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March 28, 2022

Honorable Michelle L. Phillips
Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223

***Re: Case 15-M-0742***

Dear Secretary Phillips:

Enclosed please the Initial Comments of Verizon New York Inc. on the Proposal of the New York Smaller ILEC Companies to Establish a Successor Funding Arrangement.

These comments and Exhibit A thereto contain Protected Information within the meaning of the Protective Order issued in this proceeding. Each passage that constitutes Protected Information is preceded by the notation "**[BEGIN CONFIDENTIAL]**" and followed by the notation "**[END CONFIDENTIAL]**." All Protected Information has been redacted from this filing.

Unredacted copies of the comments and Exhibit A are being provided to the Administrative Law Judge, to Trial Staff, and to parties who have agreed to be bound by the provisions of the Protective Order.

Respectfully submitted,

Joseph A. Post

Joseph A. Post

cc: Honorable Gregg A. Sayre, ALJ
Party List

**REDACTED**

**NEW YORK**
**PUBLIC SERVICE COMMISSION**

| | |
|---|---|
| **Proceeding on Motion of the Commission to Review the State Universal Service Fund** | **Case 15-M-0742** |

# INITIAL COMMENTS OF VERIZON NEW YORK INC. ON THE PROPOSAL OF THE NEW YORK SMALLER ILEC COMPANIES TO ESTABLISH A SUCCESSOR FUNDING ARRANGEMENT

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**March 28, 2022**

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# COMMENTS OF VERIZON NEW YORK INC. ON THE PROPOSAL OF THE NEW YORK SMALLER ILEC COMPANIES TO ESTABLISH A SUCCESSOR FUNDING ARRANGEMENT

## I. INTRODUCTION AND SUMMARY OF COMMENTS

Verizon New York Inc. ("Verizon") submits these comments[1] to explain why the Commission should reject the proposal of the New York Smaller ILEC Companies ("NSICs") to establish a successor funding arrangement ("SFA") that would replace the current State Universal Service fund ("SUSF," or "Fund") after it expires on December 31, 2022.[2]

The comments are organized as follows:

First, we explain why the burden of proof on whether an SFA should be established lies squarely with the NSICs (Section II).

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[1] These comments are submitted pursuant to the Commission's February 8, 2022 "Notice Soliciting Comments" in this proceeding, and its Notice of Proposed Rulemaking under the State Administrative Procedure Act (I.D. No. PSC-04-22-00004-P, published January 26, 2022).

As discussed in Section VII below, a great deal of additional information relevant to the matters addressed in these comments will become available in the near future, either through discovery or through filings made by NSIC members. Accordingly, these comments should be regarded as preliminary, and subject to supplementation at a later stage of the proceeding.

[2] The proposal is set forth in Case 15-M-0742, "Petition for Extension of the State Universal Service Fund" (filed December 15, 2021) (the "Petition").

Next, we explain why certain of the smaller ILECs that have flouted requirements set by the Commission in its order establishing the current SUSF should not be permitted to participate in any SFA (Section III).

Finally, we describe the framework that should be applied to assess the need for an SFA (Sections IV and V), discuss certain issues relevant to the administration of an SFA should the Commission decide to create one (Section VI), and address the procedures that should be followed for the remainder of this proceeding (Section VII).

The framework that we propose in Sections IV and V differs in material respects from the framework that has governed the SUSF since it was first created in 2012, as it should.[3] We must respond to the lessons taught by the mistakes of the past rather than repeat those mistakes, and must give due recognition to the impact of changing circumstances. Although the Fund has been with us in various forms for almost twenty years (taking into account both the SUSF itself and its predecessor, the Transition Fund), it — like other relics of the past, such as the post-divestiture access charge regime and universal rate-of-return regulation — has passed its "use by" date, and is ripe for review and reassessment.

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[3] The original Fund was created, with a four-year term, by a 2012 Commission order. *See* Case 09-M-0527, "Order Adopting Phase II Joint Proposal" (issued and effective August 17, 2012) (the "*2012 Order*"). It was extended, under modified terms, for an additional four years in 2016, and then, with further modifications, for an additional two years in 2020. *See* Case 15-M-0742, "Order Adopting Joint Proposal" (issued and effective September 16, 2016) (the "*2016 Order*"), and *id.*, "Order Adopting Joint Proposal" (issued and effective December 23, 2020) (the "*2020 Order*"). The current Fund will expire on December 31, 2022.

The 2012 Fund was preceded by a "Transition Fund" created in 2003, and by extensions of the Transition Fund that were approved in subsequent years. *See* Case 02-C-0595, "Order Adopting Comprehensive Plan" (issued and effective December 23, 2003); Case 09-M-0527, "Order Adopting Terms of Phase I Joint Proposal" (issued and effective July 16, 2010); *id.*, "Order Modifying Temporary Transition Fund Extension" (issued and effective September 16, 2011), and *id.*, "Order Increasing Cap on Temporary Transition Fund Extension" (issued and effective March 16, 2012).

Indeed, the significant changes made to the Fund by the orders adopting the 2016 and 2020 Joint Proposals[4] demonstrate the Commission's willingness to reconsider earlier funding models. Those changes include the introduction of JP ¶ 8(e) in 2016, and, in 2020, a reduction in the term of the Fund from four to two years and the introduction of competitive and financial reporting requirements (¶¶ 2(e) and 2(f)). All of these changes were in the direction of increased scrutiny of NSIC claims that funding was needed to preserve universal service.

Our proposed framework for evaluating any successor funding arrangement, set forth in Sections IV and V, has two key components:

- ***Criteria for assessing the existence of competition in the NSIC service areas.*** Although competition has not been taken into account in prior iterations of the Fund,[5] it is clear that where adequate competitive alternatives to the NSICs' services exist, there is no need to continue subsidizing the NSICs themselves in order to ensure the continued existence of universal service. That should be the only purpose of an SFA — to ensure the continuation of universal service. To the extent that the NSICs are not required for that purpose, there is no justification for creating an SFA to subsidize them.

- ***Criteria for assessing financial need*** that better reflect the realities of the NSICs' operations than the rate-case criteria that currently govern funding decisions.

Although Verizon and other parties are still in the process of gathering information relevant to the proposed framework, it now appears clear that the NSICs will not be able to meet their burden of showing that there is a need for an SFA. But even if the Commission should decide to establish an SFA, then, as shown below, the framework that is proposed in Sections IV

[4] Virtually all of the iterations of the SUSF and the Transition Fund have been created through "Joint Proposals" ("JPs") negotiated by parties and then adopted by the Commission. In some cases in these comments, we refer to the provisions of particular Joint Proposals. These should be understood as shorthand references to the Commission orders adopting the proposals, which is what gives the proposals their binding force.

[5] However, the current Fund includes a competitive reporting requirement (¶ 2(e)), intended to generate information for possible use in this proceeding.

and V provides important guideposts for determining how applications for SFA funding should be assessed in the future.

## II. THE POTENTIAL FUND BENEFICIARIES MUST BEAR THE BURDEN OF JUSTIFYING THEIR PROPOSAL FOR ESTABLISHING A SUCCESSOR FUNDING ARRANGEMENT

### A. The Fund in its Current Form Fails to Achieve its Goals

The Petition argues incorrectly that the Fund should simply be continued or renewed for at least an additional four years, in precisely its current form:

> [T]he NSIC members respectfully submit that they have provided sufficient information to sustain the conclusion that: (1) there is a need for the SUSF; (2) the SUSF should continue past December 31, 2022; and (3) *the current funding size and framework should continue for at least a four-year period*."[6]
>
> * * *
>
> As a result, the SUSF framework that should continue after December 31, 2022 should follow the framework that the Commission has already determined to advance the public interest. As reflected in the various *SUSF Orders*, this is not the "first rodeo" for the Commission or the parties regarding the SUSF. At the end of the current SUSF Renewal Period (*i.e.*, December 31, 2022), the Commission and all interested parties will have had ten (10) years of experience in the successful operation of the SUSF, without any negative consequences to competitors or the public.[7]

There is no basis for a presumption that an SFA should be established at all, and certainly no basis for establishing it as a mirror image of the current Fund. The current Fund and its predecessors have failed to achieve their central goal, and to extend it would simply be to double down on the mistakes of the past. That goal, as stated in numerous Commission orders, was to provide *temporary*, *transitional* funding that would put the funded companies on a path to

[6] Petition, Summary Page (emphasis supplied).

[7] *Id.* at 31.

financial self-sufficiency. For example, more than 25 years ago, when it was first considering the creation of a universal service funding mechanism, the Commission stated:

> We are also considering whether some limited, transitional funding is needed for the recovery of a portion of incumbents' embedded costs associated with the provision of basic service in high cost areas. Such funding would provide a limited cushion against significant competitive revenue losses in the early years that are associated with universal service, while requiring the incumbent to adjust to the rigors of a competitive market as time passes. Such a funding mechanism would not guarantee any company perpetual recovery of its total costs, but instead would ensure that remaining captive customers continue to have affordable services available to them.[8]

The Commission returned to that theme in its order adopting the 2016 Joint Proposal. That proposal included, for the first time, a provision (¶ 8(e)) requiring entities seeking new, continued, or modified funding from the SUSF to file a plan that would include "a good faith description as to how the Eligible Recipient may reduce its need for SUSF support at the end of the SUSF's extension period." Paragraph 8(e) also set forth detailed requirements relating to such plans.

In adopting the 2016 Joint Proposal, the Commission identified ¶ 8(e) as a key reason for finding the JP to be reasonable, and in doing so underlined the limited, transitional nature of the Fund:

> We intend to actively review the investment and operational plans proposed by the Joint Proposal to ensure that SUSF recipients are reducing their need for SUSF support. As the Commission indicated in Opinion 96-13, funding was intended to provide only a limited cushion against significant competitive revenue losses in the early years while requiring the ILECs to adjust to the rigors of a competitive market as time passes. Moreover, the funding mechanism was only intended to ensure that remaining captive customers continue to have affordable services available to them. Given our ability to monitor the proposed investment and operational plans to

[8] Case 94-C-0095, Opinion No. 96-13, "Opinion and Order Adopting Regulatory Framework" (issued and effective May 22, 1996), at 14 (emphasis in original).

> ensure that SUSF recipients are actively working to reduce their need for SUSF funding, we find the proposed set of eligible recipients and associated proposed funding amounts to be reasonable.[9]

Most recently, in the *2020 Order*, the Commission reaffirmed that the Fund was intended "to provide only a limited cushion against significant competitive revenue losses while requiring the ILECs to adjust to the rigors of a competitive market as time passes," and to "provide impetus to the smaller ILEC recipients to move away from reliance on the SUSF to a state where they become more financially and operationally efficient, and able to effectively compete."[10]

The failure to achieve this goal of a limited and temporary SUSF is demonstrated by the increasing subsidies paid by the Fund since 2009:

| Year | Disbursements |
|---|---|
| 2009 | $270,512.00 |
| 2010 | $566,830.00 |
| 2011 | $579,984.00 |
| 2012 | $579,984.00 |
| 2013 | $579,984.00 |
| 2014 | $1,056,984.00 |
| 2015 | $1,804,948.72 |
| 2016 | $3,293,681.65 |
| 2017 | $4,276,030.76 |
| 2018 | $4,555,623.00 |
| 2019 | $4,794,766.96 |
| 2020 | $5,112,892.92 |
| 2021 | $5,159,527.08 |

Source: Fund Administrator

[9] *2016 Order* at 16 (footnote omitted).

[10] *2020 Order* at 19-20.

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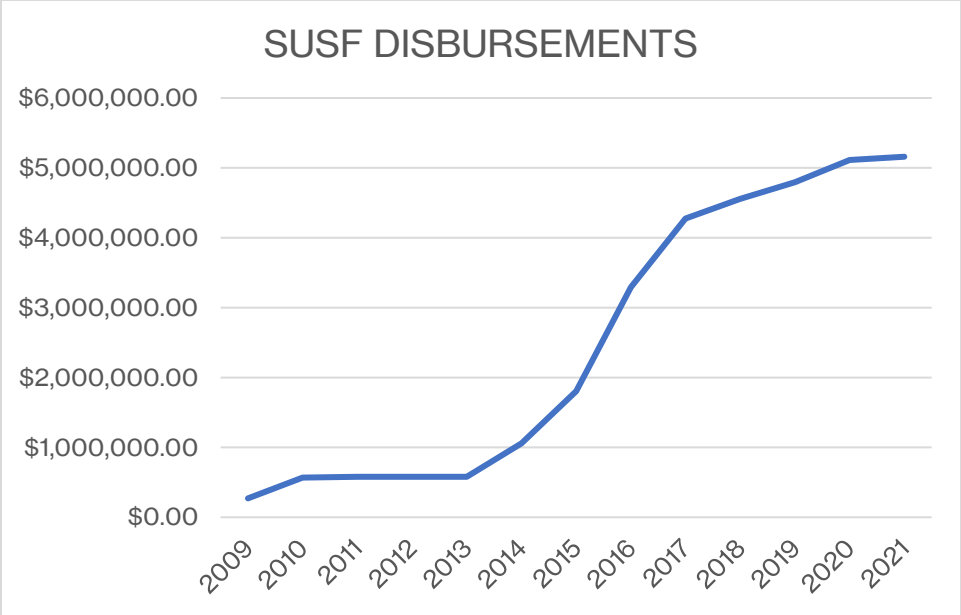


A significant reason for this failure is that SUSF funding decisions have always been made in traditional rate cases, based on a company's regulated intrastate revenues and costs. *See*, *e.g.*, 2016 JP ¶ 8(b); 2020 JP ¶ 8(b). But as we will discuss in Section V, the rate-case criteria that govern funding decisions have become increasingly irrelevant to the funded companies' operations. Companies — including the Eligible Recipients[11] — have developed healthy broadband lines of business over which voice can be offered as an application, and which are rapidly supplanting traditional voice service. Broadband revenues are neither regulated nor intrastate, and as a result do not figure into the rate-case calculus. Funding decisions are therefore made on the basis of financial data that has only marginal relevance either to the viability of the funded companies or to the maintenance of universal service; and this has clearly contributed to the uncontrolled growth of Fund disbursements.

[11] The term "Eligible Recipient" refers to one of the (currently 30) companies that are authorized to apply for subsidies from the SUSF.

This breakdown of the model underlying the SUSF undermines any notion that the establishment of an SFA should be presumed. Rather, because of the fundamental failure of the Fund and its predecessors to achieve their central objective over the course of two decades, the burden of proof should be placed squarely on any party that seeks to continue it in its current form, or indeed to establish an SFA at all.[12]

### B. The Provisions of the Current Joint Proposal

The express terms of the current (2020) SUSF also support the allocation of the burden of proof to the NSICs in this proceeding. Paragraph 2(b) of the 2020 Joint Proposal provides that an SFA will be established only if the "Commission *determines* … that there is a continued need for the SUSF." (Emphasis supplied) Thus, affirmative Commission action is required to establish an SFA. The current Fund will not be continued past December 31, 2022 by default, and there is no presumption built into the JP that an SFA will be established. The parties requesting a ¶ 2(b) determination from the Commission — the NSICs — properly bear the burden of justifying their request.

### C. The NSIC Members' Superior Access to Relevant Information

Under traditional principles of the law of evidence, a key factor in allocating the burden of proof is the identity of the party that has the best access to relevant evidence.[13] That is, for

---

[12] The existence of the Targeted Accessibility Fund, or "TAF," provides no support for the continuation of the SUSF. The TAF supports a set of services that are universally recognized to be socially-important and non-compensatory, and reimbursement is based on simple rate and cost benchmarks. TAF funding decisions are not based on "revenue requirements" determined through the application of arbitrary cost allocations. The TAF has thus created none of the controversies — and its administration entails none of the complexities — that surround the issue of whether an SUSF is needed to maintain universal service. The competitive and financial issues discussed in these comments do not bear on the TAF. Verizon is not aware of any party that has opposed continuation of the TAF since its creation in the late 1990s.

[13] *See, e.g., Seaman v. Memorial Sloan-Kettering Cancer Center*, 2010 U.S. Dist. LEXIS 21717 (S.D.N.Y. 2010) *29 - *30, *aff'd sub nom. Seaman v. First Unum Life Ins. Co.*, 487 Fed. Appx. 670 (2d Cir. 2012).

example, the principle underlying Publ. Serv. L. § 92(2)(f), which imposes the burden of proof of the appropriateness of rate changes on the utility whose rates are at issue.[14] It is the NSIC members that have the best access to information concerning the key issues in this proceeding — their financial situation, the underlying causes of that situation, their alleged need for subsidies from an SFA, the availability, cost, and potential efficacy of steps they might take to achieve self-reliance, and the existence of competitive alternatives in their service areas.

The superiority of the NSICs' access to relevant information is not affected by the availability to other parties of discovery under the Commission's rules. Discovery is valuable only to the extent that a party knows the right questions to ask, and it can take many rounds of groping in the dark by means of successive rounds of questions and answers before a party begins to acquire that knowledge. No interrogatory responses can give a party an understanding of another party's business that is comparable to what the party itself knows from carrying out its operations day-in and day-out, and having open and unmediated access to the opinions and observations of those conducting that business. Discovery is also limited by the Commission's "special study" rule (16 NYCRR § 5.8(c)), under which, except in "unusual circumstances," "a party will not be required to develop information or prepare a study for another party." Thus, Verizon could not compel a NSIC member to conduct a study of the root causes of its financial condition, and to produce the results of that study to Verizon.[15]

---

[14] *See* Case 99-C-0529, "Ruling on Procedure and Schedule" (issued April 27, 1999) (under the "traditional rate-case model," the "ILEC bore the burden of proof, in part because of its greater access to the information needed to set proper rates, and had a corresponding responsibility to provide cost studies").

[15] Additionally, thirteen companies that apparently want to retain their status as Eligible Recipients under any future SFA (see the discussion in the following section) are not parties to the proceeding, and thus are not subject to service of interrogatories or document production requests at all under the Commission's rules. *See* 16 NYCRR §§ 5.3(a), 5.4(a).

## III. COMPANIES THAT HAVE NOT FILED THE INFORMATION REQUIRED BY ¶¶ 2(E), 2(F), AND 8(E) OF THE CURRENT JOINT PROPOSAL SHOULD NOT BE ALLOWED TO RECEIVE THE BENEFITS OF ANY SUCCESSOR FUNDING ARRANGEMENT

Paragraph 2(e) of the current (2020) JP requires "any Eligible Recipient that is receiving or will request funding after the SUSF renewal period" (that is, after the period ending on December 31, 2022, when the current SUSF expires) to file detailed data on the location of facilities of potential alternative service providers. Additionally, under JP ¶ 2(f), certain financial data must be filed by "[a]ny Eligible Recipient that is receiving or will request funding following the SUSF Renewal Term." Under JP ¶ 8(e), "[a]ny Eligible Recipient seeking for the first time SUSF disbursements in a rate case …, any Eligible Recipient seeking a change in its SUSF funding …, and any Eligible Recipient seeking continued SUSF disbursements," is required to submit certain information relating to "steps that [it] took in an effort to improve its financial position."

As noted previously, these provisions are not merely terms and conditions of an agreement among private parties. The Commission approved and *adopted* the JP, making its provisions binding and enforceable, and giving them the full force and effect of a Commission order under the Public Service Law. As the Commission stated in its order approving the 2020 JP, "Consistent with the discussion in the body of this Order including the Commission's authority to modify the Joint Proposal, when warranted, the terms of the Joint Proposal filed in this proceeding on October 13, 2020, are *adopted and incorporated as part of this Order*."[16] Of course, as with any Commission order, the Commission retains the authority to modify its

[16] *2020 Order* at 22 (emphasis supplied); *see also id.* at 21.

requirements on a going-forward basis, but that fact gives parties no right to ignore those requirements, which remain enforceable unless and until they are rescinded or modified.

Moreover, the *2020 Order* specifically recognized the importance of these particular requirements to the administration of the SUSF. As it stated:

> The Commission agrees that the JP's requirements for current or future SUSF recipients to file extensive location and financial data, and to submit plans that consider structural and other business alternatives are among the key benefits of the JP. These provisions will help ensure that any future SUSF funding is the minimum amount necessary to achieve the goal of statewide universal service. The Commission intends to actively review this location specific and financial data along with investment and operational plans proposed by the Joint Proposal to ensure that SUSF recipients are reducing their need for SUSF support. As the Commission previously indicated, funding was intended to provide only a limited cushion against significant competitive revenue losses while requiring the ILECs to adjust to the rigors of a competitive market as time passes. The data should assist the Commission in determining whether future SUSF funding is warranted, or whether alternative means of providing funding to eligible recipients should be pursued. In addition, the compilation of location-specific data on alternatives to traditional wireline voice service over the course of the 2021-2022 term of the SUSF Renewal Period should allow the Commission to assess the state of competition in the rural areas served by the smaller ILECs. The ultimate purpose of these provisions is to provide impetus to the smaller ILEC recipients to move away from reliance on the SUSF to a state where they become more financially and operationally efficient, and able to effectively compete.[17]

It is thus significant that fourteen of the Eligible Recipients under the current Joint Proposal have failed to submit the competitive-location information required to be filed by December 31, 2021 under ¶ 2(e)(ii) of the Joint Proposal. These are:

[17] *Id.* at 19-20 (footnote omitted).

| |
|---|
| Berkshire Telephone Corporation |
| Cassadaga Telephone Corporation |
| Champlain Telephone Company |
| Chautauqua & Erie Telephone Corporation |
| Citizens Telephone Company of Hammond, NY, Inc. |
| Dunkirk and Fredonia Telephone Company |
| Empire Telephone Corporation |
| Hancock Telephone Company |
| Margaretville Telephone Company, Inc. |
| Middleburgh Telephone Company |
| Ontario Telephone Company, Inc. |
| Taconic Telephone Corporation |
| Trumansburg Telephone Company, Inc. |
| Alteva of Warwick LLC |

(None of these companies, except for Middleburgh, is a party to this case.)[18]

That these companies have not made filings under ¶ 2(e) also makes it unlikely that they will make the financial filings required under JP ¶ 2(f) when those are due on March 31, 2022, or (if required) filings under ¶ 8(e).

There are two possible explanations for this failure. The first is that these companies firmly intend *not* to seek funding from an SFA, in which case that intent should be incorporated into any Commission order establishing an SFA. The second possibility is that the companies are defying an order of the Commission by failing to comply with requirements that the Commission viewed as critical to the administration of the Fund. If the latter is the case, it would be an appropriate sanction to exclude the companies from the benefits of any SFA that the Commission may establish.

