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August 28, 2020

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: NECA 2021 Modification of the Average Schedule Universal Service High Cost Loop Support Formula, WC Docket No. 05-337

Dear Ms. Dortch:

Attached is *NECA's 2021 Modification of the Average Schedule Universal Service High Cost Loop Support Formula*. This filing contains proposed modifications to the formula used to calculate interstate universal service fund high cost loop expense adjustments for average schedule companies. These average schedule modifications are scheduled to take effect on January 1, 2021 and remain in effect through December 31, 2021.

This *2021 Modification of the Average Schedule Universal Service High Cost Loop Support Formula* has been filed electronically in the above-referenced docket.

Sincerely,

A handwritten signature in blue ink, appearing to read "Robert J. Deegan", is written over a horizontal line.

Attachment:
2021 Modification of the Average Schedule Universal Service High Cost Loop Support Formula

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

2021

NECA  MODIFICATION OF
THE AVERAGE SCHEDULE UNIVERSAL SERVICE
HIGH COST LOOP SUPPORT FORMULA

August 28, 2020

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**NECA MODIFICATION OF THE AVERAGE SCHEDULE
UNIVERSAL SERVICE HIGH COST LOOP SUPPORT FORMULA
EFFECTIVE JANUARY 1, 2021**

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UNIVERSAL SERVICE HIGH COST LOOP SUPPORT FORMULA
EFFECTIVE JANUARY 1, 2021**

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**NECA MODIFICATION OF THE AVERAGE SCHEDULE
UNIVERSAL SERVICE HIGH COST LOOP SUPPORT FORMULA
EFFECTIVE JANUARY 1, 2021**

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Summary

In this filing, the National Exchange Carrier Association, Inc. (NECA) proposes modifications to the formula used to calculate Universal Service Fund (USF) high cost loop (HCL) expense adjustments for average schedule companies.¹ This formula and associated cost per loop values are intended to govern HCL payments to average schedule companies eligible for HCL support in the 2021 calendar year.²

This filing describes results of NECA's studies to update the HCL Cost per Loop (CPL) formula, which continues to use methods approved by the Commission for determining average schedule USF payments in 2020.³ As required by the FCC's March 30, 2016 *Rate of Return Reform Order*,⁴ NECA continues to incorporate a 25-basis point annual reduction in the rate of return (RoR) used to compute the formulas. The *Rate of Return Reform Order* also adopted limits on operating expenses to be recovered through support. Under the proposed formulas, an Operating Expense

¹ NECA submits proposed modifications to the average schedule HCL formula on an annual basis. See *National Exchange Carrier Association, Inc. 2005 Modification of Average Schedule Universal Service Formulas*, CC Docket No. 96-45, Order, 19 FCC Rcd. 24998 (2004).

² Section 54.1305 of the Commission's rules require all rate of return carriers to provide High Cost Loop Support data. Effective July 1, 2019, the Commission granted forbearance from this requirement for companies receiving model-based support and electing incentive-based regulation for BDS as of July 1, 2019 and as of July 1, 2020. The proposed formula and the associated cost per loop values will be used to satisfy the reporting requirements for all carriers still required to submit HCL data, including average schedule companies receiving A-CAM, A-CAM II and Alaska Plan support and not eligible to receive HCL support. *Regulation of Business Data Services for Rate-of-Return Local Exchange Carriers, et al.*, WC Docket No. 17-144, *et al.*, Report and Order, 33 FCC Rcd. 10403 (2018).

³ *National Exchange Carrier Association, Inc., 2020 Modification of the Average Schedule Universal Service Support Formula, High-Cost Universal Service Support*, WC Docket No. 05-337, Order, 34 FCC Rcd. 11205 (2019).

⁴ *Connect America Fund*, WC Docket No. 10-90, *ETC Annual Reports and Certifications*, WC Docket No. 14-58, *Developing a Unified Inter-carrier Compensation Regime*, CC Docket No. 01-92, Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking, 31 FCC Rcd. 3087 (2016) (*Rate of Return Reform Order*).

(Opex) Limit Factor is accordingly applied to average schedule companies' cost per loop and USF payments.

A. Background

The proposed average schedule HCL formula change is needed to assure payments to average schedule companies will simulate payments received by representative cost companies, as required by section 69.606(a) of the Commission's rules.

NECA proposes herein a formula relating cost per loop data of sample companies to their loops per exchange values (see Exhibit 1) as well as an Opex limit factor to be applied to average schedule companies subject to Opex limits. NECA includes cost per loop amounts based on this formula for every average schedule study area entitled to an expense adjustment pursuant to section 54.1301, in its Annual Universal Service Fund Submission of Study Results. These cost per loop amounts, when used with the payment algorithm prescribed in section 54.1310 of the Commission's rules, will produce HCL payments to individual companies consistent with the Commission's rules.

Annual payments to average schedule companies under the proposed formula will total approximately \$4.022 million payable to 74 average schedule study areas in 2021.⁵ These payments reflect the maintenance of the cap on the overall fund size. In comparison, payments in 2020 under the current formula are expected to amount to \$3.14 million paid to 59 study areas.⁶ The proposed payments represent an increase of \$0.882 million, about 28.1%, compared to current payments. Most of this increase is attributed to the change in payment rules that took effect on July

⁵ This amount is prior to application, where applicable, of USAC adjustments for the per line per month support cap and the overall budget control mechanism.

⁶ These numbers reflect only the average schedule population eligible to receive HCL support in 2021.

1, 2015.⁷ Under the new payment rules, the fund size is controlled with across-the-board payment cuts rather than by adjusting the NACPL to keep total payments under the cap. Under this method of controlling the fund, modest increases in CPL when the CPL is close to the payment threshold, produce significantly higher percent increases in expense adjustments per loop than the same percent increase in CPL when the CPL is further from the payment threshold. Average schedule companies are low cost companies with CPLs close to the lower 115% payment threshold, so even a small increase in CPL can produce a relatively larger percent increase in HCL payments.

It should be noted the average schedule portion of high cost loop funding is small, in part because average schedule companies generally have costs between 115% and 150% of the frozen National Average Cost per Loop (NACPL), and thus receive support compensating for only a minor portion of their loop costs. HCL funding for all rural companies eligible for HCL Support in 2021 will amount to \$375.9 million. If the Commission approves the CPL formula proposed herein, the \$4.022 million in HCL funding made available in 2021 to average schedule companies will represent only 1.07% of the total rural rate of return HCL fund. In contrast, there are 87 average schedule study areas, representing 19.9% of the 438 total rural study areas eligible to receive HCL Support.⁸

⁷ On December 18, 2014, the FCC issued Report and Order that alters the way the High Cost Loop Support expense adjustments are calculated beginning July 1, 2015. *See Connect America Fund*, WC Docket No. 10-90, *ETC Annual Reports and Certifications*, WC Docket No. 14-58, *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) from Obsolete ILEC Regulatory Obligations that Inhibit Deployment of Next-Generation Networks*, WC Docket No. 14-192, Report and Order, 29 FCC Rcd. 15644 (2014) ¶¶ 102-114.

⁸ A total of 455 cost companies and 194 average schedule companies, receiving ACAM and Alaska Plan support, are not eligible to receive HCLS support in 2021. Out of these, 155 cost and 42 average schedule companies have elected incentive-based regulation for BDS and are no longer required to submit HCL data.

B. Procedural Aspects

In preparing proposed formula revisions, NECA receives valuable assistance from the Average Schedule Task Group. This group consists of exchange carrier representatives including members sponsored by industry associations (*e.g.* NTCA – the Rural Broadband Association, USTelecom, and the WTA – Advocates for Rural Broadband). The Task Group meets several times a year, reviews the steps taken in developing proposed average schedule formulas, advises NECA regarding the development of procedures for administration of the formulas, and assists the NECA Board of Directors in evaluating final proposed formulas. Task Group participation assures average schedule companies are able to participate fully in the development of the average schedule formulas, and also have an opportunity to provide input to NECA regarding the ways in which changes in average schedule company networks can affect settlement formulas.

As it has done in the past for each proposed average schedule modification, NECA will provide a statement to each average schedule company advising it of the impacts of these proposed modifications. This detailed, individual notification includes a brief overview of the new formula as well as the factors contributing to changes in a company's support amount (*e.g.* changes in loop counts and exchange count data). These notifications assure average schedule companies are aware of proposed changes in the support formula and the impact on their settlements to enable them to plan accordingly. NECA also provides data based on this formula to USAC for USF administration.

Exhibit 1

Proposed High Cost Loop (HCL) Formula for 2021

Average Schedule HCL Formula = Cost per Loop (CPL) Formula x Opex Limit Factor

CPL Formula

If Loops per exchange are less than 750, then:

$$\text{CPL} = \$1374.674968 - \$0.779715 \times \text{Loops per exchange}$$

If Loops per exchange are greater than or equal to 750 but less than 1,700, then:

$$\text{CPL} = \$835.96509 - \$0.061435 \times \text{Loops per exchange}$$

If Loops per exchange are greater than or equal to 1,700, then:

$$\text{CPL} = \$731.53.$$

Opex Limit Factor

If exchanges are not subject to section 54.305 rules,⁹ then:

Opex limit factor = 0.999925, otherwise:

Opex limit factor = 1.

⁹ Per the *Rate of Return Reform Order*, the Opex limit does not apply to acquired exchanges subject to section 54.305 or to study areas entirely composed of acquired exchanges.

C. Data Used to Develop the Proposed Formula

This section describes the data underlying the proposed HCL formula. Data comes from three sources:

1. USF data submitted by the population of Subset 3 study areas settling on a cost basis.
2. Financial accounts and loop data from a sample of average schedule study areas.
3. Access line and exchange count data from the entire population of average schedule study areas.

Subset 3 cost study areas provided categorized account data used to compute cost categorization factors. These data were collected in connection with the 2019 annual USF Data Submission and are available in the excel file included with that submission.¹⁰

Account data and loop information were collected from the average schedule study areas sampled in 2018 and 2019. The 2018 sample provided 2017 financial accounts and loop information for 2018. The 2019 sample provided 2018 financial accounts and loop information for 2019. These data were used to determine Universal Service Fund (USF) loop cost values for each company, as described in the next section.

Loop data and access line counts from the sample were used to calculate a loop count value for each sample average schedule company. In the annual collection of data from sample study areas, NECA collects the following loop information to supplement access line counts: company official lines, off-premise extensions and special access lines. NECA calculated the count of

¹⁰ See *2019 NECA Universal Service Fund Submission of 2018 Study Results*, National Exchange Carrier Association, Inc. (filed Sept. 30, 2019) (*NECA 2019 USF Data Submission*).

USF loops for each sample study area as the sum of access lines, company official lines and off-premises extensions bridged in the central office.

