

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Nebraska) Application No. NUSF-92.01
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
Arapahoe Telephone Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.02
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
Cable TV Company of Stanton.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.03
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
Cambridge Telephone Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.04
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
CenturyLink.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.05
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
Consolidated Telephone Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.06
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
Eastern Nebraska Telephone)
Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.07
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
Glenwood Telephone Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.08
Public Service Commission, on its)
own motion, seeking to administer)
the Nebraska Universal Service)
Fund's Broadband Program:)
Application to the Nebraska)
Broadband Program Received from)
Great Plains Communications.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.09
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 Inventive Wireless of Nebraska,)
 LLC d/b/a Vistabeam.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.10
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 Nebraska Central Telephone)
 Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.11
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 N.E. Colorado Cellular, Inc.,)
 d/b/a Viaero Wireless.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.12
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 Pinpoint Wireless d/b/a Blaze)
 Wireless.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.13
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 Raicom, Inc.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.14
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 Rock County Telephone Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.15
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 United State Cellular Corporation.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.16
 Public Service Commission, on its)
 own motion, seeking to administer)
 the Nebraska Universal Service)
 Fund's Broadband Program:)
 Application to the Nebraska)
 Broadband Program Received from)
 Windstream Communications of)
 Nebraska.)

Filed: May 9, 2014

PRE-FILED TESTIMONY OF TYLER FROST

Q: Please state your name for the record.

A: Tyler Frost, T-Y-L-E-R F-R-O-S-T

Q: Where are you employed and in what capacity?

A: I am the Commission's Economist. I perform various econometric modeling and economic analysis for the Nebraska Public Service Commission ("Commission"), including the Telecommunications Infrastructure and Public Safety, Communications, and Natural Gas Departments.

Q: What is the purpose of your testimony?

A: To describe the Staff's recommendations regarding the applications docketed as NUSF-92.01 through NUSF-92.12. Specifically, my testimony is related to the methodology developed by the Staff to determine the use of Nebraska Broadband Program support and to recommend the Commission adopt the Staff's methodology.

Q: Is your methodology contained in the Staff Recommendation filed with the Commission and served on the parties on April 22, 2014?

A: Yes, it is.

Q: Could you please describe the Staff's proposed Methodology?

A: Several applicants filed applications which included multiple projects within a single application. Sixteen (16) applications were received with a total of ninety-six (96) projects; increases of 60% over Year 2 and 380% over Year 1.¹

Given the 2014 NEBP support amount available, an increase of 125% over the Year 2 amount, staff augmented the process developed in Year 2, to expand broadband coverage to the greatest number of Nebraskans, to further expand broadband coverage to Nebraskans in high-cost areas, where economic or technology limitations may preclude relatively smaller projects. Staff believes this methodology advances the broadband policies adopted by the Commission.

For purposes of its review, each project was scored individually within the methodology. Various pieces of information were taken directly from the applications submitted for each project and utilized in factor development. This data included: retail monthly recurring and nonrecurring end-user rates for the provisioning of broadband service; residential monthly recurring rates for voice service and subscriber line charges, if applicable; speed (Mbps) of the respective service being offered; and total grant request amount for each project.

Additionally, the staff obtained various other data, from publicly available sources, also used in factor development. This data included population and household

¹Subsequent to negotiations, one application was amended, removing one project from consideration.

by census block;² area by census block;³ and broadband availability.⁴

Scoring Criteria:

In Year 3, each project was scored based on six (6) scoring criteria, prior to group assignment. Each criterion, determined using the formulas detailed below, utilizes relative scoring and therefore ranges in value from zero (0) to one (1).

Relative scoring measures a project against all others. The project that best fulfills the objectives of the NEBP program for a particular criterion is awarded the maximum point value and sets the bar for all other projects.

The formulas below all follow the same basic principle; each criterion equals the percentage of the highest, or lowest where applicable, amount for that criterion out of all projects.

Service

The Service criterion is determined based on the percentage unserved and underserved area, as determined by the NE Broadband Map.

$$(\%Un/Underserved Area_i) / \text{Max}(\%Un/Underserved Area)$$

² United States Census Bureau, Census 2010 Summary File 1.

³ United States Census Bureau, 2010 Tiger/Line Shapefiles.

⁴ State Broadband Initiative Broadband Mapping Data, April 2014 submission.