[18] Additionally: (a) Nicholville did not submit its ¶ 2(e) data until February 28, 2022, over six weeks after the (extended) deadline imposed by the Commission; **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

On February 22, 2022, Administrative Law Judge Gregg Sayre, the presiding officer in this proceeding, issued a ruling denying a motion by Verizon to exclude the companies from SFA benefits.[19] Judge Sayre's ruling was procedural and thus does not (and, indeed, could not) preclude the Commission, in its final order, from granting the relief requested by Verizon in that motion. Indeed, as the following extracts make clear, the ruling was based on the perceived prematurity of Verizon's motion and on the Judge's conclusion that the issue should be decided by the Commission:

> To put it in a nutshell, Verizon is seeking a form of partial summary judgement from an Administrative Law Judge in a rulemaking *in which comments have not even been filed*. Viewed as such, Verizon's motion is clearly without merit purely from a procedural standpoint. (Ruling at 4; emphasis supplied)
>
> The failure of some ILECs to file the December 31, 2021, data required by the 2020 Order also does not warrant an advance "death penalty" *at this stage of the case*. (Ruling at 4; emphasis supplied)
>
> As the ILECs and UIU argue, the importance of the missing data is only one of many factors that the Commission will consider when it reaches its decision in this case. However, the ILECs that have not filed the December 31, 2021 data should be aware that the absence of the required data may, at the conclusion of this case, lead to a determination by the Commission that they have failed to provide a sufficient showing of a need for post-2022 funding in their service territories, and that they will therefore not be eligible for such funding. (Ruling at 4-5)

## IV. WHERE ADEQUATE COMPETITIVE ALTERNATIVES EXIST, THERE IS NO NEED TO SUBSIDIZE LEGACY PROVIDERS IN ORDER TO ENSURE THE MAINTENANCE OF UNIVERSAL SERVICE

### A. NSIC Members Face Significant Competition

The NSIC members face substantial competition in their service areas. This is suggested by a number of independent sources, including (1) the line-loss data tabulated in Attachment B to

[19] Case 15-M-0742, "Ruling Denying Motion to Exclude" (issued February 22, 2022).

the NSIC Petition, (2) the Commission's conclusions in its recent order on the ratemaking treatment of loan proceeds received by a subset of the NSIC members under the federal Coronavirus Aid, Relief, and Economic Security ("CARES") Act,[20] and **[BEGIN CONFIDENTIAL]** [redacted]

[redacted]

[redacted]

[20] The Commission stated:

> While we strongly disagree with many of the Small ILEC claims and arguments, the Commission believes that these arguments need not be addressed when deciding the appropriate rate treatment for the PPP loans, due to *the competitive environment in which the Small ILECs now operate*. As the Commission found in its 2018 Tax Act Order, as a result of *customer losses to competitors even before the COVID-19 pandemic*, the intrastate return on equity (ROE) of these 14 Small ILECs fell below the ROE that would have been allowed in a traditional rate case, and often fell below 0%, thus indicating that these ILECs were losing money on their intrastate operations even prior to the Covid-19 pandemic. The Small ILECs' responses to the Commission's March 2021 Order confirmed that the Small ILECs continued to operate during the COVID-19 pandemic in a *highly competitive environment* which negatively impacted earnings.

Case 21-C-0110, "Order Determining Ratemaking" (issued and effective February 18, 2022), at 9 (footnote omitted; emphasis supplied).

[21] Case 07-C-0349, "Order Adopting Framework" (issued and effective March 4, 2008). In the tabulation of the competitive presence filings, the second column addresses the percentage of *customers* and the third column addresses the percentage of *territory*. The full questions asked in the survey were: Question 1: "What percentage of residences in your telephone service territory have competitive cable telephone service available to them? (Please do not include satellite telephone service.)" Question 2: "What percentage of customers in your telephone service territory currently have non-affiliated wireless telephone service available to them?" Question 3: "How would you characterize, in terms of percentage, the availability of wireless phone service coverage across your telephone service territory? (Please provide a single percentage figure of availability rather than a range of percentages.)" Note that Question 1 refers only to "competitive" cable telephone service (and thus may have been interpreted by some respondents as excluding such service provided by affiliated companies), and that Question 2 refers explicitly to "non-affiliate wireless telephone service," a limitation that may have been applied by some respondents in responding to Question 3 as well).

**[END CONFIDENTIAL]**

This *prima facie* evidence of competition is confirmed conclusively by the accompanying report on "Examining the Availability of Alternative Voice Service Providers in the Service Areas of Certain Smaller ILECs in New York State," prepared by Dr. Christian M. Dippon, a Managing Director of NERA Economic Consulting and Chair of its Global Energy, Environment, Communications and Infrastructure Practice. (A copy of the report is provided in Exhibit A.) Dr. Dippon's report marshals a wide body of evidence — including analyst reports, market data, the filings that have been made under ¶ 2(e) of the 2020 Joint Proposal, and Form 477 data filed with the FCC — to show that affordable competitive alternatives are widely available in the NSIC service areas and are accepted by consumers. Dr. Dippon demonstrates that "*all* households in the NSIC serving areas have choices for their voice services" (emphasis supplied). NERA Report ¶¶ ES6-7, 62; *see also id.* ¶ 53. Indeed, a weighted average of 99.7%

of the households in the NSIC service areas are covered by the well-established and affordable alternatives of wireline broadband and wireless mobile service, even without taking fixed wireless and satellite service into consideration. *Id.* ¶ 59 & Table 17.

### B. Competition Obviates the Need for a Successor Funding Arrangement

The SUSF was not created simply to keep NSIC members in business. Rather, it exists to support a goal that lies beyond the continuing existence of those companies. As the Commission stated in its order adopting the 2020 JP, "The SUSF is a fund that provides supplemental revenue support to certain smaller ILECs *in order to keep basic telephone service available to certain customers at affordable rates*."[22] If adequate competitive alternatives to a funded company's services are available, there is no basis for requiring other providers — and particularly its competitors — to subsidize the company's continued operation in order to advance the goal identified by the Commission.

In past proceedings, NSICs have claimed that where adequate competitive alternatives are available for only some of its customers, universal service requires the companies to remain in business both to serve the remaining retail customers and to provide wholesale support to competitive providers. But that argument misses the point that in such scenarios the companies do not need to incur all of the costs associated with operating at their current scope and scale.

If competitive alternatives are available to some, but not all, of a company's customers, then funding should be available to the company only to the extent required to enable it to support the provision of service to end users to whom such alternatives are *not* available. In such a case, the company could reduce the scope and scale of its operations to a level necessary to:

[22] *2020 Order* at 3 (emphasis supplied).

(a) maintain continuity of retail service to customers (if any) who lack competitive alternatives, and (b) maintain continuity of any carrier-to-carrier services (such as pole attachments) that are relied on by competitive providers of retail voice service. By withdrawing from all or a portion of its retail operations, such companies should be able to avoid a significant portion of the costs associated with call centers, customer dispatches, and other retail functions, as the Commission recognized in developing an "avoided cost" discount for resold ILEC services.[23]

The affected NSIC members should bear the burden of demonstrating the amount of such avoided costs. If the company fails to appropriately re-scale its operations, then the resulting cost savings should be imputed to it in any funding determinations.

### C. An Analysis of Competitive Alternatives to the Services Provided by NSIC Members Should Take into Account Wireline Broadband Services, Mobile and Fixed Wireless Services, and Satellite Service

Dr. Dippon's analysis focuses on wireline broadband, mobile and fixed wireless, and satellite services as substitutes for the services being provided by the NSICs. None of these alternatives is regulated by the Commission, and the NSICs argue that this disqualifies them for consideration in this proceeding; "Commission jurisdiction over Universal Service providers," they claim, "is a necessary prerequisite to a Universal Service program based on accountability."[24]

We urge the Commission to reject this self-interested claim that the only appropriate service for customers is the service provided by the NSIC members themselves. The adequacy of alternatives to traditional services should be judged by the test of the market — *i.e.*, whether

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[23] *See, e.g.*, Case 95-C-0657, *et al.*, "Opinion and Order Determining Wholesale Discount" (Opinion No. 96-30) (issued and effective November 27, 1996).

[24] Petition at 15; *see generally id.* at 15-18.

there is substantial consumer acceptance of the alternative. No other test is as meaningful or as consistent with the Commission's stated policy of favoring price and service discipline through competition — where competition exists — over discipline through traditional regulation.[25] Competition is about the primacy of customer choice — it is a mechanism that enables customers to decide for themselves what they want and to "vote with their feet," rather than having providers or regulators decide for them what features, functionalities, and services they want or "need." The test of the market is the only "substitutability" test that should be applied in this proceeding. As the evidence marshaled by Dr. Dippon demonstrates, available wireless and wireline alternatives clearly meet that test.[26]

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[25] *See* Case 05-C-0616, "Statement of Policy on Further Steps Toward Competition in the Intermodal Telecommunications Market and Order Allowing Rate Filings" (issued and effective April 11, 2006) ("*Competition III Order*"), at 6 ("We have pursued competitive telecommunications markets because competition spurs innovation, promotes investment, encourages efficiency, and maximizes customer choice. Competition also disciplines providers' behavior, reducing the need for governmental regulation. Indeed, some regulations, particularly when applied asymmetrically, can be detrimental to the innovation in pricing and services that occur as a result of true competition.").

[26] In particular, commercially available CMRS (cellular) service clearly meets the substitutability test set forth above. It has achieved widespread consumer acceptance and indeed in some areas is achieving penetration levels approaching or exceeding those of incumbent providers. Almost sixteen years ago, in the *Competition III Order*, the Commission stated that "[i]n our judgment, consumers view these offerings [*i.e.*, VoIP and cellular] as close substitutes to wireline local service." *Competition III Order* at 33-34 (footnotes omitted); *see also id.* at 33 n.72, 34-35. As Dr. Dippon shows, developments since 2006, when the *Competition III Order* was issued, corroborate the Commission's conclusions.

Although satellite and fixed wireless service are at early stages of their product life style, adoption of both will likely expand rapidly within the term of any SFA. *See, e.g.*, NERA Report ¶¶ 26-27, 33. And, as noted previously, the well-established alternatives of mobile wireless and wireline broadband by themselves are available to 99.7% of the NSICs' customers.

## V. DETERMINATIONS OF A COMPANY'S NEED FOR SUSF SUBSIDIES SHOULD BE BASED ON TOTAL-COMPANY REVENUES AND COSTS, AND SHOULD TAKE INTO ACCOUNT THE IMPACTS OF BOTH AN INCREASED RETAIL BENCHMARK RATE AND STRUCTURAL CHANGES THAT COULD IMPROVE THE COMPANY'S EARNINGS

The NSIC Petition is based on the premise that the need for SUSF funding should be assessed, as it has been in the past, through the application of traditional rate-case criteria based on the "revenue requirements" of their regulated intrastate services:

> As Attachment D [to the Petition] demonstrates, the actual intrastate rates of return of the NSIC members contrasted with their authorized rates of return confirms that continued SUSF support is critical to maintaining such members' financial health and ability to meet their Universal Service obligations at affordable rates, including those related to a reasonable expectation of their ability to recover and earn on their network investments.[27]
>
> For purposes of this proceeding, the NSIC members understand the continued underlying need of the SUSF to be determined consistent with the time-honored, Commission-overseen intrastate rate case process.[28]

As Joseph Gillan observes in the report accompanying the comments submitted today by the Cable Telecommunications Association of New York ("CTANY"), the NSICs are using "time honored" here as a euphemism for "outdated."[29] As we show below, the traditional rate-case approach fails to reflect current realities. A total-company approach is the only valid starting point for determining the financial health of the NSIC members.

[27] Petition at 14.

[28] Petition at 18.

[29] "Assessing the Financial Status of Small ILECs in New York" ("Gillan Report"), ¶ 16.

### A. Traditional Rate-Case Standards Provide an Inadequate Mechanism for Determining the Need for Universal Service Funding

Mr. Gillan's report demonstrates the problems created by reliance on traditional rate-case criteria:

> [T]here is a fundamental transition underway to move from narrowband voice networks (commonly copper) to broadband networks that support Internet access, video *and* voice (with that latter requiring relatively little incremental effort and a trivial level of capacity). The federal rules underlying the [NSIC Petition's] Attachment D calculation have never been updated to reflect the realities of this transition. Rather, the rules are known to produce distorted outcomes, most particularly by inflating intrastate costs and ignoring critically important revenue streams.
>
> There are two problems. The first is the fixed allocator used to apportion outside plant (for simplicity, loop) costs between the states and FCC. In the early 1980s, the states and the FCC agreed to use a fixed allocator that assigned 75% of the loop cost to the states, with the FCC accepting responsibility for 25%, irrespective of the actual usage of the network. Second, in 2001, the FCC froze the allocations applied to other cost categories, subject to limited opportunities to update these relationships.
>
> … The FCC periodically admits the problems caused by these obsolete rules but has chosen to avoid correction. For instance, in a recent order the FCC extended the separations freeze for a further six years and explained:
>
> * * *
>
> > We [the FCC] agree with NARUC that the existing separations rules, which presume circuit-switched, primarily voice networks, require updating to reflect today's network configurations and mix of broadband, video, and voice services. We also share NARUC's … [and others'] concern that those rules *necessarily* misallocate network costs.
>
> Notably, the specific NARUC comments cited by the FCC provide, in pertinent part,
>
> > The current Separations process necessarily misallocates network costs and revenues — attributing 75% of network costs to states based on the inaccurate presumption that networks are still used primarily for intrastate voice services.
> >
> > But voice is no longer the dominant use of telecommunications networks so even assuming the current split of voice traffic remains approximately 75% intrastate and 25% interstate, use of

> those percentages no longer makes sense. Why? Because voice service use of the common network has been dwarfed by internet and other broadband access services the FCC classifies as interstate.
>
> This means, at least with respect to rate-of-return carriers, States bear 75% of the cost of the network facilities, even though the revenues for broadband and other mixed-use services are allocated to interstate services. This apparent cross-subsidization of interstate services hurts consumers and rural America's ability to compete in a global economy.

NARUC further explained how the misinformation produced by these obsolete federal rules could be used to portray a distorted picture of unprofitability:

> The misallocation of those network costs are ultimately reflected in the higher rates that the States' consumers and businesses pay for voice services. They skew State and federal universal service programs and provide the basis for arguments that intrastate telecommunications services are "not profitable."

Attachment D is a regulatory fiction, for there no longer *is* a circuit-switched narrowband network operating in New York (except in isolated instances). Each of the petitioning NSICs admit that they use the same access (i.e., local loop) to provide broadband or Internet access service as they use to provide voice, which necessarily means that the overall profitability of the enterprise can only be determined by looking at the revenues from *all* the services using this shared facility. As shown in three case studies of composite financials (provided later in this report) that are publicly available, Attachment D's preordained showing of negative returns does not square with reality.[30]

In some cases, as in the Commission's review of major rate changes pursuant to Public Service Law § 92, reliance on regulated, intrastate costs and revenues may be required by law. However, nothing in the Public Service Law compels the application of those standards in SUSF funding determinations. Rather than let rate-case standards apply by default, the Commission should base determinations of "need" for funding on total-company financial data, which does

[30] Gillan Report, ¶¶ 18-23 (emphasis in original; footnotes omitted).

not depend on the flawed allocations discussed by Mr. Gillan. That is, of course, the way that investors, lenders, shareholders, a company's own management, and the Securities and Exchange Commission, all evaluate a company's financial position.

A total-company analysis would take into account all of the costs and revenues relevant to funding determinations, including those that would be assigned to the interstate jurisdiction in rate cases and those attributable to unregulated services such as broadband. It would include funding received to support the deployment of broadband facilities under such programs as Governor Hochul's ConnectALL initiative,[31] the American Rescue Plan Act of 2021,[32] and the Infrastructure Investment and Jobs Act.[33] It would also include subsidies provided under the FCC's High Cost Program.[34]

The potential effect of a total-company analysis is shown on the table below, which is based on income for current SUSF recipients as set forth in Schedule 12 of the companies' annual reports to the Commission for calendar year 2020.[35] Although we have not yet been able to confirm that Schedule 12 includes all of the revenues that are relevant to funding determinations,[36] it at least serves as a starting point for analysis, and provides a point of comparison with rate-case results.

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[31] *See* https://broadband.ny.gov/.

[32] Pub. L. No. 117-2, 135 Stat. 4 (2021).

[33] Pub. L. No. 117-58, 135 Stat. 429 (2021).

[34] *See* https://opendata.usac.org/High-Cost/High-Cost-Funding-Disbursement-Search/cegz-dzzi. Data on that website shows that the NSIC members received between $121,908.00 (Port Byron) and $3,659,719.08 (Deposit) in 2021, for a total of $15,881,399.25.

[35] Reports for 2021 had not yet been filed at the time these comments were submitted.

[36] Verizon is still investigating, through discovery and otherwise, the extent to which the data on Schedule 12 in fact reflects all expenses and revenues that should be taken into account in funding determinations.

| Company | 2020 Net Income (1) | 2020 SUSF Draw (2) |
|---|---|---|
| Chazy & Westport | $31,919 | $244,872 |
| Crown Point | $397,066 | $236,064 |
| Germantown | $716,041 | $492,998 |
| Newport | $757,752 | $374,359 |
| Oneida | $464,922 | $240,864 |
| Pattersonville | $65,057 | $151,453 |
| TDS-Deposit | $935,846 | $999,691 |
| TDS-Edwards | $546,110 | $469,866 |
| TDS-Port Byron | $172,035 | $685,946 |
| TDS-Township | ($53,521) | $897,893 |
| TDS-Vernon | $20,777 | $323,120 |

(1) Source: Annual Reports to PSC, Schedule 12, line 48.
(2) Source: SUSF Administrator.

This data shows that for five of the eleven companies (the ones shaded in blue), 2020 net income, as shown on Schedule 12, was greater than the 2020 SUSF draw. This suggests that the companies would have had a positive net income even if they had not received any SUSF subsidies. For the remainder (except for TDS-Township), there was sufficient net income to at least substantially reduce the SUSF funding found to be needed.

The best way to develop a reliable methodology for determining relevant total-company net income, and to apply that methodology to the NSIC members, would be for Trial Staff to convene a technical conference devoted to those issues. Given the importance of that information to the resolution of the issues in this proceeding, we strongly urge Staff to do so.

### B. The Retail Benchmark-Rate Construct Should Be Retained in any Successor Funding Arrangement, but the Rate Should Be Increased to $30/Month

Since the first SUSF proposal was adopted in 2012, the Joint Proposals adopted by the Commission have included a requirement that companies seeking funding must increase their retail basic service rates to a "benchmark" level of $23.00 per line per month (or have that rate level imputed in funding determinations), subject to transitional arrangements for companies whose rates at the time were significantly below that level. This requirement appropriately

recognized that companies seeking subsidies should look first to their own retail customers for support (subject to affordability considerations embodied in the $23 benchmark rate), rather than imposing funding burdens on other companies (potentially including their competitors). As the Commission explained in its order establishing the 2012 SUSF:

> The current benchmark rate of $23 per line per month for basic residential local service used in determining need for support from the Transition Fund and the TTFE would be continued under the Phase II Joint Proposal as the "Benchmark Rate" generally to be applied in determining an eligible recipient ILEC's actual need for support. The alternative "Transitional Rate" for imputing revenue would permit some additional leeway and funding in the case of an eligible ILEC with an authorized basic residential local service rate, before filing for SUSF support, of less than $19.50/line/month. The required $3.50 annual increase in the Transitional Rate for such carriers, on the other hand, should help to reduce draws on the SUSF gradually, while escalating the incentive for recipient ILECs to achieve greater efficiencies, move their basic service rates closer to forward-looking costs, and reduce their dependence on external support. We find these benchmarking provisions reasonable.[37]

This "retail-first" construct should be a part of any SFA established by the Commission. Indeed, for the reasons summarized below, it would be appropriate to increase the benchmark rate, for SFA purposes, to a level of at least $30:

1. The benchmark has been in place for 16 years. The Transition Plan incorporated a benchmark rate for residential service "that relied on Verizon's rates which ranged from $15.81 to $19.64."[38] In April 2006, in the *Competition III Order*, the Commission set a new "basic service rate cap" of $23/month.[39] On September 29, 2006, it announced that that rate would be

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[37] *2012 Order* at 18.

[38] *See* Case 02-C-0595, "Notice Soliciting Comments" (issued September 29, 2006).

[39] *Competition III Order, supra,* at 60-61, 78-79.

used as the new residential rate benchmark for determination of Transition Fund eligibility.[40] That benchmark rate was carried forward into the 2010 Temporary Transition Fund Extension and, starting in 2012, into the three iterations (2012, 2016, and 2020) of the SUSF.

2. Applying an inflator to the $23 rate based on general price changes from October 2006 to February 2022 (the latest month for which data is currently available), would increase the rate to slightly over $32, whether the inflator is based on the Consumer Price Index ("CPI") or the Producer Price Index ("PPI") for local telephone service.[41] (Both of those indices are computed and reported by the Bureau of Labor Statistics.)

3. Thirty dollars is also well within the FCC's $52.65 "reasonable comparability benchmark" for fixed voice service in rural areas for 2022. That is the ceiling rate for Eligible Telecommunications Carriers that are receiving funding under certain federal support programs.[42]

4. Finally, the $30 rate is less than 1% of median household income in each of the 23 counties in which the NSICs are located.[43]

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[40] *See* footnote 38, *supra*.

[41] The CPI increased by 40.6% during that period and the local telephone PPI increased by 42.1%.

[42] Federal Communications Commission, WC Docket No. 10-90, Public Notice, "Wireline Competition Bureau and Office of Economics and Analytics Announce Results of 2022 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" (rel. December 16, 2021). The $56.25 figure is based on rates that include state-regulated fees such as subscriber line charges, state universal service fees, and mandatory extended area service charges, but *not* the federal subscriber line charge. *See id.* at 1 n.2.

[43] Those counties are identified in the response to Information Request VZ-NSIC-7. The county among the 23 with the lowest 2020 median annual household income was Delaware County, at $49,945. Thirty dollars per month, or $360 per year, is 0.72% of that figure.

### C. Any Company Seeking Subsidies under a Successor Funding Arrangement Should Be Required to Demonstrate It Has Exhaustively Reviewed, and Implemented Where Appropriate, Alternatives for Improving Its Financial Performance

Any company that seeks funding under any SFA that may be established (including current recipients that seek to continue their existing level of funding) should be required to conduct a rigorous and disciplined review of alternatives that would enable it to address its own financial problems while continuing to provide all functions necessary to the maintenance of universal service within its existing service area — and to implement the most practicable, reasonable, and efficacious of the alternatives that it identifies.

Such a review should be similar to the type of review that might be conducted by a consultant or investment banker advising a troubled company. All alternatives should be "on the table" for purposes of such a review, including alternatives that would make fundamental structural changes in the company's business model. Such structural changes might include the following:

- the sale or spin-off of a portion of the company's business;
- the outsourcing of particular functions; or
- mergers, acquisitions, joint ventures, and other transactions with other providers that might create economies of scope or scale.