A loops-per-access line ratio was calculated by dividing sample total USF loops by sample total access lines. Totals used in this calculation were weighted using sample weights. Sample weights are used to expand the sample to a population estimate. A study area's sample weight is the reciprocal of the probability of it being included in the sample. The sample weight measures the count of units in the population a member of the sample represents. For example, a study area with a sample weight of three represents three study areas in the average schedule population. An unbiased estimate of the population is achieved by weighting access line data in this manner. This means an estimate developed by this method is expected to neither overestimate nor underestimate the loops-per-access line ratio.

$$2021 \text{ Fund Loops per Access Line Ratio} = 1.020159$$

Account and loop data from the sample were projected to December 2019 levels using the methods and growth models developed in NECA's 2019 study and filed in the 2020 NECA Modification of Average Schedules.¹¹

¹¹ The growth rates development method description is included in Section V.B and V.C of NECA's December 2019 settlements formula filing. *See National Exchange Carrier Association, Inc. 2020 Modification of Average Schedules*, WC Docket No. 19-371 (filed Dec. 23, 2019).

Access line¹² data and exchange counts for the population of average schedule study areas were taken from NECA's settlement system for the month of December 2019 based on the June 2020 view. For the purpose of evaluating the proposed formula on each member of the average schedule population, USF loop counts were calculated for each study area using the loops per access line ratio.

$$USF \text{ Loops} = \text{Access Lines} \times \text{Loops per Access Line Ratio}$$

USF loops and exchange counts for each average schedule study area are displayed in Appendix C.

D. HCL CPL Formula

This section describes the derivation of the average schedule CPL formula and Opex limit factor by:

- Computing categorization factors from Subset 3 cost company data;
- Determining loop costs for sample average schedule study areas using these factors and projected accounts;
- Using sample companies' loop cost and loops per exchange data to derive a statistical regression model; and
- Comparing sample companies' CPL capped by the FCC's Opex limits and actual uncapped

¹² Average schedule companies, participating in the NECA pools, are required to report access line counts to NECA each month based on their billing of End User Common Line (EUCL) charges associated with basic local exchange service. Average schedule companies that do not participate in NECA pools are not required to report monthly access line counts to NECA. Year-end access line count data from these companies is obtained using an annual line count data collection. NECA uses the December line counts to calculate USF loops for all average schedule companies. The resulting loop counts are included in the annual USF data submission filed on October 1st of each year.

CPL to derive an overall Opex limit factor.

These steps are explained in the following four subsections.

1. Calculation of Categorization Factors from Subset 3 Cost Companies

Cost companies submit categorized data to NECA pursuant to section 54.1305 of the Commission's rules.¹³ This data was used to compute average USF loop cost categorization factors. Loop cost categorization factors are the cost company fractions of accounts attributed to loop. They were developed from accounts related to Exchange Line Cable and Wire Facilities (C&WF, Category 1) and Exchange Line Central Office Circuit equipment (Category 4.13).

For example, by computing the ratio of cost company Central Office Equipment (COE) Category 4.13 investment to total cost company COE investment, NECA developed average categorization factors for Category 4.13 investment. Loop cost categorization factors were developed for each of NECA's five geographical regions, to recognize categorization differences in circuit equipment and cable and wire facilities across regions.

Exhibit 2 summarizes how these categorization factors were computed from cost company data, and how they were used to allocate sample average schedule companies' projected accounts. The first column names the Algorithm line corresponding to instructions in Tab 3 of NECA's Universal Service Fund (USF) 2019 Submission of 2018 Study Results.¹⁴ Algorithm lines AL3, AL4, AL5 and AL6 are categorization factors

¹³ Data was taken from the USF Data submission filed with the Commission on September 30, 2019. See *NECA 2019 USF Data Submission*.

¹⁴ *Id.*

defined in the USF submission to apportion unseparated cost accounts to loop.

Algorithm lines 13 through 24 are the various cost components of loop cost. Line 25 is the total unseparated loop cost. Line 26 is the cost per loop. Loop cost components are named in the second column in Exhibit 2. The third column is a description of each algorithm line and the last column presents cost categorization formulas used to calculate the value for each sample average schedule company.

Algorithm Lines 23 and 24 in Exhibit 2 use Adjustment Ratios to allocate Total Accumulated Depreciation to C&W Facilities and COE Transmission. This is done to ensure the amount of reserves assigned to loop is in proportion to the amount of investment assigned to loop. The adjustment ratio is calculated as follows:

$$\text{Adjustment Ratio} = \frac{\text{Proportion Of Reserves Allocated To Loop}}{\text{Proportion Of Investment Allocated To Loop}}$$

For example, an adjustment ratio of 0.98534 for Cable & Wire Facilities means the portion of reserves allocated to Loop is 98.53% of the portion of Cable & Wire Facilities investment allocated to Loop. Exhibit 3 describes the derivation of these ratios.

In the *Rate of Return Reform Order* the Commission re-prescribed the 11.25 percent rate of return to 9.75 percent with a 25-basis point reduction per year over a six year transition period. July 1, 2016 was the effective date for the initial transitional rate of 11%. That rule was first implemented in the average schedule CPL formula by an Interim

Modification filed by NECA on May 13, 2016,¹⁵ effective July 1, 2016. The second step of the rate of return transition, to 10.75 percent, was effective July 1, 2017. The third step of the rate of return transition, to 10.50 percent was effective July 1, 2018. The fourth step of the rate of return transition, to 10.25 percent was effective July 1, 2019. The fifth step of the rate of return transition, to 10.0 percent was effective July 1, 2020. The sixth step of the rate of return transition, to 9.75 percent will be effective July 1, 2021. Because the 2021 HCL support year encompasses two transitional rate of return reductions, NECA applied a blended rate of return of 9.875 percent when calculating algorithm lines 23 and 24 to estimate cost per loop. This represents a 10 percent rate of return in effect for the first six months of 2021 and 9.75 percent for the last six months of 2021.

¹⁵ *NECA 2016 Further Modification of the Average Schedule Universal Service High Cost Loop Support Formula*, WC Docket No. 05-337.

Exhibit 2

Allocation of Average Schedule Accounts to Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL3		Factor A: C&WF Cat. 1/Total C&WF	Average ratio by region based on cost company data
AL4		Factor B: COE Cat. 4.13/Total COE	Average ratio by region based on cost company data
AL5		Factor C (C&WF Gross Allocator): C&WF Cat. 1/Total Plant in Service	Average ratio by region based on cost company data
AL6		Factor D (COE Gross Allocator): COE Cat. 4.13/Total Plant in Service	Average ratio by region based on cost company data
AL13	C&WF Maintenance	C&WF Maintenance Expense assigned to Cat. 1 C&WF R&B Factor = $\frac{\text{C&WF R\&B Exp.}}{\text{C&WF Expense}}$	Factor A x (1 - C&WF R&B Factor) x <u>C&WF Expense</u> ¹⁶
AL14	COE Maintenance	COE Maintenance Expense assigned to Cat. 4.13 COE R&B Factor = $\frac{\text{COE R\&B Exp.}}{\text{COE Expense}}$	Factor B x (1 - COE R&B Factor) x <u>COE Expense</u>
AL15	Network and General Support Expense	Network Support Expense plus General Support Expense assigned to C&WF Cat. 1 and to COE Cat. 4.13 Net. Spt. R&B Factor = $\frac{\text{Network Spt. R\&B Exp.}}{\text{Network Support Expense}}$ Gen. Spt. R&B Factor = $\frac{\text{General Spt. R\&B Exp.}}{\text{General Support Expense}}$	(Factor C + Factor D) x [(1 - Network Support R&B Factor) x <u>Network Support Expense</u> + (1 - General Support R&B Factor) x <u>General Support Expense</u>]

¹⁶ Amounts underlined are data or calculated values of sample average schedule study areas. Other values are cost company factors.

Exhibit 2

Allocation of Average Schedule Accounts to Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL16	Network Operations Expense	Network Operations Expense assigned to C&WF Cat. 1 and to COE Category 4.13 Ntwk. Oper. R&B Factor = $\frac{\text{Ntwk. Oper. R\&B Exp.}}{\text{Ntwk. Oper. Expense}}$	(Factor C + Factor D) x (1 - Network Operations R&B Factor) x <u>Network Operations Expense</u>
AL17	C&WF Depreciation & Amortization Expense	Depreciation & Amortization Expense assigned to C&WF Category 1 Dep. Exp. C&WF Factor = $\frac{\text{Dep. \& Amort. Exp. CWF}}{\text{C\&WF}}$ Tangibles -- C&WF = $\frac{\text{Amort. Tangible Assets -- C\&WF}}{\text{Amort. Tangible Assets}}$ Depreciation--Tang. Factor = $\frac{\text{Deprec. -- Tangibles}}{\text{Tangibles}}$	Factor A x [(Depreciation Expense Factor--C&WF x $\frac{\text{C\&WF}}{\text{C\&WF}}$) + (Depreciation Expense Factor—Tangibles x <u>Tangibles</u>) + (Tangibles Factor -- C&WF x <u>Amort. Tangible Assets</u>)]

Exhibit 2

Allocation of Average Schedule Accounts to Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL18	COE Depreciation & Amortization Expense	Depreciation & Amortization Expense assigned to COE Category 4.13 $\text{Dep. Exp. COE Factor} = \frac{\text{Dep. \& Amort. Exp. COE}}{\text{COE}}$ $\text{Tangibles -- COE} = \frac{\text{Amort. Tangible Assets -- COE}}{\text{Amort. Tangible Assets}}$ $\text{Depreciation--Tang. Factor} = \frac{\text{Deprec.--Tangibles}}{\text{Tangibles}}$	Factor B $\times [(\text{Depreciation Expense Factor--COE} \times \text{COE}) + (\text{Depreciation Expense Factor--Tangibles} \times \text{Tangibles}) + (\text{Tangibles Factor -- COE} \times \text{Amort. Tangible Assets})]$
AL19	Corporate Operations Expense	Corporate Operations Expense assigned to C&WF Cat. 1 and to COE Cat. 4.13, limited as per § 54.1308(a)(4) ¹⁷	(Factor C + Factor D) $\times \text{Corporate Operations Expense}$

¹⁷ For purposes of the USF Data Submission, Corporate Operations Expenses were subject to the cap imposed by the Commission in its Report and Order and Further Notice of Proposed Rulemaking released November 18, 2011. *Connect America Fund, et al.*, WC Docket No. 10-90, *et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 17663 (2011) ¶¶ 232-233, further modified by the Commission in the March 23, 2018 Order to include consumer broadband-only lines in the calculation of the Corporate Operations Expenses limit formula. *See Connect America Fund, et al.*, WC Docket No. 10-90, *et al.*, Report and Order, Third Order on Reconsideration, and NPRM, 33 FCC Rcd. 2990 (2018) (*March 23, 2018 Order*).

