the following provider types and number counts as shown in Table 3, below. This chart, and subsequent charts for the affordability survey are created from Exh SB-5.

Table 3: Provider Type Count

Row Labels	Count of Company
Enterprise	18
Mass Market	72
PUD	
Wholesale	10
Grand Total	**100**

Staff removed the Enterprise Companies from the competition study as they does not offer mass market internet services.[27] Additionally, CenturyLink and CenturyLink affiliates are removed, consistent with CenturyLink's Competition Study. Staff observes that a CenturyLink affiliate should not be viewed as a competitor to the company's ILECs for purposes of its petition because CenturyLink's control over the company gives it the option to eliminate the competition and leave ILEC customers with potentially no service alternative.

Q. How many of the providers shown above offer affordable 25/3 Mbps internet service?

[27] After joining the affordability survey to the competition study datasets Staff determined "Cheney fast Internet" and "Elevate ConnX" availability was excluded from the affordable summary analysis as their prices were listed as "Above FCC Benchmark" even though prices are not listed on their website. Due to time constraints, Staff is unable to recreate all of the analysis and list them as "affordable," even though it was unable to determine consumer prices from their website. Cheney fast Internet reports broadband availability to 493 units and Elevate ConnX reports availability to 4,954 units.

A. As shown in table 4 below, Staff has determined that there are 35 providers that offer affordable 25/3 Mbps internet service within the CenturyLink service area. It should be noted that nine of these providers do not list prices on their website and staff was unable to determine if their prices are above or below the benchmark.

Table 4: Provider Prices – Affordability Category for 25/3 Mbps Service

25/3 Mbps Price Comparison					
Above FCC Benchmark		**Below CenturyLink**		**Below FCC Benchmark**	
360 Communications, LLC	99.99	Astound_Broadband	30	Charter Communications Inc	54.99
Advanced High Speed Internet	99	Bluespan		Coast Communications Co Inc	49.95
Benton PUD	59.95	Columbia iConnect		Colfax Cable Company	40
Benton Rural Electric Association	69.95	Hunter Communications Inc.		Consolidated Communications	55
Cheney fast INTERNET	#DIV/0!	Neubeam		DCI	49.95
Clallam PUD	80	NisquallyIndianTribe		Douglas County P.U.D. (wholesale)	51
CLEC	79.95	Skynet Broadband		First Step Internet, LLC	50
CresComm WiFi LLC	99.95	SoundInternetServices		Franklin PUD	54.95
Elevate ConnX	#DIV/0!	Ziply Pacific		Grant County PowerNet Inc	52.95
EV Holdings 1 LLC	79.99	Ziply Wireless		Grant PUD	51
Highlands Fiber Network	60	Zito Media	29.95	Hood Canal Communications	51.94
HughesNet	79.99			Hughes Computer Services Inc	47.99
Inland Telephone Company	60			Inland Cellular LLC	50
Intermax Networks	69			Kitsap PUD	54.95
Jefferson County PUD	65			LocalTel Communications	45.95
Methownet.com	109			Mashell Telecom, Inc d/b/a Rainier Connect	41.95
Nikola Broadband	80			Pend Oreille PUD	49.95
Orcas Online, Inc.	109			Pioneer Telephone Company	55
OREGON TELEPHONE CORPORATION	#DIV/0!			PocketiNet	44.95
Pacific PUD	79.95			St John Cable Company	45
Pavlov Media	69.99			Swift-Stream Internet	49.95
Public Utility District No.1 of Okanogan County	59			VERIZON	49.99
PUD 3 Fiber	59.95			Wired or Wireless Inc.	49.95
Rally Networks	74.95			Ziply Fiber	40
Rebus Communications, LLC	70				
Red Spectrum Communications LLC	79.95				
Rock Island Communications	85				
RR Cable Company	60				
San Juan Cable	75				
Sparklight	70				
Starlink	120				
Taluslink, LLC	70				
TDS Telecom	81.95				
Tenino Telephone Company/Scatter Creek InfoNet	99.95				
T-Mobile US	65				
ToledoTel	74.95				
UNITED STATES CELLULAR CORPORATION	60				
Viasat Carrier Services	69.99				
Viasat, Inc.	69.99				
Vyve Broadband	59.99				
Washington Broadband	60				
Webpass, Inc.	63				
Wind Wireless	74.95				
Xfinity	64				
xyTel	140				
Company Count	45		11		24
Note: #DIV/0! Means that a company does not list this speed on its website.					

Q. How many providers offer affordable 4/1 Mbps internet service?

A. As shown in table 5 below, Staff has determined that 43 providers offer affordable 4/1 Mbps internet service as shown below. It should be noted that nine of these providers do not list prices on their website and staff was unable to determine if their prices are above or below the benchmark.

Table 5: Provider Prices – Affordability Category for 4/1 Mbps Service

4/1 Mbps Price Comparison					
Above FCC Benchmark		**Below CenturyLink**		**Below FCC Benchmark**	
Advanced High Speed Internet	59	Astound_Broadband	30	360 Communications, LLC	49.99
Benton PUD	59.95	Bluespan		Charter Communications Inc	54.99
Benton Rural Electric Association	69.95	Columbia iConnect		Coast Communications Co Inc	49.95
Cheney fast INTERNET	#DIV/0!	Hunter Communications Inc.		Colfax Cable Company	40
Clallam PUD	80	Neubeam		Consolidated Communications	55
CLEC	79.95	NisquallyIndianTribe		DCI	49.95
CresComm WiFi LLC	59.95	Skynet Broadband		Douglas County P.U.D. (wholesale)	51
Elevate ConnX	#DIV/0!	SoundInternetServices		EV Holdings 1 LLC	49.99
Hughes Computer Services Inc	59.99	St John Cable Company	38	First Step Internet, LLC	40
HughesNet	79.99	Swift-Stream Internet	37	Franklin PUD	54.95
Inland Telephone Company	65	Ziply Pacific		Grant County PowerNet Inc	52.95
Intermax Networks	69	Ziply Wireless		Grant PUD	51
Jefferson County PUD	65	Zito Media	29.95	Highlands Fiber Network	50
Nikola Broadband	70			Hood Canal Communications	51.94
OREGON TELEPHONE CORPORATION	59.95			Inland Cellular LLC	40
Pacific PUD	79.95			Kitsap PUD	54.95
Pavlov Media	69.99			LocalTel Communications	45.95
Public Utility District No.1 of Okanogan County	59			Mashell Telecom, Inc d/b/a Rainier Connect	41.95
PUD 3 Fiber	59.95			Methownet.com	49
Rebus Communications, LLC	70			Orcas Online, Inc.	49
Red Spectrum Communications LLC	59.95			Pend Oreille PUD	49.95
Rock Island Communications	85			Pioneer Telephone Company	55
RR Cable Company	65			PocketiNet	44.95
San Juan Cable	57.95			Rally Networks	54.95
Sparklight	70			Taluslink, LLC	50
Starlink	120			VERIZON	49.99
TDS Telecom	81.95			Washington Broadband	49
Tenino Telephone Company/Scatter Creek InfoNet	99.95			Wind Wireless	54.95
T-Mobile US	65			Wired or Wireless Inc.	49.95
ToledoTel	74.95			Ziply Fiber	40
UNITED STATES CELLULAR CORPORATION	60				
Viasat Carrier Services	69.99				
Viasat, Inc.	69.99				
Vyve Broadband	59.99				
Webpass, Inc.	63				
Xfinity	64				
xyTel	69				
Company Count	37		13		30
Note: #DIV/0! Means that a company does not list this speed on its website.					

Q. How many providers offer affordable 100/20 Mbps internet service?

A. As shown in table 6 below, Staff has determined that there are 23 providers that offer affordable 100/20 Mbps broadband service as shown below. It should be noted that ten of these providers do not list prices on their websites and staff was unable to determine if their prices are above or below the benchmark.[28]

[28] Methownet.com is added to this list as their website mentions fiber service but does not list a price.

Table 6: Provider Prices – Affordability Category for 100/20 Mbps Service

100/20 Mbps Price Comparison					
Above FCC Benchmark		**Below CenturyLink**		**Below FCC Benchmark**	
360 Communications, LLC	#DIV/0!	Astound_Broadband	30	Charter Communications Inc	54.99
Advanced High Speed Internet	115	Bluespan		Colfax Cable Company	50
Benton PUD	119.95	Columbia iConnect		Douglas County P.U.D. (wholesale)	51
Benton Rural Electric Association	129.95	Hunter Communications Inc.		Franklin PUD	54.95
Cheney fast INTERNET	#DIV/0!	Methownet.com		Grant County PowerNet Inc	52.95
Clallam PUD	110	Neubeam		Grant PUD	51
CLEC	79.95	NisquallyIndianTribe		Kitsap PUD	54.95
Coast Communications Co Inc	129.95	Skynet Broadband		LocalTel Communications	48.95
Consolidated Communications	85	SoundInternetServices		Mashell Telecom, Inc d/b/a Rainier Connect	41.95
CresComm WiFi LLC	#DIV/0!	Ziply Pacific		VERIZON	49.99
DCI	69.95	Ziply Wireless		Ziply Fiber	40
Elevate ConnX	#DIV/0!	Zito Media	29.95		
EV Holdings 1 LLC	95.99				
First Step Internet, LLC	75				
Highlands Fiber Network	60				
Hood Canal Communications	66.94				
Hughes Computer Services Inc	#DIV/0!				
HughesNet	94.99				
Inland Cellular LLC	80				
Inland Telephone Company	80				
Intermax Networks	83				
Jefferson County PUD	65				
Nikola Broadband	110				
Orcas Online, Inc.	#DIV/0!				
OREGON TELEPHONE CORPORATION	#DIV/0!				
Pacific PUD	79.95				
Pavlov Media	69.99				
Pend Oreille PUD	69.95				
Pioneer Telephone Company	100				
PocketiNet	59.95				
Public Utility District No.1 of Okanogan County	75				
PUD 3 Fiber	59.95				
Rally Networks	84.95				
Rebus Communications, LLC	#DIV/0!				
Red Spectrum Communications LLC	105.95				
Rock Island Communications	85				
RR Cable Company	80				
San Juan Cable	#DIV/0!				
Sparklight	70				
St John Cable Company	85				
Starlink	120				
Swift-Stream Internet	59.95				
Taluslink, LLC	70				
TDS Telecom	81.95				
Tenino Telephone Company/Scatter Creek InfoNet	124.95				
T-Mobile US	65				
ToledoTel	124.95				
UNITED STATES CELLULAR CORPORATION	60				
Viasat Carrier Services	199.99				
Viasat, Inc.	199.99				
Vyve Broadband	59.99				
Washington Broadband	60				
Webpass, Inc.	63				
Wind Wireless	99.95				
Wired or Wireless Inc.	69.95				
Xfinity	76				
xyTel	140				
Company Count	57		12		11
Note: #DIV/0! Means that a company does not list this speed on its website.					

Q. What did Staff do then?

A. Using the "brand_name" field, Staff combined the affordability study to the broadband availability data within ArcPRO.[29]

Q. What did Staff do with the broadband availability data after joining the survey data to it?

A. Using the "Location_id" field, Staff combined the broadband availability data (now including affordability data) to the Fabric and saved a copy named "CenturyLinkStudyAreaAllProviderswithAffordability." Next, Staff created a Broadband Serviceable Location Summary layer named "CenturyLinkBSLSummaries6302023" by taking the following actions:

- Removing non-mass market internet providers from its summary findings (but leaving the data contained within the all providers dataset);
- Removing satellite internet availability from its summary findings based on the testimony of Staff witness Webber (but leaving the data contained within the all providers dataset);
- Removing mobile availability data from its summary findings because the propagation models are based on *outside* use only; and[30]
- Removing CenturyLink and Quantum availability data from its summary findings (but leaving it contained within the all providers dataset).

[29] Datasets were combined by completing a "Join," which is a process within ArcPRO where two datasets are combined based on a field that exists in each dataset.
[30] *See* Fed. Commc'ns Comm'n, FCC National Broadband Map: About, *available at* https://broadbandmap.fcc.gov/about (last visited Mar. 30, 2024).

Q. Did Staff build any other filters into the "CenturyLinkBSLSummaries6302023" layer within ArcPro??

A. Yes. Based on Staff witness Webber's testimony, Staff considers an internet speed of 25/3 Mbps or faster necessary to be considered a reasonably available alternative. However, staff also presents data using benchmarks of 100/20 Mbps and 4/1 Mbps for illustrative purposes. And, as also discussed above based on Staff witness Webber's testimony, Staff considered an internet price of $55.13 or less to be necessary for a service to be considered reasonably available and affordable. But Staff presents data with this benchmark removed for illustrative purposes.

Q. How did Staff then use the "CenturyLinkBSLSummaries6302023" and "CenturyLinkStudyAreaAllProviderswithAffordability" layers?

A. Staff used these layers in ArcPRO for mapping capabilities and imported them into PowerBI for data analysis. These "workpapers" are the primary tools used for Staff's competition study.

Q. What did Staff do then?

A. Staff used the PowerBI dataset to inform its analysis of the factors for determining whether a company faces effective competition which, as I note above, the Legislature set out in RCW 80.36.320(1). I discuss this analysis more fully in the next section.

VI. CENTURYLINK'S SERVICES ARE NOT SUBJECT TO EFFECTIVE COMPETITION

Q. Do you believe CenturyLink is subject to effective competition in Washington state?

A. No. Contrary to CenturyLink's assertation that it faces intense competition in each of its wire centers, Staff's analysis shows that a significant number of CenturyLink customers in Washington lack access to reasonably available alternatives to its services and are captive customers. The number of captive customers for each operating entity, and for CenturyLink, is significant, both on a percentage and on an absolute basis. I discuss this analysis in the context of the factors set out in RCW 80.36.320(1) in the subsections that follow.

A. The Number and Size of Alternative Providers of Service in CenturyLink's Service Territory Do Not Show That CenturyLink is Subject to Effective Competition

Q. What is the first factor set forth in RCW 80.36.320(1)?

A. It is "[t]he number and sizes of alternative providers of service."

Q. What does your testimony cover with regard to the number of alternative providers of service?

A. I discuss the number of providers that offer internet availability within each CenturyLink operating entity's service territory, how many offer affordable (below the $55.13 benchmark established by Staff Witness Webber) 25/3 Mbps internet service, and how many offer affordable 100/20 Mbps service. In addition to this, I discuss the number of fixed internet providers within each wire center and then explain several shortcomings with CenturyLink's analysis on this factor.

Q. How many providers offer internet services within the combined CenturyLink study area?

A. There are a number of companies that report internet availability to at least one location within each company's service area, as shown below in Table 7.[31] If a company offers more than one speed offering it is counted in each speed range and is counted once in the "Total" column.

Table 7: Fixed Internet Mass Market Service Providers

company	Speed < 4/1 Mbps	Speed < 25/3 Mbps and >= 4/1 Mbps	Speed < 100/20 Mbps and >= 25/3 Mbps	Speed >= 100/20 Mbps	**Total**
CenturyTel of Cowiche, Inc.	3	4	5	4	**7**
CenturyTel of Inter Island, Inc.	1	2	3	4	**7**
CenturyTel of Washington	8	12	26	29	**45**
Qwest Corporation	14	18	39	55	**67**
United Telephone Company of The Northwest	4	6	11	15	**22**
Total	**14**	**19**	**43**	**63**	**76**

[31] This analysis excludes Satellite technology (four providers), CenturyLink and Quantum providers, and "Enterprise" providers for the reasons discussed above in Section V and below in Section VI.B.3. Exhibit SB-2- "June302023BSLCompaniesListAnalysis, ProvidersbyEntityType tab." Table 7, Table 8, and Table 9 are screenshots from Power BI.

Q. What if affordability is taken into consideration?

A. As noted above, Staff Witness Webber set an affordability benchmark of $55.13. When unaffordable service offerings are excluded, there are far fewer providers that report availability to at least one broadband serviceable location. The number of providers offering affordable 25/3 Mbps service is shown in the Table 8.

Table 8: Affordable Fixed Internet Mass Market Service Providers – 25/3 Mbps

company	Speed < 4/1 Mbps	Speed < 25/3 Mbps and >= 4/1 Mbps	Speed < 100/20 Mbps and >= 25/3 Mbps	Speed >= 100/20 Mbps	Total
CenturyTel of Cowiche, Inc.	1	2	2	1	**3**
CenturyTel of Inter Island, Inc.		2	2	3	**4**
CenturyTel of Washington	5	8	16	18	**27**
Qwest Corporation	9	11	20	27	**32**
United Telephone Company of The Northwest	2	3	5	7	**10**
Total	**9**	**12**	**22**	**29**	**35**

The number of providers offering affordable 100/20 Mbpervice is shown in Table 9, below.

Table 9: Affordable Fixed Internet Mass Market Service Providers – 100/20 Mbps

company	Speed < 4/1 Mbps	Speed < 25/3 Mbps and >= 4/1 Mbps	Speed < 100/20 Mbps and >= 25/3 Mbps	Speed >= 100/20 Mbps	Total
CenturyTel of Cowiche, Inc.		1	1	1	**2**
CenturyTel of Inter Island, Inc.		2	2	3	**4**
CenturyTel of Washington	2	5	10	14	**18**
Qwest Corporation	5	6	13	18	**21**
United Telephone Company of The Northwest	1	2	4	6	**9**
Total	**5**	**7**	**15**	**20**	**23**

Q. Does CenturyLink witness Gose correctly identify 138 competitors operating within CenturyLink's service area in Table 3 of his direct testimony?

