

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Petition of) Application No. NUSF-77.08
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from Cambridge)
Telephone Company.)
)
)
)

In the Matter of the Petition of) Application No. NUSF-77.09
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from CenturyLink.)
)
)

In the Matter of the Petition of) Application No. NUSF-77.10
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from Citizens)
Telephone Company of Nebraska)
d/b/a Frontier Communications of)
Nebraska.)
)
)

In the Matter of the Petition of) Application No. NUSF-77.11
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from Diode Cable)
Company.)
)

In the Matter of the Petition of) Application No. NUSF-77.16
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from Raicom, Inc.)
)
)

In the Matter of the Petition of) Application No. NUSF-77.17
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from Rock County)
Telephone Company.)
)
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In the Matter of the Petition of) Application No. NUSF-77.18
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from Three River)
Communications, LLC.)
)
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In the Matter of the Petition of) Application No. NUSF-77.19
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)
Regarding the Nebraska Universal)
Service Fund: Application to the)
Nebraska Broadband Pilot Program)
(NEBP) received from Windstream)
Communications.)
)
)

In the Matter of the Petition of) Application No. NUSF-77.20
the Nebraska Telecommunications)
Association for Investigation and)
Review of Processes and Procedures)

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-77.08 through NUSF-77.23. Specifically, my testimony is related to the methodology developed by the Staff to determine the use of Nebraska Broadband Pilot 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 August 28, 2013?

A: Yes, it is.

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

A: Several of the applicants filed applications including multiple projects within a single application. Sixteen (16) applications were received with a total of sixty (60) projects; representing a nearly 130% increase in the number of applications and an over 200% increase in the number of projects submitted. For purposes of this review, each project will be 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; the speed (Mbps) of the respective service being offered; and the 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: residential monthly recurring rates for voice service and subscriber line charges, if applicable;¹ population and household by census block;² area by census block;³ and broadband availability.⁴

¹ Company specific publicly filed tariffs.

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

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

Staff utilized the Group Assignment to facilitate the Commission's direction to prioritize areas determined as unserved,⁵ using the broadband mapping data as a starting point for its review.

Staff 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, containing some hybrid of various levels of unserved and underserved areas, received a Group Assignment of two (2) through (4), based on the total cost of the project.⁶

As noted previously the NEBP, Year Two, saw a marked increase in the number of projects submitted; over three times the number received in Year One. While this increase is indeed a testament to the Commission and the way in which the NEBP was designed, the influx of applications results in demand significantly outpacing supply. As such, staff utilized total cost in the determination of the Group Assignment in an effort to advance the objectives of the NEBP; expanding broadband service availability to the

⁴ State Broadband Initiative Broadband Mapping Data, April 2013 submission.

⁵ See P.O.5 at 7.

⁶ All projects filed for the NEBP in 2013 are independent of all other projects filed by the same applicant.

greatest number of Nebraskans.⁷ This preference towards smaller projects does just that, increasing the NEBP Year Two impact six-fold.

Staff utilized the Jenks optimization method,⁸ 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 two (2); 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 three (3); finally, projects with a total project cost in excess of the second break value received a Group Assignment value of four (4).

Three classes, or two break values, were selected in an effort to maintain consistency, from Year One to Year Two, in the number of Group Assignment values used. The existence of a purely unserved project in Year Two results in the additional Group Assignment value.

The Group Assignment is used to create a priority hierarchy. Within each hierarchy, or tier, each project is scored based on the criteria detailed below.

⁷ See NUSF-77, P.O. 7 at 5 (describing the NUSF Act's goal to ensure all Nebraskans have comparable access to advanced services).

⁸ 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.

Within each priority tier, each project is scored based on six (6) scoring criteria. 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 within the same priority tier. 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, within each priority tier.

Service

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

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

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.⁹

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.

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

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.

⁹ All nonrecurring charges were amortized over a period of sixty (60) months at a rate of 0.0% prior to comparison and/or summation.

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

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

A: Scoring criteria results are then weighted and summed, by project, to determine each individual project's total score. The assigned weight is 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.¹⁰

¹⁰ 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%

Q: What happens next?

A: Finally, based on a project's total score, priorities are assigned, within each priority tier, and NEBP program support amounts proposed, subject to funding availability.

For example, suppose there are four projects and two projects, each with a priority tier value of one (1) and two (2), respectively. The four projects within priority

tier one (1) would be prioritized, based on total scores, from one (1) to four (4). The remaining two projects, within priority tier two (2) would then be prioritized, based on total scores, with the top score receiving a priority of five (5) and the lower receiving a priority of six (6). Based on project costs and support amounts available, NEBP program support would be proposed based on the assigned priorities; one (1) through (6).

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

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

TABLE 2

	NEBP Program Support	
	<u>Requested¹</u>	<u>Proposed</u>
Cambridge	\$ 1,823,448	\$ 219,536
CenturyLink	\$ 799,188	\$ 799,188
Constelco	\$ 918,869	\$ 164,550
Diode	\$ 107,598	\$ 107,598
Eastern	\$ 498,016	\$ 200,195
Frontier	\$ 579,967	\$ 219,048
Glenwood	\$ 294,068	\$ -
GreatPlains	\$ 1,484,693	\$ 278,325
NECentral	\$ 1,305,897	\$ 136,050
Pierce	\$ 264,856	\$ 264,856
Raicom	\$ 282,216	\$ -
Rock	\$ 229,531	\$ 229,531
ThreeRiver	\$ 735,738	\$ -
USCC	\$ 670,499	\$ 368,632
Viaero ²	\$ 2,927,426	\$ 378,963
Windstream	<u>\$ 2,610,118</u>	<u>\$ 633,528</u>
	\$15,532,125	\$ 4,000,000

¹ Requested grant amounts listed have been adjusted as described in Ms. Sue Vanicek's testimony.

² Proposed amount represents partial support of single project.

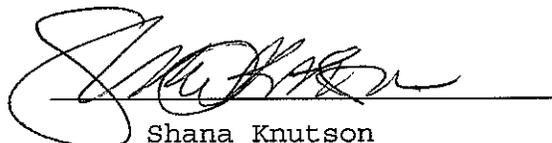
Q: Do you have anything further to add at this time?

A: Not at this time.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that an original of the foregoing Direct Testimony of Tyler Frost was filed with the Commission on this 27th day of September 2013, and that a copy of the Direct Testimony was sent via e-mail to the following:

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