Exhibit 2

Allocation of Average Schedule Accounts to Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL20	Operating Taxes	Operating Taxes assigned to C&WF Cat. 1 and to COE Cat. 4.13 Operating Taxes Factor = $\frac{\text{Operating Taxes}}{\text{Total Plant in Service}}$	$(\text{Factor C} + \text{Factor D})$ $\times \text{Operating Taxes Factor}$ $\times \underline{\text{Total Plant in Service}}$
AL21 + AL22	Benefits & Rents	Benefits & Rents other than Corporate Operations Expense assigned to C&WF Cat. 1 and COE Cat. 4.13 $\text{C\&WF R\&B Factor} = \frac{\text{C\&WF R\&B Expense}}{\text{C\&WF Expense}}$ $\text{COE R\&B Factor} = \frac{\text{COE R\&B Expense}}{\text{COE Expense}}$ $\text{Net. Sup. R\&B Factor} = \frac{\text{Network Sup. R\&B Exp.}}{\text{Network Support Expense}}$ $\text{Gen. Sup. R\&B Factor} = \frac{\text{General Sup. R\&B Exp.}}{\text{General Support Expense}}$	$(\text{Factor C} + \text{Factor D})$ $\times [(\text{C\&WF R\&B Factor} \times \underline{\text{C\&WF Expenses}})$ $+ (\text{COE R\&B Factor} \times \underline{\text{COE Expenses}})$ $+ (\text{Net. Sup. R\&B Factor} \times \underline{\text{Net. Sup. Expenses}})$ $+ (\text{General Sup. R\&B Factor} \times \underline{\text{General Sup. Expenses}})$ $+ (\text{Net. Op. R\&B Factor} \times \underline{\text{Net. Op. Expenses}})]$

Exhibit 2

Allocation of Average Schedule Accounts to Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL23	C&WF Return	<p>Return Component for C&WF Cat. 1</p> <p>C&WF Cat. 1 Factor = $\frac{\text{C\&WF Cat. 1}}{\text{C\&WF}}$</p> <p>Tangibles -- C&WF Factor = $\frac{\text{Tangibles --C\&WF}}{\text{Tangibles}}$</p> <p>Accum. Dep. Adj. Ratio -- C&WF (See Exhibit 3)</p>	<p>{(C&WF Cat. 1 Factor x <u>C&WF</u>)</p> <p>+ (Tangibles Factor--C&WF x <u>Tangibles</u>)</p> <p>+ (Factor C x <u>Materials & Supplies</u>)</p> <p>- Factor A x [(Accum. Dep. Adj. Ratio – C&WF</p> <p>x <u>Acc. Dep.</u> x <u>%C&WF of TPIS</u>)</p> <p>+ (Net N.C. D. OIT Factor--C&WF x <u>TPIS</u>)</p> <p>+ (Tangibles Factor--C&WF x <u>Acc. Amo.-</u> <u>Tangibles</u>)]} x 0.09875</p>
AL24	COE Return	<p>Return Component for COE Cat. 4.13</p> <p>COE Cat. 4.13 Factor = $\frac{\text{COE Cat. 4.13}}{\text{COE}}$</p> <p>Tangibles -- COE Factor = $\frac{\text{Tangibles --COE}}{\text{Tangibles}}$</p> <p>Accum. Dep. Adj Ratio -- COE. (See Exhibit 3)</p>	<p>{(COE Cat. 4.13 Factor x <u>COE</u>)</p> <p>+ (Tangibles Factor--COE x <u>Tangibles</u>)</p> <p>+ (Factor D x <u>Materials & Supplies</u>)</p> <p>- Factor B x [(Accum. Dep. Adj Ratio -- COE</p> <p>x <u>Acc. Dep</u> x <u>%COE of TPIS</u>)</p> <p>+ (Net N.C. Def. OIT Factor --COE x <u>TPIS</u>)</p> <p>+ (Tangibles Factor--COE x <u>Acc. Amo.-</u> <u>Tangibles</u>)]} x 0.09875</p>
AL25	Loop Costs	Total Unseparated Loop Cost	Sum of AL13 -- AL24
AL26	Cost per Loop	Study Area Cost per Loop	AL25 Divided by Total Loops

Exhibit 3

Adjustment Ratios for Allocation of Total Accumulated Depreciation

Description	Calculation	Factor name
COE Transmission fraction of TPIS	Sum DL240 / Sum DL160	TPIS % 2230
C&W Facilities fraction of TPIS	Sum DL255 / Sum DL160	TPIS % 2410
COE Transmission fraction of Tot. Acc. Dep.	Sum DL270 / Sum DL190	ACCT 3100 % 2230
C&W Facilities fraction of Tot. Acc. Dep.	Sum DL280 / Sum DL190	ACCT 3100 % 2410
Adjustment Ratio for COE Transmission.	ACCT 3100 % 2230 / TPIS % 2230	Accum. Dep. Adj. Ratio - COE
Adjustment Ratio for C&W Facilities.	ACCT 3100 % 2410 / TPIS % 2410	Accum. Dep. Adj. Ratio - C&WF

- DL240 = COE Transmission (Acct 2230)
- DL255 = C&WF Total (Acct 2410)
- DL160 = Total Plant in Service (TPIS)
- DL270 = Accumulated Depreciation - COE Transmission Equipment
- DL280 = Accumulated Depreciation - Cable & Wire Facilities
- DL190 = Accumulated Depreciation

Exhibit 4 displays the computed values of the loop cost categorization factors from sample cost companies, in each of NECA's five geographical regions.¹⁸

¹⁸ Regions are defined by groups of states or territories as follows:
 REGION 1 (Eastern): CT, DC, DE, MA, MD, ME, NH, NJ, NY, PA, PR, RI, VA, VI, VT, WV
 REGION 2 (Southern): AL, FL, GA, KY, LA, MS, NC, SC, TN
 REGION 3 (Southwestern): AR, HI, IL, IN, KS, MI, MO, MP, OH, OK, TX, WI
 REGION 4 (Western): AK, AS, AZ, CA, CO, GU, ID, MT, NM, NV, OR, UT, WA, WY
 REGION 5 (North Central): IA, MN, ND, NE, SD

Exhibit 4

Loop Cost Categorization Factors from Sample Cost Companies

FACTOR	REGION1	REGION2	REGION3	REGION4	REGIONS5
FACTOR A	0.88393	0.90148	0.84080	0.79804	0.82842
FACTOR B	0.39055	0.49932	0.49513	0.47435	0.47201
FACTOR C	0.50936	0.61986	0.58028	0.52652	0.54430
FACTOR D	0.10925	0.10260	0.10111	0.10500	0.10843
C&WF RENTS & BENEFITS	0.37407	0.34652	0.27253	0.29164	0.29568
COE RENTS & BENEFITS	0.12015	0.17094	0.17831	0.18801	0.20861
TANGIBLES - C&WF	0.00000	0.00000	0.45104	0.00000	0.40430
TANGIBLES - COE TRANSMISSION	0.00000	0.00000	0.00000	0.13157	0.46127
TANGIBLES - COE CATEGORY 4.13	0.00000	0.00000	0.00000	0.07151	0.10483
ACCUMULATED DEPRECIATION - C&WF	0.56779	0.65180	0.62961	0.60158	0.53322
ACCUMULATED DEPRECIATION - COE TRANS.	0.20612	0.21588	0.21636	0.22305	0.29277
NET NON-CURR DEF FIT-C&WF- Commercial Comp.	0.02106	0.02323	0.03584	0.02747	0.03827
NET NON-CURR DEF FIT-C&WF- Coops	0.00000	0.00000	0.00000	0.00000	0.00000
NET NON-CURR DEF FIT-COE TRANS.- Comm Comp.	0.00813	0.00561	0.00593	0.01089	0.01170
NET NON-CURR DEF FIT-COE TRANS.- Coops	0.00000	0.00000	0.00000	0.00000	0.00000
NETWORK SUPPORT RENTS & BENEFITS	0.16993	0.20572	0.14797	0.38946	0.23817
GENERAL SUPPORT RENTS & BENEFITS	0.15901	0.18084	0.23438	0.30239	0.18723
NETWORK OPERATIONS BENEFITS	0.18021	0.23881	0.24796	0.27301	0.27741
DEPRECIATION EXPENSE - C&WF	0.03525	0.03863	0.03654	0.03764	0.04139
DEPRECIATION EXPENSE -COE TRANSMISSION	0.04987	0.06626	0.06485	0.07443	0.07152
DEPRECIATION - TANGIBLES	0.00000	0.00000	0.02255	0.00000	0.00000
ACCUM. DEP. ADJ. RATIO - COE	1.03859	1.16073	1.23854	1.16932	1.40108
ACCUM. DEP. ADJ. RATIO - C&WF	0.98534	0.94794	0.91227	0.91183	0.81156
OPERATING INCOME TAX - Cooperatives	0.00431	0.00410	0.00420	0.00490	0.00276
OPERATING INCOME TAX-Commercial Companies	0.00881	0.00794	0.00941	0.00910	0.00426

2. Calculation of Loop Cost for Sample Average Schedule Companies

NECA calculated loop costs for sample average schedule companies consistent with the Part 54 rules that apply to cost companies. Accordingly, for each average schedule study area in the sample, the loop cost is the accumulation of components of accounts assigned to loop. Costs assigned to the loop include C&WF investment in Category 1, COE investment in Category 4.13 and other accounts assigned proportionately based on these accounts. The portion of costs in accounts assigned to loop were determined using the allocation ratios derived from cost companies.

NECA applied the cost categorization factors shown in Exhibit 4 to uncategorized projected accounts from sample average schedule study areas to produce unseparated average schedule category-level loop costs. Section 54.1308 of the Commission's rules describes various unseparated accounts making up a study area's total unseparated loop costs. Following this method, the unseparated loop cost for each sample average schedule study area was determined by summing the following categories related to COE Category 4.13 and C&WF Category 1 plant, as follows.

$$\begin{aligned} \text{Loop Cost} = & \text{Maintenance Expense} + \text{Network \& General Support Expenses} \\ & + \text{Network Operations Expense} + \text{Depreciation \& Amortization Expense} \\ & + \text{Corporate Operations Expense} + \text{Operating Taxes} + \text{Benefits Expense} \\ & + \text{Rent Expense} + \text{Return on Investment} \end{aligned}$$

Exhibit 5 presents the results of loop cost calculations for the average schedule sample.