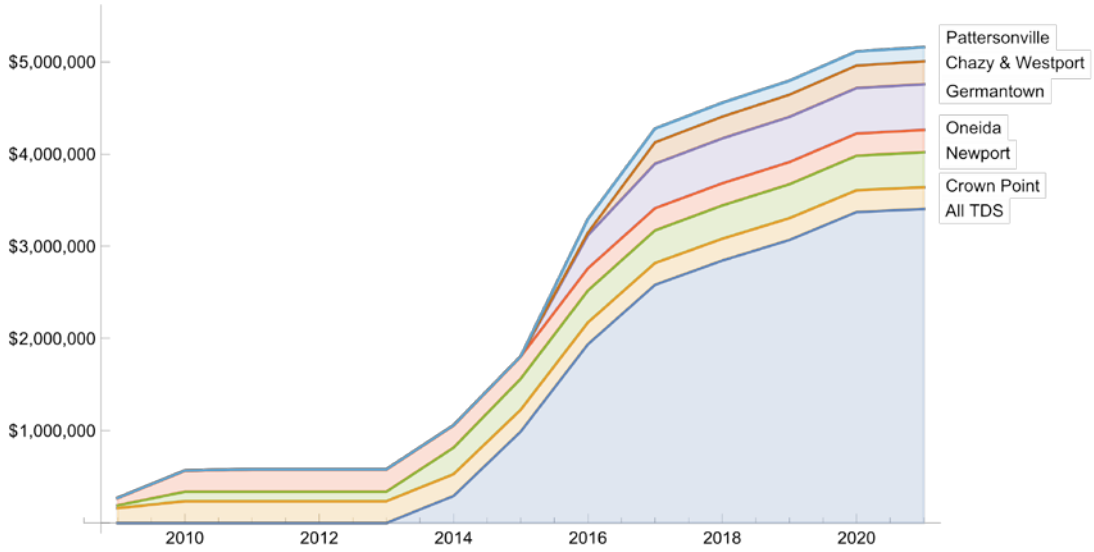
We recognize that because of jurisdictional limitations, the Commission might not be able to compel the company to adopt all — or perhaps any — of the alternatives identified in such a study. Clearly, however, it could decline to consider any funding proposal submitted by a company unless and until such a study is conducted and the Commission determines that no practicable, reasonable alternative to external funding would be consistent with the continued existence of universal service.

It bears repetition and emphasis that the burden of conducting such studies should be placed squarely on the NSIC members. Other parties should not be expected to prove that such transactions *would* be feasible and beneficial. The companies' exclusive access to information concerning the operations and needs of the businesses they manage makes this appropriate. It should also be noted that the ¶ 8(e) filings made by the companies funded under the current SUSF do not obviate the need for such studies. Those filings are replete with conclusory statements about the feasibility, infeasibility, benefits, and lack of benefits of particular options. What is needed here are rigorous, disciplined, and documented studies.

There are substantial reasons for believing that some or all of the NSIC members have not conducted — but should be required to conduct — the types of reviews suggested above. Among other things, this is illustrated by **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** Other small ILECs — who notably are not receiving SUSF subsidies — have undertaken transactions that are intended to increase their financial strength.[44] It is up to the current and future recipients (if any) to justify their failure to do so. And it is up to companies such as the five TDS companies — **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL] —** to explain why their "need" for SUSF funding has increased so substantially over time. (In this context, it is worth

[44] Case 20-C-0553, "Order Approving Transfer of Control with Conditions" (issued and effective June 28, 2021); Case 20-C-0548, "Order Approving Transfer of Control with Conditions" (issued and effective March 23, 2021).

noting that the TDS companies represent the lion's share of both the growth and current size of the Fund,[45] as shown by the following graph of SUSF disbursements.)[46]




Source: Fund Administrator

The existence of the Fund in its current form creates no incentives for such transactions. The incentives that it does create and the focus that it does promote are — in the words of a TDS executive — to "[e]nsure that all Federal and State USF mechanisms are being appropriately worked in order to ensure we maximize overall revenue streams per the rules."[47] That remarkably candid statement makes it clear that "the rules" need to be changed in order to ensure that NSIC members focus on weaning themselves from, rather than "work[ing]," "State USF mechanisms."

[45] Gillan Report, ¶ 33.

[46] In the graph, disbursements to Oriskany, which as of April 1, 2018 became part of TDS - Vernon, are included in the TDS total.

[47] That is one of the responsibilities listed on the LinkedIn page of Mr. Joel Dohmeier, TDS Telecom, Director – Regulatory Revenue, Strategy & Compliance. *See* https://www.linkedin.com/in/joel-dohmeier-3921636.

## VI. IF A SUCCESSOR FUNDING ARRANGEMENT IS ESTABLISHED, CURRENT CONTRIBUTION MECHANISMS, CONTRIBUTION RECOVERY MECHANISMS, AND ADMINISTRATIVE PROVISIONS SHOULD BE RETAINED, BUT THE CURRENT FUNDING CAP SHOULD BE REDUCED

Certain provisions of the current SUSF are reasonable and non-controversial, and should be retained if an SFA is established.

### A. Term

The term of an SFA should be no more than two years (the term of the current SUSF), and it should not be subject to renewal under any circumstances. Only a non-renewable fund will focus the funded companies' attention on achieving self-reliance (assuming that they are not already self-reliant when all relevant revenues are taken into account). At the end of a two-year SFA, funding will have been in place for 21 years. That should be enough for a "temporary" "transitional" arrangement meant to facilitate the funded companies' transformation to financially self-reliant entities.

### B. Eligible Recipients

Only the eleven companies currently receiving SUSF funding should be eligible for funding under an SFA. An SFA established to promote the transition *to* self-reliance should not be used to encourage migration *away from* self-reliance.

### C. Fund Administration

The Fund should continue to be administered by the TAF Administrator, which has shouldered that responsibility since 2003 without, so far as we are aware, complaints from any party.

### D. The Contribution Mechanism

The current mechanism for allocating responsibility for financial support of the SUSF is reasonable, mirrors the rules applied to the TAF, is easy to administer, and has a long history of acceptance by the parties. If an SFA is established, that mechanism should be retained.

### E. The Contribution Recovery Mechanism

The current mechanism for recovering SUSF contributions through rates or surcharges (2020 JP ¶ 9) enables contributing companies, at their discretion, to spread the burden of support among their customers. Contributors can decide on their own whether to bear the burden themselves or to share it with their customers (with the latter option creating the risk of losing some customers to competitors because of the increased bottom lines of their bills).

### F. The Funding Cap

The SUSF includes a cap on the total obligations of the contributing companies (and therefore on the total subsidies available to funding recipients). 2020 JP ¶ 3(d). The following table shows the history of the funding caps:

| Year | Cap |
|---|---|
| 2013 | $5,000,000 |
| 2014 | $4,000,000 |
| 2015 | $4,000,000 |
| 2016 | $4,000,000 |
| 2017 | $6,500,000 |
| 2018 | $6,500,000 |
| 2019 | $6,500,000 |
| 2020 | $6,500,000 |
| 2021 | $6,250,000 |
| 2022 | $6,000,000 |

The cap has been an important constraint that reduces the burden that the Fund places upon contributing companies. Caps should remain in place if an SFA is established, but the cap level should be reduced to reflect: (1) the more stringent standards for funding that are proposed

here, (2) the proposed exclusion of the fourteen companies that failed to file ¶ 2(e) information or otherwise participate as a party, (3) the proposal that only current recipients would be eligible for future funding, and (4) the importance of increased incentives for a transition to self-reliance. A reduced cap would also be consistent with the fact that the cap has never been exceeded since the Fund was created in 2012, as shown by the following table:

| YEAR | DISBURSEMENT | CAP | % OF CAP DISBURSED |
|---|---|---|---|
| 2013 | $579,984.00 | $5,000,000 | 11.60% |
| 2014 | $1,056,984.00 | $4,000,000 | 26.42% |
| 2015 | $1,804,948.72 | $4,000,000 | 45.12% |
| 2016 | $3,293,681.65 | $4,000,000 | 82.34% |
| 2017 | $4,276,030.76 | $6,500,000 | 65.79% |
| 2018 | $4,555,623.00 | $6,500,000 | 70.09% |
| 2019 | $4,794,766.96 | $6,500,000 | 73.77% |
| 2020 | $5,112,892.92 | $6,500,000 | 78.66% |
| 2021 | $5,159,527.08 | $6,250,000 | 82.55% |

If an SFA is established for more than a single year, the caps should reflect a "glide path" that will reduce the cap from year to year. We suggest a $3,000,000 cap in year 1, reduced to $1,500,000 in year 2.

## VII. A SCHEDULE SHOULD BE SET FOR THE SUBMISSION OF DEFINITIVE FINAL COMMENTS — SUPPLEMENTED AS NECESSARY WITH FACTUAL SUPPORT IN THE FORM OF AFFIDAVITS OR DECLARATIONS — FOLLOWING THE CONCLUSION OF THIS COMMENT PROCESS

This comment process was initiated in part to provide an opportunity for public input under the State Administrative Procedure Act, and in part to respond to a request set forth in NSIC's procedural proposal to Judge Sayre:

> Arguments in support of continuing the SUSF have already been supplied by NSIC in the [Petition]. VZ and other parties can agree or disagree with NSIC's arguments and position, and set forth new arguments they contend support their respective positions. However, seeing this is not the first "rodeo" regarding the extension of the SUSF by any active party, waiting

> effectively 5 full months as VZ suggests to state [in testimony] the party's position on the continuation of the SUSF has no rational basis. It is critical that identification of issues in dispute occur at the outset, so parties' presentations can move forward in an efficient manner.[48]

In other words, NSIC's position was that the non-petitioner parties should initially define their general positions in comments, as NSIC's general position had been framed in its Petition, in order to facilitate the framing of NSIC's initial testimony. Verizon opposed this aspect of the NSIC proposal on the grounds that it was unnecessarily time-consuming. At the procedural conference, Advisory Staff suggested that the concern about the preliminary delineation of positions in the case could be met through the filing of SAPA comments (since the publication of a SAPA notice would be required in any event). That was the approach that Judge Sayre adopted. Thus, these comments were not originally considered — and should not be considered — to be the parties' last opportunity to provide input to the Commission's decision-making process.

Additional "process" will certainly be necessary after the filing of these comments (and the reply comments scheduled for April 11, 2022) in view of the ongoing accumulation of record evidence, including the following:

- JP ¶ 2(e) requires that the submissions made on December 31, 2021 be "updated monthly throughout calendar year 2022, if necessary, by any Eligible Recipient that is receiving or will request funding after the SUSF renewal period." (JP ¶ 2(e)(ii)) Moreover, there were numerous defects in the initial ¶ 2(e) filings, which are being explored through interrogatories that have led to supplemental filings that have continued virtually to the date of these comments.

- Submissions under JP ¶ 2(f) filings must be made by March 31, 2022, by "[a]ny Eligible Recipient that is receiving or will request funding following the SUSF Renewal Term." (JP ¶ 2(f)) It is unlikely that those filings can be thoroughly reviewed by the April 11 reply comment deadline.

[48] New York Smaller ILEC Companies' Response to Verizon New York Inc. Procedural Schedule (dated January 4, 2022), at 1.

- There are various dates on which ¶ 8(e) information must be submitted by companies receiving funding, but the last date specified in JP ¶ 8(e)(ii) is March 31, 2022. However, an Eligible Recipient seeking first-time SUSF disbursements in a rate case filed after March 31, 2022 may be required to make a ¶ 8(e) showing as part of such filing. (JP ¶ 8(e)(ii)(A)(1)))
- 2021 NSIC Annual Report filings are due to be made on March 31, 2022.
- Discovery on other issues is ongoing, and there remain issues to be clarified and resolved with respect to NSIC's answers and objections. We expect that Rule 5.9 conferences and motions to compel discovery will be required in some cases.
- The Technical Conference requested in Section V, above, should be scheduled.

Verizon believes that the needs of the proceeding best can be met through the submission of final, comprehensive comments (building on this comment process, incorporating additional information obtained through discovery or otherwise, and incorporating any necessary legal analysis), together with affidavits or declarations, as necessary, to address factual matters and expert opinions. Based on our review of the issues in the case in the course of preparing these comments, Verizon does not believe that cross-examination in an evidentiary hearing will enhance the quality of the record, and a "paper" process will save time — an important consideration in view of the fact that the Fund is scheduled to sunset on December 31, 2022 — and reduce the burden on the parties of transporting witnesses to the hearing location.

These final comments (with supporting affidavits and declarations) should be filed simultaneously by all parties, followed by a round of simultaneous reply comments, as is being done here. As discussed in Verizon's opposition to NSIC's motion for interlocutory review, simultaneous filings are widely used in Commission practice, and are considered by many parties (including, once, NSIC itself) to be reasonable and efficient.[49]

[49] Case 15-M-0742, "Response of Verizon New York Inc. to the New York Smaller ILEC Companies' Request for Interlocutory Review" (dated February 10, 2022), at 7-10.

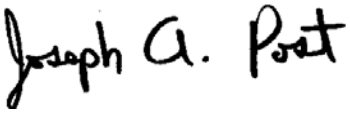
## VIII. CONCLUSION AND SUMMARY: VERIZON'S RECOMMENDATIONS

For the reasons set forth above, an SFA should not be established unless the NSIC members meet their burden of demonstrating, in this proceeding, both that no adequate competitive alternatives to their services exist, under the standards set forth in Section IV, above, and that financial need exists under the criteria set forth in Section V, above. Data gathered to date strongly suggests that they will not be able to meet that burden.

If, however, an SFA is created:

- It should be for no longer than an additional two years, with no opportunity to extend it further, and should be limited to current recipients of SUSF funding.
- The retail benchmark rate should be increased to $30/month.
- In assessing future applications for support from the Fund, applicants should be required to demonstrate both: (a) the absence of competitive alternatives, under the criteria set forth in Section IV, above, and (b) financial need under the criteria set forth in Section V, above.
- Existing contribution, administration, and contribution-recovery mechanisms should be retained.
- The current funding cap should be reduced as proposed above.

Respectfully submitted,



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**March 28, 2022**

REDACTED

# EXHIBIT A

REDACTED

BEFORE THE STATE OF NEW YORK PUBLIC SERVICE COMMISSION

CASE 15-M-0742
PROCEEDING ON MOTION OF THE COMMISSION TO REVIEW THE STATE UNIVERSAL SERVICE FUND


# Examining the Availability of Alternative Voice Service Providers in the Service Areas of Certain Smaller ILECs in New York State

EXPERT REPORT OF CHRISTIAN M. DIPPON, Ph.D.
On Behalf of Verizon New York Inc.

March 28, 2022

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**Before the State of New York Public Service Commission**
*Proceeding on Motion of the Commission to Review the State Universal Service Fund*

# Expert Report of Christian M. Dippon, Ph.D.

## EXECUTIVE SUMMARY

ES1. This report responds to Verizon New York Inc.'s request to identify the type and geographic presence of competitive service providers for voice services in the service areas covered by 17 New York Smaller ILEC Companies (NSICs). Data submitted by these companies to the New York State Public Service Commission and the Federal Communications Commission clearly demonstrates that households located in the NSICs' service areas have several competitive alternatives for voice services.

ES2. The New York State Public Service Commission is attempting to determine whether a Successor Funding Arrangement is required when the current State Universal Service Fund expires on December 31, 2022. To make such a determination, a proper analysis of the competitive options for voice services must include not only what was once considered the domain of the local telephone company, namely plain old telephone service (POTS), but also alternative providers such as wireline broadband, mobile wireless, fixed wireless, and satellite providers. To that end, I examined the scope of all the technology platforms that offer substitute voice services to see what the actual situation in New York State is regarding competitive alternatives for voice services.

ES3. I did not limit my research to only other wireline options because the nature of the telecommunications industry has changed drastically over the years and consumers now have access to voice services from a multitude of providers. To gather the relevant data, I used data submitted by the NSICs to the New York State Public Service Commission,

data reported to the Federal Communications Commission on its Form 477 as well as other sources such the New York State Broadband Fund and the Federal Communications Commission's Regional Digital Opportunity Fund auction.

ES4. Focusing on the State of New York, the NYPSC Staff's 2015 report noted that access line counts in the state had dropped almost 70 percent; a trend that had started much earlier. In addition, between 2016 and 2020, all but one of the NSICs reported a decrease in access lines, on average 18 percent. The Staff's 2015 report stated that customers were migrating their primary lines to VoIP and wireless voice services and their secondary lines to cable modem, digital subscriber line, and optical carrier broadband. This trend continued and will continue and expand as newer technologies become available to consumers.

ES5. The 2020 Joint Proposal in the NYPSC's state universal service fund proceeding required the submission of data by the smaller ILECs. Using the data from the NSICs' submissions, I determined that over **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** percent of the households in the study areas have a choice of two wireline options. However, customers are no longer limited to wireline options. In 2021, the NYPSC asked selected NSICs to report the percentage of residences with competitive telephone service options. The responses indicated **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

ES6. Data that is publicly available from the FCC's web site indicate that all consumers in areas served by the NSICs have competitive options. In fact, 83 percent of the households in the NSICs' service areas have wireline alternatives for voice services. When I included mobile wireless, this percentage jumps to over 99 percent of households. Finally, I added

fixed wireless and satellite service to my analysis and found that 100 percent of the households in the NSICs' service areas have alternative coverage.

ES7. The only conclusion that can be drawn after examining the available data and using a proper market definition is that all households in the NSICs' service areas have choices for their voice services.

# I. INTRODUCTION

1. My name is Christian Dippon. My business address is 1255 23rd Street, Suite 600, Washington, DC 20037. I am a Managing Director at the Washington, DC, office of NERA Economic Consulting (NERA), where I also serve as Chair of the Global Energy, Environment, Communications, and Infrastructure Practice and as a member of its Board of Directors. I have specialized in regulatory and complex litigation matters in the communications, Internet, and high-tech sectors for over 25 years. I hold a Doctor of Philosophy and Master of Arts in Economics and a Bachelor of Science in Business Administration.

2. My relevant experience includes assessing competition in retail and wholesale telecommunication markets, modeling incremental costs for wholesale rate setting cases, studying the competitive ramifications of disruptive technologies and market consolidation, and evaluating the need (or lack of need) for regulatory intervention. I have authored and edited several books as well as book chapters in anthologies and have written numerous articles on telecommunications competition and strategies. I also frequently lecture in these areas at industry conferences, continuing legal education programs, and at universities.

3. I have offered expert testimony in regulatory and litigation cases and have testified in depositions, jury and bench trials in state and federal courts, and domestic (AAA) and international (UNCITRAL, ICC, ICSID, LCIA) arbitrations. I have also offered expert testimony in matters before international courts, the Federal Communications

Commission (FCC), the International Trade Commission (ITC), the Federal Aviation Administration (FAA), and various international regulatory and competition agencies. I attach a copy of my curriculum vitae as Appendix A to this report.

## II. BACKGROUND AND PURPOSE OF REPORT

4. I prepared this report at the request of Verizon New York Inc. (Verizon) in connection with the proceeding now pending before the New York State Public Service Commission (NYPSC) to determine whether to establish a Successor Funding Arrangement (SFA) following the expiration of the current State Universal Service Fund (SUSF) on December 31, 2022. I understand from my review of the relevant documents and discussions with Verizon that the current iteration of the SUSF is a two-year plan that was in put in place because of the NYPSC's adoption in December 2020 of a Joint Proposal offered by several parties.

5. Under the 2020 Joint Proposal, the SUSF will sunset unless the NYPSC determines that there is a need for an SFA following the expiration of the SUSF on December 31, 2022.[1] Each eligible recipient that is receiving or that will request SUSF funding is required by the Joint Proposal to provide location data that identifies addresses and related infrastructure locations (i.e., poles) where: (a) the eligible recipient's broadband network and the broadband network of an alternative provider pass the customer location; (b) the eligible recipient is the only broadband provider that passes the location; (c) no broadband network passes the location; and (d) only an alternative broadband network

[1] See 2020 Joint Proposal ¶ 2(b).

passes the location. The companies eligible for SUSF funding agreed in the Joint Proposal to provide this data before or on December 31, 2021, with subsequent monthly updates as necessary.[2]

6. With the expiration of the SUSF approaching, Verizon tasked me with identifying the type of service providers that offer voice services that could provide alternatives to the service provided by the 17 petitioning New York Smaller ILEC Companies (NSICs).[3] Using the location data submitted by most of the NSICs pursuant to paragraph 2(e) of the 2020 Joint Proposal, Verizon asked me to quantify the percentage of households passed by at least one alternative *wireline* broadband service provider. Verizon also requested that I analyze data in these providers' submissions to the Federal Communications Commission (FCC) and to calculate the percentage of households in the NSICs' service areas passed by at least one competing voice provider *no matter the technology used to provide the service*.

7. Verizon retained me as an independent expert in this matter. As such, neither my compensation nor my firm's compensation is dependent in any way on the substance of my opinions or the outcome of this matter. I may revise and supplement my opinions upon further review and analysis of any new data, materials, analysis, or filings.

[2] Ibid, ¶ 2(e).

[3] The 17 NSICs are Armstrong Telephone Company-New York; Chazy & Westport Telephone Corporation; Crown Point Telephone Corporation; Delhi Telephone Company; Fishers Island Telephone Company; Germantown Telephone Company, Inc.; Middleburgh Telephone Company; Newport Telephone Company, Inc.; Nicholville Telephone Company; Oneida County Rural Telephone Company; Pattersonville Telephone Company; State Telephone Company, Inc.; TDS Telecom - Deposit Telephone Company, Inc.; TDS Telecom - Edwards Telephone Company, Inc.; TDS Telecom – Port Byron Telephone Company; TDS Telecom - Township Telephone Company, Inc.; and TDS Telecom - Vernon Telephone Company. (See Case 15-M-0742, "Petition for the Extension of the State Universal Service Fund," December 15, 2021, Attachment A.)

8. The remaining structure of this report is as follows. Section III discusses the types of voice service providers operating in rural New York State and shows that they are suitable alternatives to the services offered by the NSICs. Section IV calculates the percentage of households in the NSICs' service areas that have access to at least one alternative *wireline* provider. Section V calculates the percentage of households in the service areas of the NSICs that have access to one or more alternative provider *no matter the technology*. Section VI concludes. Detailed data backing up the discussion in this report is provided in the tables in the body of this report and in Appendices B through D.

## III. TECHNOLOGY PLATFORMS THAT OFFER SUBSTITUTE VOICE SERVICES

9. Rural New York State households have several competitive options when it comes to "flat rate residential service."[4] The technological progress of the late 1990s and the early 2000s resulted in numerous substitute products for the service that is funded by the SUSF. Traditionally, wireline telephone companies were the sole providers of this service. Given that the industry was composed of regulated local monopolies, the copper cable of only one telephone company (i.e., the ILEC) served the entire franchised area. Advances in communications technologies have fundamentally altered the competitive dynamics of the telecommunications industry. The term *flat rate* has become antiquated as unlimited domestic calling has become the norm. Similarly, the concept of *wireline* service has vanished because consumers are largely indifferent or often unaware of whether a copper, fiber, or coaxial cable, fixed or mobile wireless system, or a satellite

[4] Case 15-M-0742, "Order Initiating Proceeding to Review the State Universal Service Fund and Seeking Comments," issued and effective January 22, 2016, pp. 2, 6.

network is being used to meet their demand for voice service at home. From a consumer's perspective, they have access to voice services, and it is not important to them what technology provides it.

