During the August 30, 2017 hearing, the Commission granted Charter the opportunity to submit post-hearing comments in response to new issues raised by the Rural Independent Companies (RIC) for the first time at the hearing. Charter takes the opportunity to provide comments as follows:

A. Mr. Gillan never claimed that revenue was stabilizing.

The RIC dedicated a large portion of its time at the hearing responding to a statement that Mr. Gillan never made. Specifically, RIC claimed that Mr. Gillan had testified that revenues were stabilizing.¹ But Mr. Gillan never made such an argument. Rather, Mr. Gillan was more precise and stated only that (1) based on federal data, over 50% of the decline in intrastate Nebraska revenues between 2007 and 2014 occurred in the wireless market,² and (2) the unbundling of the mobile device from the contract price could explain a large part of this decline. Following this logic, Mr. Gillan recommended that the Commission first determine why revenues are declining before abandoning a measure (i.e., revenues) that is preferable to connections for a wide range of reasons.

Importantly, Mr. Gillan’s call to first understand why revenues are declining does not mean that Mr. Gillan had prejudged what that examination would reveal. Mr. Gillan has since

¹ Pfister at Tr. 73, Kranmer at Tr. 88.
researched the best available public information and the data suggests that the decline in wireless revenue can largely be attributed to two factors – smartphone penetration and device unbundling – that cannot continue indefinitely.

Specifically, the correlation between smartphone penetration and reported wireless revenues from 2008 (the iPhone was introduced in 2007) and 2013 (T-Mobile unbundled that year) is -0.98. This means that as smartphone penetration increased, reported wireless revenues declined. Starting in 2013, the decline in wireless revenues accelerates, but T-Mobile’s experience suggests the impact of device unbundling occurs quickly. Within 2-years of offering unbundled service, 89% of T-Mobile’s post-paid subscriptions were unbundled.

Although neither of these (potential) causes has fully run its course, the evidence suggests that the decline will moderate. AT&T and Sprint were the last major wireless carriers to unbundle the device (at the beginning of 2016), suggesting that the impact from this market change will largely conclude by the end of 2017. Smartphone penetration is estimated at 80% and slowing, further suggesting that the decline in wireless revenues will likely moderate in 2018.

The point of Mr. Gillian’s comments at the workshop – as well as the analysis above – is that understanding the underlying causes of the observed symptom (declining revenues) should be a requisite step to changing its methodology. The analysis above is limited by its reliance on public federal data, but that limitation can be corrected by the Commission analyzing its own data to determine if similar patterns apply. The conclusion of the analysis – i.e., that the decline in wireless revenue cannot continue indefinitely – counsels against adopting changes in the contribution methodology to address a concern that will logically moderate on its own.

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3 A correlation coefficient measures the degree of linear association between two sets of data. The coefficient can range from 1.00 to -1.00, with 1.00 representing a perfect positive correlation and -1.00 representing a perfect negative correlation. The correlation between smartphone penetration and reported wireless revenues from 2008 to 2013 of -0.98 means that as the decline is wireless revenues can be significantly explained by the growth in smartphone penetration. Data used: Table 1.2, 2016 USF Monitoring Report, Rel. Jan. 13, 2017 and Smartphone Penetration of the Mobile Market, comSource MobiLens.

B. The Form 477 Instructions are not unambiguous.

Mr. Gillan warned that the Form 477 data may not be stable, noting that the central law of economics – *i.e.*, that quantity declines as price increases – is likely to apply to Form 477 subscription data (should the commission apply a price in the form of a connections-charge). RIC responded by claiming the instructions are clear, but RIC selectively omitted important parts of the FCC instruction. Below is the full instruction, with the RIC-omitted sentences underlined:

Report interconnected VoIP subscriptions based on the maximum number of interconnected VoIP calls that customers may have active—at the same time—between their physical location and the public switched telephone network. The maximum number of such calls may be set out under the terms of service agreements with business, institutional, or government customers, or it may be determined by some other method that best reflects customer needs and requirements. For example, providers that market against traditional business telephone systems should be able reliably to estimate what their customers' requirements would be for trunks between a traditional PBX and the telephone company.

Mr. Gillan’s testimony is that there is no industry-standard methodology that would provide the Commission—and, importantly, each of the providers—with confidence that connections are being reported in a consistent and competitively neutral manner.

Moreover, nearly all (over 90%) of the growth in “Form 477 connections” that makes the measure so attractive to RIC is in wireless subscriptions. To the extent that much/all of this growth is caused by second-phones issued by a business, it is useful to remember that Form 477 permits such subscriptions to be reported by billing address. Businesses, in particular, are likely to have multiple address (i.e., states) to which they can attribute wireless subscriptions.

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5. Gillan at Tr. 34-35.
6. Davis at Tr. 94.
7. Form 477 Instructions, December 5, 2016, at p. 20. Italics, emphasis and parenthetical reference to the Glossary removed.
8. Gillan at Tr. 38.
9. Form 477 Instructions, December 5, 2016 at p. 27.
10. No party has addressed how wireless resellers (that do not file Form 477) would be assessed under the proposed methodology, particularly as the underlying carrier (that does complete Form 477) would not know the billing address of the reseller's end user.
Each of these (and other) ambiguities support Mr. Gillan’s admonition that, should the Commission experiment with a connections-based methodology, it remember the basic principle “small fees, small problem[s].”\textsuperscript{11} Even though the Commission intends to decide the level of its charges in a separate proceeding, it should understand that changing the contribution methodology will not provide an avenue to increase the level of subsidies.

