

**STATE OF MINNESOTA  
BEFORE THE PUBLIC UTILITIES COMMISSION**

Beverly Jones Heydinger	Chair
Nancy Lange	Commissioner
Dan Lipschultz	Commissioner
Matt Schuerger	Commissioner
John Tuma	Commissioner

**In the Matter of the Petition of CenturyLink   Docket No. P-421/AM-16-496  
QC to be Regulated Pursuant to Minn. Stat.  
§ 237.025: Competitive Market Regulation**

**AFFIDAVIT OF AL LUBECK**

**November 18, 2016**

**TABLE OF CONTENTS**

I. INTRODUCTION .....1

II. CRITERIA IN MINN. STAT. § 237.025, SUBD. 4(1) .....4

    A. CENTURYLINK QC SERVES LESS THAN 50% OF HOUSEHOLDS IN EACH EXCHANGE SERVICE AREA .....4

    B. 60 PERCENT OF HOUSEHOLDS IN CENTURYLINK QC EXCHANGES CAN CHOOSE ANOTHER PROVIDER.....9

        1. Wireline Voice Coverage .....10

        2. Wireless Coverage.....13

        3. Conclusion – Wireline and Wireless Coverage.....19

III. REQUIRED MATERIALS PER MINN. STAT. § 237.025, SUBD. 2.....20

IV. CONCLUSION.....26

STATE OF KANSAS            )  
  ) ss.  
COUNTY OF JOHNSON        )

Al Lubeck, being duly sworn on oath, states as follows:

**I. INTRODUCTION**

1. My name is Al Lubeck. I received a B.S. in Accounting from the University of Nebraska – Lincoln in 1980, and then spent six years at what is now Price Waterhouse Coopers working with audit and tax clients. I joined Sprint in 1986, serving in various tax, accounting and finance positions. I joined Sprint’s Wholesale organization just after the 1996 Federal Telecom Act was passed, and over the next decade, I negotiated interconnection, resale and collocation agreements. When Embarq Corporation was spun off by Sprint in 2006, I was named a Wholesale Product Manager, where I developed and managed Special Access and Interconnection products and services. In 2008 I joined the Public Policy organization. As a Public Policy Director, I investigate, draft and defend CenturyLink policy positions in specific areas, and have testified in Pennsylvania, Texas, Indiana, Washington and South Carolina and have presented to Commissions or Legislatures in Wyoming, Nebraska and at NARUC conferences. About a year ago, I added legislative and regulatory support for Minnesota, Wyoming and Texas.

2. The purpose of my affidavit is to provide evidence to support CenturyLink’s Petition to classify its residential voice services and business voice services (for customers subscribing to three or fewer lines) in CenturyLink QC exchange service areas as subject to Competitive Market regulation, pursuant to Minn. Stat. § 237.025. First, my affidavit will demonstrate that all CenturyLink QC exchange service areas in Minnesota meet the criteria set

forth in Minn. Stat. § 237.025, Subd. 4(1). Second, my affidavit will provide the additional data that is required to be filed with a Petition for Market Regulation per Minn. Stat. § 237.025, Subd. 2(b). Third, my affidavit will provide the data specifically addressed in the Commission's *Order Requiring Further Filings and Initiating Expedited Proceeding* released on November 2, 2016. Robert Brigham filed affidavits in support of this petition on June 30, 2016 and August 29, 2016. This affidavit is intended to supplement those filings but, for ease of reference, will repeat and add to the information filed at that time. In addition, CenturyLink is filing the affidavit of Mr. Adam Nelson of consulting firm, Federal Engineering. Mr. Nelson has conducted a study of wireless coverage in wire centers where available evidence either does not establish or may not establish that wireline competition alone is sufficient to meet applicable statutory criteria.

3. Minn. Stat. § 237.025, Subd. 4 provides the competitive criteria that must be met in order for the Commission to grant the Petition for an exchange service area to be regulated under this section of the statute:

Subd. 4. **Competitive criteria.** The commission shall approve a petition under this section if a petitioning local exchange carrier demonstrates to the commission's satisfaction that:

(1) it serves fewer than 50 percent of the households in an exchange service area, and at least 60 percent of households in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider; or:

(2) it serves more than 50 percent of the households in an exchange service area, and:

(i) at least 60 percent of households in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider;

(ii) no significant economic, technological, or other barriers to market entry and exit exist;

(iii) no single provider has the ability to maintain prices above competitive levels for a significant period of time or otherwise deter competition; and

(iv) the petitioning local exchange carrier will continue to offer basic local service, as defined in subdivision 8, consistent with its tariffs in effect at the time of its petition.

4. In this Petition, CenturyLink is seeking Market Regulation under Minn. Stat. § 237.025 for 108 CenturyLink QC exchange service areas in Minnesota. For each exchange service area, this Petition seeks Market Regulation based on the criteria in Subd. 4(1). In no case is CenturyLink seeking Market Regulation under the criteria in Subd. 4(2). Therefore, my affidavit is limited to providing evidence demonstrating that the criteria in Subd. 4(1) are met; i.e., that CenturyLink QC “serves fewer than 50 percent of the households in each exchange service area, and at least 60 percent of households in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider.”

5. As noted above, the geographic unit defined in the statute is the “exchange service area.” However, much of the data in my affidavit is provided at the more granular wire center level. The 108 exchange service areas for which CenturyLink seeks relief include 154 wire centers.<sup>1</sup> Most exchange service areas contain only one wire center; in these cases, the exchange service area and wire center are the same. However, in other cases, especially in urban areas such as Minneapolis, St. Paul and Duluth, an exchange service area may contain several wire centers.<sup>2</sup> Exhibit AL-1 provides a list and mapping of the 108 exchange service areas and 154 wire centers.<sup>3</sup>

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<sup>1</sup> Exchange Service Areas and wire centers are listed in the Qwest Corporation Exchange and Network Services Tariff, Section 5.