A. No. Staff's Table 5 shows that there are 76 distinct internet providers within the CenturyLink service area. The difference is likely due to the fact that Staff does not include the CMRS providers as their availability data is specifically based on outside propagation models and because, as previously mentioned, Staff also excludes four satellite companies (as discussed below in Section VI.B.3), CenturyLink and Quantum (as discussed above in Section V), and all enterprise companies that don't offer mass

market internet service. Although it is unclear in CenturyLink testimony, it appears that a single company can appear in multiple technology categories within CenturyLink's Tables 3 and 4.

Q. Did Staff calculate the how many distinct (counted once regardless of technology offerings or available speeds) providers are within each Wire Center?

A. Yes, as you can see in Table 10 below, there is an average of 5.5 providers per wire center, a median of 5 providers per wire center, a mode of 4 providers per wire center, a minimum of 2 providers per wire center, and a maximum of 14 providers per wire center.[32]

Table 10: Provider Statistics per Wire Center

	Per Wire Center
Mean	5.5
Median	5
Mode	4
Minimum	2
Maximum	14

Q. What statistics does CenturyLink provide about the number of providers per Wire Center?

A. On page 19 his direct testimony, Mr. Gose states that "CenturyLink faces between 8 and 28 competitors per wire center, with the average number of competitors sitting at 14.7,"[33] there is a footnote that lists the Modality Counts Tab of Exh. PJG-2C. Based on the data

[32] Table 10 is created from the Tab "ProviderCountStatistics" within Exh SB-2.
[33] Gose, Exh. PJG-1T at 19:1-2.

within this tab, Mr. Gose added each of these columns to create the "Total Competitors in Wirecenter" column. Although Staff's counts do not include CenturyLink, Quantum, Mobile Voice nor satellite providers, Staff's analysis shows that Mr. Gose overstates the number of providers in all wire centers (if a provider uses more than one technology) as a provider is counted for each technology it utilizes.

Q. Is it clear that Table 3 and 4 within Mr. Gose's testimony should not be summed?

A. No, it is not, because it does not state the total number of companies that are included in the analysis or state whether companies are only counted once or for every technology they offer. However, if summed that would appear like there are 270 competitors when there are far fewer.

B. CenturyLink's Customers Do Not Have a Range of Services Available from Alternative Providers in the Relevant Market

Q. What is the second factor set forth in RCW 80.36.320(1)?

A. It is "[t]he extent to which services are available from alternative providers in the relevant market."

Q. Please summarize your analysis and conclusion regarding the second factor ?

A. I address the relevant market; the types of services that the Commission should consider alternatives in the relevant market – fixed voice, mobile broadband, and fixed internet; and then I provide a case study by looking at CenturyLink's Eastsound wire center, something that illustrates how CenturyLink's competition study significantly

overestimates the number of alternative providers offering service to its customers. For fixed voice as an alternative, I discuss Staff's market share analysis and Staff's Herfindahl Hischman Index analysis. For mobile broadband, I discuss Staff's attempts to quantify the number of units that cannot obtain service from an alternative provider. For fixed internet, I discuss the number of units that cannot obtain service from an alternate provider and further break that data down to look at RDOF-funded locations, tribal locations, and rural locations.

1. The relevant market for CenturyLink's petition.

Q. Please describe Staff's understanding of the relevant geographic market within this proceeding.

A. CenturyTel of Cowiche, CenturyTel of Inter Island, Inc. CenturyTel of Washington, Qwest Corporation, and United Telephone Company of the Northwest are each separate legal entities and each serves a separate and distinct market. Each company's service area can be seen on the Commission's public facing UTC Regulated Telecommunications ILEC Boundaries map.[34]

Q. What is different about these areas?

A. As shown in the analysis below, each of these companies offer services in different geographic areas and the ratio of rural to urban locations within each companies' service

[34] Wash. Utils. & Transp. Comm'n, UTC regulated ILEC Boundaries, *available at* https://wutc.maps.arcgis.com/home/webmap/viewer.html?webmap=37dc41f987774ebf8096c6d19dfbc0e6 (last visited Mar. 30, 2024) (hereinafter "ILEC Boundary Map").

area impacts not only how each company operates, but also how other providers (if any) operate.

Q. Are these companies able to charge different rates than each other?

A. Yes. Qwest's rate for residential basic local exchange service is $32.50 and I believe that each operating company can offer service at a rate of $32.00 or different rates.

Q. Is there any reason to look at telecommunications for the entire state?

A. While it is true that voice services are offered throughout the state, ILECs like CenturyLink are only required to offer service within their service territory. While competition at a larger level is important, so too is competition and availability at the local level. The FCC recognized this with the creation of the Broadband Data Collection process and the elimination of the Form 477 process. The former is broadband availability on a location by location basis whereas the latter is broadband availability on a census block by census block basis. The FCC realized that analysis at a high level can obscure what is happening at the local level and took action to give itself and other policy makers the ability to look at availability and competition at a granular level.

Q. How granular can Staff's competition analysis get?

A. Staff created the competition study to look at each operating entity independently, but also highlights this data at a wire center by wire center basis. The five operating entities consist of 222 wire centers and Staff's competition study provides us the ability to assess them one by one. Staff highlights several wire centers within this testimony but all of

them should be highlighted as the differences between each, in terms of available fixed voice, mobile voice, and fixed internet service, is significant.

2. Potential alternatives to CenturyLink's services.

Q. Please describe Staff's understanding of the alternative services in the relevant market

A. As I discussed above, fixed voice service, mobile voice, and broadband service are potential alternatives to CenturyLink's voice services. It is necessary to assess the availability of these services within each operating entities service area in order to determine whether CenturyLink's customers have reasonably available alternatives and to determine if the company has a significant captive customer base. While competition for all types of service has increased substantially in urban areas, this does not yet hold true for rural areas, where inducing the deployment of alternative services generally requires additional incentives. Each of these service types will be further analyzed below.

Q. Should potential voice, mobile internet, or fixed internet service offerings be considered in this proceeding?

A. No. While the FCC will be launching the Mobility Fund and RDOF Phase II at some point in the future, and the state will be deploying BEAD funding; services that are not available today should not be considered to be reasonably available alternatives. A

service that may become available at some future point is not reasonably available now, and, indeed, may never actually be "available."

Q. Should existing RDOF supported locations be considered in this proceeding.

A. Yes, it is important that they be considered. Providers receiving RDOF support are required to offer voice services throughout their service area. Six companies receive support to deploy broadband in Washington state and were required to offer voice services to funded locations after receiving support.[35] For this reason, it makes sense to treat these locations as served by an alternative service provider.

Q. Is there a chance these providers walk away from their obligation?

A. Yes, there is a possibility. The FCC recently issued a Request for Comment asking if it should grant an amnesty period for RDOF providers to default on their obligations.[36] If the FCC grants amnesty to providers there is the possibility that RDOF providers "walk away" from their obligation which would leave consumers without alternatives until BEAD funding is implemented and new providers deploy services over the next five years.

[35] *See, e.g.*, Dockets UT-210008, UT-210139, UT-210149, UT-180763, UT-201008, and UT-210043.
[36] Fed. Commc'ns Comm'n, WCB Seeks Comment on Letter Seeking RDOF and CAF II Amnesty From 69 ISPs, Trade Associations, State and Local Officials, School Districts, Unions and Civil Organizations, *available at* https://www.fcc.gov/document/wcb-seeks-comment-letter-seeking-rdof-and-caf-ii-amnesty-69-isps-trade-associations-state (last visited Mar. 30, 2024).

Q. Should internet service offered by a PUD or Port be included in this analysis?

A. They should be included to the extent that service includes mass market internet availability. Staff's analysis below includes all internet providers that offers mass market services consistent with the FCC's rules, public notices, and technical assistance documents. CenturyLink's inclusion of Port and PUD projects for middle-mile or transport service overinflates reported internet availability if it does not include the last-mile architecture.

a. Fixed voice.

Q. How did Staff assess voice competition in Washington?

A. Staff completed a market share analysis and performed a Herfindahl-Hirschman Index analysis to measure market concentration.

Q. How did Staff perform the market share analysis?

A. Staff's market share analysis can be found in the tabs labeled "CL Market Share FV Household" and "CL Market Share FV&M Pop" of Exh. SB-2C. The first tab estimates CenturyLink's market share of the Fixed voice market. Staff used the data provided by CenturyLink in "Attachment PC 21(C)" to calculate the number of CenturyLink Voice Subscribers by county. Staff then compared that to the total number of fixed voice subscribers and total number of households, by county, as reported in the FCC's "Voice Telephone Services as of 06/30/22" (VTS) report.[37] With this information, Staff created

[37] Fed. Commc'ns Comm'n, Voice Telephone Services Report, *available at* https:// www.fcc.gov/voice-telephone-services-report (last visited Mar. 30, 2024). County Level Subscription data is as of June 30, 2022.

columns L, M, and N to calculate CenturyLink's market penetration, the overall fixed voice market penetration, and CenturyLink's estimated 2022 fixed voice market share, respectively. Additionally, staff conducted the same analysis in columns P, Q, and R using the Department of Revenue's 2022 annual averaged 911 line counts (Exh. SB-14).

For the Second tab, "CL Market Share FV&M Pop," Staff incorporated the mobile line counts of the Department of Revenue's data (Exh. SB-14) and recalculated CenturyLink's market penetration, the overall voice service market penetration, and CenturyLink's estimated voice service market share. To calculate market penetration, staff used the U.S. Census Bureau's July 1, 2022 population estimates (Exh. SB-15). In an attempt to incorporate mobile, staff determined that using the total population of each county, instead of households, would more accurately measure market penetration.

Q. What did Staff's market share analysis show?

A. Staff's market share analysis demonstrates that CenturyLink retains a large share of the telecommunications market in Washington state.[38] In comparing CenturyLink's voice subscribers to the number of voice subscribers in the FCC VTS report, CenturyLink had more than [redacted] percent of the fixed voice market share in 26 different counties as of June 30, 2022. CenturyLink had over [redacted] percent in 11 of those 25 counties and had [redacted] percent or more of the market share in 4 of them. Staff found very similar results when comparing CenturyLink subscribership with the Data compiled from the Department of Revenue.

[38] CenturyLink provided its confidential line counts by census tract in its response to PC DR21. Staff summarized the line counts at the county level and added them to the "CL Market Share FV Houshold" and "CL Market Share FV&M Pop" tabs within Exh. SB2.

Q. What lessons does Staff draw from that market share analysis?

A. The above market share analysis is done on a state-wide basis, by county. This means that CenturyLink's market share is actually understated compared to the market that it is required to offer service within. Even then, CenturyLink is a large voice provider within many of the counties in which it operates.

Q. Was staff able to do this analysis with mobile counts?

A. Yes.

Q. What does the market share analysis show when mobile data is included?

A. When Staff includes publicly available mobile data from the Washington State Department of Revenue,[39] into the market share analysis, CenturyLink's shares inevitably decline; however, Staff's analysis shows that, even with mobile subscribers added in, CenturyLink still has more than [redacted] percent of the market share in 14 counties. In 8 of those 14 counties, CenturyLink has more than [redacted] percent of the market share. In 4 of them it has over [redacted] percent and it still has an estimated [redacted] percent of the market share in Garfield County.

Q. Did Staff also look at market penetration?

A. Yes. Market penetration measures the number of CenturyLink access lines relative to the total population. Staff uses population, rather than households, to help give a more

[39] *See* Exh. SB-14. DOR receives monthly counts for POTS, VoIP, and Mobile lines. Exh. SB-14a indicates that these are estimates as this is an average based on the 2022 reporting year.

accurate representation when considering mobile service subscribers. Staff used the US Census Bureau's 2022 population estimates (Exh. SB-15) to measure market penetration.

Q. What did Staff learn from the market penetration analysis?

A. As the data shows on Staff's competition study Tab "CL Market Share FV&M Pop,"[40] 16 counties have an overall market penetration rate above 100 percent of the market penetration, with San Juan County at the top with an estimated market penetration over 130 percent.

This illustrates why incorporating mobile data can be difficult. For example, in San Juan County Staff found that CenturyLink had a market penetration of [redacted] percent in relationship to San Juan's 2022 estimated population. With the line counts provided by the Department of Revenue (Exh. SB-14), Staff calculated an estimated overall market penetration of 132.1 percent. This overall market penetration of over 100 percent is possible because, as discussed below, mobile lines are assigned to the individual but can be billed in a family plan fashion, which means that the person assigned the line may be billed at a location where he or she does not live. This "overserving" of San Juan County causes the measurement of CenturyLink's market share to decrease below its penetration rate, which staff estimates is [redacted] percent when attempting to incorporate mobile. In the 16 counties where the overall market penetration is greater than 100 percent, Staff believes CenturyLink's market share will be underestimated because its fixed voice service is location based.

[40] Within Staffs Competition Study, see Exh. SB2.

Q. What tool did Staff use to assess market concentration?

A. Staff completed a Herfindahl-Hirschman Index (HHI) to measure market concentration using the Department of Justice's scoring criteria[41] to assess the competitiveness of copper-based voice service and interconnected-VoIP service on a county-by-county and statewide bases. The HHI is a tool that helps conceptualize the degree of market concentration in each market. It is calculated by taking the sum of the squares of each company's market share. In order to protect confidential and highly confidential subscribership information, the table is rounded to the nearest 100 and has a cap of 3,000. Staff used the Department of Justice and Federal Trade Commission's "Horizontal Merger Guidelines" in determining levels of concentration (Exh. SB-25). These guidelines detail that an HHI score greater than 2,500 is classified as Highly Concentrated, a score between 1,500 and 2,500 is considered moderately concentrated, and a score under 1,500 is classified as unconcentrated.[42] The results of the HHI analysis are included in Exh. SB-26. Staff measured the HHI of each county by using the highly confidential FCC form 477 Fixed Voice Subscribership report at the census tract level for data as of June 30, 2022. This method allows staff to measure the HHI in four distinct ways: by provider, by holding company, residential only, and business only. The HHI by provider shows the reported subscribership by each provider, treating affiliated companies as competition between one another. The HHI by holding company is calculated the same way, however affiliated companies' subscribership are consolidated

[41] *See* Exh. SB-25.

[42] On December 18, 2023 the DOJ and FTC issued new guidelines that decreased the "Highly Concentrated" classification from 2,500 to 1,800. Staff used the previous and more conservative guidelines. The new guideslines are available online. U.S. Dept. of Justice, Antritrust Division & Fed. Trade Comm'n, Merger Guidelines, *available at* https://www.justice.gov/d9/2023-12/2023%20Merger%20Guidelines.pdf (last visited Apr. 2, 2024).

into one. For example, at the provider level CenturyLink, Inc; CenturyLink Communications, LLC; and Level 3 Communications, LLC are all treated as their own entity with their own market shares. For the holding company measurement level, Staff's HHI measurement includes all three companies that are consolidated into Lumen Technologies, Inc. Both the residential HHI and business HHI were calculated using the holding company method.

Q. What did the HHI show?

A. The HHI at the provider level shows that only 2 counties are unconcentrated, 15 counties are moderately concentrated, and 22 counties are considered highly concentrated markets.

The HHI at the holding company level shows that 28 counties are considered highly concentrated, 11 counties are moderately concentrated, and none are unconcentrated. When measuring the HHI by holding company, even the statewide measurement of the fixed voice market comes to 1600, or moderately concentrated.

Q. Can the HHI scores tell us whether any of the CenturyLink ILECs have a significant captive customer base?

A. On their own, no. The HHI scores cannot determine if a customer base is captive or not. However, it does provide insight into the type of market customers are facing when subscribing to a fixed voice service.

This analysis also shows a Statewide HHI of 1300, indicating an unconcentrated statewide market. As stated previously, the HHI measures how concentrated a particular market is. For reference, a pure monopoly would have an HHI of 10,000. As competitors enter the market and as market shares become more evenly distributed the HHI decreases. By comparing the Statewide HHI against the county level HHI, Staff can assess relative market concentration within a given geography. This comparison indicates that there are geographical pockets throughout the state where market concentration is relatively low. In these pockets, no individual company has captured a large enough market share to effectively have any significant market power. However, 37 of the 39 counties in Washington State received an HHI score that categorizes the county as either Highly Concentrated or Moderately Concentrated. This variance indicates that the pockets of low concentration are contained primarily in densely populated urban areas as there are more providers there. Outside of these urban cores, the market concentration increases as there are less providers.

b. Mobile broadband.

Q. What steps did staff take next in determining the likelihood of a significant captive customer base?

A. With a better understanding of the market concentration of the fixed voice market, Staff then began to look at alternative products, such as mobile and broadband, that consumers may be able to substitute for their fixed voice connection. Staff used the FCC's BDC data to analyze the broadband market but was unable to find a granular mobile data set that measured availability within homes or businesses.[43] Unfortunately, the Mobile BDC data does not measure availability inside buildings and staff therefore determined that it does not accurately measure the availability of an alternative service to fixed voice service. Staff did make several attempts to find mobile data that could be used to assess availability and market concentration, including requesting subscribership information directly from the mobile providers in Washington State, but was unsuccessful in obtaining information from most of the relevant providers.