10. As recognized by the NYPSC Staff, this phenomenon also applies in the State of New York. In 2015, as part of an extensive study of the State of Telecommunications in New York, the Staff found:

> … previously a terrestrial service provided over copper cable, telecommunication today includes wireline and wireless services, broadband-based services that include over-the-top providers.[5]

The Staff further explained:

> Voice, video and broadband have converged, and each are now available across all technology platforms and offered via copper, fiber, coaxial cable, satellite and mobile networks ….[6]

11. The introduction of competitive options for voice services transformed previous local monopolies to competitive markets. For instance, Telephone and Data Systems, Inc., the parent company of the five TDS NSICs, reported to the Securities & Exchange Commission (SEC) on the impact of platform competition:

> TDS Telecom faces competition from other cable providers, fiber overbuilders, low-cost voice providers, satellite providers, other wireline and wireless providers. Furthermore, the use of alternative communications services such as text messages, video conferencing, and social networks has reduced the demand for traditional voice services.[7]

[5] Case 14-C-0370, "Staff Assessment of Telecommunications Services," June 23, 2015, p. 1 (hereinafter NYPSC 2015 Staff Report).
[6] Ibid, p. 1.
[7] Telephone and Data Systems, Inc., SEC, Form 10-K, December 31, 2020, p. 6.

12. The introduction of substitute products for regulated flat-rate residential voice service implies a widening of the product market for voice services. As explained by the Department of Justice (DOJ), a product market "consists of a group of substitute products" or "a set of products that are reasonably interchangeable" from the customer perspective.[8] Thus, prior to platform convergence, most everyone considered the ILECs the sole providers of voice services. However, alternative wireline, mobile wireless, fixed wireless, and satellite providers offer these services in today's market. Practically, this implies that to quantify the percentage of households passed by a voice provider, the proper analysis examines the *entire* product market. In the following, I demonstrate that several voice services compete for voice demand in New York State, including advanced wireline, mobile wireless, fixed wireless, and satellite providers.

### A. Wireline Broadband Is a Competitive Option

13. Even a narrow market definition would recognize that all wireline telecommunications technologies offer substitute voice services. Wireline providers offer voice services through three main technologies. The first is the *copper network* (plain old telephone service or POTS), which can also offer internet access by allocating and conditioning portions of the bandwidth for internet protocol (IP) traffic as well as digital subscriber line (DSL) service. However, on copper networks, voice and data operate on different channels of the transmission capability made available by the copper facility.

[8] U.S. Department of Justice and the Federal Trade Commission, Horizontal Merger Guidelines, Updated June 25, 2015, pp. 2, 8–9, https://www.justice.gov/atr/horizontal-merger-guidelines-08192010#4a.

14. A second wireline technology is *voice over coaxial cable networks*. Cable companies have conditioned their legacy coaxial cable networks for the provisioning of broadband internet access. As part of this offering, cable companies offer IP voice services, which convert voice conversations into digital packets (data) and deliver them over the internet via the same coaxial cable that delivers TV (video) content to households. As of 2015, 57 percent of upstate New Yorkers received their home telephone service through their cable company.[9]

15. A third wireline technology is *voice over fiber networks*. This newest wireline technology uses glass fibers to transmit data at speeds far exceeding current DSL or coaxial cable speeds. Fiber-to-the-home (FTTH) networks (also known as fiber-to-the-premises or FTTP networks) extend the fiber to subscribers' homes, whereas other networks extend fiber to network nodes (fiber-to-the-node or FTTN) or to curbs near the subscribers' homes (fiber-to-the-curb or FTTC). Cable companies and other telecommunications companies frequently rely on FTTN by building hybrid fiber coaxial (HFC) networks. HFC networks install coaxial cables between subscribers' homes and nearby nodes and fiber elsewhere. Whether provided over a partial or full fiber network, voice over fiber relies on IP technology. I note that subscribers can also purchase voice services from voice over internet (VoIP) providers that rely on a subscriber's existing broadband connection; these are referred to as over-the-top (OTT) voice providers.

16. Wireline broadband uptake is widespread. An estimated 83.4 percent of occupied US households subscribe to wireline broadband, representing over 117 million households.

[9] See Siena College Research Institute, "Cell Phones Used by 90 Percent of New Yorkers," March 4, 2015, https://scri.siena.edu/2015/03/04/cell-phones-used-by-90-percent-of-new-yorkers/.

Of these broadband-connected households, 69 percent purchase internet services from cable companies and 31 percent purchase them from other telecommunications companies.[10] It is also common among NSICs' subscribers, with an average of 68 percent purchasing internet along with voice services.[11] Adding voice services to the already widespread wireline broadband services occurs at a price point typically well below the $23 benchmark rate that is incorporated into the SUSF. For instance, VoIP provider Google Voice offers voice services for "free for most residential users since single-number accounts qualify for the free plan."[12] Another VoIP provider, Ooma, advertises, "Get crystal-clear nationwide calling for free with Ooma."[13] Ooma does require payment of taxes and fees that amount to about $4.09 per month and a one-time payment of $99.99 for a base station.[14] Other low-priced VoIP providers include 1-VoIP ($8.97) and AXvoice ($8.25).[15] Similarly, coaxial provider Spectrum offers voice service at $14.99 per month.[16]

[10] See S&P Global, Market Intelligence, "'US Broadband Market Share Trends, Q4'21," 2022.

[11] All NSICs other than Armstrong Telephone provided data. (See FCC, Form 477 Filing Summary.)

[12] Oliver Rist, "Drop Your Landline: The Best VoIP Home Phone Services," *PCMag*, updated February 24, 2022, https://www.pcmag.com/picks/finally-ditch-that-landline-the-best-voip-home-phone-services.

[13] Ooma, https://www.ooma.com/home-phone/?offer=TELO&purchase_code=SBRD-TELO&xutm_source=SEM&xutm_campaign=SEM-49854035&xutm_medium=SEM-Google&xutm_term=Telo&_vsrefdom=Google-SEM&om_phone=866-575-5585&keyword=%2Booma%20%2Btelephone%20%2Bservice&adid=424864765918&xgclid=EAIaIQobChMIkZDP_7jD9gIVCY3ICh15xQy2EAAYASAAEgKpIfD_BwE&gclid=EAIaIQobChMIkZDP_7jD9gIVCY3ICh15xQy2EAAYASAAEgKpIfD_BwE (accessed March 13, 2022).

[14] Ibid; see also Ooma, https://www.ooma.com/home-phone/savings/#get-tax-calculator-position (accessed March 13, 2022).

[15] The 1-VoIP plan offers unlimited incoming and 500 minutes to North America. The AXvoice plan offers unlimited calling and no hardware charges. (See 1-VoIP, https://www.1-voip.com/residential-voip.php (accessed March 13, 2022); see also AXvoice, https://www.axvoice.com/ (accessed March 13, 2022).)

[16] See Spectrum, https://www.spectrum.com/home-phone, accessed March 17, 2022.

### B. Mobile Wireless Is a Competitive Option

17. The rapid introduction of 5G technology is changing the landscape of mobile wireless. There is still a core network and user equipment, but a 5G-capable network operates differently than previous networks. Regardless of the mobile wireless technology employed, whether 4G or 5G, it is and will continue to be a viable option for consumers.

18. The economics literature has long recognized that mobile wireless voice services are a substitute for wireline voice services. Dating back to the middle of the 1990s and into the early 2000s, the literature analyzed the impact of the demand for mobile wireless telephone service on the demand for fixed-line service—what the industry refers to as fixed-to-mobile substitution (FMS). Although the early literature on FMS was somewhat divided, by the early 2000s, it increasingly accepted that fixed and mobile voice services were substitutes. Parker and Röller performed one of the first FMS studies, finding indirect evidence of FMS in the United States.[17] Rodini, Ward, and Woroch arrived at a similar conclusion.[18] Ward and Woroch expanded on their previous work, finding that FMS should increase over time as prices for mobile services continued to fall to where mobile telephony could constrain the fixed-line service providers' exercise of market power, thus rendering the current regulatory regime obsolete.[19] Sung, Kim, and Lee found

[17] See P. M. Parker and L. H. Röller, "Collusive conduct in duopolies: multimarket contact and cross-ownership in the mobile telephone industry," *Rand Journal of Economics* 28, no. 2 (1997):304–322.
[18] See M. Rodini, M. Ward, and G. Woroch. "Going mobile: substitutability between fixed and mobile access," *Telecommunications Policy* 27, nos. 5-6 (2003):457-476.
[19] See M. R. Ward and G. A. Woroch, "Usage substitution between mobile telephone and fixed line in the U.S.," Arlington, TX: University of Texas (2004).

evidence of FMS in Korea.[20] Sung and Lee confirmed these findings.[21] Madden and Coble-Neal's study showed the first evidence of FMS in Australia.[22]

19. There is also evidence of FMS in New York State. For instance, because of the FCC's decision to limit Lifeline subscribers to either a wireline or a mobile wireless subscription, many subscribers dropped their wireline subscription.[23] Consequently, wireline Lifeline subscriptions declined from 768,000 in 1996 to 137,000 at year-end 2014 in New York State.[24]

20. In addition, data collected by the Centers for Disease Control (CDC) also show the competitive impact of mobile wireless services on wireline voice services.[25] The data show the extensive shift from wireline to mobile wireless over time. Specifically, as of June 2014 (at the time the NYPSC Staff performed the competition study referred to in paragraph 10 above), 8.5 percent of US households relied exclusively on wireline voice services. Seven years later, that percentage decreased to 1.9 percent. Yet, during the same period, the percentage of mobile wireless only households increased from 44 percent to 68 percent.

[20] See N. Sung, C.-G. Kim, and Y. -H. Lee, "Is a POTS dispensable? Substitution effects between mobile and fixed telephones in Korea." (Paper presented at the International Telecommunications Society Biennial Conference, Buenos Aires, July 2000).

[21] See N. Sung, and Y. -H. Lee, "Substitution between mobile and fixed telephones in Korea," *Review of Industrial Organization* 20, (2002):367–374.

[22] See G. Madden and G. Coble-Neal, "Economic determinants of global mobile telephony growth," *Information Economics and Policy* 16, (2004):519–534.

[23] NYPSC 2015 Staff Report, p. 29.

[24] Ibid.

[25] See CDC, "Wireless Substitution: Early Release of Estimates from the National Health Interview Survey," January–June 2014, Table 1; January–June 2021, Table 1. (The CDC tracks mobile-phone only usage to adjust its household sampling process.)

**Table 1: US Household Telephone Status**

| | June 2014 | June 2021 |
|---|---|---|
| Landline Only [1] | 8.5% | 1.9% |
| Landline with Wireless [2] | 44.8% | 29.3% |
| Wireless Only | 44.0% | 68.0% |
| Phoneless | 2.6% | 0.5% |
| **Total** | **100.0%** | **100.0%** |

Notes: "Nonlandline with unknown wireless" not included in June 2014—reported as 0.0 percent. Parts may not sum to total due to rounding. (1) Category called "landline without wireless" in 2014. (2) Sum of "landline with wireless" and "landline with unknown wireless."
Source: CDC, Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, January–June 2014, Table 1; January–June 2021, Table 1.

21. The CDC also publishes these data by state, albeit not as frequently. The most recent data for New York State, as shown in Table 2, reveal that most individuals use either mobile wireless services or combine mobile wireless with wireline services. Only 6 percent relied on a wireline only option.

**Table 2: NY State Household Telephone Status**

| | 2019 |
|---|---|
| Landline Only | 6.0% |
| Landline with Wireless [1] | 48.1% |
| Wireless Only | 43.9% |
| Phoneless | 2.0% |
| **Total** | **100.0%** |

Note: (1) Sum of "wireless-mostly adults, "dual users," and "landline-mostly adults."
Source: CDC, National Center for Health Statistics, National Health Interview Survey Early Release Program, 2019, Table 1.

22. A Sienna College survey of New York State residents' mobile phone use confirms the data.[26] The survey, conducted in 2015, found that over 90 percent of New Yorkers subscribe to mobile wireless services. In addition, the survey revealed that mobile

[26] See Siena College Research Institute, "Cell Phones Used by 90 Percent of New Yorkers," March 4, 2015, https://scri.siena.edu/2015/03/04/cell-phones-used-by-90-percent-of-new-yorkers/.

wireless usage far exceeded wireline usage. In fact, the write-up explains, "[T]wice as many New Yorkers make all or most of their phone calls on cell phones compared to those who make all or most of their calls on landlines," and the authors expect "that number will only continue to grow."[27] Mobile wireless providers also offer voice plans on a standalone basis. Specifically, Verizon Wireless offers a standalone voice plan at $35 per month,[28] whereas T-Mobile charges $20 per month for its voice only plan.[29]

23. Mobile virtual network operators (MVNOs), which are resellers of mobile wireless services, also offer voice only mobile wireless plans. MVNOs purchase wholesale capacity from Verizon Wireless, AT&T Mobility, and T-Mobile and retail the capacity under their own brand. For example, MVNO Mint Mobile, which operates on the T-Mobile network, currently offers a plan with unlimited voice and text with 4 GB of data for $15 per month.[30] MVNO Boost, which operates on both AT&T's and T-Mobile's networks, currently offers a plan with unlimited voice and text with 5 GB of data for $25 per month.[31] There are numerous other budget MVNO plans available.[32]

24. Several of the major cable providers also offer mobile wireless phone services through an MVNO agreement with a mobile wireless network operator. For instance, Charter

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[27] Ibid.

[28] See Verizon, https://www.verizon.com/plans/prepaid/ (accessed March 15, 2022).

[29] See T-Mobile, https://www.t-mobile.com/offers/unlimited-talk-text-phone-deals (accessed March 15, 2022).

[30] See Mint Mobile, https://www.mintmobile.com/plans/?dnfemfkahqkdlf=BUY3GET1&clickid=2IlWp8WSSxyIT41y4015IxBEUkGTnMx-UXUbxI0&irgwc=1&utm_source=impactradius&utm_medium=affiliate&utm_campaign=ir_mint&utm_content=1978036_444520&tid=impactradius&subid=1978036_444520&irpid=1978036&iradid=444520 (accessed March 14, 2022).

[31] See Boost Mobile, https://www.boostmobile.com/plans.html (accessed March 14, 2022).

[32] See Money Saving Pro, "Best MVNO in 2022, Compare the cheapest MVNO phone plans," https://www.moneysavingpro.com/plans/best-mvno/ (accessed March 14, 2022).

Communications has an MVNO agreement with Verizon and retails mobile wireless service under its Spectrum Mobile brand.[33] Spectrum Mobile offers its internet subscribers a plan for unlimited voice and text with 1 GB of data for $14 per month.[34]

### C. Fixed Wireless Is a Competitive Option

25. The product market for voice services also includes voice services provisioned over fixed wireless networks. Unlike mobile wireless where the end user can be mobile, fixed wireless provides wireless services to a fixed location, such as a home. Data traffic travels wirelessly from a fixed location's receiver antenna to a fixed wireless tower. From there, the traffic travels again wirelessly to a fiber backhaul tower, which in turn feeds it into the wireline network.[35] Fixed wireless technology is particularly suitable to rural areas.[36] As recognized by the NYPSC Staff, fixed wireless delivers broadband services; therefore, it can deliver IP voice services.[37]

26. AT&T, T-Mobile, and Verizon all offer fixed wireless access (FWA) services.[38] T-Mobile, which had 646,000 fixed wireless subscribers at year-end 2021, "has an

[33] See Best MVNO, "Spectrum Mobile In 2022: What You Need to Know," https://bestmvno.com/mvnos/spectrum-mobile/ (accessed March 12, 2022).

[34] See Spectrum Mobile, https://www.spectrum.com/mobile/plans/data-by-the-gig (accessed March 16, 2022).

[35] See, e.g., "How Does a Fixed Wireless … Work? NCTA, November 17, 2018, https://www.ncta.com/whats-new/how-does-a-fixed-wireless-networkwork.

[36] See Jeff Baumgartner, "Fixed wireless, LEO satellite broadband best suited for unserved and underserved areas – study," *Broadband World News*, November 22, 2021, https://www.broadbandworldnews.com/author.asp?section_id=733&doc_id=773672.

[37] See NYPSC 2015 Staff Report, p. 47.

[38] See Ari Howard, "Fixed wireless internet providers," *Allconnect*, updated January 27, 2022, https://www.allconnect.com/internet/fixed-wireless#:~:text=Fixed%20wireless%20towers%20can%20only,fewer%20areas%20than%20satellite%20internet.

aggressive goal of getting 7 million to 8 million FWA customers by 2025."[39] Verizon, which had 150,000 FWA subscribers at the end of the third quarter of 2021 (having grown by 55,000 subscribers in that quarter),[40] has indicated that it expects to have 50 million fixed wireless homes passed by 2025.[41] Out of these 50 million homes, it expects to obtain four to five million subscribers.[42] T-Mobile's fixed wireless service is currently available to about 39 percent of US households, and Verizon's is available to over 15 percent of US households.[43] T-Mobile has around 30 million households passed, and "almost 10 million households …. are within rural America."[44] According to T-Mobile, "Availability is based on network capacity, which is increasing all the time."[45] The coverages of T-Mobile and Verizon are largely additive because there is a limited geographic overlap between T-Mobile's and Verizon's fixed wireless services.[46]

27. Fixed wireless is also a growing voice service option in New York State. As compared with only two locations (Binghamton and Corning) served by T-Mobile as of November

[39] Sue Marek, "T-Mobile is selling prepaid 5G FWA at Metro stores," *Fierce Wireless*, March 10, 2022, https://www.fiercewireless.com/wireless/t-mobile-selling-prepaid-5g-fwa-metro-stores.

[40] See Jeff Baumgartner, "Verizon has 150,000 fixed wireless access subs," *Light Reading*, October 20, 2021, https://www.lightreading.com/5g/verizon-has-150000-fixed-wireless-access-subs-/d/d-id/772925.

[41] See Sydney Price, "Verizon now expects 70 million broadband passings by 2025," *S&P Global Market Intelligence*, November 19, 2021.

[42] See Joan Engebretson, "Verizon Nationwide Broadband Strategy Includes Fiber, Fixed Wireless, and Satellite Broadband," *Telecompetitor*, March 3, 2022, https://www.telecompetitor.com/verizon-nationwide-broadband-strategy-includes-fiber-fixed-wireless-and-satellite-broadband/.

[43] See Jeff Baumgartner, "T-Mobile's fixed wireless service reach holds edge over Verizon – study," *Light Reading*, February 14, 2022, https://www.lightreading.com/5g/t-mobiles-fixed-wireless-service-reach-holds-edge-over-verizon—study-/d/d-id/775290.

[44] Trey Paul, "T-Mobile Home Internet: Can a Mobile Company Meet Your Home's Broadband Needs?" *CNET*, February 1, 2022, https://www.cnet.com/home/internet/t-mobile-5g-home-internet-review/.

[45] T-Mobile Newsroom, "T-Mobile Launches Transformative 5G Home Internet in Metro by T-Mobile Stores Nationwide," March 10, 2022, https://www.t-mobile.com/news/offers/t-mobile-launches-5g-home-internet-in-metro-by-t-mobile-stores.

[46] See Jeff Baumgartner, "T-Mobile's fixed wireless service reach holds edge over Verizon – study," *Light Reading*, February 14, 2022, https://www.lightreading.com/5g/t-mobiles-fixed-wireless-service-reach-holds-edge-over-verizon—study-/d/d-id/775290.

2020, the company's most recent data from April 2021 show availability in an additional 21 New York State cities and towns (see Table 3).[47] Similarly, Verizon also provides fixed wireless service in numerous locations in New York State.[48] See Appendix B for the zip codes and towns where it provides service as of October 2020.

**Table 3: T-Mobile Fixed-Wireless Locations in New York State (April 2021)**

**Cities and Towns**

| | | |
|---|---|---|
| Batavia | Syracuse | Plattsburgh |
| Rochester | Binghamton | Corning |
| Jamestown-Dunkin-Fredonia | Albany-Schenectady-Troy | Glen Falls |
| | Seneca Falls | Olean |
| Buffalo-Cheektowaga | Utica-Rome | Hudson |
| Cortland | Amsterdam | New York-Newark-Jersey City |
| Oneonta | Malone | |
| Gloversville | Ogdensburg-Massena | |
| Ithaca | Watertown-Fort Drum | |

Source: T-Mobile Home Internet Cities & Towns, April 7, 2021.

28. Based on the FCC's Form 477 data, 40.8 percent of households on average in the NSIC areas have access to T-Mobile's fixed wireless service.

[47] See T-Mobile Newsroom, "T-Mobile Expands Home Internet to More Than 130 Additional Cities & Towns," November 9, 2020, https://www.t-mobile.com/news/un-carrier/tmobile-expands-home-internet-to-more-than-130-additional-cities-towns.

[48] See Verizon Home Internet Zip Code List, October 1, 2020, https://www.verizon.com/about/sites/default/files/LTE-home-Internet-zip-code-list-09-2020.pdf.

**Table 4: NSIC Households Covered by T-Mobile's Fixed Wireless Service (December 2020)**

| NSIC | Total Households | T-Mobile Fixed Wireless Overlap | T-Mobile as a % of Total Households |
|---|---|---|---|
| Armstrong Telephone Co. | 3,294 | 1,945 | 59.0% |
| Chazy & Westport Telephone Corp. | 3,579 | 2,021 | 56.5% |
| Crown Point Telephone Corp. | 2,701 | - | 0.0% |
| Delhi Telephone Co. | 2,774 | 1,004 | 36.2% |
| Fishers Island Telephone Corp. | 120 | 42 | 35.0% |
| Germantown Telephone Co. | 2,992 | 1,946 | 65.0% |
| Middleburgh Telephone Co. | 6,928 | 2,184 | 31.5% |
| Newport Telephone Co. | 3,166 | 280 | 8.8% |
| Nicholville Telephone Co. | 2,273 | - | 0.0% |
| Oneida County Rural Telephone Co. | 3,861 | 600 | 15.5% |
| Pattersonville Telephone Co. | 1,409 | 790 | 56.1% |
| State Telephone Co. | 7,622 | 3,918 | 51.4% |
| Telephone & Data Systems, Inc. | 18,188 | 9,306 | 51.2% |
| **Total/Average** | **58,907** | **24,036** | **40.8%** |

Note: Values are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.
Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; Steven Manson et al., IPUMS National Historical Geographic Information System.

29. Similarly, Verizon's fixed wireless service is available to households residing in the Census Blocks ("CBs") of the NSICs as shown in Table 5. Based on Form 477 data for December 2021, which is not yet posted on the FCC's website but was provided by Verizon, about one-third of households on average in the NSIC areas have access to Verizon's fixed wireless service.

**Table 5: NSIC Households Covered by Verizon's Fixed Wireless Service (December 2021)**

| NSIC | Total Households | Verizon Fixed Wireless Overlap | Verizon as a % of Total Households |
|---|---|---|---|
| Armstrong Telephone Co. | 2,986 | 1,440 | 48.2% |
| Chazy & Westport Telephone Corp. | 4,691 | 948 | 20.2% |
| Crown Point Telephone Corp. | n/a | n/a | n/a |
| Delhi Telephone Co. | 2,902 | 741 | 25.5% |
| Fishers Island Telephone Corp. | 1,144 | 957 | 83.7% |
| Germantown Telephone Co. | 2,480 | 1,412 | 56.9% |
| Middleburgh Telephone Co. | n/a | n/a | n/a |
| Newport Telephone Co. | 2,997 | 616 | 20.6% |
| Nicholville Telephone Co. | 2,405 | 647 | 26.9% |
| Oneida County Rural Telephone Co. | 3,738 | 1,148 | 30.7% |
| Pattersonville Telephone Co. | 1,234 | 258 | 20.9% |
| State Telephone Co. | 8,021 | 2,909 | 36.3% |
| Telephone & Data Systems, Inc. | 18,043 | 5,666 | 31.4% |
| **Total/Average** | **50,641** | **16,742** | **33.1%** |

Note: n/a = data not available. Values are based on 2020 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.
Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; Form 477 fixed wireless data provided by Verizon; Steven Manson et al., IPUMS National Historical Geographic Information System.