Value

The Value criterion is determined based on the retail end-user rate and the speed of the service to be provided at said rate.

$$\text{Min}(\text{Retail Rate} / \text{Mbps}) / (\text{Retail Rate}_i / \text{Mbps}_i)$$

Where "Retail Rate_i" is equal to the summation of residential monthly recurring rate for voice service; broadband retail monthly recurring charge; and, where applicable, the SLC; the nonrecurring broadband activation charge, and the greater of the monthly recurring CPE charge and the nonrecurring CPE charge.⁵

Scale

The Scale criterion is based on the total adjusted grant request amount, not including match amounts, the speed of the respective service, and the total number of households.

$$\text{Min}(\text{Cost} / (\text{Mbps} * \text{HH})) / (\text{Cost}_i / (\text{Mbps}_i * \text{HH}_i))$$

Cost

The Cost criterion is based on the total adjusted grant request amount, not including match amounts, and the total number of households.

$$\text{Min}(\text{Cost} / \text{HH}) / (\text{Cost}_i / \text{HH}_i)$$

⁵ All nonrecurring charges were amortized over a period of sixty (60) months at a rate of 0.0% prior to comparison and/or summation.

Rural

The Rural criterion is based on the total number of households and the area, in square miles.

$$\text{Min}(\text{HH} / \text{SqMi}) / (\text{HH}_i / \text{SqMi}_i)$$

Scope

The Scope criterion is based on the total number of households.

$$\text{HH}_i / \text{Max}(\text{HH})$$

Q: Can you describe how the criteria is weighted and summed?

Scoring criteria results were then weighted and summed, by project, to determine each individual project's total score. The assigned weight was the maximum number of points achievable for the criterion's value, limiting the amount each criterion can affect the total score. The weight for each criterion is dependent on all other, as the total weight is constant (100). The assigned weight can therefore be viewed as a measure of the importance, or value of each criteria within the scoring methodology and, further, ensure applicants are properly incented to propose projects that best fulfill the objectives of the NEBP program.

Service

A Service criterion weight of twenty-five percent (25%) encourages applications targeting broadband support amounts to unserved and underserved areas, a goal of the NEBP program.

Value

A Value criterion weight of fifteen percent (15%) places a balanced emphasis on the cost to the consumer and the speed of service provided; while also recognizing economies of scale may lead to diminishing returns as speeds begin to exceed consumers' needs.

Scale

A Scale criterion weight of five percent (5%) recognizes the value of providing higher broadband speeds to a larger number of households at a reasonable cost.

Cost

A Cost criterion weight of twenty-five percent (25%) encourages applicants to reduce the cost of their proposals, will heighten the probability of expanding broadband in Nebraska at an increased rate, is appropriate and forwards the goals of the NEBP program.

Rural

A Rural criterion weight of five percent (5%) recognizes the need to consider rural areas of Nebraska, those with a lower number of households per square mile.⁶

⁶ The Rural criterion is not excessively correlated to the Service criterion and so it continues to be reasonable to include the Rural criterion at the weight noted above.

Scope

A Scope criterion weight of twenty-five percent (25%) encourages applicants to provide balanced projects that expand broadband service availability to the greatest number of Nebraskans.

TABLE 1

NEBP Program	
<u>Criterion</u>	<u>Weight</u>
Service	25.0%
Value	15.0%
Scale	5.0%
Cost	25.0%
Rural	5.0%
Scope	<u>25.0%</u>
Total	100.0%

Staff then utilized the Group Assignment to facilitate the Commission's direction to prioritize areas determined as unserved,⁷ using the broadband mapping data as a starting point for its review.

Staff then triaged the projects into categories, or groups, based on the nature of each area being served and the total cost of each project. Any project comprised completely of unserved areas received a Group Assignment value of one (1); all remaining projects contain some hybrid of various levels of unserved and underserved areas. If not identified as Group Assignment one, the highest scoring project submitted by each applicant received a

⁷ See NUSF-77 P.O. 5 at 7.

Group Assignment of two (2). All remaining projects received a Group Assignment of three (3) through (5), based on the total cost of the project.⁸

As noted previously the 2014 NEBP saw a marked increase in the number of projects submitted. While this increase continues to be a testament to the Commission and the way in which the NEBP was designed, the influx of applications again results in demand significantly outpacing supply.

Given the additional NEBP support amount available in 2014, in an effort to further advance the objectives of the NEBP and expand broadband coverage to Nebraskans in high-cost areas, where economic or technology limitations may preclude relatively smaller projects, each applicant's highest ranking project, based on the individual project's total score, if not previously identified as Group Assignment 1, received a Group Assignment of 2.

Q: What happens next?

A: Lastly, for all remaining projects, staff again utilized total cost in the determination of the Group Assignment in an effort, as in Year 2, to expand broadband service availability to the greatest number of Nebraskans.⁹

⁸ All projects filed for the NEBP in 2014 are independent of all other projects filed by the same applicant.

⁹ See *In the Matter of the Petition of the Nebraska Telecommunications Association for Investigation and Review of Processes and Procedures Regarding the NUSF*; Application No. NUSF-77 Progression Order No. 7; *In The Matter Of The Nebraska Public Service Commission On Its Own Motion Seeking To Implement Policies And Procedures Related To Providing Dedicated Universal Service Support For Wireless Telecommunications Services*, Application No. NUSF-69; *In the Matter of the Nebraska Public*

As in Year 2, staff utilized the Jenks optimization method,¹⁰ also known as the goodness of variance fit (GVF), to identify natural breaks within the dataset of total cost. Based on these results, the following Group Assignments were designated; projects with a total project cost less than or equal to the first break value received a Group Assignment value of three (3); projects with a total project cost greater than the first break value, but less than or equal to the second break value, received a Group Assignment value of four (4); finally, projects with a total project cost in excess of the second break value received a Group Assignment value of five (5).