Q. Are the various fixed voice and mobile services sufficiently similar for staff to make apples-to-apples comparisons?

A Differences between them make comparisons difficult. The main reason for this difficulty is that mobile services are assigned to a person, where fixed service is assigned to a location. This difference may seem small, but it can drastically alter the data regarding subscriptions. For example, a household with four mobile lines may only have one or two of its members living in Washington. The other household members may be in a different county, or even a different State. This dynamic makes specific subscribership data difficult to use in analyzing market concentration for a designated area.

[43] 47 C.F.R. § 1.7004(C)(3), (with subsection 3 specifying that data is for mobile voice, 3G, 4G LTE, and 5G service. Subsection 5 specifies that propagation models are for on-street or pedestrian stationary usage, and in-vehicle mobile usage).

There are other differences. Take as example, work phones. An individual may work at a company and have both an office and a cell phone. While definitely a part of the voice market, these two additional access lines supplement, rather than substitute for their personal line(s). Another issue is trying to determine equivalency between mobile and fixed service, particularly regarding access to 911 emergency services. If a household has only one mobile cellular phone, but multiple members in the household, then if one member leaves with that cellular device, the other household members will no longer have phone service access. Additionally, for some customers a mobile device is treated as a complementary service instead of a substitute. For these customers, mobile is an additional service they require that works in conjunction with their fixed connection. These factors make it difficult to measure the market concentration.

Q. Is Staff asking the Commission to discount mobile services entirely?

A. No. Staff acknowledges that mobile services are certainly a strong force in the telecommunication industry and are undoubtedly available in some areas. However, they are not available within all areas within structures. With current federal and state initiatives to "bridge the digital divide," staff believes the fixed internet availability, or rather location-based internet availability, is more easily and directly comparable for understanding alternative services to CenturyLink's, and whether those services are available within a home or business. In fact, the FCC's 2024 Section 706 Report speaks to this concern in regard to "Advanced Telecommunications Deployment." The report states:

> Based on our evaluation of the data, we find that our universal service goals for section 706 have not been met, and we therefore conclude that advanced

> telecommunications capability is not being deployed to all Americans in a reasonable and timely fashion. Most significantly, at present, 100/20 Mbps terrestrial fixed broadband service has not been physically deployed to approximately 7% of Americans. Rural areas and Tribal lands significantly trail more urban areas, with approximately 28% of people living in rural areas and approximately 23% of people living on Tribal lands lacking access to 100/20 Mbps fixed broadband services.[44]

Q. Why is Staff focused on Mobile Voice service as an alternative service?

A. Because CenturyLink leans heavily on mobile voice in making its claim to face effective competition. In EXH-PJG-1T, Table 1 and surrounding text, CenturyLink indicates that 99.9 percent of all CTL ILEC households have Commercial Mobile Radio Service ("mobile") availability. In Exh. SB-7, CenturyLink states that it believes the BDC mobile availability propagation models do not distinguish between inside and outside propagation.

Q. Does CenturyLink accurately portray the treatment of the BDC propagation models?

A. No. CenturyLink's own evidentiary support includes information from the FCC that undercuts its claims. The relevant exhibit, Exh.-PJG-7, quotes from the FCC's website and states that "The coverage areas are meant to represent the areas where a user should be able to establish a mobile connection, either outdoors or moving in a vehicle, and achieve certain upload and download speeds. Please note that the map does ***not*** include information on the availability of mobile wireless broadband service while indoors."

[44] *In re Inquiry Concerning the Deployment of Advanced Telecommc'ns Capability to All Americans in a Reasonable & Timely Manner*, GN Docket No. 22-270, 2024 § 706 Report, 2-3 ¶ 4 (released Mar. 18, 2024), *available at* https:// docs.fcc.gov/public/attachments/FCC-24-27A1.pdf (last visited Mar. 30, 2024).

(emphasis added). This same language can be found on the FCC's Broadband Map website.[45] CenturyLink's inclusion of this data misrepresents what the data is actually saying and overestimates the extent to which these services are reasonably available within a consumer's home or business.

Q. Why does CenturyLink's inclusion of the data miss the mark?

A. In its Second Report to Improve Broadband Data and Map to Bridge the Digital Divide Order, the FCC established standardized parameters to create consistency and help itself assess and compare coverage for each technology.[46] The FCC recognized the need for this structure based on the recommendations found in its Mobility Fund Phase II Investigation Staff Report arising from a determination that Verizon, U.S. Cellular, and T-mobile *appeared to overstate coverage by around 40 percent of the time.*[47] Staff has endeavored to not overstate mobile voice or mobile internet availability within structures. But this means that another source of data is necessary to measure mobile voice or broadband availability.

Q. Where did Staff turn for this alternative data set?

A. Staff used the U.S. Census Bureau's American Community Survey (ACS).

[45] Exh. SB-8.
[46] *See Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195, 11-10, Second Report and Order and Third Further Notice of Proposed Rulemaking, ¶¶ 36-38, *available at* 35 FCC Rcd. 7460 (2020) (*Second Order and Third Further Notice*).
[47] *See generally* Fed. Commc'ns Comm'n, Mobility Fund Phase II Coverage Maps Investigation Staff Report (2019), *available at* https://docs.fcc.gov/public/attachments/DOC-361165A1.pdf (last visited Mar. 31, 2024).

Q. What is the ACS?

A. It is an ongoing survey that provides vital information on a yearly basis about our nation and its people. The ACS includes 1-year estimates which includes information collected over a 12-month period. The 5-year estimates include information collected over a 60-month period and one primary advantage is that they have increased statistical reliability compared to single-year estimates, particularly for small geographic areas and small population subgroups.[48]

Q. What data does the ACS provide concerning mobile availability?

A. Although the Phone, Internet, and Subscription questions posed by the Bureau do not focus on Mobile Voice service in households, it does focus on whether households have internet access or are able to access the internet via cellular (mobile), "broadband" (cable, fiber optic or DSL), satellite internet access or a combination of technologies.

Q. Please describe what the ACS shows about mobile (CMRS) availability in Washington

A. Both the FCC and the NTIA rely on the ACS results to measure broadband access and to provide grants. The 5-Year ACS data shows that in Washington state, there are 174,660 households with cable, fiber, or DSL with no other type of internet subscription (including mobile), there are 15,197 households with satellite service with no other type of internet subscription (including mobile), and there are 167,379 households without

[48] *See* U.S. Census Bureau, Understanding and Using ACS Single-Year and Multiyear Estimates, *available at* https://www.census.gov/content/dam/Census/library/publications/2020/acs/acs_general_handbook_2020_ch03.pdf (last visited mar. 31, 2024).

internet access (fixed or mobile),[49] Combined, there are 357,236 households without mobile internet access as shown below on Table 11.

Table 11: Washington State Internet Access Estimates

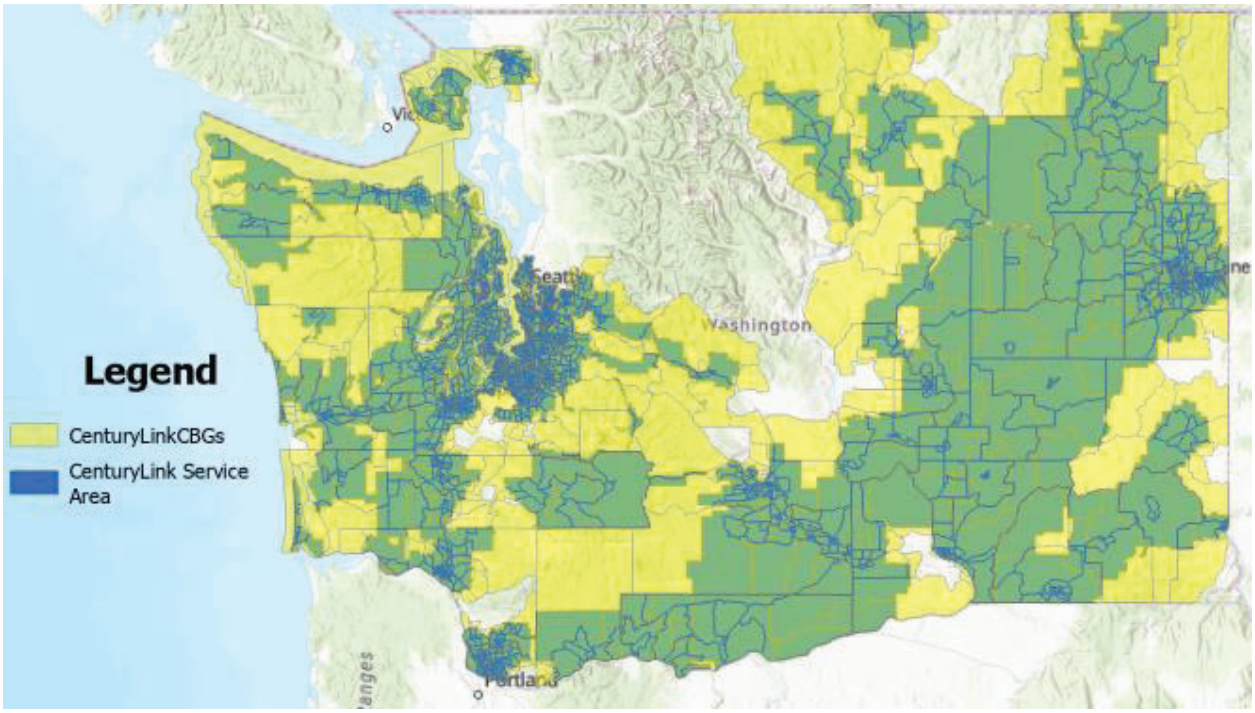
B28002 | Presence and Types of Internet Subscriptions in Household +3 | Notes | Ge 1 | Topi 1 | Codes | Dataset | Year | Hide | Transpose | Margin of

	Washington	
Label	Estimate	Margin of Error
Total:	2,979,272	±5,779
With an Internet subscription	2,749,145	±7,050
Dial-up with no other type of Internet subscription	5,275	±629
Broadband of any type	2,743,870	±6,992
Cellular data plan	2,540,901	±8,167
Cellular data plan with no other type of Internet subscription	268,621	±4,574
Broadband such as cable, fiber optic or DSL	2,366,953	±8,324
Broadband such as cable, fiber optic or DSL with no other type of Internet subscription	174,660	±3,642
Satellite Internet service	170,936	±2,870
Satellite Internet service with no other type of Internet subscription	15,197	±793
Other service with no other type of Internet subscription	2,309	±375
Internet access without a subscription	62,748	±2,109
No Internet access	167,379	±3,200

This data is available at the census block group level,[50] which allows for a granular analysis.[51] Staff identified all the census block groups (CBG) that are fully or partially within the Combined CenturyLink study area.[52] On Figure 3, below, the CenturyLink service area is shown in green, wire center boundaries in blue, and CBG areas in yellow.

[49] See United States Census Bureau, American Cmty. Survey: Why We Ask Questions About Compute & Internet Use, *available at* https:// www.census.gov/acs/www/about/why-we-ask-each-question/computer/ (last visited Apr. 2, 2024).
[50] United States Census Bureau, Table B28002: Presence and Types of Internet Subscriptions in Household, *available at* https://data.census.gov/table/ACSDT5Y2022.B28002?q=Telephone,%20Computer,%20and%20Internet%20Access&g=040XX00US53,53$1500000 (last visited Mar. 31, 2024).
[51] ACS 1-Year estimates are available and while more recent, this level of data is only viewable at the county level or higher.
[52] Spatially joined CenturyLink area (Join Feature) to the CBG (Target Feature) with a one to one join operation, selected "not keep all targets," match is "intersect."

Figure 3: Census Block Groups that Overlap the CenturyLink Service Area



Q. What method did Staff use to consider the households without mobile internet access in its competition study?

A. Staff apportioned the estimated number of total households and the estimated number of households without access to fixed and mobile internet access from the CBG level to the Combined CenturyLink wire centers in ArcPRO . This data is shown on a company and wire center basis within the "ACS5YearCBG_WCApportion" tab in EXH-SB-2C.[53] To ensure this data is accurate, Staff created the "StaffHHComparedtoCL(C)" tab within EXH-SB-2C to compare Staff's number of estimated households by wire center with CenturyLink's estimated households per wire center. On a wire center basis and in

[53] Staff used the Area Apportion Method and maintained the target geometry. The amount that each CBG contributes to the summarized values for each target area is determined by the area of overlap between two features. ESRI, ArcGIS Pro: Tool Reference, *available at* https://pro.arcgis.com/en/pro-app/latest/tool-reference/analysis/apportion-polygon.htm (last visited Mar. 31, 2024) (describing the apportionment tool).

aggregate, Staff's estimates are conservative as its estimates are [redacted] fewer than CenturyLink's estimates within its competition study.

Q. Based on Staff's analysis, how available is mobile internet to households within the CenturyLink service area?

A. As shown in Table 12 below, the number of households estimated to lack mobile internet access (of any speed) is significant on both a percentage and absolute basis.

Table 12: Estimated Households without Mobile Internet Access (MIA) by Company

Companies	HH Total	HH_FixedSubNoOtherSubs	HH_SatSubNoOtherSubs	HHsWithoutInternetAccess	Total HHs w/o Mobile Internet Access	%of HH w/o MIA
CenturyTel of Cowiche, Inc.	1,597	129	26	126	281	18%
CenturyTel of Inter Island, Inc.	7,107	412	100	438	950	13%
CenturyTel of Washington	125,362	8,183	1,795	8,715	18,693	15%
Qwest Corporation	1,875,312	106,944	7,429	104,751	219,124	12%
United Telephone	64,494	3,476	706	5,502	9,684	15%
Grand Total	2,073,872	119,144	10,056	119,532	248,732	12%

It is important to note that this analysis takes neither speed nor affordability into consideration and shows that more than one out of every ten customers within each ILEC company's service area lacks mobile internet access.

Q. What does Staff's study show concerning mobile internet availability in the territory of CenturyTel of Cowiche?

A As shown in Table 13, below, nearly 2 in 10 households do not have internet access in CenturyTel of Cowiche's study area. Staff would like to highlight the wire center with the highest percentage of households without internet access and the wire center with the highest number of households without internet access. On a percentage basis, 28 percent of the 57 households in the Rimrock wire center lack access to mobile internet service.

238 of the 1,336 households in the Cowiche wire center lack access to mobile internet service.

Table 13: Estimated CenturyTel of Cowiche Households without Mobile Internet Access

Lumen_WA_WireCenter_and_C	CenturyTel of Cowiche, Inc.					
Wire Center	HH Total	HH_FixedSubNoOtherSubs	HH_SatSubNoOtherSubs	HHsWithoutInternetAccess	Total HHs w/o Mobile Internet Access	%of HH w/o MIA
Cowiche	1336	118	21	99	238	18%
Rimrock	57	5	4	7	16	28%
Tieton	204	6	1	20	27	13%
Grand Total	1597	129	26	126	281	18%

Q. What does Staff's analysis show for mobile internet availability in CenturyTel of Inter Island's territory?

A. As shown in Table 14, below, a lack of mobile internet access is prevalent throughout each of CenturyTel of Inter Island's wire centers. Staff would like to highlight the wire center with the highest percentage of households without internet access and the wire center with the highest number of households without internet access. On a percentage basis, 23 percent of the 213 households in the Blakely Island wire center lack access to mobile internet service. 406 of the 3,342 households in the Friday Harbor wire center lack access to mobile internet service.

Table 14: Estimated CenturyTel of Inter Island Households without Mobile Internet Access

Lumen_WA_WireCenter_and_C	CenturyTel of Inter Island, Inc.					
Wire Center	HH Total	HH_FixedSubNoOtherSubs	HH_SatSubNoOtherSubs	HHsWithoutInternetAccess	Total HHs w/o Mobile Internet Access	%of HH w/o MIA
Blakely Island	213	18	14	17	49	23%
Eastsound	2,338	98	27	123	248	11%
Friday Harbor	3,342	187	21	198	406	12%
Lopez	1,214	109	38	100	247	20%
Grand Total	7,107	412	100	438	950	13%

Q. What does Staff's analysis show concerning mobile internet availability in the territory of CenturyTel of Washington?

A. As show in Table 15, below, approximately 18,693 households lack mobile internet access in CenturyTel of Washington's service area. Staff would like to highlight the wire center with the highest percentage of households without internet access and the wire center with the highest number of households without internet access. On a percentage basis, 48 percent of the 762 households in the Nespelem wire center lack access to mobile internet service. 2,051 of the 21,173 households in the Gig Harbor wire center lack access to fixed and mobile internet service.