Exhibit 5

Allocation of Unseparated Total Accounts to Loop Weighted Total Data from the Average Schedule Sample

HCL Algorithm Line	Cost Category	Calculation Method	Total Account Per Loop	Avg Loop %	Loop Cost Per Loop
1	C&WF Category 1	Cost Company Factor	5,009.83	0.8521	4,268.93
2	COE Category 4.13	Cost Company Factor	1,785.79	0.4704	840.02
3	Factor A	% C&WF Cat 1 of Total C&WF	5,009.97	0.8521	4,268.93
4	Factor B	% COE Cat 4.13 of Total COE	1,785.79	0.4704	840.02
5	Factor C	% C&WF Cat 1 of TPIS	7,823.32	0.5457	4,268.93
6	Factor D	% COE Cat 4.13 of TPIS	7,823.32	0.1074	840.02
7	Materials & Supplies for CWF Cat 1	Factor C x M&S	104.81	0.5450	57.13
8	Materials & Supplies for COE Cat 4.13	Factor D x M&S	104.81	0.0936	9.81
9	Reserves for CWF Cat 1	Factor A x Reserves	5,475.20	0.4886	2,675.40
10	Reserves for COE Cat 4.13	Factor B x Reserves	5,475.20	0.1384	757.99
11	Factor E	% Net C&WF Cat 1 of Net TPIS	2,458.56	0.6714	1,650.66
12	Factor F	% Net COE Cat 4.13 of Net TPIS	2,458.56	0.0374	91.84
13	Maintenance of C&WF Cat 1	Factor A x (Maintenance - R & B)	131.11	0.5856	76.78
14	Maintenance of COE Cat 4.13	Factor B x (Maintenance - R & B)	97.87	0.3662	35.84
15a	Network Support Assigned to Loop	(Fact C + Fact D) x (Net Sup Exp - R&B)	7.87	0.5163	4.06
15b	General Support Assigned to Loop	(Fact C + Fact D) x (Gen Sup Exp - R&B)	51.73	0.5171	26.75
16	Network Operations Assigned to Loop	(Fact C + Fact D) x (Net Ops Exp - R&B)	93.70	0.4963	46.50
17	Depreciation of C&WF Cat 1	C&WF Cat 1 x C&WF Deprec Rate	4,268.93	0.0388	165.65
18	Depreciation of COE Cat 4.13	COE Cat 4.13 x COE Deprec Rate	840.02	0.0621	52.20
19	Corporate Oper. Exp. Assigned to Loop	(Fact C + Fact D) * Corp. Oper. Exp.	242.66	0.6402	155.35
20	Operating Taxes Assigned to Loop	(Factor C + Factor D) x Oper Taxes	47.33	0.6510	30.81
21	Benefits in Oper. Exp. Assigned to Loop	(Fact C + Fact D) x (Benefits - Corp Ops)	288.59	0.2434	70.23
22	Rents in Oper Exp Assigned to Loop	(Fact C + Fact D) x (Rents - Corp Ops)	288.59	0.0401	11.58
23	Return on C&WF Cat 1	.09875 x Net CWF Cat 1	1,650.66	0.0988	163.00
24	Return on COE Cat 4.13	.09875 x Net COE Cat 4.13	91.84	0.0988	9.07
25	Total Loop Cost	Sum 13 Thru 24	8,100.92	0.1047	847.83

3. CPL Formula for 2021

This study develops a formula simulating the cost per loop data of sample companies, which is used to compute loop costs as the basis of expense adjustments for all average schedule companies. The underlying basis of the formula is the comparison of cost per loop data obtained from average schedule sample companies to their ratios of loops per exchange. Based on the relationship of these variables, a statistical model is developed and is used to compute the HCL cost per loop for each member of the total population of average schedule companies.

NECA used cost per loop data of sample average schedule study areas to derive a statistical regression model. This model form was first presented in the 2002 NECA Modification of Average Schedule Universal Service Formulas, filed on October 1, 2001, and approved by the Commission in its July 30, 2002 Order.¹⁹ The model relating cost per loop to loops per exchange in this year's study produces statistically significant coefficients. NECA proposes use of this model in 2021.

In Appendix B of this filing NECA presents the HCL cost per loop data for sample average schedule study areas. This section explains the use of that data to develop a statistical model for calculating CPL values for each study area in the average schedule population.

¹⁹ See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *National Exchange Carrier Association, Inc. Proposed 2002 Modification of Average Schedule Formulas*, Order, 17 FCC Rcd. 14236 (2002).

This model uses the outlier accommodation method for regression, first introduced in NECA's December 31, 1998 average schedule filing²⁰ and approved by the Commission.²¹ The threshold used in this calculation was equal to three standard deviations of the residuals. The outlier accommodation method uses weighted linear regression, with regression weights defined in two steps. First residuals and DFFITS values for each observation are determined by an unweighted linear regression. Then regression weights are calculated using these values.

If $\text{Abs}(\text{residual}) \leq \text{threshold}$, then regression weight_i = 1

$$\text{Else regression weight}_i = \left(\frac{C/2}{\text{DFFITS}_i} \right)^2, \text{ where } C = 2\sqrt{\frac{P+1}{N-P-1}}$$

P = number of model coefficients, N = number of observations

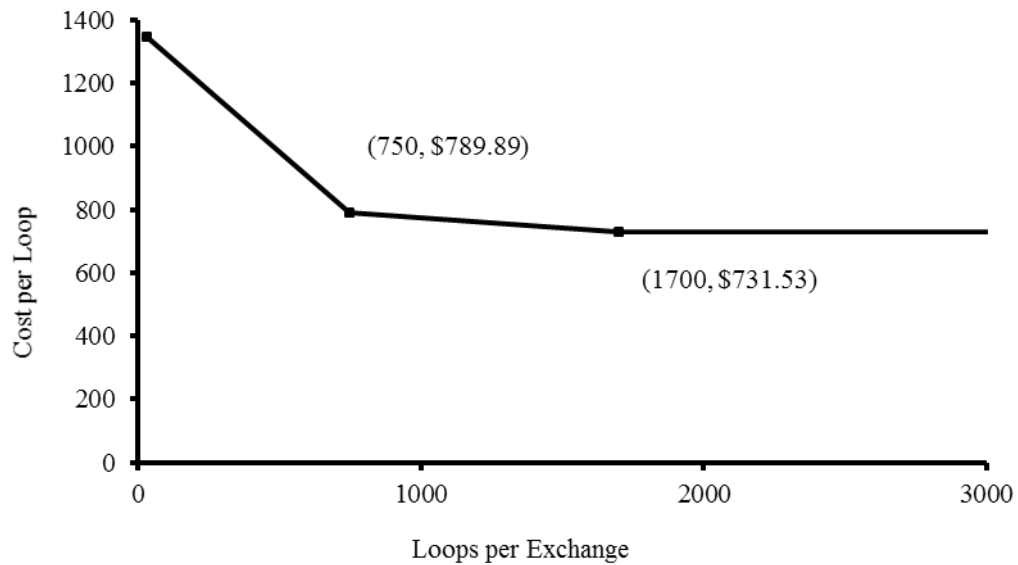
The model relates the CPL variable (the dependent variable) to the loops per exchange variable using constrained linear regression. The model reflects the CPL trend of sample companies, which show relatively higher costs associated with lower values of loops per exchange. This trend decreases at one rate for the smallest study areas, then decreases at slower rates for the group of midsize average schedule study areas, and finally levels off for the larger study areas.

²⁰ See *1999 NECA Modifications of Average Schedules*, National Exchange Carrier Association, Inc. (filed Dec. 31, 1998).

²¹ *National Exchange Carrier Association, Inc., Proposed Modifications to the 1999-2000 Interstate Average Schedule Formulas*, ASD 99-18, Order, 14 FCC Rcd. 9803 (1999).

The model consists of a set of connected lines, each corresponding to a designated range of loops per exchange. In this year's study, as in last year's study, the best fitting model supported three distinct ranges of loops per exchange values delimited by two breakpoints. NECA selected the formula breakpoints to assure support amounts would be accurately distributed across study areas in all size ranges. NECA tested sets of breakpoints and regression coefficients iteratively to determine the combination with the best fit to the data, resulting in breakpoints of 750 and 1,700 loops per exchange.

Exhibit 6
CPL Model



To fit the CPL formula to sample company data, NECA first calculated the overall average cost per loop of study areas with loops per exchange exceeding 1,700, using the standard weighted ratio estimation method. This method produced a formula CPL for this group of study areas of \$731.53. This CPL is a good statistical representation of the data for these study areas, which show a consistently flat trend as relates to loops per exchange.

$$\text{Cost per Loop (a3)} = \frac{\sum_{ECs > (1700 LPE)} \text{Sample Weight}_i * \text{Outlier Weight}_i * \text{Cost per Loop}_i * \text{Loops}_i}{\sum_{ECs > (1700 LPE)} \text{Sample Weight}_i * \text{Outlier Weight}_i * \text{Loops}_i}$$

Next, NECA used linear regression to solve for other parameters of the model. The regression model is a sequence of three connected straight lines specified as follows (CPL denotes the study area's cost per loop; LPE denotes each study area's loops per exchange, and BP denotes breakpoint).

$$\text{CPL}_i = [a_1 + b_1 \text{LPE}_i] \delta_{1i} + [a_2 + b_2 \text{LPE}_i] \delta_{2i} + a_3 \delta_{3i}$$

where: $\delta_{1i} = 1$, if $(\text{LPE}_i \leq \text{BP}_1)$, and $\delta_{1i} = 0$ otherwise.

$\delta_{2i} = 1$, if $(\text{BP}_1 < \text{LPE}_i \leq \text{BP}_2)$, and $\delta_{2i} = 0$ otherwise.

$\delta_{3i} = 1$, if $(\text{LPE}_i > \text{BP}_2)$ and $\delta_{3i} = 0$ otherwise.

The model is constrained at the breakpoints, BP_1 and BP_2 , to ensure connectivity of the line segments, as follows:

$$a_1 + b_1 \cdot \text{BP}_1 = a_2 + b_2 \cdot \text{BP}_1$$

$$a_2 + b_2 \cdot \text{BP}_2 = a_3 = \$731.53.$$

The resulting coefficients are calculated using standard linear regression methods, including outlier weighting as described earlier in this section. This model fits the cost per loop data most accurately and reflects relationships between loop cost and loops per exchange.

4. Operating Expense Limit Factor for 2021

In the *Rate of Return Reform Order*,²² the Commission adopted limits on operating expenses (Opex)²³ to be recovered through HCL support with January 1, 2017 as effective date. Consistent with the rules, NECA developed an Opex limit factor for average schedule companies to be applied to companies' formula-estimated CPLs.

NECA calculated the Opex limit factor using accounting data of sample average schedule companies. For each sample company, the sum of company's total accounts used to determine the operating expenses eligible for support was compared to the Opex limit generated by the Commission's regression model. If the sum of actual eligible operating costs exceeded the FCC's Opex limit, operating cost was capped at the limit level, and the limit was applied proportionately to all accounts used to determine eligible operating expenses.

In 2017, the first year in which the Opex cap was implemented, Opex amounts were limited by one-half of the required reduction.²⁴ Since 2018 the full required limit has been applied

²² *Rate of Return Reform Order* ¶¶ 95-104.

²³ The *March 23, 2018 Order* modified the Opex Limits allowing an adjustment for inflation.

²⁴ *Rate of Return Reform Order* ¶ 103.

to Opex amounts. In this year's study, there is one out of 172 sample average schedule companies affected by the Opex limitation.

Using the limited Opex, NECA calculated each sample company cost per loop and USF revenue requirement (RRQ), calculated as cost per loop x loops. By comparing the sample weighted USF RRQ based on limited operating expenses to the sample weighted USF RRQ based on unlimited operating expenses for companies subject to Opex limits, NECA determined the proportionate share that the effect of the Opex limits would have on the sample average schedule companies. The Opex limit factor calculation is shown below.

$$\text{Opex limit factor} = \frac{\text{Total Weighted Opex Limit Adjusted USF RRQ}}{\text{Total Weighted Actual USF RRQ}}$$

$$\text{Opex limit factor}^{25} = 0.999925$$

The proposed CPL formula and Opex limit factor are shown in Exhibit 1. Using the proposed formula, loops per exchange data, as described in Section C of this filing, and Opex limit factor, NECA determined proposed CPL values for each average schedule study area. The proposed CPL values are higher than the current formula CPL values for all study areas.