<sup>2</sup> Exchange service areas that are served by a central office switch in another state (such as Fargo-Moorhead) are not included.

<sup>3</sup> In all exhibits, the Duluth Kenwood wire center is included in the Duluth Hemlock wire center, since CenturyLink systems combine data for these two wire centers. CenturyLink clarifies that it is seeking relief for the Duluth Kenwood wire center.

## II. CRITERIA IN MINN. STAT. § 237.025, SUBD. 4(1)

### A. CenturyLink QC Serves less than 50% of Households in each Exchange Service Area

6. Confidential Exhibit AL-2 provides the percentage of households that subscribe to CenturyLink voice service in each of the 154 CenturyLink QC wire centers in Minnesota. Confidential Exhibit AL-2 calculates the percentage of residential households subscribing to CenturyLink QC voice service in each wire center by dividing the CenturyLink primary residential voice lines by the number of households<sup>4</sup> located in the wire center.<sup>5</sup> The number of households is based on the latest United States Census Bureau data, and the primary access lines are based on CenturyLink billing data for end of year 2015. Primary lines (not including additional lines) are used to identify the households that have CenturyLink voice service—whether they have one line or multiple lines.

7. The data in Confidential Exhibit AL-2 demonstrates that CenturyLink QC provides local exchange voice service to well less than 50% of the households in all but four of the 154 wire centers, and in most of these wire centers, the percentage is far below 50%. Thus, in 150 wire centers, the company clearly “serves fewer than 50 percent of the households” and

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<sup>4</sup> A household is defined as follows by the Census Bureau: “A household includes all the people who occupy a housing unit (such as a house or apartment) as their usual place of residence. A household includes the related family members and all the unrelated people, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit such as partners or roomers, is also counted as a household. The count of households excludes group quarters. There are two major categories of households, “family” and “nonfamily. Household is a standard item in Census Bureau population tables.” See: <https://www.census.gov/glossary/>. Households do not include vacant housing units.

<sup>5</sup> Households are identified by the census department for each census block. In order to assign households to the appropriate wire centers, the following process was used. First, households in census blocks that are fully contained within the boundaries of a wire center (most census blocks) are assigned to that wire center. Second, households in census blocks that extend across wire center boundaries are assigned using the Centroid method. The “centroid method” uses the geometric center (expressed in latitude/longitude) of a census block. The *entire* census block assigned to the exchange where the geometric center of the census block is located.

meets the first criterion in Subd. 4(1). The aggregate percentage of households served by CenturyLink QC throughout its serving area in Minnesota is only 22.3%.

8. There are four wire centers where the percentage of households served by CenturyLink QC appears to be greater than 50%: Cook, Grand Marais, Island Lake and Tofte. It may be observed that in these wire centers, the number of *households* as defined by the Census Bureau is significantly lower than the number of *housing units* (also shown in Exhibit AL-2) defined by the Census Bureau:<sup>6</sup>

	Households	Housing Units	% of Housing Units Occupied
Cook	1,030	2,270	45%
Grand Marais	1,463	2,804	52%
Island Lake	1,656	2,251	74%
Tofte	440	1,568	28%
Total CenturyLink QC Area	1,497,681	1,590,341	94%

The number of *households* is far less than the number of *housing units* in these wire centers because they serve parts of Minnesota where customers often own second homes used for recreational purposes. For example, the Tofte and Grand Marais wire centers are in Cook

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<sup>6</sup> The Census Bureau defines Housing Units as follows: “A house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters, or if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have direct access from outside the building or through a common hall. For vacant units, the criteria of separateness and direct access are applied to the intended occupants whenever possible.” See <https://www.census.gov/glossary/>.

County and serve the boundary waters area in northeast Minnesota, where there are many summer homes and cabins. According to the 2010 census, there were 5,839 housing units in Cook County (and most of these are in the Tofte and Grand Marais wire centers). Only 2,494 of these housing units were occupied. Of the 3,345 vacant housing units, 3,061 are classified as “For seasonal, recreational or occasional use.”<sup>7</sup> Thus, over half of the housing units in the area are “For seasonal, recreational or occasional use.” The Cook wire center is located in St. Louis County, an area with several lakes, including Lake Vermillion, and there are numerous cabins in the area. According to the 2010 census, there were 103,058 housing units in St. Louis County, with 84,783 occupied units. Of the 18,275 vacant housing units, 11,999 are classified as “For seasonal, recreational or occasional use.”<sup>8</sup> While customers subscribe to CenturyLink voice service for many of these dwellings, they do not qualify as a household because they are not occupied by the owner for a large portion of the year. If a customer lives in Minneapolis but also has a cabin in Tofte, the Census Bureau will consider the household to be in Minneapolis. The Census Bureau will count the Minneapolis home as a household, not the Tofte home, even though the Tofte home may have CenturyLink voice service working all year.

9. For these areas, the household share calculated for CenturyLink QC is distorted, since there are voice lines active in dwellings that are defined as housing units, but not households. Thus, the *numerator* in the calculation includes voice lines for households that are not included in the *denominator*. This anomaly can be corrected by removing the primary access lines that are not associated with a household from the numerator. An estimate of the number of

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<sup>7</sup> See: <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml#> (Under community facts, enter Cook County, MN and then click on the link for General Population and Housing Characteristics under the 2010 census).