Table 15: Estimated CenturyTel of Washington Households without Mobile Internet Access

Lumen_WA_WireCenter_and_C	CenturyTel of Washington					
Wire Center	HH Total	HH_FixedSubNoOtherSubs	HH_SatSubNoOtherSubs	HHsWithoutInternetAccess	Total HHs w/o Mobile Internet Access	% of HH w/o MIA
Almira	292	31	2	27	60	21%
Ames Lake	379	12	6	8	26	7%
Arletta	2,850	192	-	18	210	7%
Ashford	356	66	1	35	102	29%
Basin City	502	-	11	24	35	7%
Carnation	1,672	53	2	72	127	8%
Cathlamet	868	48	64	65	177	20%
Cheney	6,159	192	68	600	860	14%
Chewelah	2,490	208	136	418	762	31%
Clallam Bay	193	14	11	36	61	32%
Clearwater	5	-	-	1	1	20%
Connell	1,572	40	16	117	173	11%
Coulee City	540	86	21	77	184	34%
Creston	187	28	10	39	77	41%
Curtis	581	43	23	62	128	22%
Davenport	1,589	191	96	157	444	28%
Edwall	381	26	16	50	92	24%
Elma	3,383	231	23	333	587	17%
Eltopia	203	12	16	6	34	17%
Eureka	338	3	7	52	62	18%
Fall City	3,603	165	-	51	216	6%
Forks	2,323	172	4	304	480	21%
Gig Harbor	21,173	1,513	39	499	2,051	10%
Harrington	256	23	27	26	76	30%
Humptulips	201	14	3	30	47	23%
Hunters	1,019	140	88	253	481	47%
Kahlotus	116	17	10	3	30	26%
Kettle Falls	1,935	76	78	280	434	22%
Kingston	5,683	410	1	374	785	14%
Lake Quinault	83	12	3	11	26	31%
Lakebay	4,976	386	15	325	726	15%
Lind	312	10	8	48	66	21%
Long Beach	2,236	240	-	166	406	18%
Mathews Corner	337	2	18	47	67	20%
Mccleary	1,603	186	3	151	340	21%
Medical Lake	2,949	117	17	136	270	9%
Mesa	380	3	8	19	30	8%
Montesano	2,656	154	5	210	369	14%
Morton	1,553	135	19	215	369	24%
Neah Bay	303	35	3	56	94	31%
Nespelem	762	54	100	214	368	48%
North Bend	9,226	397	29	137	563	6%
North Vashon	990	30	-	153	183	18%
Ocean Park	1,368	190	3	124	317	23%
Ocosta	30	4	-	-	4	13%
Odessa	763	115	61	125	301	39%
Orting	7,944	332	21	299	652	8%
Pacific Beach	179	10	-	4	14	8%
Packwood	552	84	19	90	193	35%
Pe Ell	953	95	71	91	257	27%
Puget Island	239	20	6	42	68	28%
Randle	921	70	103	177	350	38%
Raymond	2,123	123	44	327	494	23%
Reardan	1,687	82	91	168	341	20%
Ritzville	1,162	81	14	153	248	21%
Royal City	1,624	29	20	89	138	8%
Snoqualmie Pass	98	1	-	2	3	3%
South Bend	1,206	131	18	100	249	21%
South Prairie	5,111	110	2	113	225	4%
Spangle	295	10	8	26	44	15%
Sprague	339	24	17	42	83	24%
Starbuck	56	2	5	6	13	23%
Twisp	1,175	111	34	90	235	20%
Vader	597	16	13	77	106	18%
Valley	804	104	39	150	293	36%
Vashon	3,333	318	11	223	552	17%
Washtucna	143	19	11	8	38	27%
Wilbur	727	109	11	100	220	30%
Wilson Creek	305	31	8	39	78	26%
Winthrop	440	39	75	9	123	28%
Yacolt	1,973	156	83	136	375	19%
Grand Total	125,362	8,183	1,795	8,715	18,693	15%

Q. What did Staff's analysis show about mobile internet availability in the territory of Qwest Corporation?

A. As seen below in Table 16, approximately 219,124 households lack mobile internet access in Qwest's study area. Staff would like to highlight the wire center with the highest percentage of households without internet access and the wire center with the highest number of households without internet access. On a percentage basis, 46 percent of the 1,696 households in the Springdale wire center lack access to mobile internet service. 8,388 of the 55,133 households in the Spokane Walnut wire center lack access to mobile internet service.

Table 16: Estimated Qwest Households without Mobile Internet Access

Lumen_WA_WireCenter_and_C	Qwest Corporation					
Wire Center	HH Total	HH_FixedSubNoOtherSubs	HH_SatSubNoOtherSubs	HHsWithoutInternetAccess	Total HHs w/o Mobile Internet Access	%of HH w/o MIA
Aberdeen	13,137	1,183	96	1,251	2,530	19%
Auburn	36,287	1,941	73	2,535	4,549	13%
Bainbridge Island	8,050	334	10	102	446	6%
Battleground	11,812	877	56	400	1,333	11%
Belfair	5,817	512	54	338	904	16%
Bellevue Glencourt	19,680	929	10	263	1,202	6%
Bellevue Sherwood	36,092	1,556	37	951	2,544	7%
Bellingham Lummi	431	13	8	47	68	16%
Bellingham Regent	46,636	2,856	84	2,308	5,248	11%
Black Diamond	4,982	303	91	158	552	11%
Bonney Lake	14,518	557	51	500	1,108	8%
Bremerton Essex	20,712	1,358	17	1,158	2,533	12%
Buckley	2,965	103	4	362	469	16%
Castle Rock	3,855	424	41	274	739	19%
Centralia	10,711	1,250	88	980	2,318	22%
Chehalis	6,306	573	106	637	1,316	21%
Cle Elum	2,039	142	20	214	376	18%
Colby	8,478	553	19	434	1,006	12%
Colfax	2,058	288	26	283	597	29%
Colville	5,429	511	275	680	1,466	27%
Copalis-Ocean Shores	2,112	115	3	180	298	14%
Coulee Dam	1,586	264	52	207	523	33%
Crosby	2,290	151	-	48	199	9%
Crystal Mountain	24	1	1	2	4	17%
Dayton	1,496	130	30	222	382	26%
Deer Park	7,101	549	350	838	1,737	24%
Des Moines-Ta-Tr	13,810	832	12	573	1,417	10%
Easton	168	6	2	16	24	14%
Elk	2,661	240	83	232	555	21%
Enumclaw	7,996	506	45	398	949	12%
Ephrata	4,272	320	1	378	699	16%
Federal Way	22,102	902	24	1,189	2,115	10%
Graham	28,281	1,354	79	1,288	2,721	10%
Green Bluff	2,462	172	48	179	399	16%
Hoodsport	998	164	2	84	250	25%
Issaquah	30,078	1,252	16	353	1,621	5%
Joyce	953	77	45	41	163	17%
Kent Meridian	21,082	729	18	613	1,360	6%
Kent O Brien	2,235	26	-	76	102	5%
Kent Ulrich	34,131	1,131	71	1,425	2,627	8%
Lacey	48,709	3,084	167	2,740	5,991	12%
Lewiston Sherwood	7,460	406	60	731	1,197	16%
Liberty Lake	1,007	96	20	77	193	19%
Longview	30,057	2,356	425	2,742	5,523	18%
Loon Lake	729	88	26	105	219	30%
Maple Valley	13,921	641	30	446	1,117	8%
Mercer Island	7,253	302	23	173	498	7%
Moses Lake Afb	2,646	196	47	344	587	22%
Moses Lake Alder	13,450	681	84	1,067	1,832	14%
Napavine	2,227	217	20	168	405	18%
Newman Lake	2,197	109	2	121	232	11%
Northport	893	56	140	121	317	35%
Olympia Evergreen	6,801	412	7	288	707	10%
Olympia Whitehall	37,208	2,952	237	1,822	5,011	13%
Omak	6,013	408	156	768	1,332	22%
Orchards	74,576	4,064	180	3,927	8,171	11%
Oroville	1,388	122	32	204	358	26%
Othello	4,611	76	65	484	625	14%
Pasco	26,423	1,478	151	1,358	2,987	11%
Pateros	662	13	25	121	159	24%
Pomeroy	1,296	40	32	163	235	18%
Port Angeles	12,720	1,416	100	839	2,355	19%
Port Ludlow	1,571	150	36	82	268	17%

Lumen_WA_WireCenter_and_C	Qwest Corporation					
Wire Center	HH Total	HH_FixedSubNoOtherSubs	HH_SatSubNoOtherSubs	HHsWithoutInternetAccess	Total HHs w/o Mobile Internet Access	%of HH w/o MIA
Port Orchard	13,239	1,320	32	501	1,853	14%
Port Townsend	5,768	701	23	506	1,230	21%
Puyallup	42,019	1,761	123	1,872	3,756	9%
Renton	63,950	3,119	62	2,781	5,962	9%
Ridgefield	6,264	292	61	292	645	10%
Rochester	6,022	501	180	242	923	15%
Roy	2,748	201	6	310	517	19%
Seattle Atwater	34,853	1,426	56	789	2,271	7%
Seattle Campus	18,474	836	-	615	1,451	8%
Seattle Cherry	40,659	1,848	67	2,487	4,402	11%
Seattle Duwamish	15,395	762	42	920	1,724	11%
Seattle East	53,946	2,408	75	2,401	4,884	9%
Seattle Elliott	14,985	505	32	803	1,340	9%
Seattle Emerson	46,661	3,143	153	3,231	6,527	14%
Seattle Lakeview	41,081	1,868	37	929	2,834	7%
Seattle Main	26,329	1,229	8	1,684	2,921	11%
Seattle Parkway	24,952	1,521	18	1,718	3,257	13%
Seattle Sunset	37,569	1,591	70	1,147	2,808	7%
Seattle West	31,991	1,172	46	894	2,112	7%
Sequim	12,677	1,641	136	926	2,703	21%
Shelton	13,797	1,446	178	1,148	2,772	20%
Silverdale	15,517	777	43	358	1,178	8%
Spokane Chestnut	4,106	65	37	278	380	9%
Spokane Fairfax	25,745	1,454	94	1,956	3,504	14%
Spokane Hudson	23,062	1,457	90	2,262	3,809	17%
Spokane Keystone	15,977	1,036	8	1,105	2,149	13%
Spokane Moran	12,902	629	61	458	1,148	9%
Spokane Riverside	23,445	1,450	116	1,353	2,919	12%
Spokane Walnut	55,133	4,158	268	3,962	8,388	15%
Spokane Whitworth	28,935	1,755	115	1,418	3,288	11%
Springdale	1,696	254	112	419	785	46%
Sumner	10,582	480	2	440	922	9%
Sunnyslope	1,185	91	-	19	110	9%
Tacoma Fawcett	19,882	927	13	1,804	2,744	14%
Tacoma Ft Lewis	7,988	162	7	212	381	5%
Tacoma Greenfield	33,574	1,619	37	2,106	3,762	11%
Tacoma Juniper	30,598	1,695	30	2,127	3,852	13%
Tacoma Lenox	36,576	1,886	123	2,073	4,082	11%
Tacoma Logan	19,865	1,380	-	986	2,366	12%
Tacoma Skyline	19,271	1,206	67	1,063	2,336	12%
Tacoma Waverly 2	8,164	495	13	513	1,021	13%
Tacoma Waverly 7	34,550	1,453	44	1,800	3,297	10%
Vancouver North	30,861	1,881	32	1,171	3,084	10%
Vancouver Oxford	37,863	2,317	135	2,314	4,766	13%
Waitsburg	656	79	31	53	163	25%
Walla Walla-Touchet	20,579	1,256	122	1,696	3,074	15%
Warden	1,295	60	22	193	275	21%
Winlock	2,410	142	42	194	378	16%
Yakima Chestnut	32,879	1,850	132	3,775	5,757	18%
Yakima West	16,986	1,092	115	1,339	2,546	15%
Grand Total	1,875,312	106,944	7,429	104,751	219,124	12%

Q. What did Staff's analysis show about mobile internet availability in the territory of United Telephone of the Northwest?

A. As seen below in Table 17, there are approximately 9,684 households who lack mobile internet access in United's service area. Staff would like to highlight the wire center with

the highest percentage of households without internet access and the wire center with the highest number of households without internet access. On a percentage basis, 50 percent of the 101 households in the Roosevelt wire center lack access to mobile internet service. 1,358 of the 15,717 households in the Poulsbo wire center lack access to mobile internet service.

Table 17: Estimated United Households without Mobile Internet Access

Lumen_WA_WireCenter_and_C	United Telephone Company of The Northwest					
Wire Center	HH Total	HH_FixedSubNoOtherSubs	HH_SatSubNoOtherSubs	HHsWithoutInternetAccess	Total HHs w/o Mobile Internet Access	%of HH w/o MIA
Bickelton	185	13	19	56	88	48%
Brinnon	509	44	7	66	117	23%
Chimacum	768	70	32	39	141	18%
Columbia	4	-	-	-	-	0%
Dallesport	331	35	1	20	56	17%
Gardiner	219	40	-	2	42	19%
Glenwood	278	41	23	35	99	36%
Goldendale	3,834	354	75	506	935	24%
Grandview	4,236	154	16	450	620	15%
Granger	1,195	15	3	135	153	13%
Harrah	1,116	40	15	115	170	15%
Klickitat	286	24	18	39	81	28%
Lyle	782	60	27	73	160	20%
Mabton	991	60	9	93	162	16%
Mattawa	2,303	103	12	99	214	9%
Paterson	63	3	3	9	15	24%
Poulsbo	15,717	875	19	464	1,358	9%
Prosser	4,060	202	110	424	736	18%
Quilcene	1,337	151	64	100	315	24%
Roosevelt	101	7	10	34	51	50%
Stevenson	3,067	274	29	450	753	25%
Sunnyside	8,312	243	37	856	1,136	14%
Toppenish	3,974	123	33	394	550	14%
Trout Lake	499	64	16	14	94	19%
Wapato	3,532	144	16	357	517	15%
White Salmon	3,310	231	18	284	533	16%
White Swan	412	4	12	53	69	17%
Whitstran	895	14	31	182	227	25%
Willard	464	29	3	41	73	16%
Wishram	28	1	-	5	6	21%
Zillah	1,686	58	48	107	213	13%
Grand Total	64,494	3,476	706	5,502	9,684	15%

Q. Do you believe CenturyLink accurately portrays internet availability within its service territory?

A. No. The lack of fixed and mobile internet access as shown by ACS data confirms and reinforces that the FCC's mobile voice and broadband availability data does not reflect

mobile voice or internet access inside homes or businesses, as indicated by the FCC. This analysis indicates that CenturyLink's representation of near unanimous mobile voice availability is far from the truth of what consumers experience in their households.

Q. Does the FCC have a broadband speed guide?

A. Yes, the FCC's Broadband Speed Guide provides a number of different speeds and the minimum speeds required, based on running one activity at a time. It lists VoIP Calls at less than .5 Mbps, streaming ranges from 3-25 Mbps, telecommuting from 5-25 Mpbs, and many other activities.[54]

Q. Based on the speed guide, would customers with internet speeds of 500 Kbps or slower be able to do more than one activity at a time?

A. No. While CenturyLink considers internet speeds as low as 200 Kbps as sufficient for voice service to be available,[55] staff witness Webber explains why this assumption is invalid.

a. Fixed internet.

Q. Please describe how Staff analyzes fixed internet service competition in Washington.

[54] Federal Commc'ns Comm'n, Broadband Speed Guide, *available at* https://www.fcc.gov/consumers/guides/broadband-speed-guide (last visited Mar. 31, 2024).
[55] *See* Exh. SB-6 (CenturyLink's response to UTC Staff DR No. 29, which states that upload or download speeds of at least 200 KB/s qualify a location as "served" and that voice service would be supported at any "served" location).

A. Fixed internet availability is measured at the location level and is made possible by the joining of the BDC data to each location that is included in the Fabric dataset. Both the Fabric and BDC data used within Staff's study is current as of June 30, 2023. These separate, yet related, datasets make it possible to analyze availability at the CenturyLink service area level, at the CenturyLink operating entity level, the exchange, or even the wire center level. Staff joined other indicators to each location to assess availability to tribal locations, rural and urban locations, and removed RDOF funded locations which already have a voice obligation by the high-cost Eligible Telecommuncations Carrier that was awarded support. Using the fabric, Staff can view all of these characteristics and assess the various speeds reported by different providers with the tables and charts created using the data exported from Staff's PowerBI "CenturyLinkAffordabilityProject" file. For access and transparency, summarized versions of this data are shown in EXH-SB-2C. Again, staff witness Webber set a speed benchmark of 25/3 Mbps internet speed in order to consider a service a reasonably available alternative to CenturyLink's voice service and to have the bandwidth necessary to meet consumer demands simultaneously.

Q. Please describe fixed internet service competition in Washington

A. As shown in Table 18, within the CenturyLink service area there are 117,332 units without 25/3 Mbps internet availability. [56] If the benchmark was set at 4/1 Mbps, this

[56] Data excludes Satellite, CenturyLink, and Quantum availability data. Additionally, all companies classified as Enterprise have been removed as they do not offer mass market internet service. RDOF locations are included in this summary.

would decrease to 90,347 units (or 3.35 percent). If the benchmark was set at 100/20 Mbps, this would increase to 199,747 units (or 7.62 percent).[57]

Table 18: Units within CenturyLink's Service Area - Internet Availability by Speed[58]

Company	(All)	
Row Labels	**Number of Units**	**% of Units**
Not Reported	60,240	2.30%
Speed < 4/1 Mbps	30,107	1.15%
Speed < 25/3 Mbps and >= 4/1 Mbps	26,985	1.03%
Speed < 100/20 Mbps and >= 25/3 Mbps	82,415	3.14%
Speed >= 100/20 Mbps	2,420,845	92.38%
Grand Total	**2,620,592**	**100.00%**

On an individual operating entity basis, the differences become more distinct.