Q: Can you describe the results of the Staff Methodology and the proposed recommendation for broadband program support?

A: Yes. The staff proposes the following results, based on the methodology detailed and described above.

Service Commission, on its own motion, seeking to establish a long-term universal service funding mechanism Application No. NUSF-26, ORDER (January 15, 2013) ("P.O. 7") at 5 (describing the NUSF Act's goal to ensure all Nebraskans have comparable access to advanced services).

¹⁰ The Jenks optimization method determines the optimal arrangement of data into different classes, by minimizing the variance within each class, while maximizing the variance between classes.

TABLE 2

2014 NEBP Program Support

<u>Applicant</u>	<u>Project</u>	<u>Proposed¹</u>
Arapahoe	Brule	\$ 396,416
Cambridge	Bartley6	\$ 397,043
CenturyLink	Central_City	\$ 84,496
CenturyLink	Chadron	\$ 91,275
CenturyLink	Fremont	\$ 45,205
CenturyLink	Grand_Island	\$ 115,846
CenturyLink	Norfolk_Ben	\$ 106,688
CenturyLink	Norfolk_HWY24	\$ 129,322
CenturyLink	North_Platte_HWY30	\$ 96,931
CenturyLink	North_Platte_HWY83	\$ 149,903
CenturyLink	Springfield	\$ 48,450
CenturyLink	Springfield_HWY31	\$ 87,115
CenturyLink	Springfield_HWY50	\$ 15,989
CenturyLink	Wakefield	\$ 214,196
Consolidated	Grant	\$ 366,693
Eastern	Winnebago	\$ 173,343
Glenwood	Nelson	\$ 201,840
Glenwood	Superior	\$ 181,028
Great Plains	Bloomfield	\$ 239,184
Great Plains	Cedar_Rapids	\$ 173,772
Great Plains	Crofton	\$ 138,819
Great Plains	Niobrara	\$ 135,309
Great Plains	Petersburg	\$ 161,220
Great Plains	Stratton	\$ 155,841
Great Plains	Trenton	\$ 179,568

TABLE 2 (Cont.)

2014 NEBP Program Support

<u>Applicant</u>	<u>Project</u>	<u>Proposed[†]</u>
NE Central	E_Ashton	\$ 96,734
NE Central	Scotia	\$ 271,802
NE Central	W_Ashton	\$ 109,112
Pinpoint	Wauneta	\$ 276,750
Raicom	Frontier	\$ 125,326
Raicom	Hitchcock	\$ 61,433
Raicom	Wauneta	\$ 100,944
Rock	Newport	\$ 274,531
Stanton Cable	Clarkson	\$ 198,413
USCC	Anselmo	\$ 133,954
USCC	Ansley	\$ 133,954
USCC	Brewster	\$ 133,954
USCC	Brownlee	\$ 133,954
USCC	Burwell	\$ 133,954
USCC	Burwell_DT	\$ 133,954
USCC	Callaway	\$ 133,954
USCC	Dunning	\$ 87,454
USCC	Greeley	\$ 87,454
USCC	Long_Pine	\$ 133,954
USCC	Merriman	\$ 133,954
USCC	Oconto	\$ 133,954
USCC	Spalding	\$ 87,454
USCC	Stapleton	\$ 133,954
USCC	Verdon	\$ 133,956

TABLE 2 (Cont.)

<u>2014 NEBP Program Support</u>		
<u>Applicant</u>	<u>Project</u>	<u>Proposed¹</u>
Viaero	Callaway	\$ 274,772
Viaero	Minor_Camp	\$ 352,313
Viaero	Oconto	\$ 129,032 ²
Viaero	St_Edward	\$ 384,460
Vistabeam	Banner	\$ 5,768
Vistabeam	Box_Butte	\$ 1,575
Vistabeam	Cheyenne	\$ 12,495
Vistabeam	Deuel	\$ 2,985
Vistabeam	Garden	\$ 7,553
Vistabeam	Kimball	\$ 6,638
Vistabeam	Morrill	\$ 5,828
Vistabeam	Scottsbluff	\$ 42,345
Vistabeam	Sioux	\$ 5,625
Windstream	DuBois	<u>\$ 298,272</u>
		\$ 9,000,000

¹ All project proposed amounts are funding in full, subject to adjustments subject to adjustments described above, unless otherwise noted.

² Proposed amount represents partial support of project.

Q: Do you have anything further to add at this time?

A: Not at this time.