<sup>8</sup> See: <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml#> (Under community facts, enter St. Louis County, MN and then click on the link for General Population and Housing Characteristics under the 2010 census).



primary access lines associated with households can be calculated by multiplying the number of CenturyLink voice lines by the ratio of households to housing units in the wire center. The adjusted primary access lines can then be divided by households to yield the percentage of households with CenturyLink QC voice service. This calculation is performed in the last column of Confidential Exhibit AL-2 for these four wire centers, and the adjusted percentages are shown in the table below. If the mismatch is corrected, the company “serves fewer than 50 percent of the households” and meets the first criterion in Subd. 4(1) in these four wire centers.

	Households	Housing Units	% of Housing Units Occupied	CTL QC Primary Access Lines	Adjusted CTL QC Primary Access Lines	% of Households with CTL QC Voice Service
Cook	1,030	2,270	45%	788	355	35%
Grand Marais	1,463	2,804	52%	760	395	27%
Island Lake	1,656	2,251	74%	863	639	39%
Tofte	440	1,568	28%	257	72	16%

10. While I have presented the voice market share calculations on a wire center basis, the statute states that the commission shall approve a petition if a petitioning local exchange carrier demonstrates to the commission’s satisfaction that it serves fewer than 50 percent of the households in an **exchange service area**. Of course, if all of the wire centers in the exchange service area meet the standard, it is mathematically certain that the standard is met for the entire exchange service area containing these wire centers. In addition, one of the wire centers

discussed above—Island Lake—is part of the Duluth exchange service area, and therefore should be added to the other Duluth wire centers to determine if the Duluth exchange meets the statutory standard. It is easy to see from Exhibit AL-2 that the Duluth exchange service meets the 50% standard even without the adjustment described above: 10,483 primary access lines divided by 48,532 households results in a 22% CenturyLink QC voice share for the Duluth exchange service area, including Island Lake.

11. In the affidavit filed by Robert Brigham on June 30, 2016, CenturyLink provided an analysis that estimated the count of small business lines and showed that if small business lines are added to residential lines, CenturyLink share is below the statutory threshold outlined in Minn. Stat. § 237.025, Subd. 4(1).<sup>9</sup> However, in this filing, CenturyLink is not providing additional small business data, because a careful review of the statute shows that business customer data is not relevant to Minn. Stat. § 237.025, Subd. 4(1), which specifically refers to “households.” Small business customers are not considered as “households” by the Census Bureau; they are considered to be “establishments” or “firms.”<sup>10</sup> Since the standard is whether CenturyLink “serves fewer than 50 percent of the **households** in an exchange service area” and whether “at least 60 percent of **households** in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider,” CenturyLink is limiting the analysis to household data.<sup>11</sup>

12. Some parties may observe that CenturyLink’s sister company, CenturyLink Communications (“CLC”), provides voice service in portions of the CenturyLink QC territory,

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<sup>9</sup> See Confidential Exhibit RHB-3.

<sup>10</sup> See: <https://www.census.gov/glossary/>.

<sup>11</sup> In the event the commission were to rule that small business lines are relevant to the 50% criteria. The arguments set forth by Mr. Brigham’s affidavit of June 29, 2016 at paragraph 7 still apply.

and may argue that these customers should be added to the households served with CenturyLink QC voice service. I agree that any *households* served by CLC should be included in the CenturyLink household share. However, CLC does not provide voice services to any residential households in Minnesota; CLC only serves business customers via traditional TDM service or VoIP service. Therefore, there are no households served by CLC in the CenturyLink QC wire centers.

**B. 60 percent of households in CenturyLink QC Exchanges can choose another provider**

13. The second criteria under Minn. Stat. § 237.025, Subd. 4(1) requires that “at least 60 percent of households in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider.” A “competitive provider” is defined in Minn. Stat. § 237.025, Subd. 1 as a “wireless voice service provider” or “any other provider of local voice service who owns a substantial proportion of the last-mile or loop facilities delivering service to a majority of households in an exchange service area, without regard to the technology used to deliver the service.” It is important to note that the statute references a percent of *households*, not a percent of the geographic area within an exchange service area. Thus, it is possible that a competitor could offer service to less than 60% of an exchange service area, but still offer service to well over 60% of the households in the area, because households may be concentrated in certain geographic areas. The remaining paragraphs of this section will provide evidence demonstrating that at least 60 percent of households in each CenturyLink QC exchange service area can choose voice service from at least one additional unaffiliated competitive service provider. I will focus primarily on four sets of data: (1) cable coverage data provided by the FCC based on Form 477 submissions by cable companies; (2) other wireline carrier coverage data provided by the FCC based on Form 477 submissions; (3) wireless coverage data provided by (a) the FCC based on wireless company Form 477 submissions, and (b) the State of

Minnesota's Office of Broadband Development, and (4) the wireless coverage data provided by Federal Engineering, Inc, as described in the affidavit of Mr. Adam Nelson.

## 1. Wireline Voice Coverage

### a. Cable Coverage

14. Cable companies are "competitive providers" as defined in Minn. Stat. § 237.025, Subd. 1(a), since they own the last-mile or loop facilities used to deliver voice service to their customers. Cable companies, including Comcast, Charter, Mediacom, Cable One, Midcontinent and others provide voice service (along with video and high speed internet) throughout CenturyLink QC's Minnesota serving territory, as described below.