Q. What does Staff's competition study show concerning fixed internet availability in the territory of CenturyTel of Cowiche?

A. As shown in Table 19 below, CenturyTel of Cowiche has 2,373 serviceable units throughout its study area. Within the CenturyTel of Cowiche service area there are 259 units (or 10.91 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 179 units (or 7.54 percent). If the benchmark was set at 100/20 Mbps, this would increase to 416 units (or 17.53 percent).

[57] The Washington Legislature defines broadband as involving download speeds of 100 Mbps down and upload speeds of 20 Mbps. RCW 43.330.530. The FCC recently adopted a similar definition. Fed. Commc'ns Comm'n, 2024 § 706 Report, *available at* https:// docs.fcc.gov/public/attachments/FCC-24-27A1.pdf (last visited Mar. 31, 2024) (hereinafter "§706 Report").

[58] Tables 18, 19, 20, 21, 22, and 23 are all created from the "AllPricesBSLSummaryRDOFCompany" of EXH-SB-2. Tables and include RDOF funded locations.

Table 19 Units within CenturyTel of Cowiche's Service Area - Internet Availability by Speed

Company	CenturyTel of Cowiche, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	179	7.54%
Speed < 25/3 Mbps and >= 4/1 Mbps	80	3.37%
Speed < 100/20 Mbps and >= 25/3 Mbps	157	6.62%
Speed >= 100/20 Mbps	1,957	82.47%
Grand Total	**2,373**	**100.00%**

Q. What does Staff's study show for fixed internet availability in the territory of CenturyTel of Inter Island?

A. As shown in Table 20 below, CenturyTel of Inter Island, Inc. has 15,570 serviceable units throughout its study area. Within the CenturyTel of Inter Island service area there are 8,034 units (or 51.60 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 7,430 units (or 47.72 percent). If the benchmark was set at 100/20 Mbps, this would increase to 8,975 units (or 57.64 percent).

Table 20: Units within CenturyTel of Inter Island's Service Area - Internet Availability by Speed

Company	CenturyTel of Inter Island, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	7,299	46.88%
Speed < 4/1 Mbps	131	0.84%
Speed < 25/3 Mbps and >= 4/1 Mbps	604	3.88%
Speed < 100/20 Mbps and >= 25/3 Mbps	941	6.04%
Speed >= 100/20 Mbps	6,595	42.36%
Grand Total	**15,570**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability in the territory of CenturyTel of Washington?

A. As shown in Table 21 below, CenturyTel of Washington has 186,858 units within its study area. Within the CenturyTel of Washington service area there are 37,172 units (or 19.89 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 29,682 units (or 15.88 percent). If the benchmark was set at 100/20 Mbps, this would increase to 59,623 units (or 31.91 percent).

Table 21: Units within CenturyTel of Washington's Service Area - Internet Availability by Speed

Company	CenturyTel of Washington	
Row Labels	**Number of Units**	**% of Units**
Not Reported	18,404	9.85%
Speed <4/1 Mbps	11,278	6.04%
Speed <25/3 Mbps and >=4/1 Mbps	7,490	4.01%
Speed <100/20 Mbps and >=25/3 Mbps	22,451	12.02%
Speed >=100/20 Mbps	127,235	68.09%
Grand Total	**186,858**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability in the territory of Qwest Corporation?

A. As shown in Table 22 below, Qwest Corporation has 2,334,964 units within its study area. Within the Qwest service area there are 57,055 units (or 2.44 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 43,547 units (or 1.86 percent). If the benchmark was set at 100/20 Mbps, this would increase to 111,617 units (or 4.78 percent).

Table 22: Units within Qwest's Service Area - Internet Availability by Speed

Company	Qwest Corporation	
Row Labels	**Number of Units**	**% of Units**
Not Reported	28,055	1.20%
Speed < 4/1 Mbps	15,492	0.66%
Speed < 25/3 Mbps and >= 4/1 Mbps	13,508	0.58%
Speed < 100/20 Mbps and >= 25/3 Mbps	54,562	2.34%
Speed >= 100/20 Mbps	2,223,347	95.22%
Grand Total	**2,334,964**	**100.00%**

Q. And, lastly, what did Staff's analysis show about fixed internet availability in the territory of United Telephone of the Northwest?

A. As shown in Table 23 below, United Telephone of the Northwest has 80,827 units within its study area. Within the United service area there are 14,812 units (or 18.33 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 9,509 units (or 11.76 percent). If the benchmark was set at 100/20 Mbps, this would increase to 19,116 units (or 23.65 percent).

Table 23: Units within United's Service Area - Internet Availability by Speed

Company	United Telephone Company of The Northwest	
Row Labels	**Number of Units**	**% of Units**
Not Reported	6,303	7.80%
Speed < 4/1 Mbps	3,206	3.97%
Speed < 25/3 Mbps and >= 4/1 Mbps	5,303	6.56%
Speed < 100/20 Mbps and >= 25/3 Mbps	4,304	5.32%
Speed >= 100/20 Mbps	61,711	76.35%
Grand Total	**80,827**	**100.00%**

b. Fixed internet with RDOF supported locations removed.

Q. What does it look like if all RDOF funded locations are removed from the analysis?

A. There is still a significant captive customer base. As shown in Table 24 below, within the CenturyLink service area there are 103,813 units (or 4.01 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 78,908 units (or 3.05 percent). If the benchmark was set at 100/20 Mbps, this would increase to 183,639 units (or 7.09 percent). [59]

Table 24: Non-RDOF Units within CenturyLink's Service Area - Internet Availability by Speed

Company	(All)	
Row Labels	**Number of Units**	**% of Units**
Not Reported	50,871	1.97%
Speed < 4/1 Mbps	28,037	1.08%
Speed < 25/3 Mbps and >= 4/1 Mbps	24,905	0.96%
Speed < 100/20 Mbps and >= 25/3 Mbps	79,826	3.08%
Speed >= 100/20 Mbps	2,405,206	92.91%
Grand Total	**2,588,845**	**100.00%** [60]

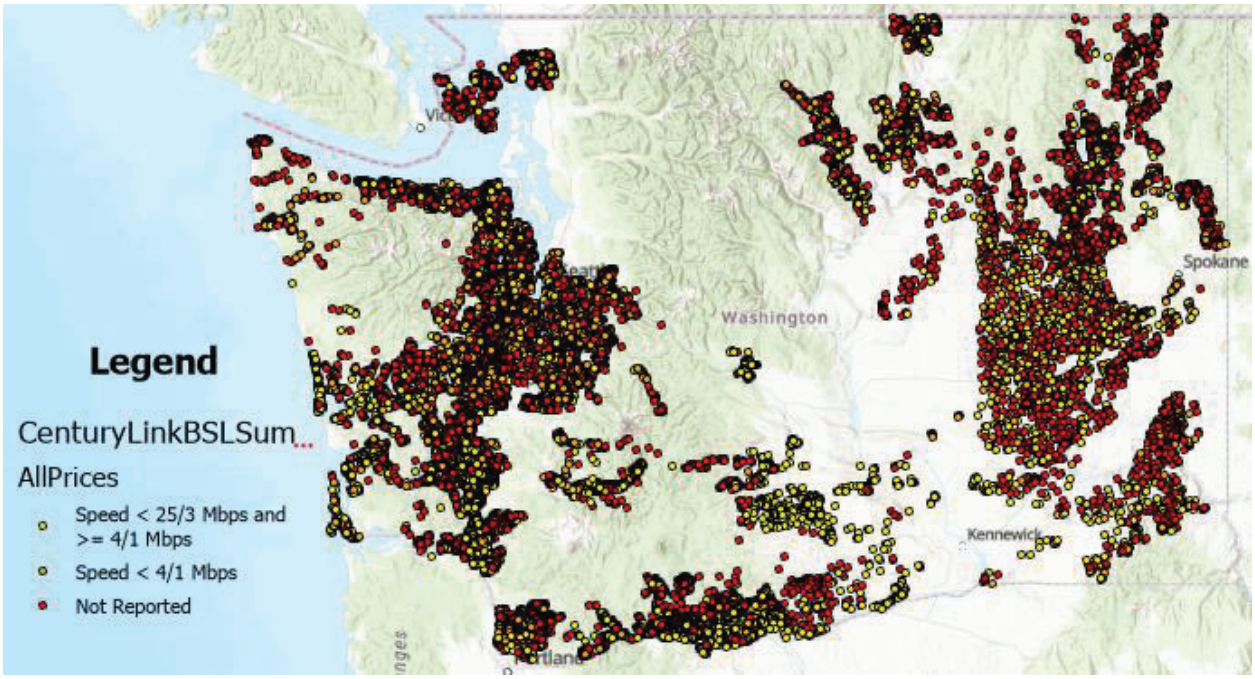
To help put this into perspective, broadband serviceable locations without 25/3 Mbps (or faster) internet service are shown in Figure 4, below.[61]

[59] Data excludes Satellite, CenturyLink, and Quantum availability data. Additionally, all companies classified as Enterprise have been removed as they do not offer mass market internet service. RDOF locations are excluded in this summary.

[60] Tables 24, 25, 26, 27, 28, and 29 are all created from the "AllPricesBSLSummaryNORDOFCo" tab within EXH. SB-2.

[61] Image created using the process previously described and is accessible via a Shapefile only. Access to the shapefile is only available after an entity executes and returns an Authorized User form to CostQuest Associates, the creator of the fabric, as previously mentioned.

Figure 4: Fixed Internet – Unserved Non-RDOF Locations



Q. Is the lack of internet connectivity uniform across CenturyLink's territory??

A. No. Even with the RDOF-supported locations removed, the different ILECs continue to show large disparities in terms of connectivity deficiencies, as seen in the following tables.

Q. What does Staff's study show concerning fixed internet availability in the territory of CenturyTel of Cowiche after removal of the RDOF-supported locations?

A. As shown in Table 25 below, CenturyTel of Cowiche has 259 units (or 10.91 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 179 units (or 7.54 percent). If the benchmark was set at 100/20 Mbps, this would increase to 416 units (or 17.53 percent).

Table 25: Non-RDOF Units within CenturyTel of Cowiche's Service Area - Internet Availability by Speed

Company	CenturyTel of Cowiche, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	179	7.54%
Speed < 25/3 Mbps and >= 4/1 Mbps	80	3.37%
Speed < 100/20 Mbps and >= 25/3 Mbps	157	6.62%
Speed >= 100/20 Mbps	1,957	82.47%
Grand Total	**2,373**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability in the territory of CenturyTel of Inter Island after it removed RDOF-supported locations?

A. As shown in Table 26 below, CenturyTel of Inter Island has 2,880 units (or 37.71 percent) without 25/3 Mbps internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 2,668 units (or 34.94 percent). If the benchmark was set at 100/20 Mbps, this would increase to 3,444 units (or 45.10 percent).

Table 26: Non-RDOF Units within CenturyTel of Inter Island's Service Area - Internet Availability by Speed

Company	CenturyTel of Inter Island, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	2,620	34.31%
Speed < 4/1 Mbps	48	0.63%
Speed < 25/3 Mbps and >= 4/1 Mbps	212	2.78%
Speed < 100/20 Mbps and >= 25/3 Mbps	564	7.39%
Speed >= 100/20 Mbps	4,193	54.90%
Grand Total	**7,637**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability in the territory of CenturyTel of Washington after removal of the RDOF-supported locations?

A. As shown in Table 27 below, CenturyTel of Washington has 31,594 units (or 17.95 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 24,903 units (or 14.15 percent). If the benchmark was set at 100/20 Mbps, this rises to 53,101 units (or 30.17 percent).

Table 27: Non-RDOF Units within CenturyTel of Washington's Service Area - Internet Availability by Speed

Company	CenturyTel of Washington	
Row Labels	**Number of Units**	**% of Units**
Not Reported	15,160	8.61%
Speed <4/1 Mbps	9,743	5.54%
Speed <25/3 Mbps and >=4/1 Mbps	6,691	3.80%
Speed <100/20 Mbps and >=25/3 Mbps	21,507	12.22%
Speed >=100/20 Mbps	122,896	69.83%
Grand Total	**175,997**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability in the territory of Qwest Corporation once the RDOF –supported locations are removed?

A. As shown in Table 28 below, Qwest has 54,466 units (or 2.34 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 41,702 units (or 1.79 percent). If the benchmark was set at 100/20 Mbps, this rises to 108,195 units (or 4.65 percent).

Table 28: Non-RDOF Units within Qwest's Service Area - Internet Availability by Speed

Company	Qwest Corporation	
Row Labels	**Number of Units**	**% of Units**
Not Reported	26,650	1.15%
Speed < 4/1 Mbps	15,052	0.65%
Speed < 25/3 Mbps and >= 4/1 Mbps	12,764	0.55%
Speed < 100/20 Mbps and >= 25/3 Mbps	53,729	2.31%
Speed >= 100/20 Mbps	2,219,071	95.35%
Grand Total	**2,327,266**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability in United Telephone Company of the Northwest's territory after Staff removes the RDOF-supported locations?

A. As shown in Table 29 below, United Telephone Company of the Northwest has 14,614 units (or 19.34 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 9,456 units (or 12.51 percent). If the benchmark was set at 100/20 Mbps, this rises to 18,483 units (or 24.46 percent).

Table 29: Non-RDOF Units within United's Service Area - Internet Availability by Speed

Company	United Telephone Company of The Northwest	
Row Labels	**Number of Units**	**% of Units**
Not Reported	6,262	8.29%
Speed < 4/1 Mbps	3,194	4.23%
Speed < 25/3 Mbps and >= 4/1 Mbps	5,158	6.83%
Speed < 100/20 Mbps and >= 25/3 Mbps	3,869	5.12%
Speed >= 100/20 Mbps	57,089	75.54%
Grand Total	**75,572**	**100.00%**

Q. Did staff look at internet availability on tribal areas?

A. Yes, as previously mentioned, staff added a tribal indicator to each broadband serviceable location (and its associated units) that is within a tribal area.[62] This gives staff and the Commission the ability to measure the impact to this covered or underrepresented population to ensure any impact is minimized.[63] This analysis is focused solely on tribal areas. RODF supported locations and non-tribal areas are not included in this analysis, and the access data set out below is presented accordingly.

c. Fixed internet availability on tribal lands.

Q. What does Staff's competition study show concerning fixed internet availability on tribal land?

A. As shown below in Table 30, Within the CenturyLink service area, there are 7,517 units (or 13.3 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 5,992 units (or 10.60 percent). If the benchmark was set at 100/20 Mbps, this rises to 11,033 units (or 19.5 percent).

[62] Staff included tribal reservations, off reservation trust lands and the Samish Tribal Designated Statistical Area.Tribal. Shapefiles (maps) were accessed from OFM. *See* Wash. State Office of Financial Mgmt., Census Geographic Files, *available at*: https://ofm.wa.gov/washington-data-research/population-demographics/gis-data/census-geographic-files (last visited Mar. 31, 2024).

[63] The Washington State Broadband Office, in consultation with the UTC, developed and submitted a now approved Digital Equity Plan to the NTIA. This plan focuses on ensuring all Washingtonians, including covered populations or underrepresented communities have access to full engagement in the digital economy. These populations include low-income households, aging individuals; incarcerated individuals; veterans; individuals with disabilities; individuals with a language barrier, individuals who are members of a racial or ethnic minority group, and individuals in a rural area. The plan can be accesses at: Wash. State Dept. of Commerce, Internet for All in Washington: Digital Equity Plan, *available at* https://deptofcommerce.app.box.com/s/u2z9y6tux2z9ypsvbsuomn0ka85w3p8w (last visited Mar. 31, 2024).

Table 30: Tribal Units Within the CenturyLink Service Area[64]

Company	(All)	
Row Labels	**Number of Units**	**% of Units**
Not Reported	5,733	10.14%
Speed < 4/1 Mbps	259	0.46%
Speed < 25/3 Mbps and >= 4/1 Mbps	1,525	2.70%
Speed < 100/20 Mbps and >= 25/3 Mbps	3,516	6.22%
Speed >= 100/20 Mbps	45,489	80.48%
Grand Total	**56,522**	**100.00%**

Q. For units within tribal areas, is the lack of internet connectivity uniform across CenturyLink's territory?

A. No, it is not uniform. Again, the different ILECs show large disparities in terms of connectivity deficiencies, as seen in the following tables.[65]

Q. **What does Staff's study show concerning fixed internet availability for tribal lands within the service area of CenturyTel of Inter Island?**

A. As shown below in Table 31, CenturyTel of Inter Islands has 2,880 units (or 37.71 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 2,668 units (or 34.94 percent). If the benchmark was set at 100/20 Mbps, this rises to 3,444 units (or 45.10 percent).