30. T-Mobile charges $50 per month for its fixed wireless service, and there are no equipment charges or data cap.[49] T-Mobile's download speeds range from 35 to 115 Mbps.[50] Verizon charges $70 per month for its service, and its download speeds range from 300 to 1000 Mbps.[51]

[49] See Trey Paul, "T-Mobile Home Internet: Can a mobile company meet your home's broadband needs?"; see also "T-Mobile Home Internet's Bigger … (Clap, Clap, Clap, Clap) Deep in the Heart of Texas," *Business Wire*, January 19, 2022, https://www.businesswire.com/news/home/20220119005651/en/.

[50] See Ari Howard, "Fixed wireless internet providers," updated January 27, 2022, *Allconnect*, https://www.allconnect.com/internet/fixed-wireless#:~:text=Fixed%20wireless%20towers%20can%20only,fewer%20areas%20than%20satellite%20internet.

[51] Ibid.

### D. Satellite Service Is a Competitive Option

31. A proper product market definition for voice service also includes voice services provided over satellites. Satellites offer virtually ubiquitous service in New York State. There are two types of satellites, geostationary and low earth orbit (LEO). Geostationary satellites are located some 22,000 miles above the equator (southern sky).[52] They require a direct line of sight between the satellite and the receiving device.[53] The distance traveled (causing increased latency) can affect the signal although this affects voice service less than other applications, such as video. HughesNet and ViaSat employ geostationary satellites.[54]

32. On the other hand, LEO satellites travel at an altitude of between 99 miles and 1,200 miles.[55] Rather than appearing fixed in the sky,[56] they "employ[] a fleet or swarm of satellites" that travels around the earth.[57] To establish continuous connectivity:

> Over the course of a day, such a satellite comes within range of every point on the earth's surface for a certain period of time. The satellites in a LEO swarm are strategically spaced so that, from any point on the surface, at least one satellite is always on a line of sight. The satellites thus act as moving repeaters in a global cellular network. A LEO satellite system

[52] See Iridium Satellite Communications, "Satellites 101: LEO vs. GEO Satellite Constellations," September 11, 2018, https://www.iridium.com/blog/2018/09/11/satellites-101-leo-vs-geo/.

[53] See TechTarget, "geostationary satellite," https://www.techtarget.com/searchmobilecomputing/definition/geostationary-satellite (accessed March 6, 2022).

[54] See Jed Pressgrove, "Once an Internet Underdog, Satellite Is Having a Moment," *Government Technology*, September 3, 2020, https://www.govtech.com/products/once-an-internet-underdog-satellite-is-having-a-moment.html.

[55] See Iridium Satellite Communications, "Satellites 101: LEO vs. GEO Satellite Constellations," September 11, 2018, https://www.iridium.com/blog/2018/09/11/satellites-101-leo-vs-geo/.

[56] Although geostationary satellites appear as fixed or stationary, they are not. Because they orbit the earth at roughly the same velocity as the earth itself rotates, they appear to maintain a fixed position in the sky to an earthbound observer.

[57] TechTarget, "geostationary satellite," https://www.techtarget.com/searchmobilecomputing/definition/geostationary-satellite (accessed March 6, 2022).

> allows the use of simple, non-directional antennas, offers reduced latency….[58]

33. Although the number of operational LEO satellite constellations remains limited, satellite broadband services from SpaceX's Starlink are already available in 29 countries, including the United States.[59] Starlink provides "fixed-broadband-like latency figures, and median download speeds fast enough to handle most of the needs of modern online life."[60] As of January 2022, the Starlink LEO satellite constellation consisted of 1,469 active satellites with another 272 moving to operational orbits.[61] SpaceX, which can carry about 50 Starlink satellites on each launch, has recently been having about two launches per month.[62] The FCC has authorized Starlink for 4,408 satellites.[63] Starlink, which exited its beta (trial) stage in October 2021,[64] has approximately 100,000 satellite terminals,[65] of

[58] Ibid.

[59] See Ry Crist, "Starlink Explained: Everything to Know About Elon Musk's Satellite Internet Venture," CNET, March 3, 2022, https://www.cnet.com/home/internet/starlink-satellite-internet-explained/ (hereinafter CNET Starlink explained).

[60] Isla Mcketta, How Starlink's Satellite Internet Stacks Up Against HughesNet and Viasat around the Globe, August 4, 2021, https://www.speedtest.net/insights/blog/starlink-hughesnet-viasat-performance-q2-2021/.

[61] See Jeff Faust, "SpaceX passes 2,000 Starlink satellites launched," *SpaceNews*, January 18, 2022.

[62] See Before the Federal Communications Commission, *In the Matter of the Petition of Starlink Services, LLC for Designation as an Eligible Telecommunications Carrier*, Petition of Starlink Services, LLC For Designation As An Eligible Telecommunications Carrier, 2021, WC Docket No. 09-197, February 3, 2012, p. 4 (hereinafter Starlink FCC ETC Application); see also Stephen Clark, "Fifty more Starlink satellites ready for launch Friday," *Spaceflight Now*, February 24, 2022, https://spaceflightnow.com/2022/02/24/fifty-more-starlink-satellites-ready-for-launch-friday/.

[63] See Jeff Faust, "SpaceX passes 2,000 Starlink satellites launched," *SpaceNews*, January 18, 2022.

[64] See Jon Brodkin, "SpaceX: Chip shortage is impacting "our ability to fulfill" Starlink orders," *Ars Technica*, November 1, 2021, https://arstechnica.com/information-technology/2021/11/starlink-exits-beta-but-spacex-says-orders-are-delayed-due-to-chip-shortage/#:~:text=Starlink%20has%20apparently%20just%20exited,Starlink%20homepage%20late%20last%20week.

[65] See CNET Starlink explained.

which the bulk are in the United States.[66] Starlink offers broadband internet access and will offer standalone voice services.[67]

34. Regarding voice services, Starlink has applied for an eligible telecommunications carrier (ETC) designation as this would make it eligible to participate in the FCC's Lifeline program.[68] Starlink's price for internet access service is $499 for the satellite dish and $99 per month for an internet connection. The price of the dish will likely decrease in the future.[69] Starlink plans to offer its standalone voice service "at rates that are reasonably comparable to urban rates."[70] In addition to Starlink's own telephony service,[71] it is likely that independent VoIP providers will offer voice services using satellites. At least one VoIP provider (Ooma) has indicated that its "home phone service is Starlink compatible."[72]

35. The FCC considered Starlink's internet broadband service quality high enough to qualify for its $20.4 billion Regional Digital Opportunity Fund (RDOF).[73] The FCC held its initial reverse auction (lowest subsidy request wins) in October 2020 and limited it to CBs that were unserved by fixed broadband with minimum 25/3 Mbps speeds (in contrast

[66] See Tony Lenoir, "Mobile app downloads underscore interest in Starlink," *S&P Global Market Intelligence*, August 3, 2021.
[67] Starlink FCC ETC Application, p. 9.
[68] Ibid, p. 12.
[69] See CNET Starlink explained.
[70] Starlink FCC ETC Application, p. 10. "All Rural Digital Opportunity Fund support recipients, like all other high-cost ETCs, will be required to offer standalone voice service and offer voice and broadband services at rates that are reasonably comparable to rates offered in urban areas." (*Rural Digital Opportunity Fund*, Report and Order, WC Docket No. 19-126 (rel. February 7, 2020), ¶ 42 (hereinafter FCC Rural Fund Order).)
[71] Starlink may deliver telephony service through a white-label managed service provider, other third-party providers, or its own proprietary solution. (See Starlink FCC ETC Application, p. 10.)
[72] Dennis Peng, "How to add home phone service to Starlink satellite internet," *Ooma*, January 14, 2022, https://www.ooma.com/home-phone/add-home-phone-service-to-starlink/.
[73] See EEC Technologies, Broadband Infrastructure Inventory Study for Jefferson County, NY, June 15, 2021, p. 15 (hereinafter EEC Jefferson County Report). RDOF replaced the Connect America Fund.

to the NSIC submissions which respond to whether the "network passes by and to which it is capable of providing broadband service at any speed.").[74] The FCC adopted a technology neutral standard for voice and broadband services at its auction.[75] Starlink won $588 million in subsidies over a 10-year period covering 35 states and 642,925 locations (defined as households and businesses).[76] The broadband deployment conditions of the auction generally require funding recipients "to commercially offer voice and broadband service to 40% of the … number of locations in a state by the end of the third full calendar year following funding authorization, and 20% each year thereafter."[77] All ETCs must advertise the availability of voice service in their service areas.[78] Many more LEO satellite constellations are expected to launch in the coming years.[79]

### E. New York State Recognizes Alternative Providers in Rural New York

36. As I noted above, the product market definition for voice service also includes voice services over satellites. This is recognized in New York State where satellite services are already part of its approach to reach difficult to serve residents (i.e., mostly rural). A

[74] Ibid.; see also 2020 Joint Proposal, ¶ 2(e)(ii).

[75] The FCC did adopt auction weights "that reflect our preference for higher speeds, higher usage allowances, and low latency." (FCC Rural Fund Order, ¶¶ 31, 38.)

[76] See Federal Communications Commission, "Successful Rural Digital Opportunity Fund Auction to Expand Broadband to Over 10 Million Rural Americans, Phase I Auction Allocates $9.2 Billion to Close the Digital Divide in 49 States and the Commonwealth of the Northern Mariana Islands," *FCC News*, December 7, 2020, Winning Bidders.

[77] FCC Rural Fund Order, ¶ 48.

[78] Ibid, ¶ 54.

[79] See Chris Daehnick, Isabelle Klinghoffer, Ben Maritz, and Bill Wiseman, "Large LEO satellite constellations: Will it be different this time?" *McKinsey & Company*, May 4, 2020, https://www.mckinsey.com/industries/aerospace-and-defense/our-insights/large-leo-satellite-constellations-will-it-be-different-this-time.

recent study of broadband services to residents of Jefferson County in upstate New York found numerous CBs served with the assistance of a New NY Broadband Grant. The study found that of the 4,612 Jefferson County CBs covered by grants, the State awarded HughesNet Systems 2,884 (62.5 percent) of them.[80] According to the EEC study, the grants will allow HughesNet to deploy its higher speed Gen5 broadband service. EEC further indicates, "The grant-supported service area will have a monthly rate not to exceed $60, with an installation fee not to exceed $49. These are lower than the provider's current price offerings."[81]

37. As shown in Table 6, at the state level, HughesNet received grants covering almost 79,000 locations (defined as households and businesses) with most of the locations in the following Regional Economic Development Regions (REDC): Capital Region, Central New York, Finger Lakes, Long Island, Mid-Hudson, Mohawk Valley, North Country, Southern Tier, Western New York.[82]

**Table 6: Hughes Network Systems New York State Broadband Grant**

| | Census Blocks | Locations | State Grant | Private & Federal Commitment | Total Investment |
|---|---|---|---|---|---|
| | 34,296 | 78,960 | $ 15,949,488 | $ 13,916,492 | $ 29,865,980 |
| Locations per Census Block | | 2.3 | | | |
| Per Location | | | $ 202 | $ 176 | $ 378 |

Source: New York State Broadband Program Office, "All Awards by Municipality, Awarded Census Blocks."

[80] EEC Jefferson County Report, p. 9.
[81] Ibid, p. 46.
[82] New York State, New York Broadband Program, Phase 3 Awardees.

38. Thus, a product market definition for voice services that includes alternative broadband providers is already reflected in New York State's Broadband Program for underserved or unserved areas. As Table 7 shows, based on the FCC Form 477 data,[83] the beneficiaries of the NY Broadband Fund reside in the service areas of the NSICs. Of particular interest is the presence of satellite provider HughesNet, which received funding for 8.7 percent of the CBs passed by the NSICs. Satellite providers also pass CBs that are not part of the NY Broadband Fund.

[83] The Form 477 includes the following names: Armstrong Telephone Company-NY for Armstrong Telephone Co., Chazy & Westport Telephone Corporation for Chazy & Westport Telephone Corp., Crown Point Network Technologies, Inc. for Crown Point Telephone Corp., Delhi Telephone Company for Delhi Telephone Co., Fishers Island Telephone Corp. for Fishers Island Telephone Corp., Germantown Telephone Company and Valstar, Inc. for Germantown Telephone Co., Midtel Cable TV, Inc. for Middleburgh Telephone Co., Newport Telephone Company, Inc. for Newport Telephone Co., Nicholville Telco LLC for Nicholville Telephone Co., Oneida County Rural Telephone Co. for Oneida County Rural Telephone Co., Pattersonville Telephone Company for Pattersonville Telephone Co., State Telephone Company, Inc. for State Telephone Co., and TDS TELECOMMUNICATIONS CORPORATION for Telephone & Data Systems, Inc. (pertaining to TDS Telecom - Deposit Telephone Company, Inc.; TDS Telecom - Edwards Telephone Company, Inc.; TDS Telecom – Port Byron Telephone Company; TDS Telecom - Township Telephone Company, Inc.; and TDS Telecom - Vernon Telephone Company.)

**Table 7: Overlap Between NSICs and NY Broadband Fund Recipients**

| Company Name | Form 477 | HughesNet Only | HughesNet and Other | HughesNet and Other as a % of Form 477 |
|---|---|---|---|---|
| Armstrong Telephone Co. | 263 | 14 | 14 | 5.3% |
| Chazy & Westport Telephone Corp. | 619 | 52 | 66 | 10.7% |
| Crown Point Telephone Corp. | 260 | 106 | 106 | 40.8% |
| Delhi Telephone Co. | 654 | 4 | 75 | 11.5% |
| Fishers Island Telephone Corp. | 53 | 53 | 53 | 100.0% |
| Germantown Telephone Co. | 512 | - | 9 | 1.8% |
| Middleburgh Telephone Co. | 1,193 | 135 | 143 | 12.0% |
| Newport Telephone Co. | 582 | 87 | 87 | 14.9% |
| Nicholville Telephone Co. | 308 | 41 | 180 | 58.4% |
| Oneida County Rural Telephone Co. | 552 | 31 | 33 | 6.0% |
| Pattersonville Telephone Co. | 170 | - | 4 | 2.4% |
| State Telephone Co. | 871 | 112 | 179 | 20.6% |
| Telephone & Data Systems, Inc. | 2,425 | 103 | 141 | 5.8% |
| **Total/Average** | **8,462** | **738** | **1,090** | **12.9%** |

Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; New York State Broadband Program Office, "All Awards by Municipality, Awarded Census Blocks."

39. Based on FCC Form 477 data, Nicholville Telephone passes homes in 308 CBs. Satellite broadband provider HughesNet received NY Broadband Fund moneys for 41 of these CBs. Other alternative broadband providers received funding for another 180 CBs, bringing the percentage overlap between Nicholville Telephone and subsidized alternative broadband providers to 58.4 percent. Similarly, the analysis reveals that in the service area covered by Fishers Island Telephone, where there are no wireline alternatives to that company's own wireline broadband offering, a subsidized HughesNet offering covers the entire area.

40. Likewise, and again based on the FCC Form 477 data, Table 8 shows the beneficiaries of the FCC's RDOF in the NSICs' service areas where SpaceX received funding for some of the CBs passed by the NSIC. Although at 0.6 percent overlap, the funded overlap percentage is small, in fact satellite service from SpaceX is available in all service areas,

even those without funding. The fact that only a limited number of CBs are recipients of the FCC's RDOF funding is explained by the fact that the FCC limits RDOF funding to CBs in which no provider offering broadband service at 25 Mbps down and 3 Mbps up was present.

**Table 8: Overlap Between NSICs and FCC RDOF Recipients**

| Company Name | Form 477 | SpaceX Only | SpaceX and Other | SpaceX and Other as a % of Form 477 |
|---|---|---|---|---|
| Armstrong Telephone Co. | 263 | 1 | 1 | 0.4% |
| Chazy & Westport Telephone Corp. | 619 | - | - | 0.0% |
| Crown Point Telephone Corp. | 260 | 5 | 5 | 1.9% |
| Delhi Telephone Co. | 654 | - | - | 0.0% |
| Fishers Island Telephone Corp. | 53 | - | - | 0.0% |
| Germantown Telephone Co. | 512 | 3 | 3 | 0.6% |
| Middleburgh Telephone Co. | 1,193 | 1 | 1 | 0.1% |
| Newport Telephone Co. | 582 | 5 | 5 | 0.9% |
| Nicholville Telephone Co. | 308 | 7 | 7 | 2.3% |
| Oneida County Rural Telephone Co. | 552 | 9 | 9 | 1.6% |
| Pattersonville Telephone Co. | 170 | - | - | 0.0% |
| State Telephone Co. | 871 | - | - | 0.0% |
| Telephone & Data Systems, Inc. | 2,425 | 20 | 20 | 0.8% |
| **Total/Average** | **8,462** | **51** | **51** | **0.6%** |

Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; FCC Public Reporting System, "Auction 904, All Assigned Census Blocks."

## F. NSIC Data Confirm Platform Competition

41. Marketplace evidence confirms a market definition that includes alternative broadband, mobile wireless, fixed wireless, and satellite providers. The availability of new technologies has led to a large and continuing shift away from ILEC access lines. In its 2015 report, NYPSC Staff noted that since the year 2000 ILEC access line counts had dropped from over 13 million to approximately 4 million, *a drop of almost 70 percent*,[84] which has continued since then. As shown in Table 9, over the 2016–2020 period, all but

[84] See NYPSC 2015 Staff Report, p. 2.

one of the 17 NSICs had a decline in access lines, on average by 18 percent. Drops in access lines occur because of competition from substitute products although the effects may be accentuated by local population shifts. Thus, although New York State's population increased modestly between 2010 and 2020 (and that of the United States grew by 7.4 percent over this period), wireline access lines have dropped significantly.[85]

**Table 9: Number of NSIC Access Lines by Company (2016–2020)**

| Company Name | 2016 | 2020 | % Change 2016-2020 |
|---|---|---|---|
| Armstrong Telephone Co. | 2,299 | 1,724 | -25% |
| Chazy & Westport Telephone Corp. | 2,373 | 1,749 | -26% |
| Crown Point Telephone Corp. | 652 | 552 | -15% |
| Delhi Telephone Co. | 2,834 | 2,403 | -15% |
| Fishers Island Telephone Corp. | 880 | 853 | -3% |
| Germantown Telephone Co. | 2,071 | 2,075 | 0% |
| Middleburgh Telephone Co. | 4,416 | 3,587 | -19% |
| Newport Telephone Co. | 2,272 | 2,001 | -12% |
| Nicholville Telephone Co. | 1,014 | 639 | -37% |
| Oneida County Rural Telephone Co. | 1,524 | 1,250 | -18% |
| Pattersonville Telephone Co. | 617 | 433 | -30% |
| State Telephone Co. | 4,731 | 3,728 | -21% |
| TDS Telecom - Deposit Telephone Co. | 4,996 | 4,428 | -11% |
| TDS Telecom - Edwards Telephone Co. | 1,383 | 1,319 | -5% |
| TDS Telecom - Port Byron Telephone Co. | 1,652 | 1,342 | -19% |
| TDS Telecom - Township Telephone Co. | 1,761 | 1,022 | -42% |
| TDS Telecom - Vernon Telephone Co. | 1,515 | 1,268 | -16% |
| **Total** | **36,990** | **30,373** | **-18%** |

Source: Case 15-M-0742, "Petition for the Extension of the State Universal Service Fund," December 15, 2021, Attachment B Access Lines of the New York Smaller ILEC Companies (2016 to 2020).

42. For six of these companies, I also have 2010 data. As shown in Table 10, on average the number of access lines dropped by nearly half over the 2010–2020 period.

[85] New York State's population went from 19,378,102 in 2010 to 20,201,249 in 2020 (before dropping a bit in 2021 to 19,835,913). The population in the counties in which the NSICs operate stayed essentially flat during the 2010 to 2020 period (down by 0.1 percent) or down modestly if Suffolk County is excluded (down 1.8 percent). See U.S. Census Bureau, QuickFacts, United States, https://www.census.gov/quickfacts/fact/table/US/PST045221. See also U.S. Census Bureau, QuickFacts, New York, https://www.census.gov/quickfacts/NY; Response to VZ-NSIC-7; Central NY News, "2020 Census: See how much population changed in every county, city, town, village in NY state (search)," updated August 13, 2021, https://www.syracuse.com/news/2021/08/2020-census-see-how-much-population-changed-in-every-county-city-town-village-in-ny-state-search.html.

**Table 10: Number of NSIC Access Lines by Company (2010, 2020)**

| Company Name | 2010 | 2020 | % Change 2010-2020 |
|---|---|---|---|
| Crown Point Telephone Corp. | 819 | 552 | -33% |
| Newport Telephone Co. | 2,987 | 2,001 | -33% |
| Oneida County Rural Telephone Co. | 2,327 | 1,250 | -46% |
| TDS Telecom - Port Byron Telephone Co. | 2,349 | 1,342 | -43% |
| TDS Telecom - Township Telephone Co. | 3,304 | 1,022 | -69% |
| TDS Telecom - Vernon Telephone Co. | 1,939 | 1,268 | -35% |
| **Sum** | **13,725** | **7,435** | **-46%** |

Source: NYPSC 2015 Staff Report, Table 7; Case 15-M-0742, "Petition for the Extension of the State Universal Service Fund," December 15, 2021, Attachment B – Access Lines of the New York Smaller ILEC Companies (2016 to 2020).

43. According to the NYPSC Staff:

> [A]ccess line losses have been [driven by] customer migrations of their primary phone lines to VoIP phone and wireless voice service, as well as secondary line migrations from dial-up Internet services, to faster, more advanced cable modem, digital subscriber line (DSL) and optical carrier broadband now offered by most companies providing broadband service in New York State.[86]

Similarly, the competitive effect of mobile wireless phone service is already incorporated into "a regulatory framework authorizing differing degrees of pricing flexibility for small independent telephone companies, based upon an analysis of company earnings, as measured by Return on Equity, and an examination of the level of competition in their service territories."[87] As part of the Annual Survey of Competitive Presence, the NYPSC asks:

- What percentage of customers in your telephone service territory have non-affiliated wireless telephone service available to them?

[86] NYPSC 2015 Staff Report, p. 2.

[87] See, for example, Letter of Debra LaBelle (Director, Office of Telecommunications) to Jeff McGrath (Nicholville Telephone Company), re: Framework for Regulatory Relief – 2020 Annual Survey of Competitive Presence, February 24, 2020.

- How would you characterize, in terms of percentage, the availability of wireless phone service coverage across your telephone service territory?[88]

44. In fact, the NYPSC has long recognized that wireline voice service provided by the ILECs faces competition from alternative providers. As early as 2006, the NYPSC concluded that the residential market for non-basic service was effectively competitive, thereby rejecting claims that mobile wireless service was not a total substitution, VoIP was not generally available, and incumbent telephone companies still had market power.[89] Over time, each of these voice options has become an even more significant competitive option.