15. The FCC requires all broadband service providers including cable companies to provide data regarding their deployment of fixed broadband services in each census block in the United States (including the state of Minnesota) via the completion of Form 477 twice each year.<sup>12</sup> The FCC Form 477 instructions are included as Exhibit AL-3. The FCC tabulates the data, and makes cable coverage by census block and by provider available to the public on its website.<sup>13</sup> While the data shows the availability of broadband services, it can be used to measure the availability of voice services because today, where cable companies offer broadband services, they also offer voice services utilizing VoIP technology. Since cable companies use their own facilities, they qualify as competitive service providers per the statute. We can utilize

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<sup>12</sup> The FCC requires Form 477 to be completed twice a year by (1) Facilities-based Providers of Broadband Connections to End Users, (2) Providers of Wired or Fixed Wireless Local Exchange Telephone Service, (3) Providers of Interconnected Voice over Internet Protocol (VoIP) Service, (4) Facilities-based Providers of Mobile Telephony (Mobile Voice) Service. See FCC Form 477 Instructions, included as Exhibit AL-5, and provided at: <https://transition.fcc.gov/form477/477inst.pdf> Fixed Broadband providers such as cable companies must provide deployment data by census block (see instructions, page 11).

<sup>13</sup> See: <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>.

the FCC's broadband data to determine at a very granular (census block) level where each cable company is offering broadband/voice service within each CenturyLink QC wire center.

16. Based on the FCC's Form 477 cable data, Exhibit AL-4 provides, for each wire center, the total households, households with cable voice coverage, and the percentage of total households where cable voice services is available.<sup>14</sup> Exhibit AL-5 provides the names of the cable providers offering services in each wire center, and the number of households that can purchase cable voice service from each cable provider.<sup>15</sup> Exhibit AL-4 demonstrates that in 115 of the 154 CenturyLink QC wire centers in Minnesota—or almost 75% of wire centers—cable voice service is available to over 60% of the households. In these wire centers, the criteria in Subd. 4(1) that “at least 60 percent of households in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider” is met based on cable voice availability alone. Also, note that the cable coverage is over 70% in 101 wire centers, over 80% in 75 wire centers, and over 90% in 61 wire centers. Exhibit AL-6 provides a map that shows the wire centers in Minnesota with over 60% cable coverage.<sup>16</sup> The key takeaway from these data is that using cable data alone, we can demonstrate that 60% of households in 115 wire centers, as identified in Exhibits AL-4 and shown in a map in Exhibit AL-6, have access to voice service “from at least one additional unaffiliated competitive service provider.”

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<sup>14</sup> If the FCC data shows that cable broadband service is available in a census block, all of the households in the census block are considered to have the option of ordering voice service from a cable provider.

<sup>15</sup> Some households may have voice service available from more than one cable provider. Therefore, if the cable households for each cable provider are added together, the sum may be greater than the total households with cable availability.

<sup>16</sup> Please see Exhibit 12 for a “key” that identifies the name of each wire center on the map.

**b. Other Wireline Voice Coverage**

17. There are also many facilities-based CLECs (often associated with small ILECs) that have expanded into CenturyLink QC serving areas in Minnesota, providing voice service (along with broadband and in some cases cable TV services) using their own facilities. Exhibit AL-7 shows the aggregate broadband availability for these carriers based on FCC Form 477 data in each Minnesota wire center served by CenturyLink QC and Exhibit AL-8 shows the data separately for each other wireline provider.<sup>17</sup> Exhibit AL-7 demonstrates that other wireline providers offer broadband service to over 60% of the households in 26 wire centers. Exhibit AL-9 lists the major other wireline providers that offer broadband service in each of the 26 wire centers with over 60% coverage. Importantly, each of these providers also offer voice services to these households. Exhibits AL-7, AL-8 and AL-9 demonstrate that based on other wireline carrier coverage alone, we can demonstrate that over 60% of households in 26 wire centers have access to voice service “from at least one additional unaffiliated competitive service provider.”

**c. Aggregate Wireline Coverage**

18. Exhibit AL-10 provides the aggregate household coverage for cable and other wireline providers for each wire center. This Exhibit takes into account the fact that some households are covered by both cable and other wireline providers, while other households are covered only by a cable or other wireline voice provider. These data demonstrate that there is facilities-based wireline voice service available to at least 60% of households in 130 wire centers in the CenturyLink QC serving area in Minnesota. There are 24 wire centers with less than 60% facilities-based wireline coverage. Thus, based on the FCC’s Form 477 data for cable and other wireline providers, the criteria in Minn. Stat. § 237.025, Subd. 4(1) that “at least 60 percent of households in the exchange service area can choose voice service from at least one additional

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<sup>17</sup> Note that some households can receive voice service from more than one other wireline provider.

unaffiliated competitive service provider” has been met in 130 of CenturyLink QC’s wire centers in Minnesota. This conclusion is demonstrated even before we look at the availability of wireless voice service.

## 2. Wireless Coverage

19. Nearly all households in CenturyLink QC’s Minnesota serving area have wireless voice service options, and the vast majority of households have multiple wireless options. This fact is demonstrated by wireless data that is provided by the Minnesota Office of Broadband Development<sup>18</sup> as well as the FCC. First, the Minnesota Office of Broadband Development publishes, and provides on its web site, a map that shows the availability of broadband services throughout the state of Minnesota. On this web site,<sup>19</sup> a user may view detailed maps that show broadband access throughout all areas of the state. This includes landline access via fiber, DSL and Cable, as well as access via mobile and fixed wireless systems. If one pulls up the map at <http://map.connectmn.org/>, and selects the “maps/data” tab and then selects “access,” a menu of access types appears. A click on “Mobile Wireless Broadband” will yield the mobile broadband coverage map (at least 4 MB down/1 MB up) for the state. The user can zoom in to see the wireless geographic coverage for any community. This data from the Office of Broadband Development also can be downloaded, and attached as Exhibit AL-11 is a map of mobile wireless broadband coverage for the state, based on the Office of Broadband Development data, with an overlay of CenturyLink exchanges.<sup>20</sup> There is wireless broadband coverage across nearly all of CenturyLink’s wire centers, except for three exchanges in the Boundary Waters area

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<sup>18</sup> The Office of Broadband Development is a state governmental agency located in the Minnesota Department of Employment and Economic Development (“DEED”).