[64] Tables 30, 31, 32, 33, and 34 are all created on "TribalAllPricesSummaryCO" tab of EXH SB-2. Data by Wire Center is included on the "TribalAllPricesSummaryWC" tab.
[65] CenturyTel of Cowiche does not have tribal areas within its study area.

Table 31: Tribal Units Within the CenturyTel of Inter Island Service Area

Company	CenturyTel of Inter Island, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	2,620	34.31%
Speed < 4/1 Mbps	48	0.63%
Speed < 25/3 Mbps and >= 4/1 Mbps	212	2.78%
Speed < 100/20 Mbps and >= 25/3 Mbps	564	7.39%
Speed >= 100/20 Mbps	4,193	54.90%
Grand Total	**7,637**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability for tribal lands within the service area of CenturyTel of Washington?

A. As shown below in Table 32, CenturyTel of Washington has 1,979 units (or 52.49 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 1,837 units (or 48.73 percent). If the benchmark was set at 100/20 Mbps, this rises to 2,330 units (or 61.80 percent).

Table 32: Tribal Units Within the CenturyTel of Washington Service Area

Company	CenturyTel of Washington	
Row Labels	**Number of Units**	**% of Units**
Not Reported	1,729	45.86%
Speed < 4/1 Mbps	108	2.86%
Speed < 25/3 Mbps and >= 4/1 Mbps	142	3.77%
Speed < 100/20 Mbps and >= 25/3 Mbps	351	9.31%
Speed >= 100/20 Mbps	1,440	38.20%
Grand Total	**3,770**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability for tribal lands within the service area of Qwest?

A. As shown below in Table 33, Qwest has 1,544 units (or 4.80 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 1,068 units (or 3.32 percent). If the benchmark was set at 100/20 Mbps, this rises to 2,815 units (or 8.74 percent).

Table 33: Tribal Units Within the Qwest Service Area

Company	Qwest Corporation	
Row Labels	**Number of Units**	**% of Units**
Not Reported	1,011	3.14%
Speed < 4/1 Mbps	57	0.18%
Speed < 25/3 Mbps and >= 4/1 Mbps	476	1.48%
Speed < 100/20 Mbps and >= 25/3 Mbps	1,271	3.95%
Speed >= 100/20 Mbps	29,381	91.26%
Grand Total	**32,196**	**100.00%**

Q. What does Staff's study show concerning fixed internet availability for tribal lands within the service area of United?

A. As shown below in Table 34, United has 1,114 units (or 8.62 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 419 units (or 3.24 percent). If the benchmark was set at 100/20 Mbps, this rises to 2,444 units (or 18.92 percent).

Table 34: Tribal Units Within the United Service Area

Company	United Telephone Company of The Northwest	
Row Labels	**Number of Units**	**% of Units**
Not Reported	373	2.89%
Speed < 4/1 Mbps	46	0.36%
Speed < 25/3 Mbps and >= 4/1 Mbps	695	5.38%
Speed < 100/20 Mbps and >= 25/3 Mbps	1,330	10.29%
Speed >= 100/20 Mbps	10,475	81.08%
Grand Total	**12,919**	**100.00%**

d. Fixed internet in rural areas.

Q. Does there appear to more or less competition in rural areas?

A. The FCC recently published its 2024 Section 706 Report that focuses on an evaluation of advanced telecommunications capability in the United States.[66] The FCC summarized the percentage of populations served with broadband (100/20 Mbps), served with 5G Mobile, and the percent served with both. It completed this analysis on rural and urban areas. Exh. SB-10 shows the differences by Washington state counties. In this report, the FCC found a clear distinction of fixed broadband and mobile availability between urban and rural areas and this is shown for Washington in table 35 below.

[66] *See generally* § 706 Report.

Table 35: FCC "Served" Findings between Urban and Rural

State, Territory,County or County Equivalent	Washington
Urban	
Pop. Evaluated	6,454,972
% of Pop. With Mobile 5G-NR 35/3 Mbps	98.60%
% of Pop. With Mobile 5G-NR 35/3 Mbps	96.80%
% of Pop. With Fixed & Mobile	95.60%
Rural	
Pop. Evaluated	1,330,814
% of Pop. With Fixed 100/20 Mbps	56.90%
% of Pop. With Mobile 5G-NR 35/3 Mbps	66.70%
% of Pop. With Fixed & Mobile	41.90%

Q. How did staff analyze urban and rural locations within its Competition Study?

A. As previously mentioned, staff identified each broadband serviceable location as "R" or "U."[67] Staff analyzed the number of rural and urban units located within each operating entities study area.

Q. **What does Staff's study show concerning the rural and urban split within the CenturyLink service area?**

A. As shown below in Table 36, within the CenturyLink service area there are 376,167 rural units and 2,212,678 urban units. In other words, rural units make up 14.53 percent of the 2,588,845 total units.

[67] "R" equals rural and "U" equals urban. Summary excludes funded RDOF locations. The 2020 Urban Shapefile (maps) were accessed from OFM. *See* Wash. State Office of Financial Mgmt., Census Geographic Files, *available at*: https://ofm.wa.gov/washington-data-research/population-demographics/gis-data/census-geographic-files (last visited Mar. 31, 2024).

Table 36: Rural and Urban Divide Within the CenturyLink Service Area[68]

Company	(All)				
Column Labels					
R		U		Total Number of Units	Total % of Units
Number of Units	% of Units	Number of Units	% of Units		
376,167	14.53%	2,212,678	85.47%	2,588,845	100.00%

Q. How many of the units within the CenturyTel of Cowiche service area are rural?

A. As shown in Table 37 below, 100 percent of the 2,373 units are rural.

Table 37: CenturyTel of Cowiche Unit Counts – Urban or Rural

Company	CenturyTel of Cowiche, Inc.		
Column Labels			
R		Total Number of Units	Total % of Units
Number of Units	% of Units		
2,373	100.00%	2,373	100.00%

Q. How many of the units within the CenturyTel of Inter Island service area are rural?

A. As shown in Table 38 below, 66.51 percent of the 7,637 units are rural.

Table 38: CenturyTel of Cowiche Unit Counts – Urban or Rural

Company	CenturyTel of Inter Island, Inc.				
Column Labels					
R		U		Total Number of Units	Total % of Units
Number of Units	% of Units	Number of Units	% of Units		
5,079	66.51%	2,558	33.49%	7,637	100.00%

Q. How many of the units within the CenturyTel of Washington service area are rural?

A. As shown in Table 39 below, 58.80 percent of the 175,997 units are rural.

[68] Tables 36, 37, 38, 39, 40, and 41 are created from the "RuralUrbanUnitsCO" tab with Exh. SB2.

Table 39: CenturyTel of Washington Unit Counts – Urban or Rural

Company	CenturyTel of Washington				
Column Labels					
R		U		Total Number of Units	Total % of Units
Number of Units	% of Units	Number of Units	% of Units		
103,492	58.80%	72,505	41.20%	175,997	100.00%

Q. How many of the units within the Qwest service area are rural?

A. As shown in Table 40 below, 9.70 percent of the 2,327,266 units are rural.

Table 40: Qwest Unit Counts – Urban or Rural

Company	Qwest Corporation				
Column Labels					
R		U		Total Number of Units	Total % of Units
Number of Units	% of Units	Number of Units	% of Units		
225,745	9.70%	2,101,521	90.30%	2,327,266	100.00%

Q. How many of the units within the United service area are rural?

A. As shown in Table 41 below, 52.24 percent of the 75,572 units are rural.

Table 41: United Unit Counts – Urban or Rural

Company	United Telephone Compa of The Northwest				
Column Labels					
R		U		Total Number of Units	Total % of Units
Number of Units	% of Units	Number of Units	% of Units		
39,478	52.24%	36,094	47.76%	75,572	100.00%

Q. What does Staff's study show concerning fixed internet availability in rural areas of the CenturyLink service area?

A. As shown in Table 42 below, there are 94,468 rural units (or 25.11 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 71,791 rural units (or 19.08 percent). If the benchmark was set at 100/20 Mbps, this rises

to 167,467 rural units (or 44.52 percent). This analysis is focused on rural areas, meaning that all urban locations and all RDOF supported locations are not included when looking at the percentage of units without access.

Table 42: Internet Availability by Speed - Rural Units within the CenturyLink Service Area[69]

Company	(All)	
Row Labels	**Number of Units**	**% of Units**
Not Reported	46,348	12.32%
Speed < 4/1 Mbps	25,443	6.76%
Speed < 25/3 Mbps and >= 4/1 Mbps	22,677	6.03%
Speed < 100/20 Mbps and >= 25/3 Mbps	72,999	19.41%
Speed >= 100/20 Mbps	208,700	55.48%
Grand Total	**376,167**	**100.00%**

Q. For units within rural areas, is the lack of internet connectivity uniform across CenturyLink's territory??

A. No. As seen in other contexts, the different ILECs show large disparities in terms of connectivity deficiencies, as seen in the following tables.

Q. What does Staff's study show concerning internet availability rural areas of the CenturyTel of Cowiche service area?

A. As shown in Table 43 below, Cowiche has 259 rural units (or 10.91 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 179 rural units (or 7.54 percent). If the benchmark was set at 100/20 Mbps, this rises to 416 rural units (or 17.53 percent).

[69] Table 42, 43, 44, 45, 46, and 47 are created from within the "RuralAllPricesSummaryCO" tab of EXH-SB2. Data is available on a Wire Center basis within the "RuralAllPricesSummaryWC" tab.

Table 43: Internet Availability by Speed - Rural Units within the CenturyTel of Cowiche Service Area

Company	CenturyTel of Cowiche, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	179	7.54%
Speed < 25/3 Mbps and >= 4/1 Mbps	80	3.37%
Speed < 100/20 Mbps and >= 25/3 Mbps	157	6.62%
Speed >= 100/20 Mbps	1,957	82.47%
Grand Total	**2,373**	**100.00%**

Q. What does Staff's study show concerning internet availability rural areas of the CenturyTel of Inter Island service area?

A. As shown in Table 44 below, Inter Island has 2,736 rural units (or 53.87 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 2,532 rural units (or 49.85 percent). If the benchmark was set at 100/20 Mbps, this rises to 3,299 rural units (or 64.95 percent).

Table 44: Internet Availability by Speed - Rural Units within the CenturyTel of Inter Island Service Area

Company	CenturyTel of Inter Island, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	2,485	48.93%
Speed < 4/1 Mbps	47	0.93%
Speed < 25/3 Mbps and >= 4/1 Mbps	204	4.02%
Speed < 100/20 Mbps and >= 25/3 Mbps	563	11.08%
Speed >= 100/20 Mbps	1,780	35.05%
Grand Total	**5,079**	**100.00%**

Q. What does Staff's study show concerning internet availability rural areas of the CenturyTel of Washington service area?

A. As shown in Table 45 below, CenturyTel of Washington has 30,698 rural units (or 29.66 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 24,128 rural units (or 23.31 percent). If the benchmark was set at 100/20 Mbps, this rises to 51,120 rural units (or 49.40 percent).

Table 45: Internet Availability by Speed - Rural Units within the CenturyTel of Washington Service Area

Company	CenturyTel of Washington	
Row Labels	**Number of Units**	**% of Units**
Not Reported	14,815	14.32%
Speed <4/1 Mbps	9,313	9.00%
Speed <25/3 Mbps and >=4/1 Mbps	6,570	6.35%
Speed <100/20 Mbps and >=25/3 Mbps	20,422	19.73%
Speed >=100/20 Mbps	52,372	50.60%
Grand Total	**103,492**	**100.00%**

Q. What does Staff's study show concerning internet availability rural areas of the Qwest service area?

A. As shown in Table 46 below, Qwest has 46,731 rural units (or 20.70 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 35,937 rural units (or 15.92 percent). If the benchmark was set at 100/20 Mbps, this rises to 95,154 rural units (or 42.15 percent).

Table 46: Internet Availability by Speed - Rural Units within the Qwest Service Area

Company	Qwest Corporation	
Row Labels	**Number of Units**	**% of Units**
Not Reported	22,835	10.12%
Speed < 4/1 Mbps	13,102	5.80%
Speed < 25/3 Mbps and >= 4/1 Mbps	10,794	4.78%
Speed < 100/20 Mbps and >= 25/3 Mbps	48,423	21.45%
Speed >= 100/20 Mbps	130,591	57.85%
Grand Total	**225,745**	**100.00%**

Q. What does Staff's study show concerning internet availability rural areas of the United service area?

A. As shown in Table 47 below, United has 14,044 rural units (or 35.57 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 9,015 rural units (or 22.84 percent). If the benchmark was set at 100/20 Mbps, this rises to 17,478 rural units (or 44.27 percent).

Table 47: Internet Availability by Speed - Rural Units within the United Service Area

Company	United Telephone Company of The Northwest	
Row Labels	**Number of Units**	**% of Units**
Not Reported	6,034	15.28%
Speed < 4/1 Mbps	2,981	7.55%
Speed < 25/3 Mbps and >= 4/1 Mbps	5,029	12.74%
Speed < 100/20 Mbps and >= 25/3 Mbps	3,434	8.70%
Speed >= 100/20 Mbps	22,000	55.73%
Grand Total	**39,478**	**100.00%**

3. Case Study: CenturyLink's Eastsound wire center.

Q. Does Staff have an example of how CenturyLink's Competition Study overestimates the number of alternative service providers within a wire center?

A. Yes. Take for example its Eastsound wire center, where CenturyLink reports competition from nine fixed internet providers.[70] CenturyLink also reports competition from three satellite providers (because it reports them as providing competition in all its wire centers). CenturyLink states that 2,684 of the 2,756 households have mobile voice availability.[71] CenturyLink relies almost exclusively on the availability of mobile and satellite service to consider this wire center as "served."

Q. Does CenturyLink accurately characterize the competition it faces in Eastsound?

A. No. Internet service provided by the satellite providers are all higher than the $55.13 affordability benchmark established by Staff Witness Webber. Additionally, mobile voice availability is included even though the FCC set standards for outside modelling only. As shown on the "AverageProvidersperWC" tab within Exh. SB-2C, each location within the Eastsound wire center has an average of .78 providers reporting availability to it. When only affordable 25/3 Mbps (or faster) is considered, this average decreases to .21 providers per location.[72]

[70] Eastsound wire center data provided on the tab titled "All Fixed Providers," within CenturyLink's Exhibit PJG-2C.
[71] Eastsound wire center data provided on the tab titled "Mobile Voice," within CenturyLink's Exhibit PJG-2C.
[72] This tab includes the average number of providers per location within each wire center.

Q. Why is this important?

A. It illustrates that although a provider or several providers, may advertise internet availability within a wire center, it is not uniformly available throughout the entire wire center. In fact, there are 34 wire centers in which the average number of providers per location is below one (all prices). When unaffordable 25/3 Mbps service is excluded, there are 139 wire centers in which the average number of providers per location is below one.

C. CenturyLink's Customers Lack Readily Available, Functionally Equivalent or Substitute Services

Q. What is the third factor set forth in RCW 80.36.320(1)(c)?

A. It is "[t]he ability of alternative providers to make functionally equivalent or substitute services readily available at competitive rates, terms, and conditions."

Q. How does staff assess whether competitors in Washington provide services at competitive rates, terms, and conditions?

A. "Competitive" rates are normally set by the market. But no two markets are necessarily the same. What is competitive in one area may not be competitive in another. Likewise, two households within the same market can have very different definitions of what is competitive. Just because a company offers a service at an extremely high price, and has one, or many subscribers, does not mean that rates are competitive or affordable. It could simply mean that the customer has no other options. For this reason, we can't simply say

all services everywhere are affordable and it would be a gross overstatement to say that they are. The CenturyLink companies each offer uniform rates within their service area and in order to be deemed competitive, subscribers should all have a service that are considered affordable.

Q. Is affordability important?

A. Yes. The Policy declaration found in RCW 80.36.300 states:

> "The Legislature declares it is the policy of the state to: (1) Preserve affordable universal telecommunications service; (2) Maintain and advance the efficiency and availability of telecommunications service; (3) Ensure that customers pay only reasonable charges for telecommunications service; (4) Ensure that rates for noncompetitive telecommunications services do not subsidize the competitive ventures of regulated telecommunications companies; (5) Promote diversity in the supply of telecommunications services and products in telecommunications markets throughout the state: and (6) Permit flexible regulation of competitive telecommunications companies and services."[73]

Two of the six state policies directly relate to affordability, specifically numbers. 1 and 3. It is, accordingly, Staff's position that affordability should be considered when attempting to determine the number of reasonably available alternatives. Take satellite for an example. In EXH-PJG-2R (CenturyLink's Redacted Competition study), CenturyLink lists three Satellite service providers, Viasat, HughesNet, and Starlink, indicating that they are reasonably available alternatives. However, the lowest priced internet service for each of those satellite providers is $99.99, $79.99, and $120 a month, respectively (see exhibits SB-11, SB-12, SB-13)). All prices are all above the FCC voice benchmark of $55.13 and well above CenturyLink's price for basic local exchange service of $39 (price includes the federal $6.50 subscriber line charge). The prices listed for satellite are for

[73] RCW 80.36.300.

internet service and adding a Voice service subscription costs an additional $35 a month for Viasat and an additional $29.95 a month for HughesNet. Starlink, on the other hand, does not currently offer a voice subscription but is currently working on a direct-to-cell network. Starlink projects to launch "text service in 2024 and voice, data, and Internet-of-Things (IoT) services in 2025."[74]

Q. Should satellite service providers be considered reasonable alternatives to CenturyLink's service?

A. No. Affordability should be considered to determine reasonableness, particularly while attempting to "Preserve affordable universal telecommunications service."[75] The Commission should, accordingly, refuse to consider services whose price exceeds Staff's benchmarks as reasonable alternatives.