45. The NYPSC Staff report confirms that subscribers use all connection methods to receive voice services. As shown in Table 11, even as far back as September 2014, voice subscribers were adopting all connection methods. Moreover, since that period, alternative providers have improved their capabilities and expanded their availability.

**Table 11: Voice Service Availability and Adoption (September 2014)**

| Voice Services | Availability | Adoption |
|---|---|---|
| LEC | >98% | >40% |
| Satellite | >95% | <1% |
| Wireless | >95% | >95% |
| Cable | >95% | >40% |
| Over-The-Top | >95% | >3% |
| Fiber | 50% | >20% |

Source: NYPSC 2015 Staff Report, p. 8, Table 1.

[88] Ibid.

[89] Case 05-C-0616, "Statement of Policy on Further Steps Toward Competition in the Intermodal Telecommunications Market and Order Allowing Rate Filings," issued and effective April 11, 2006, p. 6.

## IV. NSIC DATA REVEAL A [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] PERCENT WIRELINE OVERBUILD ALONE

**[BEGIN CONFIDENTIAL]**

46.

47.

48. [redacted]

49. [redacted]

50. [redacted]

51. [redacted]

[90] See, for example, Armstrong's 2021 Competitive Presence Survey submission.

[redacted]

52. [redacted]

**[END CONFIDENTIAL]**

## V. PUBLIC FCC DATA REVEAL 100 PERCENT COMPETITIVE OVERBUILD

53. As I explain in Section III, the proper product market definition for voice services also includes mobile wireless, fixed wireless, and satellite voice providers. Because the NSIC submissions limit location data to wireline alternatives, I queried data available from the

[91] While the survey asks only about competitive cable options, **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

FCC to calculate a more accurate percentage of competitive overbuild. This analysis reveals that all households in the NSICs' service areas have competitive options.

54. Specifically, the FCC collects and makes available for analysis data that provide "snapshots of the extent of broadband deployment and local telephone competition throughout the United States."[92] As part of the FCC's Form 477 requirements, all broadband providers, including the NSICs, must provide information regarding the availability of certain telecommunications services in their service areas. Form 477 data is at the CB level. CBs are, "Statistical areas bounded by visible features such as roads, streams, and railroad tracks, and by nonvisible boundaries such as property lines, city, township, school district, county limits and short line-of-sight extensions of roads."[93] New York State had 288,819 CBs in 2020.[94] With a 2020 population of 20,201,249, the average is approximately 70 people per CB with urban locations averaging much higher and rural locations much lower.[95] New York State covers 54,555 square miles, which averages approximately 0.19 square miles per CB—obviously with substantial differences between urban and rural locations.[96]

55. I downloaded and analyzed the data from the FCC's December 2020 Form 477. The FCC has not yet finalized aggregating the data that resulted from the June 2021 and December

[92] Federal Communications Commission, "Frequently Asked Questions (FAQs) about FCC Form 477," updated January 18, 2006, Question 1.

[93] Katy Rossiter, "What are census blocks?" United States Census, July 11, 2011, https://www.census.gov/newsroom/blogs/random-samplings/2011/07/what-are-census-blocks.html

[94] In 2010, New York State had 350,169 census blocks. See US Census Bureau, "Census Block Tallies by State or State Equivalent," https://www.census.gov/geographies/reference-files/time-series/geo/tallies.html.

[95] See US Census Bureau, QuickFacts, New York, https://www.census.gov/quickfacts/NY.

[96] See Britannica, The Information Architects of Encyclopedia. "New York," *Encyclopedia Britannica*, https://www.britannica.com/facts/New-York-state (accessed March 25, 2022).

2021 reporting periods. Thus, the most recent data for which coverage percentages can be calculated is the December 2020 data.

56. I filtered the data down to the CBs served by the NSICs and added the household count for each CB using the Bureau of Census' 2010 household count. I then calculated the cumulative percentages of households in the NSICs' service areas that have competitive options. Specifically, I first examined the number of wireline options available to each household. Second, I expanded the product market definition to also include mobile wireless services. Third, I further expanded the market definition to include fixed wireless and satellite.

57. The analysis of the Form 477 data indicates a wide availability of alternative providers. Consider, for instance, Armstrong Telephone Company. As shown in Table 15, this NSIC's Form 477 data reveal that 869 households of the 3,294 households (26.4 percent) in Armstrong Telephone Company's service area have only one wireline broadband provider. Another 1,298 households (39.4 percent) have a choice of two wireline providers, whereas 1,127 households (34.2 percent) had three or more wireline options. The second column shows the number of competitive options available to households in Armstrong Telephone Company's service area after expanding the product market definition to include mobile wireless services. As the table shows, this analysis reveals that only 22 households (0.7 percent) have only one choice of a voice services provider. Conversely, 3,272 households (99.3 percent) have competitive options for voice services. As shown in the third column, adding only fixed wireless and satellite services to wireline reveals that there are no households in Armstrong Telephone Company's service

area that do not have at least five competitive options for voice services. The fourth column includes all these options in the product market definition and indicates that there are numerous alternative providers.

**Table 15: Competitive Options in Census Blocks Passed by Armstrong Telephone Co.**

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 26.4% | 0.7% | 0.0% | 0.0% |
| 2 | 39.4% | 4.3% | 0.0% | 0.0% |
| 3 | 10.6% | 12.6% | 0.0% | 0.0% |
| 4 | 23.6% | 17.1% | 0.0% | 0.0% |
| 5 | 0.0% | 20.3% | 21.8% | 0.7% |
| 6 | 0.0% | 18.0% | 19.6% | 4.3% |
| 7 | 0.0% | 4.7% | 28.4% | 11.2% |
| 8 | 0.0% | 22.3% | 7.0% | 13.4% |
| 9 | 0.0% | 0.0% | 23.3% | 14.9% |
| 10 | 0.0% | 0.0% | 0.0% | 13.4% |
| 11 | 0.0% | 0.0% | 0.0% | 15.1% |
| 12 | 0.0% | 0.0% | 0.0% | 4.7% |
| 13 | 0.0% | 0.0% | 0.0% | 22.3% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.
Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; FCC, "Mobile Deployment Form 477 Data," December 2020; Steven Manson et al., IPUMS National Historical Geographic Information System.

Appendix D presents the same analysis for all 17 NSICs individually.

### A. Alternative Wireline Providers Are Available to 83 Percent of Households

58. Table 16 summarizes the *wireline* alternatives available in the 17 NSIC service areas according to Form 477 data. (Note that FCC data combine all five TDS NSICs into one.) This aggregation reveals that on average 83.3 percent of households in the NSIC service areas have *wireline* alternative for voice services.

**Table 16: Percentage of NSIC Households with Competitive Wireline Options**

| Provider | Wireline Only |
|---|---|
| Armstrong Telephone Co. | 73.6% |
| Chazy & Westport Telephone Corp. | 85.3% |
| Crown Point Telephone Corp. | 91.7% |
| Delhi Telephone Co. | 69.4% |
| Fishers Island Telephone Corp. | 0.0% |
| Germantown Telephone Co. | 63.7% |
| Middleburgh Telephone Co. | 82.9% |
| Newport Telephone Co. | 63.2% |
| Nicholville Telephone Co. | 82.6% |
| Oneida County Rural Telephone Co. | 85.1% |
| Pattersonville Telephone Co. | 97.7% |
| State Telephone Co. | 98.1% |
| Telephone & Data Systems, Inc. | 85.4% |
| **Weighted Average** | **83.3%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.
Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; FCC, "Mobile Deployment Form 477 Data," December 2020; Steven Manson et al., IPUMS National Historical Geographic Information System.

### B. Adding Mobile Wireless Services Increases Alternative Coverage to over 99 Percent

59. As summarized in Table 17, including mobile wireless services in the product market definition for voice services increases the households that the NSICs cover with an alternative to almost 100 percent.

**Table 17: Percentage of NSIC Households with Competitive Wireline and Mobile Wireless Options**

| Provider | Wireline and Mobile |
|---|---|
| Armstrong Telephone Co. | 99.3% |
| Chazy & Westport Telephone Corp. | 100.0% |
| Crown Point Telephone Corp. | 100.0% |
| Delhi Telephone Co. | 99.1% |
| Fishers Island Telephone Corp. | 100.0% |
| Germantown Telephone Co. | 100.0% |
| Middleburgh Telephone Co. | 99.1% |
| Newport Telephone Co. | 98.5% |
| Nicholville Telephone Co. | 99.8% |
| Oneida County Rural Telephone Co. | 100.0% |
| Pattersonville Telephone Co. | 100.0% |
| State Telephone Co. | 100.0% |
| Telephone & Data Systems, Inc. | 100.0% |
| **Weighted Average** | **99.7%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.
Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; FCC, "Mobile Deployment Form 477 Data," December 2020; Steven Manson et al., IPUMS National Historical Geographic Information System.

60. **[BEGIN CONFIDENTIAL]** [redacted]

**[END CONFIDENTIAL]**

### C. Adding Fixed Wireless and Satellite Services Reveals 100 Percent Alternative Coverage

61. Including fixed wireless and satellite services as an alternative provider increases the households that the NSICs cover to 100 percent. Fixed wireless and satellite services in combination with mobile wireless services provide virtually universal population coverage.

**Table 19: NSIC Households with Wireline, Mobile Wireless, Fixed Wireless and Satellite Options**

| Provider | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|
| Armstrong Telephone Co. | 100.0% |
| Chazy & Westport Telephone Corp. | 100.0% |
| Crown Point Telephone Corp. | 100.0% |
| Delhi Telephone Co. | 100.0% |
| Fishers Island Telephone Corp. | 100.0% |
| Germantown Telephone Co. | 100.0% |
| Middleburgh Telephone Co. | 100.0% |
| Newport Telephone Co. | 100.0% |
| Nicholville Telephone Co. | 100.0% |
| Oneida County Rural Telephone Co. | 100.0% |
| Pattersonville Telephone Co. | 100.0% |
| State Telephone Co. | 100.0% |
| Telephone & Data Systems, Inc. | 100.0% |
| **Weighted Average** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.
Source: FCC, "Form 477 Broadband Deployment Data - December 2020 (version 1)," updated November 10, 2021; FCC, "Mobile Deployment Form 477 Data," December 2020; Steven Manson et al., IPUMS National Historical Geographic Information System.

## VI. CONCLUSION

62. Based on the findings herein, it is my expert opinion that a proper analysis of the competitive options for voice services includes not only alternative wireline broadband providers but also mobile wireless, fixed wireless, and satellite providers. Examining the available data using this proper market definition finds that all households in the NSIC service areas have choices for their voice services.

## APPENDIX A: CURRICULUM VITAE OF CHRISTIAN M. DIPPON, PH.D.

# Christian M. Dippon, Ph.D.

## CHAIR, NERA'S GLOBAL ENERGY, ENVIRONMENT, COMMUNICATIONS & INFRASTRUCTURE PRACTICE

Dr. Dippon is a Managing Director at NERA and a leading authority in complex litigation disputes and competition matters in the communications, Internet, and high-tech sectors. He is also the Chair of NERA's Global Energy, Environment, Communications & Infrastructure (EECI) Practice, where he leads over 100 experts in the areas of energy, communications, media, Internet, environment, auctions, transport, and water. Global Arbitration Review (2019, 2020) and Financier Worldwide (2021) rank Dr. Dippon among the world's leading commercial arbitration experts.

Dr. Dippon advises his clients in economic damages assessments, class certifications and damages, false advertising, antitrust matters, and regulatory and competition issues. He has extensive testimonial and litigation experience, including depositions, jury and bench trials in state and federal courts, domestic (AAA) and international arbitrations (UNCITRAL, ICC, ICSID), and submissions before international courts. He assists clients with a broad range of litigation disputes related to wireline, wireless, cable, media, Internet, Internet of Things (IoT), consumer electronics, and the high-tech sector. Dr. Dippon also routinely testifies before US and international regulatory authorities, including the Federal Communications Commission, the Federal Aviation Administration, the International Trade Commission, the Canadian Radio-television and Telecommunications Commission, and the Competition Bureau Canada.

Dr. Dippon has authored and edited several books as well as book chapters in anthologies and has written numerous articles on telecommunications competition and strategies. He also lectures in these areas at industry conferences, continuing education programs for lawyers, and at universities. National and international newspapers and magazines, including the *Financial Times*, *Business Week*, *Forbes*, the *Chicago Tribune*, and the *Financial Post*, have cited his work.

Dr. Dippon serves on NERA's Board of Directors, the Board of Directors of the International Telecommunications Society (ITS), and on the Editorial Board of *Telecommunications Policy*. He is a member of the Economic Club of Washington, DC, the American Economic Association (AEA), the American Bar Association (ABA), and the Federal Communications Bar Association (FCBA).

## EDUCATION

**Curtin University, Perth, Australia**
PhD in Economics, 2011

**University of California, Santa Barbara, CA, USA**
MA in Economics, 1995

**California State University, Hayward, CA, USA**
BS *cum laude* in Business Administration, 1993

## Thesis

"Consumer Preferences for Mobile Phone Service in the U.S.: An Application of Efficient Design on Conjoint Analysis," Curtin University, 2011.

Committee: Dr. Gary Madden, Curtin University; Dr. Kenneth Train, University of California at Berkeley; Dr. Ruhul Salim; Curtin University.

Reviewers: Dr. Jerry Hausman, Massachusetts Institute of Technology; Dr. Glenn Woroch, University of California at Berkeley.

## PROFESSIONAL EXPERIENCE

**NERA Economic Consulting**

| | |
|---|---|
| 2017–present | Chair, NERA's Global Energy, Environment, Communications & Infrastructure (EECI) Practice |
| 2017–present | Member, Board of Directors, NERA Economic Consulting |
| 2014–present | Senior Vice President / Managing Director |
| 2014–2017 | Co-Chair, Communications, Media & Internet Practice |
| 2015–2017 | Head, NERA Washington, DC |
| 2014–2015 | Co-Head, NERA Washington, DC |
| 2012–2014 | Chair, Communications, Media & Internet Practice |
| 2004–2014 | Vice President |
| 2000–2004 | Senior Consultant |
| 1998–2000 | Consultant |
| 1997–1998 | Senior Analyst |
| 1996–1997 | Analyst |

**BMW Thailand**

| | |
|---|---|
| 1993–1994 | Business Analyst |

## HONORS AND PROFESSIONAL ACTIVITIES

Member, International Bar Association (IBA)
Member, The Economic Club, Washington, DC
Editorial Board, Telecommunications Policy
Board of Directors, International Telecommunications Society (ITS)
Treasurer, International Telecommunications Society (ITS)
Member, American Economic Association (AEA)
Member, Federal Communications Bar Association (FCBA)
Associate, American Bar Association (ABA)
Who's Who Legal Arbitration 2019, Expert Witness

## TESTIMONIAL EXPERIENCE

*Testimony Formats*

Bench trials
Depositions
Domestic arbitrations
International arbitrations (UNCITRAL, ICSID, ICC, LCIA)
Jury trials
Regulatory hearings

*Appearances Before*

American Arbitration Association
Arbitration of the International Centre for Settlement of Investment Disputes (ICSID)
Arbitration of the International Chamber of Commerce (ICC)
Arbitration Under the North American Free Trade Agreement (NAFTA)
Arbitration Under the Rules of the United Nations Commission on International Trade Law (UNCITRAL)
Arbitration Under the Rules of the London Court of International Arbitrations (LCIA)
Canadian Radio-Television and Telecommunications Commission (CRTC)
Central Jakarta District Court, Indonesia
Circuit Court of Cook County, Illinois County Department, Chancery Division
Commerce Commission New Zealand
Competition Bureau Canada
Court of Chancery of the State of Delaware
District Court for the Eastern District of Pennsylvania
District Court Northern District of California San Francisco Division
District Court of Tangerang, Indonesia
Federal Aviation Administration
Federal Communication Commission
Federal Court of Canada

Info-communications Development Authority of Singapore (IDA)
Innovation, Science and Economic Development Canada (ISED)
International Trade Commission (ITC)
Israel Ministry of Communications
Ontario Superior Court of Justice
Superior Court of California, County of Santa Clara
Superior Court of the State of California, County of Alameda
Superior Court, Province of Quebec, District of Montreal
Supreme Court of British Columbia
United States Bankruptcy Court Southern District of New York

## TESTIMONY IN REGULATORY AND JUDICIAL PROCEEDINGS

### ON BEHALF OF [CONFIDENTIAL STATE]

In the Matter of an Arbitration und the Rules of Arbitration of the International Centre for Settlement of Investment Disputes, ICSID Case No. [Confidential], [Confidential], Claimant against [Confidential], Respondent against [Confidential], Expert Report on Behalf of [Respondent], November 22, 2019, Second Report on Behalf of [Respondent], December 18, 2020 (Economic Damages / Liability / Industry expertise).

### ON BEHALF OF [CONFIDENTIAL CONSUMER ELECTRONICS]

In the Matter of an Arbitration under the Rules of Arbitration of the International Chamber of Commerce, ICC Case No. [Confidential], [Confidential], Claimant against [Confidential], Respondent against [Confidential], Counterclaim-Respondent, July 6, 2018 (Expert Report on Behalf of Respondent], November 16, 2018 [Second Expert Report on Behalf of Respondent], December 20 – 21, 2018 [Oral Testimony on Behalf of Respondent] (Economic Damages / Industry expertise).

### ON BEHALF OF [CONFIDENTIAL TELECOMMUNICATIONS INDUSTRY]

In the Matter of an Arbitration under the Rules of Arbitration of the International Chamber of Commerce, ICC Case No. [Confidential], [Confidential], First Claimant and [Confidential], Second Claimant against [Confidential], First Respondent and [Confidential], Second Respondent, December 20, 2004 (Joint Expert Report with Dr. Agustin Ros and Dr. Timothy Tardiff on Behalf of Claimants, opining on the economic and strategic importance of the mobile business for an integrated telecommunications provider (Industry expertise).

### ON BEHALF OF A1 TELEKOM AUSTRIA

"The Impact of Mobile Virtual Network Operators on Competition in the Austrian Mobile Communications Market," Expert Report of Dr. Christian Dippon (NERA Economic Consulting) and Dr. Georg Serentschy (Serentschy Advisory Services GmbH), 22 March 2021.

**Before the State of New York Public Service Commission**
*Proceeding on Motion of the Commission to Review the State Universal Service Fund*

ON BEHALF OF ALCATEL-LUCENT USA INC.

In the Superior Court of California, County of Santa Clara, *In re: Alcatel-Lucent USA Inc. v. Brilliant Telecommunications, Inc., Juniper Networks, Inc., et al.*, December 7, 2012, December 13, 2012, February 21 and 25, 2013. (Economic Damages / Industry expertise)

ON BEHALF OF AT&T ALABAMA

Before the Federal Communications Commission, Washington, DC 20554, BellSouth Telecommunications, LLC d/b/a AT&T Alabama, Complainant v. Alabama Power Company, Defendant, Proceeding No. 19 - 119, Bureau ID No. EB-19-MD-002, Affidavit of Christian M. Dippon, Ph.D., In Support of Pole Attachment Complaint, April 16, 2019, Reply Declaration of Christian M. Dippon, Ph.D., In Support of Pole Attachment Complaint, July 19, 2019 (Regulatory Rate Dispute / Industry Expertise)

ON BEHALF OF AT&T FLORIDA

Before the Federal Communications Commission, Washington, DC 20554, BellSouth Telecommunications, LLC d/b/a AT&T Florida, Complainant v. Florida Power and Light Company, Defendant, Proceeding No. 19 - __, Bureau ID No. EB-19-MD-___, Affidavit of Christian M. Dippon, Ph.D., In Support of Pole Attachment Complaint, June 28, 2019, Reply Affidavit, November 6, 2019. (Regulatory Rate Dispute / Industry Expertise)

Before the Federal Communications Commission, Washington, DC 20554, BellSouth Telecommunications, LLC d/b/a AT&T Florida, Complainant v. Duke Energy Florida, LLC, Defendant, Proceeding No. 20-, Bureau ID No. EB-20-MD-, Affidavit of Christian M. Dippon, Ph.D., In Support of Pole Attachment Complaint, August 24, 2020, Reply Affidavit, November 23, 2020. (Regulatory Rate Dispute / Industry Expertise)

ON BEHALF OF AT&T NORTH CAROLINA AND AT&T SOUTH CAROLINA

Before the Federal Communications Commission, Washington, DC 20554, BellSouth Telecommunications, LLC d/b/a AT&T North Carolina and d/b/a AT&T South Carolina, Complainant v. Duke Energy Progress, LLC, Defendant, Proceeding No. 20 -, Bureau ID No. EB-20-MD-, Affidavit of Christian M. Dippon, Ph.D., In Support of Pole Attachment Complaint, August 31, 2020, Reply Affidavit, December 18, 2020. (Regulatory Rate Dispute / Industry Expertise)

ON BEHALF OF BELL MOBILITY

Before the Superior Court, Province of Quebec, District of Montreal, In the Matter of *Gagnon vs. Bell Mobility*, No: 500-06-000496-105, October 25, 2013, March 14, 2014 (updated version from October 25, 2013, and April 2–3, 2014. (Economic damages)

**Before the State of New York Public Service Commission**
*Proceeding on Motion of the Commission to Review the State Universal Service Fund*

ON BEHALF OF CALINNOVATES

Before the Federal Communications Commission, Washington, DC, In the Matter of Expanding Consumers' Video Navigation Choices, MB Docket No. 16-42, Commercial Availability of Navigation Devices, CS Docket No. 97-80, April 22, 2016 (Public policy), October 11, 2016. (Economic damages)

Before the Federal Communications Commission, Washington, DC, In the Matter of Protecting and Promoting the Open Internet, GN Docket 14-28, "Economic Repercussions of Applying Title II to Internet Services," White Paper, by Christian Dippon, PhD and Jonathan Falk, filed as attachment to the Reply Comments of CALinnovates, September 11, 2014. (Public policy)

ON BEHALF OF CELLCOM ISRAEL, LTD.

Before the Israel Ministry of Communications, Expert Report of NERA Economic Consulting, "Reply to Frontier's Responses, Estimating the Cost of Wholesale Access Service on Bezeq's Network," Christian Dippon with Marta Petrucci, Leen Dickx, and Howard Cobb (Finite State Systems), September 29, 2014. (Regulatory policy and cost modeling)

Before the Israel Ministry of Communications, Expert Report of NERA Economic Consulting, "Estimating the Cost of Wholesale Access Services on Bezeq's Network, A Cost Modeling Review," Christian Dippon with Nigel Attenborough, Marta Petrucci, Sally Tam, Anthony Schmitz, and Howard Cobb, March 10, 2014. (Regulatory policy and cost modeling)

ON BEHALF OF COMCAST CORPORATION

Before the Federal Communications Commission, Washington, DC, In the Matter of Restoring Internet Freedom, WC Docket No. 17-108, Notice of Proposed Rulemaking, White Paper, "Public Interest Benefits of Repealing Utility-Style Title II Regulation and Reapplying Light-Touch Regulation to Broadband Internet Services, July 17 and August 28, 2017. (Competition analysis)

ON BEHALF OF THE COMMERCE COMMISSION NEW ZEALAND

"Review of Covec's 'Economic Analysis of 700MHz Allocation,'" Christian Dippon with James Mellsop, Richard Marsden, and Kevin Counsell, February 14, 2014. (Regulatory policy and competition analysis)

ON BEHALF OF THE COMPETITION BUREAU CANADA

*The Commissioner of Competition, Applicant and Chatr Wireless Inc, and Rogers Communications Inc., Respondents*, Ontario Superior Court of Justice, June 13, 2012, July 25, 2012, August 15–16, 2012. (Economic damages / Industry expertise)

ON BEHALF OF DJI TECHNOLOGY INC

Before the Federal Aviation Administration, Remote Identification of Unmanned Aircraft Systems, 14 CRF Parts 1, 47, 48, 89, 91, and 107, Docket No.: FAA-2019-1100; Notice No. 20-

01, RIN 2120-AL31, Expert Report of Christian M. Dippon, Ph.D., On Behalf of DJI Technology Inc., February 28, 2020.