E. HCL Payments for the Population of Average Schedule Companies

In 2021, actual HCL payments will be determined using each company's proposed CPL value,

²⁵ For companies subject to section 54.305 rules Opex limit factor = 1.

the expense adjustment algorithm, the frozen NACPL value, and a pro-rata adjustment factor calculated according to the Commission's rules to meet the fund cap. Following is a discussion of the effects of these calculations.

Pursuant to section 54.1310 of the Commission's rules, NECA calculates expense adjustments in two steps. First, each company's CPL is compared to the frozen NACPL of \$647.87 to calculate its expense adjustment by applying the USF payment algorithm as specified in 54.1310(a)(1) and (2). Second, if the expense adjustments for all study areas (cost and average schedules) exceed the HCL cap, each study area's expense adjustment from the first step is reduced by the ratio of the HCL support cap to the aggregate expense adjustment for all study areas. This ratio, referred to here as the pro-rata adjustment factor, is estimated to be 0.715066.²⁶

Although average schedule companies would receive \$5.6 million²⁷ based on the proposed formula and the frozen NACPL payment calculation, the capping of the fund is expected to limit this payment to \$4.022 million through the application of the pro-rata adjustment factor.²⁸ Because this view does not reflect quarterly updates to HCL data submissions to be filed with the FCC after October 1 of this year, as permitted by section 54.1306 of the Commission's rules, decreases in the pro-rata adjustment factor can be expected which will produce lower payments for all rate of return companies, including average schedule companies.

²⁶ This is NECA's initial estimate of the pro-rata adjustment factor for 2021, based on data reported to date. This factor is subject to change based on quarterly updates and other data changes.

²⁷ The Opex limitation impact on average schedule companies' total 2021 HCL support payments is reduction of 0.1% (or -\$4,838).

²⁸ See also note 5 regarding additional USAC adjustments not reflected in this calculation.

Average schedule companies that are expected to receive payments in 2021 are those with loops per exchange less than 1,450. While the cost per loop for all average schedule companies will increase as a result of the proposed formula, one study area will realize total payment reductions due to a significant decrease in its total loops.

F. Effects of Changes on Average Schedule Companies

This section provides a summary comparison of proposed payments of \$4.022 million and current payments of \$3.14 million, categorized by line size group and by percent change group.

Exhibit 7 summarizes changes in monthly payments by study area size.

Exhibit 7

Proposed Monthly HCL Payment Changes by Loop Size

Access Line Size Group	Count of Study Areas	2020 USF Payments (current)	2021 Proposed Payment (Fund Cap Applied)	Monthly Change per Loop	Percent Difference
0 to 500	21	\$90,567	\$98,639	\$2.54	8.91
500 to 1000	26	\$101,737	\$126,312	\$1.83	24.16
1000 to 2500	22	\$45,985	\$63,711	\$0.59	38.55
2500 to 5000	7	\$23,340	\$32,809	\$0.44	40.57
5000 to 10000	4	\$0	\$0	\$0.00	0.00
10000 to 20000	6	\$0	\$13,693	\$0.20	100.00
Over 20000	1	\$0	\$0	\$0.00	0.00

Exhibit 8 summarizes the monthly changes in expense adjustments by percent change bands.

Exhibit 8

Proposed Monthly HCL Payment Changes by Percent Change Bands

Percent Change Group	Count of Study Areas	2020 USF Payments (current)	2021 Proposed Payment (Fund Cap Applied)	Monthly Change per Loop
-10% to 0%	1	\$2,363	\$2,230	\$2.93
0%	13	\$0	\$0	\$0.00
0% to 10%	14	\$77,045	\$81,118	\$1.82
10% to 20%	19	\$130,623	\$147,091	\$1.42
20% to 30%	4	\$16,366	\$20,208	\$2.06
30% to 50%	7	\$18,076	\$24,736	\$1.03
50% to 100%	7	\$13,533	\$22,624	\$1.08
100%	15	\$0	\$22,278	\$0.35
100% to 300%	3	\$3,128	\$8,879	\$1.11
Over 300%	4	\$495	\$6,000	\$1.50

G. Conclusion

The proposed HCL formula shown in Exhibit 1 herein conforms to FCC USF reporting rules, produces payments consistent with those experienced by similarly situated cost companies as required by the Commission's Part 69 rules, and yields reasonable changes in payments to average schedule companies. The Commission should approve this formula to go into effect on January 1, 2021.

Appendix A
 2020 Average Schedule USF Study
 Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (yes=1)
1	100019	OXFORD COUNTY TEL. & TELE. CO.	1
2	120043	DUNBARTON TEL. CO.	1
3	140053	FRANKLIN TEL. CO.-VT	1
4	150076	CASSADAGA TEL. CORP.	1
5	150125	STATE TEL. CO.	1
6	170156	THE CITIZENS TELEPHONE COMPANY OF KECKSBURG	1
7	170171	HICKORY TEL. CO.	1
8	170175	IRONTON TEL. CO.	1
9	170195	ARMSTRONG TEL. CO. NORTH	1
10	170196	PALMERTON TELEPHONE COMPANY	1
11	170197	PENNSYLVANIA TEL. CO.	1
12	170205	SOUTH CANAAN TEL. CO.	1
13	170210	VENUS TEL. CORP.	
14	170277	WEST SIDE TEL. CO.-PA	
15	190220	BURKE'S GARDEN TEL. CO., INC.	1
16	190237	HIGHLAND TEL. COOP.-VA	
17	190238	MGW TELEPHONE COMPANY, INC.	
18	190243	PEMBROKE TEL. COOP.	
19	190250	SHENANDOAH TEL. CO.	1
20	197251	SHENANDOAH TELEPHONE COMPANY - NR	1
21	220324	VALLEY TELEPHONE CO., LLC	1
22	220380	PROGRESSIVE RURAL TEL. COOP., INC.	
23	220389	TRENTON TEL. CO.	1
24	230478	ELLERBE TEL. CO. dba RIVERSTREET NETWORKS	1
25	230494	PINEVILLE TEL. CO.	1
26	230496	RANDOLPH TEL. MEMB. CORP. DBA RANDOLPH COMM.	1
27	230497	SURRY TELEPHONE MEMBERSHIP CORPORATION	1
28	230501	SKYLINE TEL. MEMB. CORP.	1
29	230503	SURRY TELEPHONE MEMBERSHIP CORPORATION	1
30	230505	WILKES TEL MEMB CORP dba RIVERSTREET NETWORKS	1
31	230511	YADKIN VALLEY TEL. MEMB. CORP.	1
32	240515	CHESNEE TEL. CO.	1
33	240516	CHESTER TEL. CO.-SC	1
34	240532	LOCKHART TEL. CO., INC.	1
35	240535	NORWAY TEL. CO., INC.	
36	240541	RIDGEWAY TEL. CO., INC.	1
37	240546	SANDHILL TEL. COOP., INC.	1
38	250285	CASTLEBERRY TEL. CO., INC.	1
39	250311	OAKMAN TEL. CO., INC.	
40	260398	BRANDENBURG TEL. CO., INC.	1
41	260408	GEARHEART COMM. DBA COALFIELDS TEL. CO.	1
42	270428	DELCAMBRE TEL. CO.	1
43	280451	DECATUR TEL. CO., INC.-MS	
44	290554	BLED SOE TEL. COOP.	1
45	290570	LORETTO TEL. CO., INC.	1

Appendix A
 2020 Average Schedule USF Study
 Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (yes=1)
46	290598	WEST KENTUCKY RURAL TELEPHONE COOP. CORP.-TN	1
47	300588	AYERSVILLE TEL. CO.	1
48	300589	BASCOM MUTUAL TEL. CO.	1
49	300591	BUCKLAND TELEPHONE COMPANY	
50	300609	DOYLESTOWN TEL. CO.	1
51	300614	FORT JENNINGS TEL. CO.	1
52	300619	GLANDORF TEL. CO., INC.	1
53	300625	KALIDA TEL. CO., INC.	1
54	300639	THE NEW KNOXVILLE TEL. CO.	
55	300650	THE OTTOVILLE MUTUAL TEL. CO.	1
56	300651	PATTERSONVILLE TEL. CO.-OH	
57	300654	RIDGEVILLE TEL. CO.	
58	300656	SHERWOOD MUTUAL TEL. ASSOC.	1
59	300662	VANLUE TEL. CO.	
60	300663	VAUGHNSVILLE TEL. CO., INC.	1
61	300664	WABASH MUTUAL TEL. CO.	
62	310675	BARAGA TELEPHONE COMPANY	
63	310676	BARRY COUNTY TEL. CO.	
64	310678	BLANCHARD TELEPHONE CO.	1
65	310688	CLIMAX TEL. CO.	1
66	310694	FARMERS MUT. OF CHAPIN DBA CHAPIN TEL. CO.	
67	310703	KALEVA TEL. CO.	
68	310725	SAND CREEK TEL. CO.	
69	310735	WESTPHALIA TEL. CO.	
70	320751	CITIZENS TEL. CORP.-WARREN	1
71	320756	CRAIGVILLE TEL. CO., INC.	1
72	320771	GEETINGSVILLE TEL. CO., INC.	1
73	320792	MULBERRY COOP. TEL. CO., INC.	1
74	320816	S & W TEL. CO., INC.	
75	320826	SWAYZEE TEL. CO., INC.	1
76	320827	SWEETSER RURAL TEL. CO., INC.	1
77	320837	WEST POINT TEL. CO., INC.	
78	320839	YEOMAN TEL. CO., INC.	1
79	330842	AMERY TELCOM, INC.	
80	330843	AMHERST TEL. CO.	
81	330846	BALDWIN TELCOM., INC.	
82	330847	BELMONT TEL. CO.	
83	330848	BERGEN TEL. CO.	
84	330865	CLEAR LAKE TEL. CO., INC.-WI	
85	330868	COON VALLEY FARMERS TEL. CO., INC.	
86	330872	CUBA CITY TEL. EXCH. CO.	
87	330879	FARMERS IND. TEL. CO.-WI	
88	330896	LAKEFIELD TELEPHONE COMPANY	1
89	330905	MANAWA TEL. CO.	
90	330925	BAYLAND TELEPHONE, LLC	1