Q. What is CenturyLink's view on affordability?

A. CenturyLink indicated that the definition of affordable is subjective, that "What is 'affordable' to one customer may be 'unaffordable' to another."[76] On its own, this is true. The maximum price a customer is willing or can pay for a service or product, does distinguish what that customer considers to be affordable as opposed to unaffordable. However, in the context of universal telecommunications service, affordability should be determined by considering every customer's affordability threshold.

[74] *See* Exh. SB-13.
[75] RCW 80.36.300(1).
[76] See Exh. SB-27.

Q. Has another agency assessed the impact of affordability (or other considerations) on the adoption of services?

A. Yes, in the FCC's 2022 Communications Marketplace Report, the agency calculated county-level adoption rates for terrestrial broadband services by quartile ranking for median household income, population density, the poverty rate, and the proportion of population within rural areas.[77]

As shown in Figure 4 of the FCC's table, below, those with the lowest median household income have lower adoption rates, those with the lowest population density had the lowest adoption rates, those with the highest household poverty rate had the lowest adoption rate, and those with the highest rural population rate had the lowest adoption rates.

[77] *Communications Marketplace Report*, 37 FCC Rcd 15514, 15628, Fig. II.A.17 (2022).

Figure 4: FCC Fig. II.A.18

Fig. II.A.18
Average County Overall Adoption Rate for Fixed Terrestrial Services by County Level Demographic Variable (Dec. 31, 2021)

	25/3 Mbps	100/20 Mbps	940/500 Mbps
Median Household Income ($2020)			
First Quartile (Lowest Median Household Income)	42.4%	18.6%	8.8%
Second Quartile	54.7%	21.8%	8.8%
Third Quartile	60.8%	23.7%	8.1%
Fourth Quartile (Highest Median Household Income)	73.1%	30.5%	12.2%
Population Density			
First Quartile (Lowest Population Density)	50.4%	24.1%	6.8%
Second Quartile	46.6%	20.7%	9.1%
Third Quartile	59.7%	21.5%	9.4%
Fourth Quartile (Highest Population Density)	74.2%	28.4%	12.1%
Household Poverty Rate			
First Quartile (Lowest Household Poverty Rate)	68.4%	28.5%	9.9%
Second Quartile	61.8%	24.5%	9.8%
Third Quartile	56.2%	22.3%	9.9%
Fourth Quartile (Highest Household Poverty Rate)	44.5%	19.3%	8.3%
Rural Population Rate			
First Quartile (Lowest Rural Population Rate)	72.6%	28.5%	11.3%
Second Quartile	60.3%	22.5%	9.2%
Third Quartile	50.1%	20.1%	9.1%
Fourth Quartile (Highest Rural Population Rate)	47.8%	23.5%	8.1%

Source: FCC Form 477 year-end residential deployment and connections data; Staff Block Estimates; 2020 Census land area estimates; ACS Five-Year Estimates for 2016-2020.

Based on this data, CenturyLink is correct, services, regardless of speed, are affordable for some and unaffordable for others. However, services that are unaffordable to the majority of a covered population are not reasonably available. To be considered reasonably available, services must be available and affordable. Unfortunately, those with the lowest median household income, the highest poverty rate, and that live in rural areas have the lowest adoption rates for any and all speeds.

Q. Has the FCC considered affordability in its assessment of advanced telecommunications and universal service in other ways?

A. Yes, the FCC stated, "We find that broadband affordability is critical to our assessment of its availability and agree with commenters, such as the Wireless Infrastructure Association (WIA), which states that '[f]or many Americans on the wrong side of the digital divide the biggest barrier is not the availability of service but the lack of resources to connect.'[78] We also agree with Open Technology Institute at New America's (OTI's) statement that 'if the cost of broadband service is higher than millions of people can afford, service cannot be said to be available.'" The FCC recognizes that service is not available unless people can afford it. The Commission should do no differently, given the Legislature's policy declarations.

Q. How did Staff use the affordability benchmark used in its competition study?

A. Staff completed an affordability survey to identify the price of service to purchase 4/1 Mbps, 25/3 Mbps, and 100/20 Mbps from each provider. As previously stated, a "Comparison" column was added to the survey and joined to the broadband availability data, which was then joined to the Fabric. Staff then completed two queries. The first query excluded CenturyLink, Quantum, Enterprise providers, and records where 25/3 Mbps comparison is equal to "Above FCC Benchmark." Once set, Staff ran summary statistics to identify the maximum speed range for each broadband serviceable location. This number was then joined to the fabric dataset, nulls were changed to "Not Reported," staff then added a text column, copied the maximum and then converted the number to one of the four broadband status groupings. For the second query, Staff repeated this

[78] § 706 Report at ¶ 13 (alteration in original).

process to exclude CenturyLink, Quantum, Enterprise providers, and records where the 100/20 Mbps comparison field is equal to "Above FCC Benchmark."

Q Does staff's affordability survey consider the extra cost of VoIP service in addition to the cost of internet service?

A. No, it doesn't. Contrary to CenturyLink's assertion that "voice service would be supported at any "served" location," the fact that an ISP provides internet service does not mean that voice service is available. There is an additional cost for VoIP service and this extra cost is not already included the provider prices of internet service.

Q. How would inclusion of affordability affect CenturyLink's Competition study?

A. If CenturyLink had taken affordability into consideration when conducting its competitive analysis, the number of reasonably available alternative providers would decrease substantially. Previously, I explained why satellite should not be considered a reasonably available alternative in the context of affordability. When applying an affordability standard, such as the FCC voice benchmark, which is currently at $55.13, to CenturyLink's competition study, the number of alternatives decreases from the 82 providers CenturyLink included in the "all providers" tab of EXH-PJG-2R/C to 35 providers that provide internet service that is below the FCC voice benchmark. If the Commission looks at alternative affordable speeds, there are only 43 companies below $55.13 with 4/1 Mbps availability and only 23 companies below $55.13 with 100/20 Mbps availability).

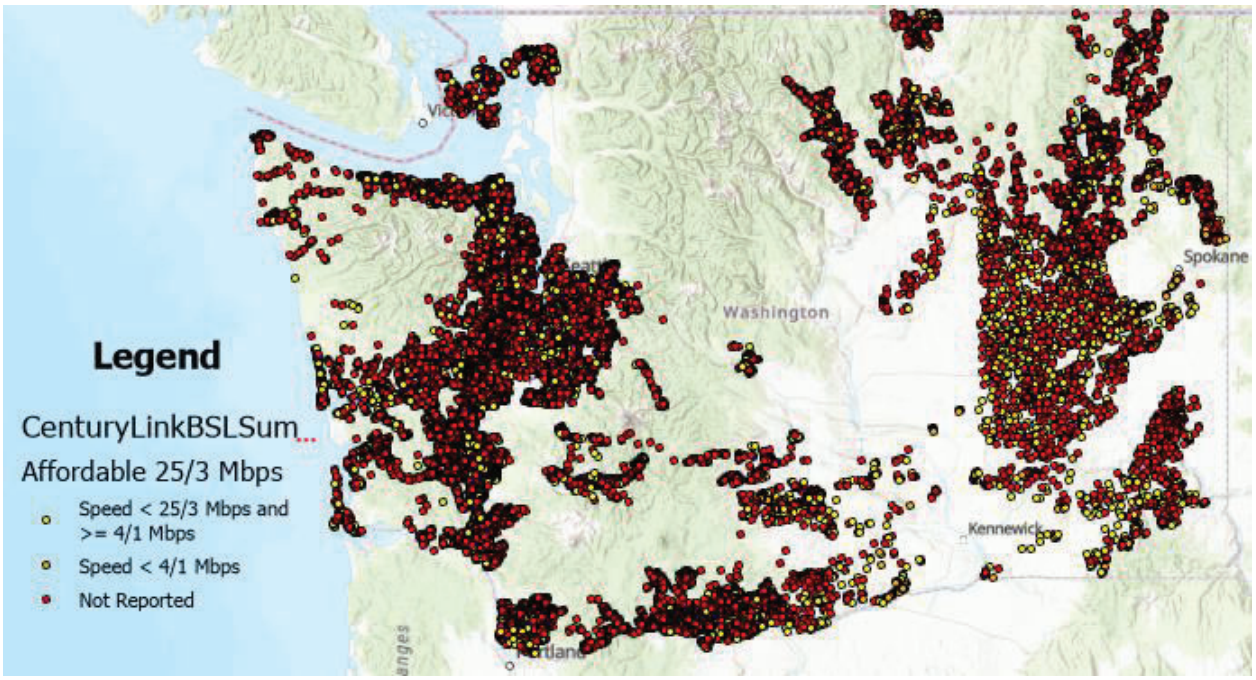
This reduction in providers does not take into consideration whether these ISPs provide telecommunication services or not, and at what additional price. CenturyLink claims that "This proceeding concerns whether the CenturyLink ILEC's are subject to effective competition for voice services in their Washington service territories."[79] Yet, CenturyLink's competition study makes no effort to determine if the alternative providers even provide a comparable service to their voice service. Instead, the CenturyLink's competition study over-represents the number and size of reasonably available alternatives by equating broadband availability to available voice service regardless of the price or internet speed.

Q. Is there an affordable 25/3 Mbps internet service in the CenturyLink service area?

A. In some areas, yes. However, there are relatively few affordable fixed internet service alternatives. Units without affordable 25/3 Mbps internet service are shown in Figure 5, below. This analysis excludes broadband availability of providers whose 25/3 Mbps service is more than the $55.13 affordability benchmark set by Staff Witness Webber. A unit without any affordable internet options is counted in the "Not Reported" group.

[79] *See* Exh. SB-29.

Figure 5: Broadband Serviceable Locations without affordable 25/3 Mbps Internet Service[80]



As shown in Table 48 below, within the Combined CenturyLink study area there are 1,156,976 units (or 44.69 percent) without affordable 25/3 Mbps (or faster) internet availability. If the benchmark was set at 4/1 Mbps, this would decrease to 1,028,853 units

[80] Created within ArcPRO from the CenturyLinkBSLSummaries6302023 layer.

(or 39.74 percent). If the benchmark was set at 100/20 Mbps, this would increase to 1,626,807 units (or 62.84 percent).

Table 48: Affordable Internet Availability by Speed within the CenturyLink Service Area

company	(All)	
Row Labels	**Number of Units**	**% of Units**
Not Reported	1,023,626	39.54%
Speed < 4/1 Mbps	5,227	0.20%
Speed < 25/3 Mbps and >= 4/1 Mbps	128,123	4.95%
Speed < 100/20 Mbps and >= 25/3 Mbps	469,831	18.15%
Speed >= 100/20 Mbps	962,038	37.16%
Grand Total	**2,588,845**	**100.00%** [81]

Q. Is the lack of affordable internet connectivity uniform across CenturyLink's territory??

A. No, it is not uniform. As staff's analysis has consistently shown, the different ILECs show large disparities in terms of connectivity deficiencies, as discussed more fully below.

Q. What does the data show about affordable internet service in CenturyTel of Cowiche's territory?

A. Table 49 below, shows reported internet availability for providers that offer affordable 25/3 Mbps service within CenturyTel of Cowiche's study area. Cowiche has 1,241 units (or 52.30 percent) without affordable 25/3 Mbps or faster internet service. If the

[81] Table 48, 49, 50, 51, 52, and 53 are created from within the "Afford253SummaryCO" tab of EXH-SB2. Data is available on a Wire Center basis within the "Afford253SummaryWC" tab. Data excludes Enterprise providers as well as CenturyLink and Quantums internet availability data and all

benchmark was set at 4/1 Mbps, this decreases to 974 units (or 41.05 percent). If the benchmark was set at 100/20 Mbps, this rises to 2,369 units (or 99.83 percent).

Table 49: Affordable Internet Availability by Speed within the CenturyTel of Cowiche Service Area

company	CenturyTel of Cowiche, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	820	34.56%
Speed < 4/1 Mbps	154	6.49%
Speed < 25/3 Mbps and >= 4/1 Mbps	267	11.25%
Speed < 100/20 Mbps and >= 25/3 Mbps	1,128	47.53%
Speed >= 100/20 Mbps	4	0.17%
Grand Total	**2,373**	**100.00%**

Q. What does the data show about affordable internet service in CenturyTel of Inter Island's territory?

A. Table 50 below, shows reported internet availability for providers that offer affordable 25/3 Mbps service within CenturyTel of Inter Island's study area. Inter Island has 4,567 units (or 59.80 percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 4,237 units (or 55.48 percent). If the benchmark was set at 100/20 Mbps, this rises to 5,121 units (or 67.06 percent).

Table 50: Affordable Internet Availability by Speed within the CenturyTel of Inter Island Service Area

company	CenturyTel of Inter Island, Inc.	
Row Labels	**Number of Units**	**% of Units**
Not Reported	4,237	55.48%
Speed < 25/3 Mbps and >= 4/1 Mbps	330	4.32%
Speed < 100/20 Mbps and >= 25/3 Mbps	554	7.25%
Speed >= 100/20 Mbps	2,516	32.94%
Grand Total	**7,637**	**100.00%**

Q. What does the data show about affordable internet service in CenturyTel of Washington's territory?

A. Table 51 below, shows reported internet availability for providers that offer affordable 25/3 Mbps service within CenturyTel of Washington's study area. CenturyTel of Washington has 108,424 units (or 61.61 percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 95,537 units (or 54.28 percent). If the benchmark was set at 100/20 Mbps, this rises to 131,948 units (or 74.97 percent).

Table 51: Affordable Internet Availability by Speed within the CenturyTel of Washington's Service Area

company	CenturyTel of Washington	
Row Labels	**Number of Units**	**% of Units**
Not Reported	94,625	53.77%
Speed < 4/1 Mbps	912	0.52%
Speed < 25/3 Mbps and >= 4/1 Mbps	12,887	7.32%
Speed < 100/20 Mbps and >= 25/3 Mbps	23,524	13.37%
Speed >= 100/20 Mbps	44,049	25.03%
Grand Total	**175,997**	**100.00%**

Q. What does the data show about affordable internet service in Qwest's territory?

A. Table 52 below, shows reported internet availability for providers that offer affordable 25/3 Mbps service within Qwest's study area. Qwest has 1,010,522 units (or 43.42 percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to 901,107 units (or 38.72 percent). If the benchmark was set at 100/20 Mbps, this rises to 1,453,241 units (or 62.44 percent).

Table 52: Affordable Internet Availability by Speed within the Qwest Service Area

company	Qwest Corporation	
Row Labels	**Number of Units**	**% of Units**
Not Reported	897,251	38.55%
Speed < 4/1 Mbps	3,856	0.17%
Speed < 25/3 Mbps and >= 4/1 Mbps	109,415	4.70%
Speed < 100/20 Mbps and >= 25/3 Mbps	442,719	19.02%
Speed >= 100/20 Mbps	874,025	37.56%
Grand Total	**2,327,266**	**100.00%**

Q. What does the data show about affordable internet service in United's territory?

A. Table 53 below, shows reported internet availability for providers that offer affordable 25/3 Mbps service within United's study area. United has 32,222 units (or 42.64 percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases 26,998 units (or 35.72 percent). If the benchmark was set at 100/20 Mbps, this rises to 34,128 units (or 45.16 percent).

Table 53: Affordable Internet Availability by Speed within the United Service Area

company	United Telephone Company of The Northwest	
Row Labels	**Number of Units**	**% of Units**
Not Reported	26,693	35.32%
Speed < 4/1 Mbps	305	0.40%
Speed < 25/3 Mbps and >= 4/1 Mbps	5,224	6.91%
Speed < 100/20 Mbps and >= 25/3 Mbps	1,906	2.52%
Speed >= 100/20 Mbps	41,444	54.84%
Grand Total	**75,572**	**100.00%**

Q. What does Staff's competition study demonstrate for the third factor?

A. Staff's competition study demonstrates that 44 percent of the 2,588,845 units within the CenturyLink service area lack affordable 25/3 Mbps (or faster) internet service. A significant lack of access to affordable 25/3 Mbps internet service is also apparent across all the operating entities. Over 42 percent of the units with United Telephone Company of the Northwest's service area lack affordable 25/3 Mbps service, and this is the lowest percentage across all five of the companies. CenturyLink's customers lack functionally equivalent or substitute services at competitive rates, terms, and conditions.

D. Other Indicators of Market Power also Indicate that CenturyLink Has a Significant Captive Customer Base

Q. What is the fourth factor set out in RCW 80.36.320(1)?

A It is "[o]ther indicators of market power which may include market share, growth in market share, ease of entry, and the affiliation of providers of services."