\section*{C. The Form 477 and TRS data sources are not consistent.}

The Commission hearing revealed a fundamental disagreement concerning whether the “assessable connection” should be the existing TRS data or drawn from Form 477.\textsuperscript{12} The table below shows the wide variance that already exists between these data sources – a difference of nearly 550,000 connections that Windstream describes (in understatement) as “directionally ... kind of in the ballpark.”\textsuperscript{13}

Using data for June 2016 and maintaining the fund amount at its existing level ($37.3 million) for 2016-2017,\textsuperscript{14} the table below estimates the monthly rate under each data source:

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|}
\hline
 & TRS & Form 477 \\
\hline
Estimated Connections (thousands) & 2,118 & 2,667 \\
Implied Monthly Charge & $1.47 & $1.17 \\
\hline
\end{tabular}
\caption{Estimated “Connection Charge” Calculated by Data Source}\textsuperscript{15}
\end{table}

\textsuperscript{11} Gillan Tr. At 39.

\textsuperscript{12} Lubeck at Tr. 24 (favoring TRS) contrasted with Pfister at Tr. 78 (recommending Form 477).

\textsuperscript{13} Kreutz at Tr. 103

\textsuperscript{14} \textit{Order Setting Surcharge,} In the Matter of the Commission, on its own motion, seeking to determine the level of the fund necessary to carry out the Nebraska Telecommunications Universal Service Fund Act effective fiscal year beginning July 1, 2017, NUSF-4, June 13, 2017, at 5. In this \textit{Order} the Commission adopted a surcharge sufficient to maintain in the FY 2017-2018 support at the same level of remittances ($37.3 million) that it anticipated for FY 2016-2017. The RIC found this level of support to be acceptable (at p. 3), albeit the minimum amount that the RIC recipients would recommend.

\textsuperscript{15} Table 1 reproduces the Windstream analysis (Kreutz at Tr. 102-106), but uses the updated Form 477 subscription counts and a NUSF level of $37.3 million, consistent with the most recent Commission Order.
The RIC projections are inaccurate and Mr. Gillan's critique remains valid.

At the hearing, the RIC objected to Mr. Gillan's characterization of its connections-forecast as "implausible and improbable," claiming that its analysis was instead "realistic and conservative," based solely on the fact that its June 2016 total projection was lower than what was actually reported.

RIC separately projected subscriptions for three groups: residential wireline, business wireline and wireless. Although the total may seem reasonable, the accuracy of its projections should be evaluated by how well the methodology's projections for each category matched reality.

Table 2: Comparing RIC's Projections to Actual (thousands)

<table>
<thead>
<tr>
<th>Category</th>
<th>Dec-16 Actual</th>
<th>Jun-16 RIC Actual</th>
<th>Jun-16 Actual</th>
<th>Projected Change</th>
<th>Actual Change</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>363</td>
<td>354</td>
<td>364</td>
<td>-9</td>
<td>1</td>
<td>-111%</td>
</tr>
<tr>
<td>Business</td>
<td>382</td>
<td>387</td>
<td>384</td>
<td>5</td>
<td>2</td>
<td>-60%</td>
</tr>
<tr>
<td>Wireless</td>
<td>1,886</td>
<td>1,909</td>
<td>1,919</td>
<td>23</td>
<td>33</td>
<td>43%</td>
</tr>
<tr>
<td>Total</td>
<td>2,631</td>
<td>2,650</td>
<td>2,667</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As Table 2 demonstrates, the RIC projections are wildly inaccurate. But the error in RIC's projections is masked by the fact that the error in RIC's wireline estimates are offset by the error in its wireless subscription. This does not mean, however, that the RIC methodology is "realistic and conservative" – it only means it is remarkably inaccurate in opposite directions, for different categories, for different reasons.

Table 2 also underscores how the perceived attractiveness of the connections approach is dependent entirely upon growth in wireless connections and, even more fundamentally, that the

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16 Kraner at Tr. 85.
17 Kraner at Tr. 86.
18 Moreover, the Commission should look at the projected gains/losses in each period rather than the total that includes an unchanging base. Including the base of subscriptions (which is in the millions) will always minimize the error in RIC's methodology that estimated the incremental movement (in the thousands) that occurs between periods.
multi-device customer base will continue to grow in perpetuity. All trends, however, come to an end, and the Commission should be skeptical about any methodology that fundamentally assumes that \textit{two} trends (\textit{i.e.}, that revenues will decline forever and wireless subscriptions will grow independently of population) will continue unabated for years to come.

**CONCLUSION**

As the Commission reviews this response, Charter recommends that it keep three thoughts in mind:

- The concern with continuing to assess intrastate telecommunications revenue is predominately \textit{a concern with wireless revenues};

- The perceived merits of a connections-based approach are almost entirely dependent upon the \textit{continued growth in wireless connections}, and

- A connections-based charge might be workable provided it is \textit{sufficiently small to avoid creating more problems than it solves}.

Overall, Charter believes that the next steps warrant further analysis – to determine whether the revenue patterns exhibited by the public federal data are present in the proprietary Nebraska revenue data, to understand the differences between the TRS and Form 477 data, and to better understand how all of the complex details of a new methodology can be resolved. And, most importantly, the Commission should critically examine the root causes of the wireless revenue decline to determine whether it can be expected to continue for years to come. Doing so would be prudent before adopting a significant shift in how the NUSF would be assessed.
BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Nebraska Public Service Commission, on its own motion, to consider revisions to the universal service fund contribution methodology.

Application No. NUSF-100 / PI-193

Certificate of Service

The undersigned hereby certifies that on this 15th day of September, 2017 an original and five (5) copies of the Post-Hearing Comments by Charter Fiberlink – Nebraska, LLC and Time Warner Cable Information Services (Nebraska), LLC in this matter were hand-delivered to the Nebraska Public Service Commission, 300 The Atrium, 1200 N Street, Lincoln NE, and a copy of the same was e-mailed to:

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