Appendix A
 2020 Average Schedule USF Study
 Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (yes=1)
91	330938	NORTHEAST TEL. CO.	1
92	330946	SHARON TEL. CO.	1
93	330951	SOMERSET TEL. CO., INC.	
94	340983	CAMBRIDGE TEL. CO.-IL	
95	340990	CLARKSVILLE MUTUAL TEL. CO.	
96	340993	CROSSVILLE TEL. CO.	
97	341017	GLASFORD TEL. CO.	
98	341021	THE GRANDVIEW MUTUAL TEL. CO.	1
99	341024	HAMILTON COUNTY TELEPHONE CO-OP	
100	341041	KINSMAN MUTUAL TEL. CO.	
101	341046	LEONORE MUTUAL TEL. CO.	
102	341050	MARSEILLES TEL. CO. OF MARS.	1
103	341053	METAMORA TEL. CO.	1
104	341062	NEW WINDSOR TEL. CO.	
105	341075	REYNOLDS TEL. CO.	
106	341086	TONICA TEL. CO.	
107	341092	STELLE TEL. CO.	
108	351097	ANDREW TEL. CO., INC.	
109	351100	WESTSIDE INDP. TEL. CO.	
110	351101	ATKINS TEL. CO.	
111	351107	BALDWIN-NASHVILLE TEL. CO., INC.	
112	351108	BARNES CITY COOP. TEL. CO.	
113	351112	BREDA TEL. CORPORATION	
114	351119	CASEY MUTUAL TEL. CO.	
115	351121	CENTER JUNCTION TEL. CO., INC.	
116	351125	CENTRAL SCOTT TEL.	
117	351133	C-M-L TEL. COOP. ASSN.	
118	351136	SHELLSBURG CABLEVISION, INC.	
119	351137	COON VALLEY COOP. TEL. ASSN., INC.	
120	351141	CORN BELT TEL. CO.	
121	351146	CUMBERLAND TEL. CO.	
122	351147	DANVILLE MUT. TEL. CO.	
123	351150	DIXON ACQUISITION, LLC	
124	351153	DUNKERTON TEL. COOP., INC.	1
125	351157	ELLSWORTH COOP. TEL. ASSN.	1
126	351162	FARMERS COOP. TEL. CO.-DYSART	1
127	351166	FARMERS & MERCHANTS MUTUAL TEL. CO.	1
128	351171	FARMERS MUTUAL TEL. CO.-JESUP	
129	351176	FARMERS TEL. CO.-ESSEX	
130	351179	FENTON COOP. TEL. CO.	
131	351189	RIVER VALLEY TELECOMMUNICATIONS COOP.	
132	351191	GRAND MOUND COOP. TEL. ASSN.	
133	351199	HAWKEYE TEL. CO.	
134	351205	HUXLEY COMMUNICATIONS COOPERATIVE	1
135	351212	JEFFERSON TEL. CO.-IA	

Appendix A
 2020 Average Schedule USF Study
 Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (yes=1)
136	351213	JORDAN SOLDIER VALLEY TELEPHONE COMPANY	
137	351222	LA MOTTE TEL. CO.	
138	351228	LONE ROCK COOP. TEL. CO.	
139	351232	LYNNVILLE TELEPHONE COMPANY	
140	351238	MARTELLE COOP. TEL. ASSN.	
141	351239	MASSENA TEL. CO.	
142	351241	MECHANICSVILLE TEL. CO.	
143	351246	MINERVA VALLEY TEL. CO., INC.	
144	351247	MODERN COOP. TEL. CO.	
145	351250	MUTUAL TEL. CO. OF MORNING SUN	
146	351257	NORTH ENGLISH COOP. TEL. CO.	
147	351260	NORTHWEST IOWA TELEPHONE, LLC	
148	351264	OLIN TEL. CO., INC.	
149	351265	ONSLOW COOP. TEL. ASSN.	
150	351266	ORAN MUTUAL TEL. CO.	
151	351269	PALO COOPERATIVE TELEPHONE ASSOCIATION	1
152	351270	PALMER MUTUAL TEL. CO.	
153	351273	PEOPLES TEL. CO.-IA	
154	351275	PRAIRIEBURG TEL. CO., INC.	1
155	351278	READLYN TEL. CO.	
156	351282	ROCKWELL COOP. TEL. ASSN.	
157	351283	ROYAL TEL. CO.	1
158	351285	SAC COUNTY MUTUAL TEL. CO.	
159	351291	SCHALLER TEL. CO.	
160	351292	SEARSBORO TEL. CO.	
161	351293	SHARON TEL. CO.	1
162	351301	FMTC-I35, INC. (SWT)	1
163	351302	SPRINGVILLE COOP. TEL. ASSN.	1
164	351306	SULLY TEL. ASSOC.	
165	351307	SUPERIOR TEL. COOP.	
166	351308	TEMPLETON TEL. CO.	
167	351309	TERRIL TELEPHONE COOPERATIVE	
168	351310	TITONKA TEL. CO. DBA TITONKA-BURT COMM	
169	351319	VAN BUREN TEL. CO., INC.	
170	351320	VAN HORNE COOP. TEL. CO.	1
171	351322	VENTURA TEL. CO., INC.	1
172	351335	WESTSIDE INDP. TEL. CO.	
173	351336	WILTON TEL. CO.	1
174	351342	WOOLSTOCK MUT. TEL. ASSN.	
175	351344	PRAIRIE TEL. CO., INC.	
176	351424	MABEL COOP. TEL. CO.-IA	
177	361348	WILDERNESS VALLEY TELEPHONE COMPANY, INC.	
178	361353	CITY OF BARNESVILLE TEL. CO.	1
179	361356	BENTON COOP. TEL. CO.	
180	361365	CALLAWAY TEL. CO.	

Appendix A
 2020 Average Schedule USF Study
 Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (yes=1)
181	361372	CLEMENTS TEL. CO.	
182	361390	FEDERATED TEL. COOP.	
183	361401	HALSTAD TEL. CO.	
184	361403	FEDERATED TELEPHONE COOPERATIVE	
185	361404	HARMONY TEL. CO.	
186	361408	HOME TEL. CO.-MN	
187	361409	HUTCHINSON TELEPHONE COMPANY	
188	361413	MID STATE TEL. CO. DBA KMP TEL. CO.	
189	361423	RUNESTONE TELEPHONE ASSOCIATION	
190	361424	MABEL COOPERATIVE TELEPHONE CO.- MN	
191	361430	MELROSE TELEPHONE COMPANY	
192	361431	MIDWEST TEL. CO.	
193	361439	MINNESOTA VALLEY TEL. CO. INC.	
194	361443	LORETEL SYSTEMS, INC.	
195	361450	PARK REGION MUTUAL TEL. CO.	
196	361472	REDWOOD COUNTY TEL. CO.	
197	361474	ROTHSAY TELEPHONE COMPANY INC.	
198	361475	RUNESTONE TEL. ASSN.	
199	361479	SCOTT RICE TELEPHONE COMPANY	1
200	361495	VALLEY TEL. CO.-MN	
201	361499	TRI-CO TECHNOLOGIES, LLC DBA CROSSLAKE COMM.	1
202	361500	NORTHERN TELEPHONE COMPANY OF MN	
203	361502	WESTERN TELEPHONE COMPANY	
204	361505	WIKSTROM TELEPHONE COMPANY INC.	
205	361508	WINTHROP TEL. CO.	
206	361512	WOLVERTON TELEPHONE COMPANY	
207	371581	PIERCE TELEPHONE COMPANY	
208	381509	WOLVERTON TEL. CO.	
209	381614	POLAR COMMUNICATIONS MUTUAL AID CORP (A)	
210	381615	GRIGGS COUNTY TELEPHONE COMPANY	
211	381622	GRIGGS COUNTY TEL. CO. (MOORE&LIBERTY)	
212	381638	MIDSTATE COMMUNICATIONS INC.	1
213	391649	BERESFORD MUNICIPAL TEL. CO.	1
214	391650	CITY OF BROOKINGS MUNICIPAL TEL. DEPT.	1
215	391653	CITY OF FAITH MUNICIPAL TEL CO	1
216	391664	JAMES VALLEY COOPERATIVE TELEPHONE COMPANY	
217	401710	MAGAZINE TELEPHONE COMPANY	
218	401712	MOUNTAIN VIEW TELEPHONE COMPANY	
219	401722	E. RITTER TELEPHONE COMPANY	
220	421900	KLM TEL. CO.	
221	421932	LATHROP TELEPHONE COMPANY	
222	421936	PEACE VALLEY TELEPHONE CO.	
223	421942	ROCK PORT TEL. CO.	
224	431968	BEGGS TELEPHONE COMPANY	1
225	442107	LIVINGSTON TELEPHONE COMPANY	1

Appendix A
 2020 Average Schedule USF Study
 Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (yes=1)
226	462198	PINE DRIVE TEL. CO.	
227	462206	STONEHAM COOPERATIVE TEL. CO.	
228	462210	WILLARD TEL. CO.	
229	472227	MUD LAKE TELEPHONE COOPERATIVE ASSN. INC.	
230	482252	RONAN TEL. CO.	
231	502279	GUNNISON TEL. CO.	
232	502282	MANTI TELEPHONE COMPANY	1
233	502283	SKYLINE TELECOM	
234	532386	CANBY TELEPHONE ASSOCIATION (MT. ANGEL)	1
235	532396	ST. PAUL COOP. TEL. ASSN.	
236	613005	CIRCLE TELEPHONE & ELECTRIC, LLC	
237	613026	NORTH COUNTRY TELEPHONE COMPANY	

Appendix B
2020 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
1	120042	30	1	1.5	1,706.42
2	150076	687	1	1	381.96
3	170191	6,481	8	1	674.92
4	170195	345	1	1.5	609.95
5	170205	1,423	2	1	516.20
6	170205	1,423	2	1.5	516.20
7	170210	954	1	1	1,051.01
8	190220	157	1	1.5	417.83
9	190238	1,339	5	1	1,032.03
10	190243	1,967	2	1	566.79
11	190250	14,761	9	1	587.94
12	190250	14,761	9	1	587.94
13	220389	2,848	3	1	1,118.20
14	230503	9,481	6	1	931.02
15	230505	2,193	3	2.5	808.16
16	240535	403	1	2	891.25
17	240535	403	1	1.5	891.25
18	240546	12,181	7	1	622.02
19	250285	579	1	1.5	887.38
20	250311	1,031	4	1	1,038.13
21	250311	1,031	4	1	1,038.13
22	260398	12,087	8	1	624.79
23	280451	1,544	1	2.5	697.49
24	290554	9,424	5	1	812.03
25	290554	9,424	5	1	812.03
26	290598	938	4	1	1,167.05
27	300589	384	1	1.5	2,100.92
28	300591	450	1	2	699.74
29	300604	598	1	1	859.55
30	300609	992	1	2	1,039.78
31	300633	420	1	4.04047	975.73
32	300651	230	1	1.5	1,009.59
33	300651	230	1	1	1,009.59
34	300664	842	1	2	677.31
35	310675	3,184	4	1	623.62
36	310676	5,221	4	1	473.64
37	310678	740	1	2.5	535.57
38	310694	416	1	2.78082	937.63
39	310703	899	4	1	979.85
40	310725	588	1	2	1,627.47
41	320816	166	1	1.5	1,038.61
42	320826	347	1	1	2,015.08
43	320827	589	1	1.5	1,572.79
44	320837	642	1	1.5	520.04