Q. How many indicators of market power did Staff consider?

A. Staff looked at four. I have already discussed two of them – Staff's market share and Staff's HHI analysis – above in Section VII.B.2. Here I discuss a third, CenturyLink's complaint and violation data, which shows deteriorating performance on the company's part. Staff witness Webber covers the fourth, CenturyLink's price data over the course of its AFOR; he also supplements Staff's HHI analysis with a variant analysis he performed and supplements Staff's complaint and violation data with an analysis of CenturyLink's internal complaint data.

Q. Has Staff looked at the record of complaints filed against CenturyLink with the Commission, and the number of violations found?

A. Yes. The UTC's Consumer Protection division queried all telecommunication violations that started between January 1, 2019, and December 31, 2023, and provided them to Staff. Violations for each CenturyLink operating entity are assigned to "CenturyLink" within Consumer Protections complaint database. In order to associate them with the correct ILEC, Staff geocoded the addresses for the "CenturyLink" complaints, and then spatially combined the ILEC name within the public-facing ILEC exchange boundary map to each violation, in order to identify the correct operating entity.[82]

Q. What did Staff do next?

A. Staff then created a table summarizing the complaints and violations by ILEC and then normalized those statistics so that on a per 1,000 access line basis (access line counts are

[82] *See* ILEC Boundary Map (showing the boundaries).

confidential) the statistics could be compared on an apples-to-apples basis. The table(s) were then converted to the charts in Exhibits 22, 23, and 24 to compare the counts to (1) another large telecommunication company, and (2) all other telecommunication companies combined. The table showing the normalized number of violations is presented in Exhibit No. SB-22C.

Q. How does the complaint data shed light on CenturyLink's market power?

A. Competition should lead to lower prices and higher quality of service.[83] A company that has a high number of violations and quality of service issues thus does not appear to face effective competition.

Q. What does the data show with respect to CenturyLink's violations?

A. On a normalized basis (violations per 1,000 access lines),[84] CenturyTel of Washington has more than 20 times as many violations as both Ziply Fiber Northwest, LLC (the other largest ILEC in Washington state) and as all other companies combined. Qwest Corporation has more than 18 times as many violations. CenturyTel of Inter Island, Inc has more than 10 times as many violations. and United Telephone Company of the Northwest has more than six times.

[83] *See* Weisman, Exh. DLW-1T at 4:6-5:7.

[84] If a person calls and files a complaint, this counts as one complaint. However, a single complaint can have numerous violations for different WACs or the same WAC..

Q. What does the data show with respect to CenturyLink's number of complaints?

A. On a normalized basis (complaints per 1,000 access lines), CenturyTel of Washington has nearly 26 times as many complaints as Ziply Fiber Northwest, LLC (the other largest ILEC in Washington state) and as all other companies combined. Qwest Corporation has more than 14 times as many complaints. CenturyTel of Inter Island, Inc has more than 9 times as many complaints. and United Telephone Company of the Northwest has 9 times as many complaints.

Q. What conclusions should the Commission draw from the complaint and violation data presented here?

A. CenturyLink's number of complaints and number of violations (as normalized) far exceed the next largest ILEC (Ziply Fiber Northwest, LLC.), as well as dwarf the same statistics for all other telecommunications companies in the State of Washington combined for calendar year 2022. The trend over the last five years indicates that CenturyLink's quality of service is declining.[85] That data suggests that CenturyLink is not operating in a competitive environment because competition should produce, among other benefits, better service. However, complaint and violation data indicates that is not happening, and, indeed, the opposite is true: CenturyLink's service quality, as measured in complaints and violations, is declining.

[85] See generally SB-23; SB-24 (setting out the five-year summaries).

E. Applying the Four Factors to CenturyLink Subscribers

Q. Does CenturyLink's petition propose protections for certain customers?

A. Yes. CenturyLink agrees as part of its petition to refrain from disconnecting customers that it has identified as having no alternative service providers. These customers are thus effectively the ones that CenturyLink admits are captive, and it identifies approximately 800 of them.

Q. Did Staff look into the way Lumen identified its protected customers?

A. Yes. CenturyLink provided a shapefile of [redacted] voice customers and a list of 940 voice customers that it was unable to geocode.[86] CenturyLink also provided a shapefile of its approximately 800 "Protected Customers."[87] Staff was able to geocode 886 of the 940 voice customers that CenturyLink was unable to map.[88]

Q. Did Staff look at CenturyLink's Customers (including RDOF supported locations) and their available fixed internet services?

A. Yes. Staff assessed the [redacted] CenturyLink customers and their fixed internet availability.[89] As shown in Table 54 below, CenturyLink has [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set

[86] *See* Exh. SB-19
[87] *See* Exh.SB-21C.
[88] Staff used ESRI's World Batch Geocoder service within ArcPRO.
[89] Using ArcPRO, CenturyLink's confidential subscribership (target) data (CenturyLink ILECs' voice and VoIP cusomters in Washington) is spatially joined to the CenturyLink BSLSummaries6302023 (join features) layer using a one to one join operation, keep all features, and closest match option. Summary includes RDOF funded locations and excludes Enterprise providers, Quantum and CenturyLink availability and all satellite providers.

at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] units (or [redacted] percent). Subscribership data and internet availability can be seen at the wire center level in the "AllPricesWASubscribers(C)" tab within EXH-SB-2C.

Table 54: Confidential CenturyLink's Subscribers Internet Options (All Prices) by Speed

REDACTED

Q. What did Staff learn through its analysis?

A. Based on staff witness Webber's testimony that 25/3 Mbps internet speed is necessary for a service to be considered a reasonably available alternative, Staff found that [redacted] wire centers contain at least five subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 50 subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 100 subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 200 subscribers without fixed internet access alternatives.

Q. Did Staff look at CenturyLink's Non-RDOF supported Customers and their available fixed internet services?

A. Yes. Staff assessed all CenturyLink customers and their fixed internet availability. As shown in Table 55 below, CenturyLink has [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] units (or [redacted] percent). Subscribership data and internet availability can be seen at the wire center level in the "AllPricesWASubscribers(C)" tab within EXH-SB-2C.

Table 55: Confidential CenturyLink's Non-RDOF Subscribers Internet Options (All Prices) by Speed

REDACTED

Q. What did Staff learn through the analysis excluding RDOF funded CenturyLink subscribers?

A. Based on staff witness Webber's testimony that 25/3 Mbps internet speed is necessary for a service to be considered a reasonably available alternative, Staff learned that [redacted] wire centers contain at least five subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 50 subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 100 subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 200 subscribers without fixed internet access alternatives.

Q. Does each individual operating entity have subscribers without internet availability?

A. Yes.

Q. What internet speeds are available to subscribers (non-RDOF funded locations) within CenturyTel of Cowiche's service area?

A. As shown in Table 56 below, there are [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 56: Confidential CenturyTel of Cowiche Subscribers Fixed Internet Alternatives – Non-RDOF funded locations

REDACTED

Q. What internet speeds are available to subscribers (non-RDOF funded locations) within CenturyTel of Inter Island's service area?

A. As shown in Table 57 below, there are [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 57: Confidential CenturyTel of Inter Island Subscribers
Fixed Internet Alternatives – Non-RDOF funded locations

REDACTED

Q. What internet speeds are available to subscribers (non-RDOF funded locations) within CenturyTel of Washington's service area?

A. As shown in Table 58 below, there are [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 58: Confidential CenturyTel of Washington Subscribers
Fixed Internet Alternatives – Non-RDOF funded locations

REDACTED

Q. What internet speeds are available to subscribers (non-RDOF funded locations) within Qwest's service area?

A. As shown in Table 59 below, there are [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 59: Confidential Qwest Subscribers Fixed Internet Alternatives – Non-RDOF funded locations

REDACTED

Q. What internet speeds are available to subscribers (non-RDOF funded locations) within United's service area?

A. As shown in Table 60 below, there are [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 60: Confidential United Subscribers Fixed Internet Alternatives – Non-RDOF funded locations

REDACTED

Q. Did Staff then look at CenturyLink's Customers (including RDOF funded locations) and their available affordable fixed internet services?

A. Yes. Staff assessed all CenturyLink customers and their fixed affordable internet availability. As shown in Table 61 below, CenturyLink has [redacted] voice subscribers (or [redacted] percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] units (or [redacted] percent). Subscribership data and internet availability can be seen at the wire center level in the Affordable253WASubscribers(C) tab within EXH-SB2.

Table 61: Confidential CenturyLink's Subscribers (including RDOF funded locations) Affordable Internet Options by Speed

REDACTED

Q. What did Staff learn through itsanalysis?

A. Based on Staff Witness Webber's testimony setting an affordability benchmark of $55.13 for a service to be considered a reasonably available alternative, Staff identified [redacted] wire centers contain at least five subscribers without affordable fixed internet access alternatives. [redacted] wire centers contain at least 50 subscribers without affordable fixed internet access alternatives. [redacted] wire centers contain at least 100 subscribers without affordable fixed internet access alternatives. [redacted] wire centers contain at least 200 subscribers without affordable fixed internet access alternatives.

Q. Did Staff look at CenturyLink's Non-RDOF supported Subscribers and their available affordable fixed internet services?

A. Yes. Staff assessed all CenturyLink customers and the affordable fixed internet availability to each address. As shown in Table 62 below, CenturyLink has [redacted] voice subscribers (or [redacted] percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] units (or [redacted] percent). Subscribership data and internet availability can be seen at the wire center level in the "Affordable253WASubscribers(C)" tab within EXH-SB-2C.

Table 62: Confidential CenturyLink Subscribers – Affordable Internet Services Available

REDACTED

Q. What did Staff learn through the analysis of affordable fixed internet service for non-RDOF funded CenturyLink subscribers?

A. Based on staff witness Webber's testimony that 25/3 Mbps internet speed is necessary for a service to be considered a reasonably available alternative, Staff found [redacted] wire centers contain at least five subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 50 subscribers without fixed internet access alternatives. [redacted]

wire centers contain at least 100 subscribers without fixed internet access alternatives. [redacted] wire centers contain at least 200 subscribers without fixed internet access alternatives.

Q. Does each individual operating entity have subscribers without affordable internet availability?

A. Yes, as I explain below in detail.

Q. What affordable internet speeds are available to subscribers within CenturyTel of Cowiche's service area?

A. As shown in Table 63 below, there are [redacted] voice subscribers (or [redacted] percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or 100 percent).

Table 63: Confidential CenturyTel of Cowiche Subscribers Affordable Fixed Internet Services

REDACTED

Q. What affordable internet speeds are available to subscribers within CenturyTel of Inter Island's service area?

A. As shown in Table 64 below, there are [redacted] voice subscribers (or [redacted] percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps,

this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 64: Confidential CenturyTel of Inter Island Subscribers Affordable Fixed Internet Services

REDACTED

Q. What affordable internet speeds are available to subscribers within CenturyTel of Washington's service area?

A. As shown in Table 65 below, there are [redacted] voice subscribers (or [redacted] percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 65: Confidential CenturyTel of Washington Subscribers Affordable Fixed Internet Services

REDACTED

Q. What affordable internet speeds are available to subscribers within Qwest's service area?

A. As shown in Table 66 below, there are [redacted] voice subscribers (or [redacted] percent) without affordable 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 66: Confidential Qwest Subscribers Affordable Fixed Internet Services

REDACTED

Q. What affordable internet speeds are available to subscribers within United's service area?

A. As shown in Table 67 below, there are [redacted] voice subscribers (or [redacted] percent) without 25/3 Mbps or faster internet service. If the benchmark was set at 4/1 Mbps, this decreases to [redacted] subscribers (or [redacted] percent). If the benchmark was set at 100/20 Mbps, this rises to [redacted] subscribers (or [redacted] percent).

Table 67: Confidential United Subscribers Affordable Fixed Internet Services

REDACTED

Q. Did Staff look at CenturyLink's Customers and their available mobile internet services?

A. Yes. This confidential analysis is found on the "CaptiveCustomers(C)NoMobile" tab of Exh. SB2. Column B is the number of CenturyLink voice subscribers by wire center without 25/3 Mbps availability and Column C is the number of CenturyLink voice subscribers by wire center without affordable 25/3 Mbps availability and Column D is the number of estimated households by wire center without mobile internet access as calculated on the "ACS5YearCBG_WCApportion" tab from within Exh. SB-2C.

Q. What did Staff learn through that analysis?

A. This exhibit illustrates that there are a significant number of customers without available (or affordable) fixed internet who also do not have access to mobile internet access.

Q. What about the number of wire centers with CenturyLink subscribers that have neither available 25/3 fixed internet service nor mobile service?

A. There are [redacted] wire centers with more than 5 captive subscribers, [redacted] wire centers with more than 50 captive subscribers, [redacted] wire centers with more than 100 captive subscribers,

[redacted] wire centers with more than 200 captive subscribers, and there are [redacted] wire centers with more than 500 captive subscribers.

Q. What about the number of wire centers with CenturyLink subscribers that have neither affordable 25/3 fixed internet service nor mobile service?

A. There are [redacted] wire centers with more than 5 captive subscribers, [redacted] wire centers with more than 50 captive subscribers, [redacted] wire centers with more than 100 captive subscribers, [redacted] wire centers with more than 200 captive subscribers, and there are [redacted] wire centers with more than 500 captive subscribers.

Q. Can you illustrate this point with an example?

A. Yes, Staff completed this analysis for the Eastsound wire center which is covers Orcas Island and is within CenturyTel of Inter Islands service area. Based on Table 68 below, [redacted] CenturyLink subscribers ([redacted] percent) do not have 25/3 Mbps service availability, if the benchmark is 4/1 Mbps this declines to [redacted] subscribers ([redacted] percent), if the benchmark is 100/20 Mbps this increases to [redacted] subscribers ([redacted] percent)[90]

[90] Table 67 created from the "AllPricesWASubscribers(C)" tab within Exh. SB-2.

Table 68: Confidential Subscribers Fixed Internet Availability within the Eastsound Wire Center

REDACTED

Q. Do subscribers in the Eastsound wire center have affordable internet access options?

A. No, based on Table 69 below, [redacted] CenturyLink subscribers ([redacted] percent) do not have 25/3 Mbps service availability, if the benchmark is 4/1 Mbps this declines to [redacted] subscribers ([redacted] percent), if the benchmark is 100/20 Mbps this increases to [redacted] subscribers (100 percent)[91]

Table 69: Confidential Subscribers Affordable Fixed Internet Availability within the Eastsound Wire Center

REDACTED

[91] Confidential Table 3 created from the Affordable253WASubscribers(C) tab within Exh. SB-2.

Q. What is the result if you take into consideration fixed internet availability and fixed mobile internet access?

A. The "CaptiveCustomers(C)NoMobile" tab within Exh. SB-2C contains this data. It shows that Eastsound has an estimated 248 households without mobile internet access and that there are [redacted] CenturyLink subscribers without 25/3 Mbps availability and [redacted] CenturyLink subscribers without affordable 25/3 Mbps availability.

Q. Is this more or less than CenturyLink provided in it testimony?

A. It is more. CenturyLink provided a shapefile of its "Protected Customers."[92] Staff identified only [redacted] protected addresses within this dataset within the Eastsound wire center.

Q. Should the Commission choose to accept Staff's mobile availability rather than CenturyLink's?

A. Yes. CenturyLink relies on data that the FCC specifically designed to measure outside mobile availability. Based on FCC guidance, Staff used the only source that it is aware of to measure mobile broadband access within households.

Q. Did you create a figure showing the location of CenturyLink's Protected Customers, its voice subscribers, and fixed internet availability?

A. Yes, this confidential map is Exh. SB-21C, shows the Eastsound Wire Center that covers Orcas Island, in the San Juan's. Staff overlayed CenturyLink's "Protected Customers"

[92] *See* Exh. SB-20.

(big blue circles), CenturyLink's identified and unidentified voice customers (black circle and black square, respectively), and then fixed broadband availability by speed (regardless of price, see map legend) for all of the locations and their associated units.

Q. What does this map and analysis illustrate?

A. That subscribers in the Eastsound wire center do not have reasonably available alternatives and many of its customers are captive.

Q. Is this specific to only the Eastsound wire center or to all of the wire centers within the CenturyLink service area?

A. What Staff's analysis shows for Eastsound is true in a number of other wire centers. The "CaptiveCustomers(C)NoMobile" tab within Exh. SB-2C addresses all of the wire centers and staff identified that when affordability is taken into account, more than [redacted] percent of CenturyLinks wire centers have more than [redacted] captive subscribers, more than [redacted] percent of CenturyLink's wire centers have more than [redacted] captive subscribers, and that more than [redacted] percent of CenturyLink's wire centers have more than [redacted] captive subscribers.

Q. After completing this analysis, what are your conclusions of CenturyLink's competition study?

A. CenturyLink's data treats all internet speeds as equal, misrepresents what the mobile availability data means, excludes locations within CenturyLink's study area, understates the number of units within its study area, includes non-mass market broadband

availability data, excludes a wire center that partially contains Washingtonians and does not take into consideration whether or not an alternative service is affordable. Based on these methodological limitations, as well as policy considerations, staff believes that CenturyLink's Competition Study does not accurately portray the competition it faces and that each company is NOTt subject to effective competition.

Q. Does this conclude your testimony?

A. Yes, it does.