<sup>19</sup> See: <https://mn.gov/deed/programs-services/broadband/>.

<sup>20</sup> Please see Exhibit 12 for a map that identifies the CenturyLink QC Exchanges.

in the northeast corner of the state—Tofte, Finland and Grand Marais.<sup>21</sup> Importantly, wherever a customer can obtain broadband service from a broadband carrier, he or she can also obtain voice service.

20. Second, the FCC requires all mobile wireless providers to submit mobile voice coverage data via its Form 477. According to the Form 477 instructions (Exhibit AL-3), a mobile wireless provider must upload a “shapefile” of its voice coverage area to the FCC to meet Form 477 requirements:

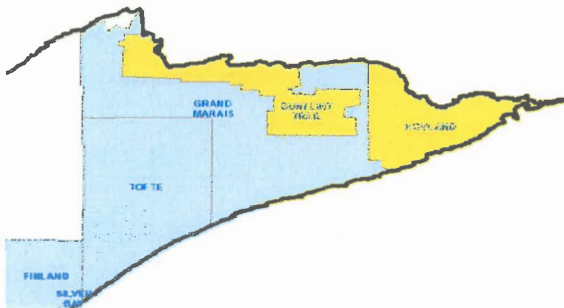
### 5.11 Mobile Voice Deployment

Information in this section is reported by *facilities-based mobile voice providers*, as defined in Who Must File This Form? and the Glossary. Additional information can be found in a separate document, Mobile Voice Deployment Terms.

These providers shall submit polygons in a shapefile format representing geographic coverage nationwide (including the 50 states, District of Columbia, Puerto Rico, and the Territories and possessions) for each mobile voice transmission technology (as specified in Technology of Transmission Codes for Mobile Wireless Services table in Codes to Use in Data Upload Files section) deployed in each frequency band (as specified in the Spectrum Codes table in Codes to Use in Data Upload Files section). A variation in technology or frequency band would require the submission of a separate polygon.

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<sup>21</sup> Note that two of the exchanges in the Boundary Waters area—Hovland and Gunflint Trail—are not CenturyLink QC exchanges, and are not under consideration in this proceeding.





The shapefiles should be formatted in accordance with the instructions provided in a separate document, How Should I Format My Mobile Voice Deployment Data?, and uploaded as a .zip file to the Form 477 filing interface. A Mobile Voice Deployment Shapefile Template is also available for download.

The FCC accumulates all of the wireless broadband coverage data for all of the wireless providers, and makes this data available for download by the public on its web site. See: <https://www.fcc.gov/mobile-deployment-form-477-data>.

21. CenturyLink downloaded the FCC's wireless voice coverage data and has prepared Exhibit AL-13, which shows the households in each wire center that have voice service available from each wireless carrier.<sup>22</sup> This Exhibit demonstrates that according to the data reported by wireless carriers to the FCC, there is 100% wireless coverage in all but three wire centers in the far northeast part of the state: Silver Bay, Grand Marais and Tofte. And the lowest percent of households covered is 94%. Based on the 2015 Form 477 data downloaded from the FCC web site, CenturyLink has also prepared the maps included as Exhibits AL-15 and AL-16. Exhibit AL-15 shows the aggregate voice coverage for all the major wireless providers, and Exhibit AL-16 shows the wireless voice coverage separately for each of the four major carriers. Both maps show an overlay of CenturyLink exchanges (See Exchange key in Exhibit AL-12). Thus, even if we consider only wireless voice service providers, ***at least 60 percent of households in all 108 exchange service area can choose voice service from at least one additional unaffiliated competitive service provider***, meeting this requirement of the statute.

22. On September 27, 2016, the DOC filed in this case the FCC's Eighteenth Report in WT Docket No. 15-125. By making this report a part of the record in this case, the DOC was seeking to show that the FCC's wireless data is not accurate enough for use in this proceeding. The DOC highlighted a number of sentences in the report, where the FCC described the

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<sup>22</sup> Exhibit 14 provides the households covered by each individual wireless carrier.

limitations of the FCC's December 2014 wireless data, and the DOC indicated that due to the methodology used, the analysis "likely overstates the coverage experienced by consumers."

23. It is critical to understand that the DOC's comments regarding the FCC's wireless relate to the Eighteenth Report, which is based on the FCC's 2014 wireless data. On September 30, 2016, the FCC released new "*Data On Mobile Broadband Deployment As Of December 31, 2015 Collected Through FCC Form 477.*" This new data employs a methodology that the FCC describes as much more accurate than the previous wireless coverage data that was criticized by the DOC. The new FCC data is described in the document provided as Exhibit AL-17: *Working Toward Mobility Fund II: Mobile Broadband Coverage Data and Analysis.*<sup>23</sup> Jon Wilkins, Chief of the FCC's Wireless Telecommunications Bureau, issued a Blog regarding the new release, which is included at Exhibit AL-18. He states:

This new and improved data is a major step forward over the data analyzed in the Mobility Fund Phase I auction, called the "centroid method." Let's get technical. The "centroid method" uses the geometric center (expressed in latitude/longitude) of a census block. If that point has service coverage, the *entire* census block is considered to be covered. Thus, the centroid method has drawbacks. As parties have pointed out, the centroid method may over-estimate coverage, particularly in rural areas with very large census blocks – or under-estimate it in census blocks with partial coverage that does not include the centroid location. Because the U.S. has approximately 11 *million* census blocks, there is the potential that by using the centroid method, we may have missed a number of areas in the country that lacked 3G or better service in Mobility Fund Phase I.