Appendix B
2020 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
45	330843	4,043	3	1	897.92
46	330843	4,043	3	1	897.92
47	330846	2,600	2	1	1,268.52
48	330868	1,617	3	1	1,010.11
49	330872	1,094	1	2.5	713.52
50	330879	1,840	3	1	664.61
51	330879	1,840	3	2	664.61
52	330938	2,989	4	1	815.64
53	330946	406	2	1.5	1,689.92
54	330946	406	2	1	1,689.92
55	340983	695	2	2.79082	753.48
56	340993	293	1	1	1,083.58
57	341017	834	1	2	691.43
58	341024	1,477	7	1	1,382.86
59	341046	122	1	1.5	1,188.35
60	341050	1,382	1	1	772.01
61	341075	375	1	1	1,064.97
62	341092	48	1	1.5	872.26
63	350739	192	1	1.5	561.03
64	351097	228	1	1.5	904.18
65	351097	228	1	1	904.18
66	351101	903	1	2.5	1,010.81
67	351101	903	1	2	1,010.81
68	351107	192	1	1	1,479.77
69	351112	747	3	1	1,210.42
70	351121	78	1	1	848.84
71	351125	3,886	3	1	421.73
72	351137	434	2	1	1,021.79
73	351137	434	2	1	1,021.79
74	351139	1,100	4	1	731.61
75	351139	1,100	4	1	731.61
76	351147	590	1	1	1,982.81
77	351150	272	1	1.5	900.87
78	351150	272	1	1	900.87
79	351153	482	1	1.5	1,294.58
80	351157	619	2	1	825.62
81	351166	384	1	2	1,869.19
82	351179	244	1	1.5	1,453.65
83	351189	686	2	1	832.74
84	351189	686	2	1	832.74
85	351191	365	1	2	938.36
86	351202	476	1	1	979.64
87	351205	1,034	2	2	1,150.54
88	351213	333	2	1	1,251.52

Appendix B
2020 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
89	351228	211	1	1.5	787.51
90	351238	199	1	1	1,030.62
91	351241	381	1	1.5	2,458.73
92	351246	396	2	1	1,263.55
93	351250	314	1	1	1,472.45
94	351260	2,049	3	1	831.71
95	351261	874	4	1	956.69
96	351264	380	2	1	1,677.25
97	351266	197	1	1	2,107.73
98	351266	197	1	1	2,107.73
99	351270	223	1	1	1,347.49
100	351283	270	1	1	1,196.43
101	351283	270	1	1	1,196.43
102	351285	725	2	1	1,136.68
103	351292	181	1	1.5	1,665.75
104	351302	897	1	1	851.80
105	351306	632	1	2	966.35
106	351307	103	1	1	1,446.08
107	351307	103	1	1.5	1,446.08
108	351308	319	1	1.5	1,329.16
109	351309	198	1	1	2,675.34
110	351309	198	1	1	2,675.34
111	351319	1,806	6	1.5	1,059.15
112	351319	1,806	6	1	1,059.15
113	351320	464	1	1.5	1,084.14
114	351320	464	1	1.5	1,084.14
115	351322	272	1	1.5	808.03
116	351331	2,739	6	1	1,170.75
117	351334	2,693	8	1	1,036.73
118	351335	248	1	1.5	1,510.74
119	351335	248	1	1	1,510.74
120	351344	327	2	1.5	1,177.20
121	351344	327	2	1	1,177.20
122	351424	860	3	1	838.14
123	361353	1,091	1	2	655.46
124	361356	3,913	5	2	777.96
125	361356	3,913	5	1	777.96
126	361372	93	1	2	832.16
127	361390	1,755	7	1	1,046.90
128	361403	678	1	1	546.75
129	361403	678	1	1.5	546.75
130	361409	4,530	1	1	691.02
131	361423	723	1	2.93356	918.37
132	361424	637	2	1.5	708.80

Appendix B
2020 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
133	361424	637	2	1	708.80
134	361443	6,832	9	1	853.50
135	361443	6,832	9	1	853.50
136	361474	375	1	1.5	984.21
137	361475	3,078	9	1	810.57
138	361499	1,246	1	1.5	916.72
139	361500	28	1	1	2,228.82
140	361500	28	1	1.5	2,228.82
141	361502	1,084	2	1	621.59
142	361505	5,186	18	1	1,266.14
143	361505	5,186	18	1	1,266.14
144	361508	456	1	2.5	1,191.47
145	361512	126	1	1	1,300.61
146	371530	986	5	1	1,581.45
147	371555	4,443	9	1	741.82
148	371555	4,443	9	1	741.82
149	371563	549	2	1.5	1,630.18
150	371563	549	2	1	1,630.18
151	371590	56	1	2	999.80
152	381601	42	1	1.5	1,019.76
153	381622	755	2	1	445.84
154	381638	859	2	1	1,182.56
155	391653	263	1	1	358.51
156	391682	344	2	1.5	597.54
157	401712	5,028	8	1	966.28
158	401712	5,028	8	1	966.28
159	421893	233	1	1	2,084.60
160	421900	783	4	1.5	569.43
161	421900	783	4	1	569.43
162	431968	1,033	1	1	993.53
163	431968	1,033	1	2	993.53
164	442043	304	2	1.5	1,571.10
165	462210	61	1	1	2,267.50
166	472227	1,019	5	1	933.36
167	472227	1,019	5	1	933.36
168	502282	2,190	2	1	726.06
169	502282	2,190	2	1.5	726.06
170	502283	1,376	5	1	886.11
171	532386	1,232	1	1	503.31
172	613005	59	1	2	995.05

Appendix C
2020 Average Schedule USF Study
Comparison of Current and Proposed Monthly HCL Support Payments

Obs	Study Area Code	Loops	Exch	Loops per Exch	Current Payments	Proposed Cost per Loop *	Proposed Payment (Fund Cap Appl.)	Per Loop Payment Difference	Payment Percent Difference
1	100019	2,131	6	355	\$27,836	\$1,097.80	\$30,716	\$2.68	10.3%
2	120043	1,367	1	1,367	\$0	\$751.92	\$364	\$0.27	100.0%
3	140053	815	1	815	\$1,093	\$785.84	\$1,288	\$0.24	17.8%
4	150076	599	1	599	\$2,464	\$907.56	\$3,770	\$2.66	53.0%
5	150125	3,936	2	1,968	\$0	\$731.48	\$0	\$0.00	0.0%
6	170156	2,480	1	2,480	\$0	\$731.48	\$0	\$0.00	0.0%
7	170171	873	1	873	\$818	\$782.27	\$1,259	\$0.53	53.9%
8	170175	2,156	1	2,156	\$0	\$731.48	\$0	\$0.00	0.0%
9	170195	312	1	312	\$4,589	\$1,131.32	\$4,965	\$2.57	8.2%
10	170196	3,329	4	832	\$3,176	\$784.79	\$5,124	\$0.66	61.3%
11	170197	819	1	819	\$964	\$785.59	\$1,286	\$0.45	33.4%
12	170205	1,383	2	692	\$2,686	\$835.05	\$4,821	\$1.69	79.5%
13	190220	163	1	163	\$3,062	\$1,247.49	\$3,440	\$1.97	12.3%
14	190250	12,132	9	1,348	\$0	\$753.09	\$3,778	\$0.31	100.0%
15	197251	487	1	487	\$4,008	\$994.88	\$4,779	\$2.39	19.2%
16	220324	663	1	663	\$1,054	\$857.66	\$2,892	\$3.09	174.4%
17	220389	2,814	3	938	\$1,458	\$778.28	\$3,622	\$0.79	148.4%
18	230478	1,197	1	1,197	\$0	\$762.37	\$803	\$0.67	100.0%
19	230494	642	1	642	\$1,703	\$874.03	\$3,207	\$2.65	88.3%
20	230496	10,904	8	1,363	\$0	\$752.17	\$3,007	\$0.28	100.0%
21	230497	1,766	2	883	\$1,581	\$781.66	\$2,504	\$0.55	58.4%
22	230501	23,504	12	1,959	\$0	\$731.48	\$0	\$0.00	0.0%
23	230503	9,881	6	1,647	\$0	\$734.72	\$0	\$0.00	0.0%
24	230505	2,361	3	787	\$3,408	\$787.56	\$3,887	\$0.23	14.1%
25	230511	12,788	10	1,279	\$0	\$757.33	\$6,082	\$0.48	100.0%
26	240515	2,139	1	2,139	\$0	\$731.48	\$0	\$0.00	0.0%
27	240516	10,642	3	3,547	\$0	\$731.48	\$0	\$0.00	0.0%
28	240532	210	1	210	\$3,773	\$1,210.84	\$4,088	\$2.16	8.3%
29	240541	1,705	1	1,705	\$0	\$731.48	\$0	\$0.00	0.0%
30	240546	11,886	7	1,698	\$0	\$731.60	\$0	\$0.00	0.0%
31	250285	599	1	599	\$3,384	\$907.56	\$3,770	\$0.73	11.4%
32	260398	11,588	8	1,449	\$0	\$746.89	\$826	\$0.07	100.0%
33	260408	4,006	3	1,335	\$0	\$753.89	\$1,372	\$0.34	100.0%
34	270428	718	1	718	\$1,105	\$814.78	\$1,939	\$1.34	75.5%
35	290554	8,893	5	1,779	\$0	\$731.48	\$0	\$0.00	0.0%
36	290570	3,208	5	642	\$14,035	\$874.03	\$16,026	\$0.71	14.2%
37	290598	865	4	216	\$16,249	\$1,206.17	\$16,657	\$2.89	2.5%
38	300588	630	1	630	\$2,912	\$883.38	\$3,376	\$0.86	15.9%
39	300589	377	1	377	\$4,634	\$1,080.64	\$5,145	\$1.97	11.0%
40	300609	948	1	948	\$84	\$777.66	\$1,197	\$1.18	1325.0%
41	300614	558	1	558	\$3,681	\$939.52	\$4,203	\$1.17	14.2%
42	300619	1,040	1	1,040	\$185	\$772.01	\$1,086	\$0.87	487.0%
43	300625	1,431	1	1,431	\$0	\$747.99	\$163	\$0.11	100.0%
44	300650	1,289	2	645	\$5,929	\$871.69	\$6,323	\$0.29	6.6%
45	300656	595	1	595	\$2,805	\$910.67	\$3,817	\$2.13	36.1%
46	300663	155	1	155	\$3,131	\$1,253.73	\$3,314	\$2.40	5.8%
47	310678	687	1	687	\$1,755	\$838.95	\$2,499	\$1.21	42.4%
48	310688	528	1	528	\$3,574	\$962.92	\$4,456	\$2.38	24.7%
49	320751	1,380	2	690	\$3,682	\$836.61	\$4,894	\$0.98	32.9%
50	320756	487	1	487	\$4,167	\$994.88	\$4,779	\$1.74	14.7%
51	320771	261	1	261	\$4,326	\$1,171.08	\$4,617	\$2.46	6.7%

Appendix C
2020 Average Schedule USF Study
Comparison of Current and Proposed Monthly HCL Support Payments