ON BEHALF OF EUTELSAT S.A.

In the Matter of an Arbitration und the Rules of Arbitration of the International Centre for Settlement of Investment Disputes, ICSID Case No. ARB(AF)/17/2), Eutelsat S.A., Claimant, against the Mexican States, Respondent, Expert Report on Behalf of Claimant, January 9, 2019; Response Expert Report on Behalf of Claimant, February 3, 2020; Oral testimony on behalf of Claimant, September 8 – 9, 2020 (Economic Damages / Industry expertise).

ON BEHALF OF FPL GROUP INC.

In reference to *Adelphia Communications Corp., et al., Adelphia Recovery Trust, v. FPL Group Inc.*, United States Bankruptcy Court Southern District of New York, July 8, 2011, July 26, 2011, April 17, 2012, and May 2–3, 2012. (Competition analysis)

ON BEHALF OF THE GOVERNMENT OF GEORGIA

Before the International Centre for Settlement of Investment Disputes, ICSID Case No. ARB/20/5, Telcell Wireless, LLC, International Telcell Cellular, LLC, Claimants, v. Georgia, Respondent, Response Expert Report of Christian M. Dippon, Ph.D., on behalf of the Government of Georgia, May 7, 2021 (Economic Damages / Industry expertise).

ON BEHALF OF MASSAGE ENVY FRANCHISING, LLC

Before the United States United States District Court for the Northern District of California, Baerbel McKinney-Drobnis, Joseph B. Piccola, and Camille Berlese, *Plaintiffs*, v. Massage Envy Franchising, LLC, *Defendant*, Case No: 3:16-cv-6450 MMC, March 8, 2022. (Valuation of injunctive relief)

ON BEHALF OF MICROSOFT MOBILE OY AND NOKIA INC.

Before the United States International Trade Commission, In the Matter of Certain 3G Mobile Handsets and Components, Investigation No. 337-TA-613, September 12, 2014, October 3, 2014, October 15, 2014, November 21, 2014, December 12, 2014, and January 28, 2015. (Competition analysis)

Before the United States International Trade Commission, In the Matter of Certain Wireless Devices including Mobile Phones and Tablets II, Investigation No. 337-TA-905, June 26, 2014. (Competition analysis)

ON BEHALF OF MONSTER, INC.

Circuit Court of Cook County, Illinois County Department, Chancery Division, *Amy Joseph, individually and on behalf of all others similarly situated, Plaintiff, Benjamin Perez, individually and on behalf of all others similarly situated, Intervening Plaintiff vs. Monster, Inc., a Delaware*

*Corporation and Best Buy Co, Inc., a Minnesota Corporation, Defendants,* Case No. 2015 CH 13991, September 9, 2016 and February 8, 2018. (Economic damages)

ON BEHALF OF NETLINK TRUST

Before the Info-communications Development Authority of Singapore (IDA), "The Appropriate Cost Methodology for Price Regulation of Interconnection Wholesale Fiber Services," Christian Dippon with Dr. Bruno Soria, December 15, 2015. (Regulatory policy)

ON BEHALF OF NOKIA CORPORATION AND NOKIA INC.

Before the United States International Trade Commission, In the Matter of Certain Wireless Devices with 3G and/or 4G Capabilities and Components Thereof, Investigation No. 337-TA-868, August 23, 2013, September 5, 2013, September 20, 2013, October 8, 2013, November 19, 2013, December 6, 2013, January 6, 2014, and February 18, 2014. (Competition analysis)

Before the United States International Trade Commission, In the Matter of Certain Integrated Circuit Devices and Products Containing the Same, Investigation No. 337-TA-873, August 30, 2013, September 16, 2013, and March 6, 2014. (Competition analysis)

ON BEHALF OF NOKIA SOLUTIONS AND NETWORKS US LLC

In the Matter of the Arbitration between *MTPCS, LLC d/b/a Cellular One vs. Nokia Solutions and Networks US LLC d/b/a Nokia Networks*, Before the American Arbitration Association, RE: 01-15-0003-5349, December 5–6, 2016 (Economic damages and competition analysis) and May 4, 2016. (Economic damages)

Before the American Arbitration Association, *Nokia Siemens Networks US LLC n/k/a Nokia Solutions Networks US, Plaintiff vs. Viaero Wireless a/k/a NE Colorado Cellular, Inc., Defendant*, Case No. 50 494 T 00510 13, May 27, 2014 and June 2, 2014. (Economic damages)

ON BEHALF OF QATAR TELECOM (QTEL)

In Connection with *Vodafone Qatar Q.S.C v. Qatar Telecom (Qtel) Q.S.C,* Pursuant to Dispute Resolution Agreement Dated 11 November 2010, January 20, 2011 and February 21, 2011. (Economic damages)

ON BEHALF OF SINGAPORE TELECOMMUNICATIONS LIMITED AND SINGAPORE TELECOM MOBILE PTE. LTD.

Before the District Court of Tangerang, "Economic Assessment and Examination of Alleged Anticompetitive Behavior in the Indonesian Mobile Market," Expert Report by Christian Dippon, Nigel Attenborough, and William Taylor, April 21, 2010. (Economic damages)

Before the Central Jakarta District Court, "Economic Assessment and Examination of Alleged Anticompetitive Behavior in the Indonesian Mobile Market," Expert Report by Christian Dippon, Nigel Attenborough, and William Taylor, Prepared for Singapore Telecommunications

Limited and Singapore Telecom Mobile Pte. Ltd., January 15, 2010. (Economic damages and competition analysis)

ON BEHALF OF SONY COMPUTER ENTERTAINMENT AMERICA LLC

Before the United States District Court Northern District of California San Francisco Division, In Re Sony PS3 "Other OS" Litigation, Case No. CV-10-1811 SC, April 4, 2017 and June 7, 2017. (Economic damages)

ON BEHALF OF SPRINT COMMUNICATION COMPANY L.P., SPRINT SPECTRUM L.P., AND NEXTEL OPERATIONS, INC.

Before the United States District Court for the Eastern District of Pennsylvania, *Comcast Cable Communications, LLC; TVWorks, LLC, and Comcast Mo Group Inc. v. of Sprint Communication Company L.P., Sprint Spectrum L.P., and Nextel Operations, Inc.*, Civil Action No. 2:12-cv-00859-JD, July 15, 2015. (Economic damages), March 18, 2016 (Economic damages), February 14, 2017 (Economic damages and incremental cost modeling)

ON BEHALF OF SPRINT SPECTRUM LP AND WIRELESS CO. LP, NEXTEL COMMUNICATIONS INC., AND NEXTEL CALIFORNIA INC.

Superior Court of the State of California, County of Alameda, JCCP No. 4332, Case No. RG03114147, *Ayyad, et al. v. Sprint Spectrum Limited Partnership, et. al.*, Cellphone Termination Fee Cases, September 13, 2011, April 26, 2013, May 29, 2013, July 16, 2013, July 30, 2013, April 1, 2016, and January 29, 2016. (Economic damages)

ON BEHALF OF TELE FÁCIL MEXICO, S.A. DE C.V.

In the Matter of an Arbitration Under the North American Free Trade Agreement and The Arbitration Rules of the United Nations Commission on International Trade Law (1976) between *Joshua Dean Nelson, in His Own Right and On Behalf of Tele Fácil Mexico, S.A., De C.V., and Jorge Luis Blanco (the Claimants) and The United Mexican States (the Respondent)*, ICSID Case No. UNCT/17/1, November 7, 2017, June 5, 2018, November 21, 2018, April 21, 2019 (hearings). (Economic damages)

ON BEHALF OF TELUS COMMUNICATIONS INC.

Before the Canadian Radio-Television and Telecommunications Commission, CRTC 2020-131, Designing an Economically Sound Approach to Rate Setting for Canada's Wholesale Telecommunications Services, Expert Report of Christian M. Dippon. Ph.D., On Behalf of TELUS Communications, Inc., August 13, 2020, Reply Expert Report November 27, 2020. (Competition policy / regulation / cost modeling / industry expertise)

Before the Canadian Radio-Television and Telecommunications Commission, CRTC 2019-57, Review of Mobile Wireless Services, A Reply to the Competition Bureau's Assessment of the State of Wireless Competition in Canada, Expert Report of Christian M. Dippon. Ph.D., On

Behalf of TELUS Communications, Inc., January 13, 2020; Oral testimony, February 20, 2020. (Competition policy / antitrust / industry expertise)

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March 16, 2022

# APPENDIX B: VERIZON LTE HOME INTERNET ZIP CODE LIST (OCTOBER 2020)

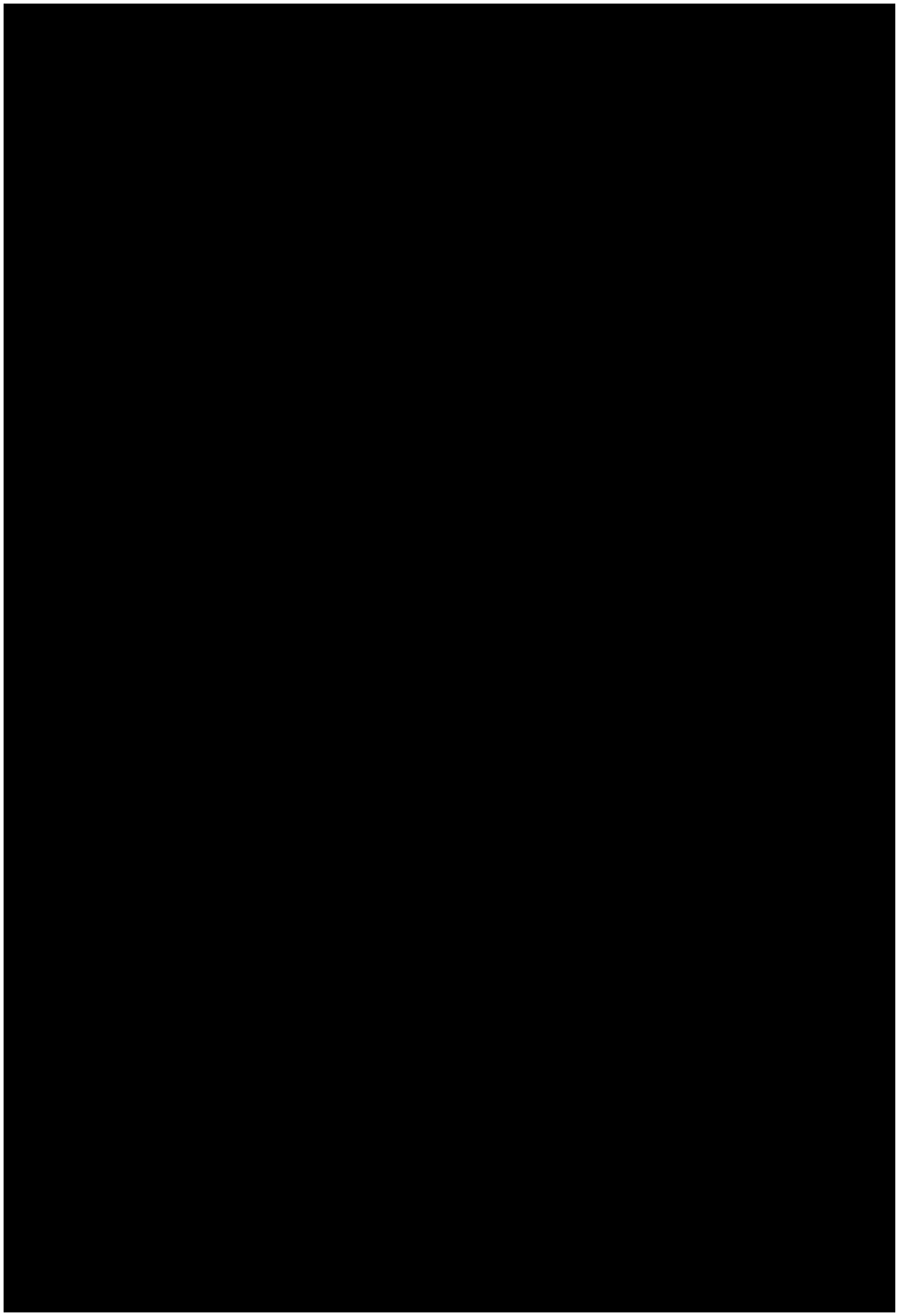
| ZIP Code | Zip Name | State | ZIP Code | Zip Name | State |
|---|---|---|---|---|---|
| 10516 | Cold Spring | NY | 11968 | Southampton | NY |
| 10518 | Cross River | NY | 11971 | Southold | NY |
| 10597 | Waccabuc | NY | 11976 | Water Mill | NY |
| 10911 | Bear Mountain | NY | 11977 | Westhampton | NY |
| 10916 | Campbell Hall | NY | 11978 | Westhampton B | NY |
| 10918 | Chester | NY | 12015 | Athens | NY |
| 10921 | Florida | NY | 12018 | Averill Park | NY |
| 10924 | Goshen | NY | 12019 | Ballston Lake | NY |
| 10928 | Highland Falls | NY | 12025 | Broadalbin | NY |
| 10933 | Johnson | NY | 12033 | Castle on Hudson | NY |
| 10940 | Middletown | NY | 12037 | Chatham | NY |
| 10941 | Middletown | NY | 12043 | Cobleskill | NY |
| 10950 | Monroe | NY | 12046 | Coeymans Hollo | NY |
| 10958 | New Hampton | NY | 12051 | Coxsackie | NY |
| 10969 | Pine Island | NY | 12060 | East Chatham | NY |
| 10973 | Slate Hill | NY | 12061 | East Greenbush | NY |
| 10990 | Warwick | NY | 12062 | East Nassau | NY |
| 10996 | West Point | NY | 12063 | East Schodack | NY |
| 10998 | Westtown | NY | 12064 | East Worcester | NY |
| 11778 | Rocky Point | NY | 12068 | Fonda | NY |
| 11792 | Wading River | NY | 12070 | Fort Johnson | NY |
| 11901 | Riverhead | NY | 12074 | Galway | NY |
| 11930 | Amagansett | NY | 12075 | Ghent | NY |
| 11933 | Calverton | NY | 12083 | Greenville | NY |
| 11935 | Cutchogue | NY | 12086 | Hagaman | NY |
| 11937 | East Hampton | NY | 12087 | Hannacroix | NY |
| 11939 | East Marion | NY | 12092 | Howes Cave | NY |
| 11941 | Eastport | NY | 12120 | Medusa | NY |
| 11942 | East Quogue | NY | 12122 | Middleburgh | NY |
| 11944 | Greenport | NY | 12123 | Nassau | NY |
| 11946 | Hampton Bays | NY | 12138 | Petersburg | NY |
| 11948 | Laurel | NY | 12140 | Poestenkill | NY |
| 11949 | Manorville | NY | 12144 | Rensselaer | NY |
| 11950 | Mastic | NY | 12147 | Rensselaerville | NY |
| 11952 | Mattituck | NY | 12148 | Rexford | NY |
| 11954 | Montauk | NY | 12151 | Round Lake | NY |
| 11957 | Orient | NY | 12153 | Sand Lake | NY |
| 11958 | Peconic | NY | 12157 | Schoharie | NY |
| 11963 | Sag Harbor | NY | 12167 | Stamford | NY |
| 11964 | Shelter Island | NY | 12168 | Stephentown | NY |
| 11965 | Shelter Island Heights | NY | 12169 | Stephentown | NY |
| 11967 | Shirley | NY | 12175 | Summit | NY |
| 12198 | Wynantskill | NY | 12182 | Troy | NY |
| 12401 | Kingston | NY | 12184 | Valatie | NY |
| 12412 | Boiceville | NY | 12196 | West Sand | NY |
| 12414 | Catskill | NY | 12197 | Worcester | NY |
| 12424 | East Jewett | NY | 12726 | Cochecton | NY |
| 12427 | Elka Park | NY | 12729 | Cuddebackville | NY |
| 12431 | Freehold | NY | 12737 | Glen Spey | NY |
| 12439 | Hensonville | NY | 12741 | Hankins | NY |
| 12442 | Hunter | NY | 12745 | Hortonville | NY |
| 12444 | Jewett | NY | 12746 | Huguenot | NY |
| 12457 | Mount Tremper | NY | 12748 | Jeffersonville | NY |
| 12461 | Olivebridge | NY | 12752 | Lake Huntington | NY |
| 12468 | Prattsville | NY | 12754 | Liberty | NY |
| 12477 | Saugerties | NY | 12758 | Livingston Mano | NY |
| 12481 | Shokan | NY | 12764 | Narrowsburg | NY |
| 12484 | Stone Ridge | NY | 12766 | North Branch | NY |
| 12485 | Tannersville | NY | 12768 | Parksville | NY |
| 12487 | Ulster Park | NY | 12771 | Port Jervis | NY |
| 12491 | West Hurley | NY | 12775 | Rock Hill | NY |
| 12494 | West Shokan | NY | 12776 | Roscoe | NY |
| 12495 | Willow | NY | 12777 | Forestburgh | NY |
| 12498 | Woodstock | NY | 12780 | Sparrow Bush | NY |
| 12501 | Amenia | NY | 12783 | Swan Lake | NY |

| | | | | | |
|---|---|---|---|---|---|
| 12514 | Clinton Corners | NY | 12786 | White Lake | NY |
| 12516 | Copake | NY | 12790 | Wurtsboro | NY |
| 12517 | Copake Falls | NY | 12831 | Gansevoort | NY |
| 12522 | Dover Plains | NY | 12833 | Greenfield Cente | NY |
| 12526 | Germantown | NY | 12850 | Middle Grove | NY |
| 12528 | Highland | NY | 12863 | Rock City Falls | NY |
| 12529 | Hillsdale | NY | 13026 | Aurora | NY |
| 12534 | Hudson | NY | 13032 | Canastota | NY |
| 12540 | Lagrangeville | NY | 13035 | Cazenovia | NY |
| 12545 | Millbrook | NY | 13036 | Central Square | NY |
| 12546 | Millerton | NY | 13037 | Chittenango | NY |
| 12547 | Milton | NY | 13053 | Dryden | NY |
| 12549 | Montgomery | NY | 13063 | Fabius | NY |
| 12564 | Pawling | NY | 13068 | Freeville | NY |
| 12566 | Pine Bush | NY | 13069 | Fulton | NY |
| 12567 | Pine Plains | NY | 13084 | La Fayette | NY |
| 12570 | Poughquag | NY | 13108 | Marcellus | NY |
| 12571 | Red Hook | NY | 13126 | Oswego | NY |
| 12572 | Rhinebeck | NY | 13132 | Pennellville | NY |
| 12581 | Stanfordville | NY | 13135 | Phoenix | NY |
| 12583 | Tivoli | NY | 13140 | Port Byron | NY |
| 12585 | Verbank | NY | 13142 | Pulaski | NY |
| 12594 | Wingdale | NY | 13148 | Seneca Falls | NY |
| 12701 | Monticello | NY | 13159 | Tully | NY |
| 12720 | Bethel | NY | 13165 | Waterloo | NY |
| 12721 | Bloomingburg | NY | 13326 | Cooperstown | NY |
| 12723 | Callicoon | NY | 13333 | East Springfield | NY |
| 13361 | Jordanville | NY | 13335 | Edmeston | NY |
| 13411 | New Berlin | NY | | | |
| 13421 | Oneida | NY | | | |
| 13439 | Richfield Springs | NY | | | |
| 13461 | Sherrill | NY | | | |
| 13468 | Springfield Cente | NY | | | |
| 13485 | West Edmeston | NY | | | |
| 13491 | West Winfield | NY | | | |
| 13730 | Afton | NY | | | |
| 13733 | Bainbridge | NY | | | |
| 13786 | Harpersfield | NY | | | |
| 13803 | Marathon | NY | | | |
| 13815 | Norwich | NY | | | |
| 13830 | Oxford | NY | | | |
| 13843 | South New Berlin | NY | | | |
| 14418 | Branchport | NY | | | |
| 14456 | Geneva | NY | | | |
| 14468 | Hilton | NY | | | |
| 14478 | Keuka Park | NY | | | |
| 14512 | Naples | NY | | | |
| 14527 | Penn Yan | NY | | | |
| 14541 | Romulus | NY | | | |
| 14572 | Wayland | NY | | | |
| 14805 | Alpine | NY | | | |
| 14808 | Atlanta | NY | | | |
| 14812 | Beaver Dams | NY | | | |
| 14818 | Burdett | NY | | | |
| 14824 | Cayuta | NY | | | |
| 14826 | Cohocton | NY | | | |
| 14837 | Dundee | NY | | | |
| 14841 | Hector | NY | | | |
| 14845 | Horseheads | NY | | | |
| 14864 | Millport | NY | | | |
| 14865 | Montour Falls | NY | | | |
| 14869 | Odessa | NY | | | |
| 14874 | Pulteney | NY | | | |
| 14886 | Trumansburg | NY | | | |
| 14891 | Watkins Glen | NY | | | |

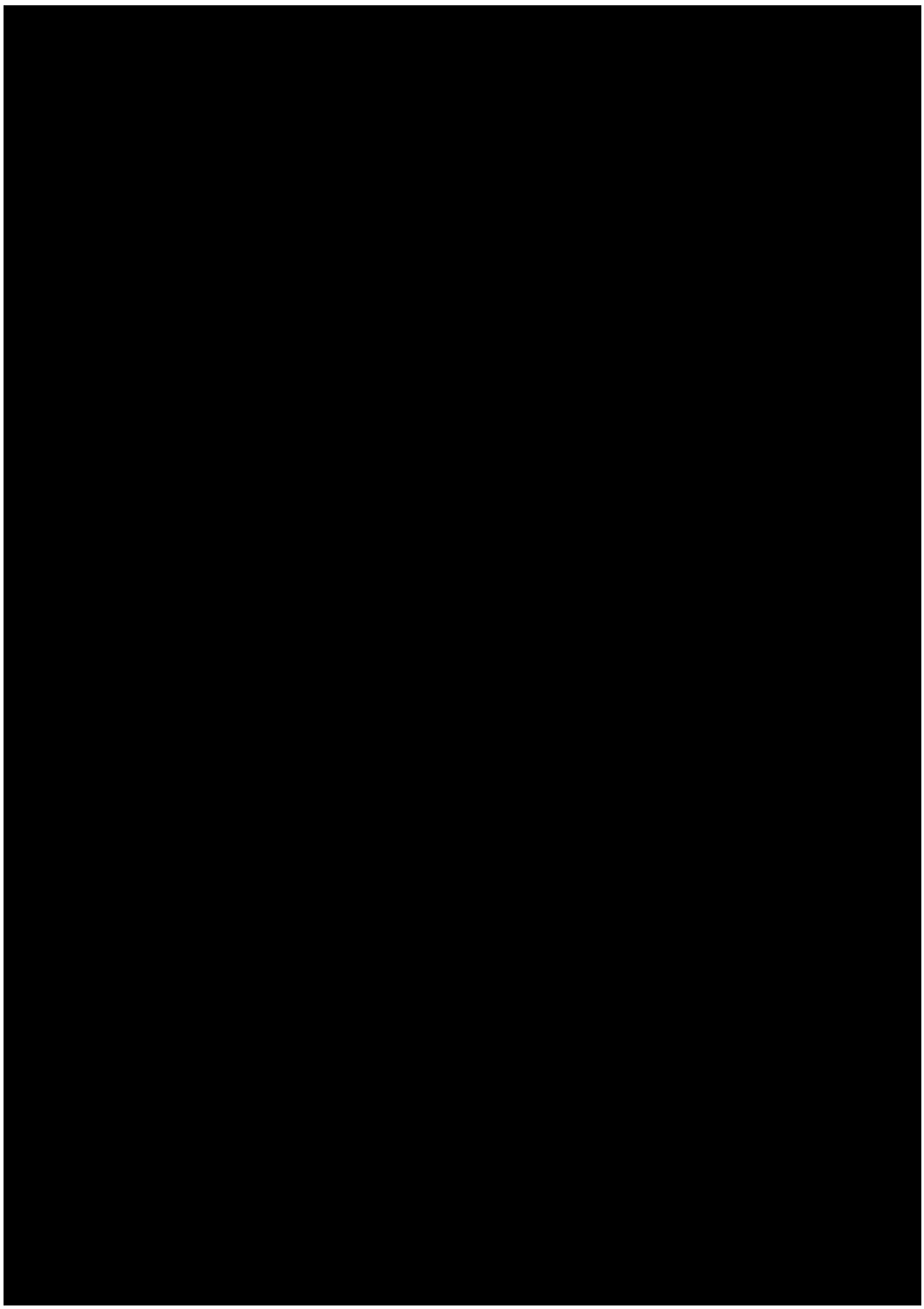
Note: Available only in parts of these zip codes.
Source: Verizon Home Internet Zip Code List, October 1, 2020,
https://www.verizon.com/about/sites/default/files/LTE-home-Internet-zip-code-list-09-2020.pdf.