Now, with the best available data we have today, FCC staff has finely honed our analytics to go beyond the centroid method and identify where unsubsidized mobile broadband service is available *within* each census block. In other words, we can now utilize Form 477 data to produce "actual area coverage." Using the actual geographic area coverage based on the Form 477 data provides a significantly more detailed basis than the prior centroid method for reforming

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<sup>23</sup> See: [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2016/db0930/DOC-341539A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0930/DOC-341539A1.pdf).

universal service support for mobile services to provide more targeted support where it is needed.<sup>24</sup>

The data downloaded by CenturyLink, and used to prepare the wireless data in Exhibits AL-13 through AL-16 is the new FCC data described in this blog. Thus, the advocacy of the DOC regarding the previous FCC data is no longer relevant.

24. In its November 2, 2016 *Order Requiring Further Filings and Initiating Expedited Proceeding*, the Commission determined that CenturyLink must “file evidence to show that the competitive criteria under subdivision 4 are met in each exchange service area.”<sup>25</sup> The Commission stated that the reliance on wireless maps from wireless carrier web sites in CenturyLink’s prior filing was inadequate because “there is no other information in the record, such as engineering testimony or other expert testimony, explaining the availability or adequacy of the wireless coverage areas shown on the maps.”<sup>26</sup> In order to address the Commission’s concern, CenturyLink retained Federal Engineering, Inc. (“FE”)<sup>27</sup> to perform an independent engineering analysis of wireless voice coverage in 32 of the more rural CenturyLink QC wire centers in Minnesota. These 32 wire centers include all of the 24 wire centers described earlier that do not have wireline voice coverage for at least 60% of households. The Affidavit of Mr. Adam Nelson describes the methodology utilized in the FE study, and presents the results of the analysis. As described by Mr. Nelson, FE’s wireless analysis uses a variety of datasets and technical parameters from multiple sources to perform an assessment of wireless voice coverage within each of the 32 wire centers. The study describes in detail the engineering data and

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<sup>24</sup> See: <https://www.fcc.gov/news-events/blog/2016/09/30/mobility-fund-ii-improving-data-we-use-identify-close-mobile-coverage>, entire document provided as Exhibit AL-18.

<sup>25</sup> *Order Requiring Further Filings and Initiating Expedited Proceeding*, Issued November 2, 2016, page 10.

<sup>26</sup> *Id.*

<sup>27</sup> Federal Engineering is a nationally recognized expert in wireless engineering and coverage issues. See Affidavit of Mr. Nelson.

wireless propagation software tools used to perform a specific analysis of wireless coverage for AT&T and Verizon for the 800 MHz frequency band. The results of the analysis are presented in table 5 of the study, which shows the percentage of household wireless coverage by wire center, for both outdoor and indoor use. Mr. Nelson's study is conservative, and likely understates coverage in these areas, since his study looked only at the coverage of two of the four major wireless providers in the 800Mhz frequency band. He based his analysis on tower information that is publicly available and was unable to analyze information that is not required to be filed publicly.

25. Nonetheless, the FE study demonstrates that for outdoor use, only two of the 32 wire centers—Cook, Henning—have outdoor household coverage of less than 60%. Only seven of the 32 wire centers—Biwabik, Cook, Duluth Pike Lake, Henning, Holdingford, Sabin and Staples have indoor household coverage of less than 60%. For all of the other wire centers, the EF engineering study corroborates the evidence provided above that over 60% of households have facilities-based wireless service available.

26. For several reasons, the Commission should still find that the 60% standard is met in all of these exchanges. As Exhibit AL-10 demonstrates, the Henning, Holdingford, Sabin and Staples exchanges have wireline service available from competitive service providers that meets the 60% standard. The Duluth Pike Lake wire center is part of the Duluth exchange, and since the statutory criteria are applicable at the exchange level, Pike Lake must be added to the remaining wire centers in the Duluth exchange in order to evaluate compliance with the statute. Per the data in Exhibit AL-10, wireline voice service is available from a competitive facilities-based wireline provider for 42,379, or 87.3% of the 48,532 households in the Duluth exchange. Clearly, the criteria for Duluth is met without consideration of wireless services.

27. Therefore, after consideration of the EF study, the only wire centers that remain with *potentially* less than 60% household coverage are the Cook and Biwabik exchanges. While the EF study is unable to corroborate that these two wire centers meet the statutory standard, the data provided by the FCC cited above does demonstrate that the 60% standard is met in these wire centers. While it is not entirely clear why there is a discrepancy between these sources, it may be that in these wire centers, AT&T and/or Verizon are offering wireless services using frequencies other than the 800 MHz band that is evaluated in EF study or that other providers are offering services that cover areas that AT&T and Verizon do not. CenturyLink believes the Commission should determine that these wire centers meet the statutory criteria of 60% facilities-based coverage in Minn. Stat. § 237.025, Subd. 4(1).

### **3. Conclusion – Wireline and Wireless Coverage**

28. Exhibit AL-19 displays the wireline coverage from Exhibit AL-10 for each of the 154 CenturyLink QC wire centers (sorted by wireline coverage percentage), along with the FCC wireless coverage from Exhibit AL-13 and wireless coverage from table 5 of the EF study for 32 wire centers. This Exhibit shows that the 60% criteria is met with cable and other wireline service for all but 24 wire centers, and that the 60% criteria is met for all wire centers and exchanges using the FCC's wireless analysis. The EF wireless study confirms that for all but two of the 24 exchanges, the 60% coverage criteria is met. Based on the evidence, the Commission should find that at least 60% of households have facilities-based voice coverage in all 108 CenturyLink QC exchange services areas, meeting the competitive criteria in Minn. Stat. § 237.025, Subd. 4(1).