Obs	Study Area Code	Loops	Exch	Loops per Exch	Current Payments	Proposed Cost per Loop *	Proposed Payment (Fund Cap Appl.)	Per Loop Payment Difference	Payment Percent Difference
52	320792	1,283	1	1,283	\$0	\$757.08	\$598	\$0.47	100.0%
53	320826	337	1	337	\$4,624	\$1,111.83	\$5,069	\$2.27	9.6%
54	320827	557	1	557	\$3,189	\$940.30	\$4,212	\$2.46	32.1%
55	320839	403	1	403	\$4,521	\$1,060.37	\$5,135	\$2.58	13.6%
56	330896	889	2	445	\$8,699	\$1,027.62	\$10,026	\$2.19	15.3%
57	330925	1,066	1	1,066	\$0	\$770.42	\$1,048	\$0.98	100.0%
58	330938	2,926	4	732	\$4,671	\$803.86	\$6,665	\$0.80	42.7%
59	330946	366	2	183	\$7,150	\$1,231.90	\$7,469	\$2.53	4.5%
60	341021	53	1	53	\$1,276	\$1,333.25	\$1,322	\$2.56	3.6%
61	341050	1,247	1	1,247	\$0	\$759.30	\$688	\$0.55	100.0%
62	341053	1,923	2	962	\$616	\$776.80	\$2,365	\$0.93	283.9%
63	351153	431	1	431	\$4,078	\$1,038.54	\$5,071	\$4.07	24.4%
64	351157	622	2	311	\$8,991	\$1,132.10	\$9,919	\$1.79	10.3%
65	351162	711	2	356	\$9,161	\$1,097.02	\$10,223	\$3.65	11.6%
66	351166	351	1	351	\$4,540	\$1,100.92	\$5,108	\$4.23	12.5%
67	351205	995	2	498	\$7,660	\$986.31	\$9,384	\$2.61	22.5%
68	351269	267	1	267	\$4,472	\$1,166.40	\$4,667	\$3.10	4.4%
69	351275	95	1	95	\$2,363	\$1,300.50	\$2,230	\$2.93	-5.6%
70	351283	204	1	204	\$3,904	\$1,215.52	\$4,014	\$2.78	2.8%
71	351293	740	2	370	\$9,213	\$1,086.10	\$10,279	\$2.82	11.6%
72	351301	437	3	146	\$9,076	\$1,260.75	\$9,481	\$2.47	4.5%
73	351302	678	1	678	\$164	\$845.97	\$2,650	\$3.75	1515.9%
74	351320	482	1	482	\$4,327	\$998.78	\$4,814	\$1.07	11.3%
75	351322	242	1	242	\$4,266	\$1,185.89	\$4,441	\$2.84	4.1%
76	351336	781	1	781	\$1,054	\$787.92	\$1,297	\$0.39	23.1%
77	361353	1,095	1	1,095	\$0	\$768.63	\$1,000	\$0.91	100.0%
78	361479	5,792	3	1,931	\$0	\$731.48	\$0	\$0.00	0.0%
79	361499	1,201	1	1,201	\$0	\$762.12	\$794	\$0.66	100.0%
80	381638	850	2	425	\$8,951	\$1,043.22	\$10,178	\$2.16	13.7%
81	391649	747	1	747	\$1,010	\$792.17	\$1,363	\$0.63	35.0%
82	391650	9,744	1	9,744	\$0	\$731.48	\$0	\$0.00	0.0%
83	391653	270	1	270	\$4,280	\$1,164.06	\$4,691	\$1.92	9.6%
84	431968	1,053	1	1,053	\$62	\$771.21	\$1,067	\$0.95	1621.0%
85	442107	4,423	1	4,423	\$0	\$731.48	\$0	\$0.00	0.0%
86	502282	1,286	1	1,286	\$0	\$756.90	\$590	\$0.46	100.0%
87	532386	979	1	979	\$0	\$775.76	\$1,165	\$1.19	100.0%
Total:		211,853			\$261,629		\$335,164	\$0.43	28.1%

* Proposed Cost per Loop with Opex limit applied

Appendix C-1
2020 Average Schedule USF Study
Model Companies, not Subject to BDS Regulation, Proposed 2021 USF Loops and Cost per Loop

Obs	Study Area Code	Loops	Exch	Loops per Exch	Proposed Cost per Loop *
1	170210	969	1	969	\$776.37
2	170277	23	1	23	\$1,356.64
3	190237	1,245	3	415	\$1,051.01
4	190238	1,430	5	286	\$1,151.59
5	190243	2,049	2	1,025	\$772.93
6	220380	3,191	6	532	\$959.80
7	240535	414	1	414	\$1,051.79
8	250311	1,003	4	251	\$1,178.88
9	280451	1,644	1	1,644	\$734.91
10	300591	467	1	467	\$1,010.47
11	300639	655	1	655	\$863.90
12	300651	213	1	213	\$1,208.51
13	300654	479	1	479	\$1,001.11
14	300662	342	1	342	\$1,107.93
15	300664	853	1	853	\$783.50
16	310675	3,148	4	787	\$787.56
17	310676	5,254	4	1,314	\$755.18
18	310694	429	1	429	\$1,040.10
19	310703	897	4	224	\$1,199.93
20	310725	572	1	572	\$928.61
21	310735	494	1	494	\$989.43
22	320816	156	1	156	\$1,252.95
23	320837	666	1	666	\$855.32
24	330842	3,913	3	1,304	\$755.79
25	330843	4,388	3	1,463	\$746.03
26	330846	2,459	2	1,230	\$760.34
27	330847	654	1	654	\$864.68
28	330848	75	2	38	\$1,344.95
29	330865	1,144	1	1,144	\$765.62
30	330868	1,609	3	536	\$956.68
31	330872	1,172	1	1,172	\$763.90
32	330879	1,868	3	623	\$888.84
33	330905	1,636	2	818	\$785.65
34	330951	1,982	1	1,982	\$731.48
35	340983	649	2	325	\$1,121.19
36	340990	226	1	226	\$1,198.37
37	340993	297	1	297	\$1,143.01
38	341017	823	1	823	\$785.34
39	341024	1,099	7	157	\$1,252.17
40	341041	58	1	58	\$1,329.35
41	341046	105	1	105	\$1,292.70
42	341062	456	1	456	\$1,019.04
43	341075	378	1	378	\$1,079.86
44	341086	231	1	231	\$1,194.47
45	341092	47	1	47	\$1,337.93
46	351097	186	1	186	\$1,229.56
47	351100	269	1	269	\$1,164.84
48	351101	610	1	610	\$898.98
49	351107	160	1	160	\$1,249.83
50	351108	82	1	82	\$1,310.64
51	351112	797	3	266	\$1,167.18
52	351119	174	1	174	\$1,238.91

Appendix C-1

2020 Average Schedule USF Study

Model Companies, not Subject to BDS Regulation, Proposed 2021 USF Loops and Cost per Loop

Obs	Study Area Code	Loops	Exch	Loops per Exch	Proposed Cost per Loop *
53	351121	67	1	67	\$1,322.33
54	351125	4,313	3	1,438	\$747.56
55	351133	659	4	165	\$1,245.93
56	351136	263	1	263	\$1,169.52
57	351137	472	2	236	\$1,190.57
58	351141	534	1	534	\$958.24
59	351146	275	1	275	\$1,160.16
60	351147	606	1	606	\$902.10
61	351150	231	1	231	\$1,194.47
62	351171	1,248	1	1,248	\$759.23
63	351176	251	1	251	\$1,178.88
64	351179	257	1	257	\$1,174.20
65	351189	670	2	335	\$1,113.39
66	351191	327	1	327	\$1,119.63
67	351199	371	1	371	\$1,085.32
68	351212	2,119	1	2,119	\$731.48
69	351213	115	1	115	\$1,284.91
70	351222	469	1	469	\$1,008.91
71	351228	209	1	209	\$1,211.62
72	351232	511	1	511	\$976.17
73	351238	213	1	213	\$1,208.51
74	351239	294	2	147	\$1,259.97
75	351241	370	1	370	\$1,086.10
76	351246	371	2	186	\$1,229.56
77	351247	699	4	175	\$1,238.13
78	351250	283	1	283	\$1,153.93
79	351257	627	1	627	\$885.72
80	351260	1,960	3	653	\$865.46
81	351264	359	2	180	\$1,234.24
82	351265	131	1	131	\$1,272.43
83	351266	206	1	206	\$1,213.96
84	351270	219	1	219	\$1,203.83
85	351273	445	1	445	\$1,027.62
86	351278	547	1	547	\$948.10
87	351282	846	4	212	\$1,209.29
88	351285	708	2	354	\$1,098.58
89	351291	1,064	4	266	\$1,167.18
90	351292	186	1	186	\$1,229.56
91	351306	649	1	649	\$868.57
92	351307	102	1	102	\$1,295.04
93	351308	337	1	337	\$1,111.83
94	351309	161	1	161	\$1,249.05
95	351310	690	2	345	\$1,105.59
96	351319	1,917	6	320	\$1,125.09
97	351335	269	1	269	\$1,164.84
98	351342	121	1	121	\$1,280.23
99	351344	332	2	166	\$1,245.15
100	351424	885	3	295	\$1,144.57
101	361348	61	1	61	\$1,327.01
102	361356	4,340	5	868	\$782.58
103	361365	166	1	166	\$1,245.15
104	361372	95	1	95	\$1,300.50
105	361390	1,783	7	255	\$1,175.76

Appendix C-1
 2020 Average Schedule USF Study
 Model Companies, not Subject to BDS Regulation, Proposed 2021 USF Loops and Cost per Loop

Obs	Study Area Code	Loops	Exch	Loops per Exch	Proposed Cost per Loop *
106	361401	1,498	10	150	\$1,257.63
107	361403	669	1	669	\$852.99
108	361404	780	2	390	\$1,070.51
109	361408	941	3	314	\$1,129.76
110	361409	4,411	1	4,411	\$731.48
111	361413	890	4	223	\$1,200.71
112	361423	833	1	833	\$784.73
113	361424	661	2	331	\$1,116.51
114	361430	5,113	8	639	\$876.37
115	361431	1,479	4	370	\$1,086.10
116	361439	390	3	130	\$1,273.21
117	361443	5,777	9	642	\$874.03
118	361450	2,683	6	447	\$1,026.06
119	361472	3,349	10	335	\$1,113.39
120	361474	354	1	354	\$1,098.58
121	361475	3,255	9	362	\$1,092.34
122	361495	457	2	229	\$1,196.03
123	361500	30	1	30	\$1,351.18
124	361502	1,060	2	530	\$961.36
125	361505	5,602	18	311	\$1,132.10
126	361508	425	1	425	\$1,043.22
127	361512	116	1	116	\$1,284.13
128	371581	1,103	2	552	\$944.20
129	381509	216	2	108	\$1,290.37
130	381614	901	5	180	\$1,234.24
131	381615	1,414	4	354	\$1,098.58
132	381622	771	2	386	\$1,073.62
133	391664	2,277	14	163	\$1,247.49
134	401710	573	2	287	\$1,150.81
135	401712	5,464	8	683	\$842.07
136	401722	1,988	8	249	\$1,180.44
137	421900	733	4	183	\$1,231.90
138	421932	918	1	918	\$779.51
139	421936	311	1	311	\$1,132.10
140	421942	1,277	3	426	\$1,042.44
141	462198	782	1	782	\$787.86
142	462206	58	1	58	\$1,329.35
143	462210	70	1	70	\$1,319.99
144	472227	1,076	5	215	\$1,206.95
145	482252	1,675	2	838	\$784.42
146	502279	929	1	929	\$778.83
147	502283	929	3	310	\$1,132.88
148	532396	549	1	549	\$946.54
149	613005	64	1	64	\$1,324.67
150	613026	171	1	171	\$1,241.25

* Proposed Cost per Loop with Opex limit applied