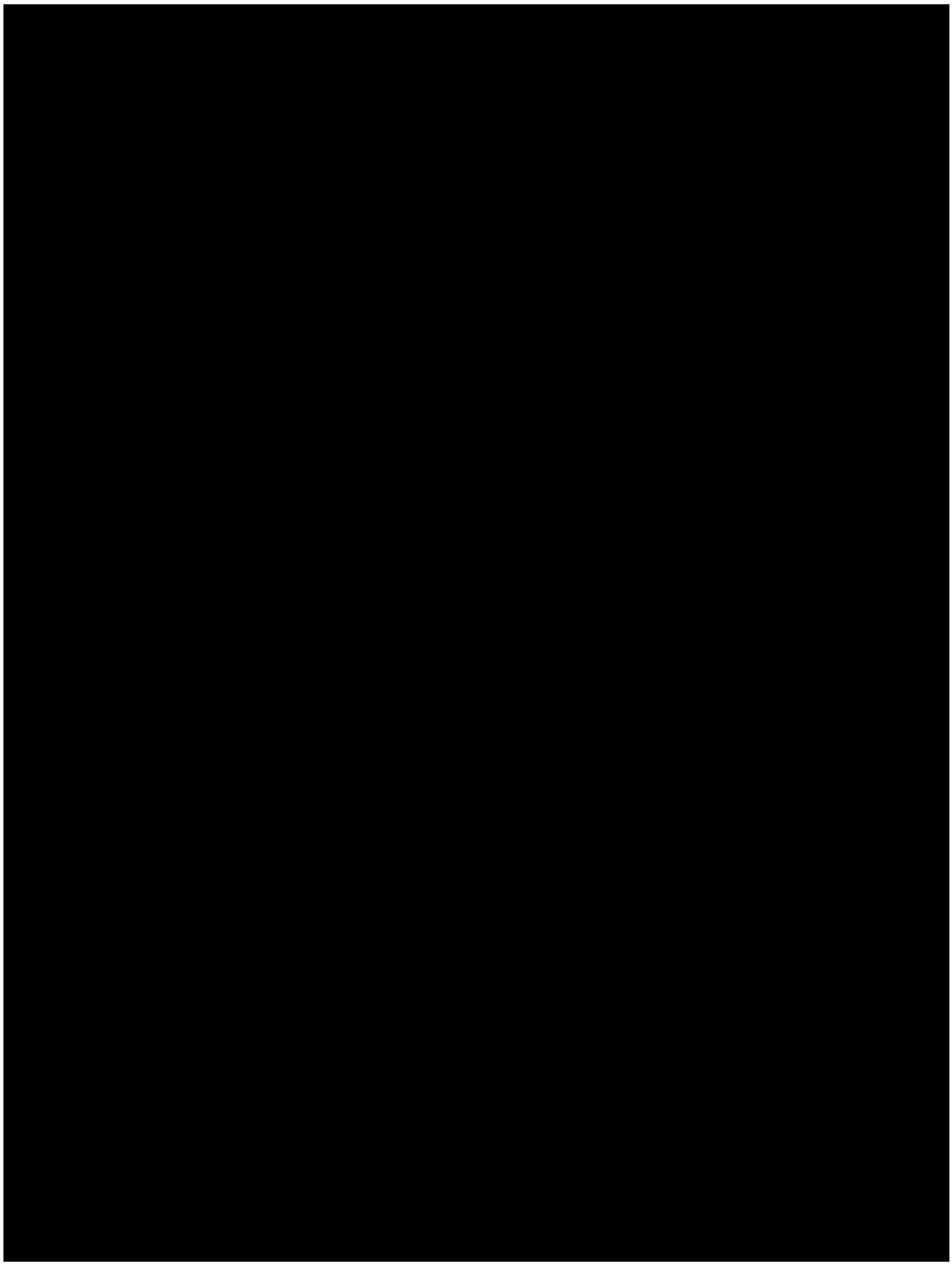
# APPENDIX C: JOINT PROPOSAL ¶ 2(E) SUBMISSION RESPONSE COUNTS

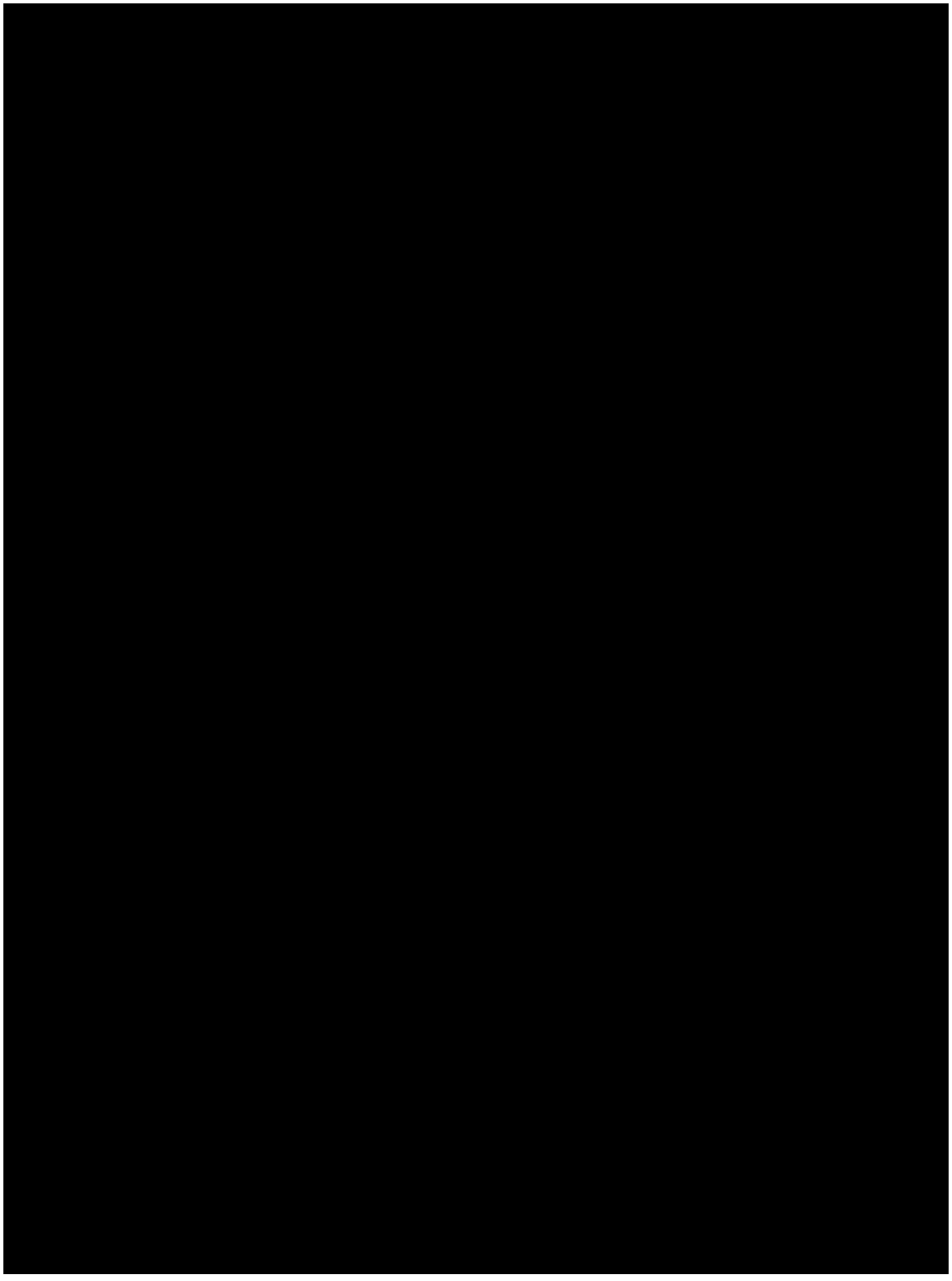
**[BEGIN CONFIDENTIAL]**



**Before the State of New York Public Service Commission**
*Proceeding on Motion of the Commission to Review the State Universal Service Fund*







**Before the State of New York Public Service Commission**
*Proceeding on Motion of the Commission to Review the State Universal Service Fund*

**[END CONFIDENTIAL]**

# APPENDIX D: HOUSEHOLDS OPTIONS IN CENSUS BLOCKS COVERED BY NSICS

## Table D-1: Households Options in CBs Covered by Armstrong Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 26.4% | 0.7% | 0.0% | 0.0% |
| 2 | 39.4% | 4.3% | 0.0% | 0.0% |
| 3 | 10.6% | 12.6% | 0.0% | 0.0% |
| 4 | 23.6% | 17.1% | 0.0% | 0.0% |
| 5 | 0.0% | 20.3% | 21.8% | 0.7% |
| 6 | 0.0% | 18.0% | 19.6% | 4.3% |
| 7 | 0.0% | 4.7% | 28.4% | 11.2% |
| 8 | 0.0% | 22.3% | 7.0% | 13.4% |
| 9 | 0.0% | 0.0% | 23.3% | 14.9% |
| 10 | 0.0% | 0.0% | 0.0% | 13.4% |
| 11 | 0.0% | 0.0% | 0.0% | 15.1% |
| 12 | 0.0% | 0.0% | 0.0% | 4.7% |
| 13 | 0.0% | 0.0% | 0.0% | 22.3% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-2: Households Options in CBs Covered by Chazy & Westport Telephone Corp.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 14.7% | 0.0% | 0.0% | 0.0% |
| 2 | 54.4% | 0.3% | 0.0% | 0.0% |
| 3 | 20.1% | 6.7% | 0.0% | 0.0% |
| 4 | 10.6% | 16.7% | 0.0% | 0.0% |
| 5 | 0.2% | 49.7% | 7.9% | 0.0% |
| 6 | 0.0% | 18.2% | 29.6% | 0.3% |
| 7 | 0.0% | 8.1% | 39.7% | 3.7% |
| 8 | 0.0% | 0.2% | 13.4% | 13.6% |
| 9 | 0.0% | 0.0% | 9.4% | 26.3% |
| 10 | 0.0% | 0.0% | 0.0% | 36.4% |
| 11 | 0.0% | 0.0% | 0.0% | 10.4% |
| 12 | 0.0% | 0.0% | 0.0% | 9.4% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-3: Households Options in CBs Covered by Crown Point Telephone Corp.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 8.3% | 0.0% | 0.0% | 0.0% |
| 2 | 31.2% | 6.9% | 0.0% | 0.0% |
| 3 | 48.5% | 26.5% | 0.0% | 0.0% |
| 4 | 7.6% | 50.0% | 0.0% | 0.0% |
| 5 | 2.3% | 10.7% | 6.8% | 0.0% |
| 6 | 2.1% | 3.7% | 32.7% | 6.7% |
| 7 | 0.0% | 2.1% | 48.5% | 25.4% |
| 8 | 0.0% | 0.0% | 7.6% | 51.4% |
| 9 | 0.0% | 0.0% | 2.3% | 10.7% |
| 10 | 0.0% | 0.0% | 2.1% | 3.7% |
| 11 | 0.0% | 0.0% | 0.0% | 2.1% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-4: Households Options in CBs Covered by Delhi Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 30.6% | 0.9% | 0.0% | 0.0% |
| 2 | 57.8% | 3.6% | 0.0% | 0.0% |
| 3 | 11.6% | 6.3% | 0.0% | 0.0% |
| 4 | 0.0% | 23.1% | 0.0% | 0.0% |
| 5 | 0.0% | 57.8% | 22.0% | 0.9% |
| 6 | 0.0% | 8.2% | 42.5% | 3.6% |
| 7 | 0.0% | 0.0% | 31.9% | 6.3% |
| 8 | 0.0% | 0.0% | 3.6% | 15.0% |
| 9 | 0.0% | 0.0% | 0.0% | 41.0% |
| 10 | 0.0% | 0.0% | 0.0% | 30.0% |
| 11 | 0.0% | 0.0% | 0.0% | 3.1% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-5: Households Options in CBs Covered by Fishers Island Telephone Corp.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 100.0% | 0.0% | 0.0% | 0.0% |
| 2 | 0.0% | 21.7% | 0.0% | 0.0% |
| 3 | 0.0% | 54.2% | 0.0% | 0.0% |
| 4 | 0.0% | 24.2% | 0.0% | 0.0% |
| 5 | 0.0% | 0.0% | 65.0% | 0.0% |
| 6 | 0.0% | 0.0% | 35.0% | 0.0% |
| 7 | 0.0% | 0.0% | 0.0% | 62.5% |
| 8 | 0.0% | 0.0% | 0.0% | 37.5% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-6: Households Options in CBs Covered by Germantown Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 36.3% | 0.0% | 0.0% | 0.0% |
| 2 | 37.2% | 0.0% | 0.0% | 0.0% |
| 3 | 19.7% | 5.6% | 0.0% | 0.0% |
| 4 | 2.1% | 43.9% | 0.0% | 0.0% |
| 5 | 4.7% | 28.3% | 14.3% | 0.0% |
| 6 | 0.0% | 15.7% | 24.1% | 0.0% |
| 7 | 0.0% | 1.7% | 25.3% | 4.3% |
| 8 | 0.0% | 4.7% | 26.8% | 11.9% |
| 9 | 0.0% | 0.0% | 4.1% | 35.3% |
| 10 | 0.0% | 0.0% | 5.3% | 16.3% |
| 11 | 0.0% | 0.0% | 0.0% | 23.1% |
| 12 | 0.0% | 0.0% | 0.0% | 3.9% |
| 13 | 0.0% | 0.0% | 0.0% | 5.2% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-7: Households Options in CBs Covered by Middleburgh Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 17.1% | 0.9% | 0.0% | 0.0% |
| 2 | 62.7% | 4.1% | 0.0% | 0.0% |
| 3 | 16.6% | 5.3% | 0.0% | 0.0% |
| 4 | 2.8% | 12.0% | 0.0% | 0.0% |
| 5 | 0.8% | 25.5% | 14.3% | 0.9% |
| 6 | 0.0% | 35.0% | 39.0% | 3.5% |
| 7 | 0.0% | 15.2% | 31.9% | 5.3% |
| 8 | 0.0% | 1.1% | 12.1% | 10.1% |
| 9 | 0.0% | 0.8% | 1.1% | 19.7% |
| 10 | 0.0% | 0.0% | 0.8% | 24.2% |
| 11 | 0.0% | 0.0% | 0.9% | 23.0% |
| 12 | 0.0% | 0.0% | 0.0% | 10.6% |
| 13 | 0.0% | 0.0% | 0.0% | 1.8% |
| 14 | 0.0% | 0.0% | 0.0% | 0.8% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-8: Households Options in CBs Covered by Newport Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 36.8% | 1.5% | 0.0% | 0.0% |
| 2 | 56.6% | 10.3% | 0.0% | 0.0% |
| 3 | 5.8% | 10.4% | 0.0% | 0.0% |
| 4 | 0.9% | 18.4% | 0.0% | 0.0% |
| 5 | 0.0% | 46.3% | 34.2% | 1.5% |
| 6 | 0.0% | 12.2% | 54.3% | 10.3% |
| 7 | 0.0% | 0.0% | 9.7% | 10.2% |
| 8 | 0.0% | 0.9% | 1.2% | 16.2% |
| 9 | 0.0% | 0.0% | 0.6% | 44.0% |
| 10 | 0.0% | 0.0% | 0.0% | 16.0% |
| 11 | 0.0% | 0.0% | 0.0% | 0.9% |
| 12 | 0.0% | 0.0% | 0.0% | 0.3% |
| 13 | 0.0% | 0.0% | 0.0% | 0.6% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-9: Households Options in CBs Covered by Nicholville Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 17.4% | 0.2% | 0.0% | 0.0% |
| 2 | 72.5% | 16.0% | 0.0% | 0.0% |
| 3 | 7.1% | 58.7% | 0.0% | 0.0% |
| 4 | 3.0% | 19.9% | 0.0% | 0.0% |
| 5 | 0.0% | 4.1% | 17.4% | 0.2% |
| 6 | 0.0% | 1.1% | 72.5% | 16.0% |
| 7 | 0.0% | 0.0% | 7.1% | 58.7% |
| 8 | 0.0% | 0.0% | 3.0% | 19.9% |
| 9 | 0.0% | 0.0% | 0.0% | 4.1% |
| 10 | 0.0% | 0.0% | 0.0% | 1.1% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-10: Households Options in CBs Covered by Oneida County Rural Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 14.9% | 0.0% | 0.0% | 0.0% |
| 2 | 55.8% | 0.6% | 0.0% | 0.0% |
| 3 | 16.4% | 9.2% | 0.0% | 0.0% |
| 4 | 12.8% | 36.7% | 0.0% | 0.0% |
| 5 | 0.0% | 27.8% | 11.8% | 0.0% |
| 6 | 0.0% | 12.9% | 56.9% | 0.4% |
| 7 | 0.0% | 12.8% | 16.0% | 8.2% |
| 8 | 0.0% | 0.0% | 7.6% | 35.8% |
| 9 | 0.0% | 0.0% | 7.8% | 28.0% |
| 10 | 0.0% | 0.0% | 0.0% | 12.4% |
| 11 | 0.0% | 0.0% | 0.0% | 7.4% |
| 12 | 0.0% | 0.0% | 0.0% | 7.8% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-11: Households Options in CBs Covered by Pattersonville Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 2.3% | 0.0% | 0.0% | 0.0% |
| 2 | 67.5% | 0.0% | 0.0% | 0.0% |
| 3 | 22.6% | 0.1% | 0.0% | 0.0% |
| 4 | 7.5% | 1.9% | 0.0% | 0.0% |
| 5 | 0.0% | 57.5% | 2.3% | 0.0% |
| 6 | 0.0% | 27.9% | 22.9% | 0.0% |
| 7 | 0.0% | 12.6% | 52.4% | 0.1% |
| 8 | 0.0% | 0.0% | 17.2% | 1.0% |
| 9 | 0.0% | 0.0% | 5.2% | 22.4% |
| 10 | 0.0% | 0.0% | 0.0% | 41.2% |
| 11 | 0.0% | 0.0% | 0.0% | 30.2% |
| 12 | 0.0% | 0.0% | 0.0% | 5.1% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-12: Households Options in CBs Covered by State Telephone Co.

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 1.9% | 0.0% | 0.0% | 0.0% |
| 2 | 48.3% | 0.0% | 0.0% | 0.0% |
| 3 | 35.1% | 0.0% | 0.0% | 0.0% |
| 4 | 12.6% | 4.8% | 0.0% | 0.0% |
| 5 | 2.1% | 17.6% | 0.9% | 0.0% |
| 6 | 0.0% | 49.5% | 5.9% | 0.0% |
| 7 | 0.0% | 19.9% | 27.1% | 0.0% |
| 8 | 0.0% | 6.0% | 29.3% | 0.9% |
| 9 | 0.0% | 2.1% | 25.3% | 3.0% |
| 10 | 0.0% | 0.0% | 6.5% | 12.1% |
| 11 | 0.0% | 0.0% | 5.1% | 36.2% |
| 12 | 0.0% | 0.0% | 0.0% | 25.2% |
| 13 | 0.0% | 0.0% | 0.0% | 15.0% |
| 14 | 0.0% | 0.0% | 0.0% | 6.4% |
| 15 | 0.0% | 0.0% | 0.0% | 1.1% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.

## Table D-13: Households Options in CBs Occupied by the 5 TDS NSICs (Combined)

| Number of Providers | Wireline Only | Wireline and Mobile | Wireline, Fixed Wireless and Satellite | Wireline, Mobile, Fixed Wireless and Satellite |
|---|---|---|---|---|
| 1 | 14.6% | 0.0% | 0.0% | 0.0% |
| 2 | 64.9% | 3.1% | 0.0% | 0.0% |
| 3 | 18.6% | 8.4% | 0.0% | 0.0% |
| 4 | 1.5% | 23.5% | 0.0% | 0.0% |
| 5 | 0.4% | 32.9% | 7.7% | 0.0% |
| 6 | 0.0% | 26.2% | 39.7% | 3.1% |
| 7 | 0.0% | 5.1% | 35.1% | 7.2% |
| 8 | 0.0% | 0.7% | 14.9% | 16.6% |
| 9 | 0.0% | 0.0% | 2.1% | 22.4% |
| 10 | 0.0% | 0.0% | 0.5% | 21.4% |
| 11 | 0.0% | 0.0% | 0.0% | 23.5% |
| 12 | 0.0% | 0.0% | 0.0% | 5.1% |
| 13 | 0.0% | 0.0% | 0.0% | 0.7% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Note: Percentages are based on 2010 U.S. Census households compiled by IPUMS. Analysis includes CBs containing households.