29. The Commission should grant CenturyLink's petition to classify its voice services as subject to Competitive Market regulation, pursuant to Minn. Stat § 237.025. The data described above demonstrates that in each of CenturyLink's 108 exchange service areas in

Minnesota, the conditions in Minn. Stat. § 237.025, Subd. 4(1) are satisfied. The data in Confidential Exhibit AL-2 demonstrates that CenturyLink QC “serves fewer than 50 percent of the households in an exchange service area.” The data in Exhibits AL-4, AL-7, AL-10, AL-13 and AL-19 demonstrate that “at least 60 percent of households in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider.”

### **III. REQUIRED MATERIALS PER MINN. STAT. § 237.025, SUBD. 2**

30. Minn. Stat. § 237.025, Subd. 2 defines the materials that an applicant for Competitive Market Regulation must provide in an Application. First, a Petitioner must provide: “A list of exchange service areas in which the local exchange carrier is seeking to be regulated under this section.” CenturyLink is requesting Competitive Market Regulation pursuant to Minn. Stat. § 237.025 in 108 exchange service areas comprised of 154 wire centers as listed in Exhibit AL-1.

31. Second, a Petitioner must provide: “The local services offered by the local exchange carrier in each exchange service area.” The local services offered by CenturyLink QC can be found in the tariffs, price lists and catalogs that are located on the CenturyLink web site at:

<http://www.centurylink.com/Pages/AboutUs/Legal/Tariffs/displayTariffLandingPage.html?rid=tariffs>. Please also see the CenturyLink response to DOC data request 26, attached as Exhibit AL-20. This response clarifies that the services under consideration here are found in the Exchange and Network Services Tariff No. 1, and lists the relevant services and USOCs. These services are available in all 154 CenturyLink QC wire centers as listed in Exhibit AL-1.

32. Third, a Petitioner must provide: “A list of competitive service providers in each exchange service area.” As described earlier, a “competitive provider” is defined in Minn. Stat.

§ 237.025, Subd. 1 as a “wireless voice service provider” or “any other provider of local voice service who owns a substantial proportion of the last-mile or loop facilities delivering service to a majority of households in an exchange service area, without regard to the technology used to deliver the service.” The facilities-based cable providers offering voice service in each wire center are identified in Exhibit AL-5; the other facilities-based wireline carriers offering voice service in each wire center are identified in Exhibit AL-8, and the facilities-based wireless providers offering voice service in each wire center are identified in Exhibit AL-14. There are many other CLECs operating in the CenturyLink QC serving area, but these carriers either do not meet the definition of “competitive service provider” or serve only business customers. For example, some CLECs purchase Unbundled Network Elements (“UNEs”) or resold services in order to provide service, and are not “competitive service providers.” Many of these CLECs are listed on the Department of Commerce web site at <https://www.edockets.state.mn.us/eAssessment-public/company/phoneServiceProvider.action>.

In addition, many CLECs, such as Integra, AT&T, Verizon, POPP Communications and XO Communications only offer services to business customers, and therefore are not included in the analysis above.<sup>28</sup> Finally, over-the-top Voice over Internet Protocol (“VoIP”) providers are not included in the definition of competitive service provider and are excluded from the analysis described above.

33. Fourth, a Petitioner must provide: “A description of affiliate relationships the petitioning local exchange carrier has with any provider of local service in each exchange service area.” CenturyLink QC has an affiliate relationship with CenturyLink Communications LLC (“CLC”), which offers voice and other services to some business customers in Minnesota using various technologies including VoIP. However, CLC does not serve any residential customers in

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<sup>28</sup> A number of these providers offer service primarily to business customers, using both their own facilities and facilities leased from CenturyLink.

CenturyLink QC's serving territory in Minnesota. In response to DOC Data Request 14, CenturyLink provided the quantity of traditional voice and VoIP customers served by CLC in each CenturyLink QC wire center. These data were provided in Confidential Attachments 14A and 14B of the response, which are included as Confidential Exhibits AL-21 and AL-22. All of the customers served with these CLC services are business customers, not households. Therefore, CLC service quantities are not included in the household data described earlier in my affidavit.

34. Fifth, a Petitioner must provide: "Documentation demonstrating the local exchange carrier's loss of local voice service customers to unaffiliated competitive service providers in each exchange service area over, at a minimum, the previous five years." Confidential Exhibit AL-23 provides the total CenturyLink QC access lines for the years 2000, 2005, 2010 and 2015 for each wire center.<sup>29</sup> It may be observed that on average, CenturyLink has lost 74% of its access lines (residential and business) since 2000 as customers have migrated to other voice options provided by unaffiliated competitors, such as cable companies, wireless providers and CLECs. And these numbers do not account for household growth from 2000-2015. The U.S. Census estimates that Minnesota population has grown 4.1% from 2000 to 2015.<sup>30</sup> And according to the FCC, 97.9% of households in Minnesota subscribe to some form of voice service,<sup>31</sup> so the customers leaving CenturyLink are not going without phone service; they are simply moving to one of the competitive voice options available to them.

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<sup>29</sup> Confidential Exhibit AL-23 shows total access lines, including all residence and business lines, rather than just primary residence lines, as provided in Confidential Exhibit AL-2.

<sup>30</sup> See: <http://www.census.gov/quickfacts/table/PST045215/00>.

<sup>31</sup> *Universal Service Monitoring Report*, prepared by Federal and State Staff for the Federal-State Joint Board on Universal Service, 2015, Table 6.6. See <https://www.fcc.gov/general/federal-state-joint-board-monitoring-reports>.



35. In its *Order Requiring Further Filings and Initiating Expedited Proceeding*, the Commission directed CenturyLink to file number portability data in order to fulfill the requirements of Minn. Stat. § 237.025, Subd. 2(b) (5).<sup>32</sup> In order to comply with this directive, CenturyLink is providing number portability data for the years 2011 through 2015, along with 2016 data through August. These data, which include each number port from CenturyLink for each month, are included as Confidential Exhibits AL-24 through AL-29.

36. The possible provision of number portability data generated significant concern from the carrier community, who is concerned about the release of this confidential data. CenturyLink has developed the following data format in order to provide the Commission with the greatest possible amount of data while at the same time protecting data that such carriers consider either carrier proprietary information or customer proprietary information under 47 U.S.C. § 222. The monthly data contained in Confidential Exhibits AL-24 through AL-29 is presented in a format that includes the following columns:

- A. "Carrier\_ID" is a code for the carrier that received the number. The code consists of a letter and a random number. The letter categorizes the provider in one of three classifications.
- "C" represents a wireline carrier that has been identified in Exhibits AL-5 or AL-8 as a competitive service provider as defined in Minn. Stat. § 237.025, Subd. 1. Carriers designated with a "C" are generally either cable providers that offer facilities based service or companies known to have built facilities in CenturyLink wire centers and offer voice service.
  - "W" represents a wireless carrier that has been identified as a competitive service provider in Exhibit AL-14.
  - "O" represents a carrier that offers service in the wire center, but CenturyLink does not have a basis to assert whether or not the carrier qualifies as a competitive service provider.

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<sup>32</sup> *Order Requiring Further Filings and Initiating Expedited Proceeding*, Issued November 2, 2016, page 9.

- B. "LSR\_Date" shows the month and year that the port request was completed.
- C. "LSR\_TOS" refers to the local service request type of service and is designated either as a "1" for business service or "2" for residential service.
- D. "Total Count" refers to the number of lines that were ported.
- E. "LSO" refers to the the area code and prefix (NXX) that exists in the local serving office, or the wire center associated with the ported number.
- F. "CLLI" is the code assigned to the wire center that serves the ported number.
- G. "Wire Center Name" refers to the common name of the wire center at issue.

This information is provided in spreadsheet form so that the Commission and parties have the opportunity to sort and analyze the data as they see fit.

37. When reviewing this data, the Commission should bear in mind that number portability data is of limited or no value in determining whether CenturyLink has met the statutory criteria at issue in this case. First, the standard in the statute is whether or not "at least 60 percent of households in the exchange service area can choose voice service from at least one additional unaffiliated competitive service provider."<sup>33</sup> Thus, the standard is whether the customer "can choose" service from a competitive service provider, not whether or not a customer has ported a number to a particular carrier, or whether the customer actually subscribes to service from a particular carrier. The porting data tells us nothing about the customer's current service; a number ported out could have been subsequently ported to another carrier or not be in use today. Second, most customers that leave CenturyLink for another provider do not port their number.<sup>34</sup> To illustrate, for the 12 months of 2015, only 15.9% of Minnesota customers disconnecting CenturyLink service ported their number to another provider, as shown

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<sup>33</sup> Minn. Stat. § 237.025, Subd. 4(1).

<sup>34</sup> For example, in many cases, a customer disconnecting CenturyLink service may already have a wireless phone, and such a customer normally does not port the disconnected wireline phone number to their wireless phone.

in Confidential Exhibit AL-30. Thus, number portability data provides data on only a small subset of customers leaving CenturyLink. Third, number porting data often shows a third party CLEC as the “port to” party, since in the past, not all carriers were able to obtain phone numbers. Thus, the “port to” party listed may not be the actual provider serving the customer.

38. While the usefulness of number porting data is limited for the reasons described above, it should be noted that of the customers that did port their number to another provider, nearly all were porting to a facilities-based competitive service provider, such as a wireless carrier, a CLEC or a cable company.<sup>35</sup> Virtually no customers ported a number to an over-the-top VoIP provider or a satellite provider.<sup>36</sup> Thus, the data does provide some limited confirmation of the presence of competitive service providers throughout Minnesota.

39. Sixth, a Petitioner must provide: “Evidence demonstrating that the local exchange carrier satisfies the competitive criteria under subdivision 4 in each exchange service area.” The evidence to demonstrate that CenturyLink meets these criteria in each CenturyLink QC exchange service area is provided in Section II of my affidavit.

40. Seventh, a Petitioner must provide: “Other information requested by the Commission that is relevant to the applicable competitive criteria under subdivision 4.” As described above, the Commission’s *Order Requiring Further Filings and Initiating Expedited Proceeding* determined that any complete application should include Number Porting data and additional evidence to show that the competitive criteria under subdivision 4 are met in each exchange service area. The Commission suggests that this latter requirement may be met via

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<sup>35</sup> Exhibits AL-24 through AL-29 include only “LNP” data, where a customer ports a number to a facilities-based provider. “LSNP” data—where a customer ports to an unbundled loop, are not included, since such a customer is not served by a “competitive service provider.”

<sup>36</sup> There would be no number port if a customer moved from CenturyLink to a provider offering service via resale.

“engineering testimony or other expert testimony, explaining the availability or adequacy of the wireless coverage areas shown on the maps.” The requirement for number porting data is met based on the number porting data that I have provided with my affidavit, as described above. The requirement for additional expert analysis of wireless data is met with the affidavit of Mr. Adam Nelson.


#### **IV. CONCLUSION**

41. Based on the evidence provided with my Affidavit, the Commission should grant CenturyLink’s Petition to classify its residential voice services and business voice services (for customers subscribing to three or fewer lines) as subject to Competitive Market regulation, pursuant to Minn. Stat § 237.025, for the 108 exchange service areas listed in Exhibit AL-1.

This concludes my affidavit.

  
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Subscribed and sworn to before me this 21<sup>st</sup> day of November 2016

  
\_\_\_\_\_  
Notary Public in and for said  
County and State

My Commission Expires:

