

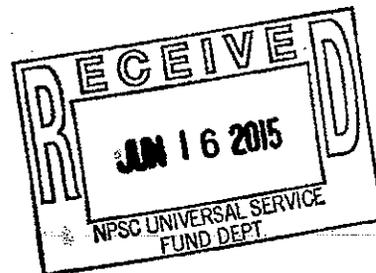
BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Nebraska) Application No. NUSF-92.17
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-92.18
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)
Cambridge Telephone Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.19
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-92.21
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,)
Consolidated Telco, Inc.,)
Consolidated Telecom, Inc., and)
Curtis Telephone Company.)
)
)



In the Matter of the Nebraska) Application No. NUSF-92.23
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-92.24
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 Network Services, Inc.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.25
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-92.26
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-92.27
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)
Hamilton Long Distance Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.28
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)
K&M Telephone Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.29
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)
Mobius Communications Company.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.30
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-92.32
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 Communications Inc.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.33
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-92.35
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-92.36
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-92.37
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-92.38
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-92.39
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.)
)
)

In the Matter of the Nebraska) Application No. NUSF-92.40
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.) Filed: June 16, 2015

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-92.17 through NUSF-92.19, NUSF-92.21, NUSF-92.23 through NUSF-92.30, NUSF-92.32 through NUSF-92.33, and NUSF-92.35 through 92.40. 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 the methodology contained in the Staff Recommendation filed with the Commission and served on the

parties on May 11, 2015 the same as what you are recommending today?

A: Yes, with the exception of one update. CenturyLink had filed three applications on November 25, 2014. On June 1, 2015 CenturyLink filed a notice withdrawing its Elkhorn project. CenturyLink had previously withdrawn its Bennington project. That leaves one project remaining for CenturyLink which is the Valley project. As a result, the model assigns CenturyLink's Valley project a Group Assignment value of two and recommends the project for funding in the amount of \$51,760. As the amount of the Valley project is less than the previously recommended, and subsequently withdrawn, Elkhorn project, any remaining broadband grant support is added to the partially funded Glenwood/Keystone project recommended by Staff.

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

A: Several applicants filed applications including multiple projects within a single application. Twenty (20) applications were received with a total of sixty-seven (67) projects.¹

Staff continues to strive to provide a comprehensive recommendation to the Commission that fulfills the objectives of the NEBP and acknowledges constructive input provided to the record, while remaining responsive to the

¹Subsequent to negotiations, four applicant's applications were amended, removing eight projects from consideration.

rapidly changing environment. Staff believes this recommendation, described herein, advances the broadband policies adopted by the Commission.

For purposes of this 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 by census block;² area by census block;³ and broadband availability.⁴

Prior to application of the scoring criteria, staff performed analysis intended to minimize or eliminate any duplication of effort between the NEBP and other sources. Staff analyzed location information for the Connect America

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, October 2014 submission.

Fund (CAF) relative to support amounts accepted by Nebraska carriers and the associated deployment obligations. Additionally, staff reviewed location information for those projects previously approved by Commission, but not yet included in the State Broadband Initiative Broadband Mapping Data.

With regards to the CAF, staff identified no concerns with projects submitted in the current round of NEBP applications. However, analysis of previously approved projects resulted in the identification of significant overlap with several currently proposed projects. Staff believes it inappropriate, and contrary to the goals of the NEBP, to provide duplicative funding in these areas merely based on the fact that previously approved construction is not yet complete. As such, staff removed the projects, listed below, from further consideration.

<u>Applicant</u>	<u>Project</u>
Great Plains	Arnold
Great Plains	Wolbach
Hamilton Long Distance	Hordville
Viaero	Ericson
Vistabeam	Scottsbluff
Vistabeam	Gering

In the current funding year, just as in previous, 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.

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

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.

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

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.

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

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.

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

A: Scoring criteria results were 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.⁶

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.

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.

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%

As the NEBP evolves, staff continues to investigate methods that best serve the citizens of Nebraska and accomplish the goals of the NEBP. In the development of the 2015 NEBP Recommendation, staff considered the intent of several Commission actions; the reduction of the 2015 NEBP budget by 11.2% from the previous year⁷ and the makeup of all projects approved in the previous two years of the NEBP. The first, in consideration of the continuing decline in NUSF remittance receipts overall, being a clear recognition of the Commission's continued need for fiscal responsibility. The second, while less obvious, being an indication of the Commission's project preference.

A thorough review of the projects approved by the Commission, in both of the two previous years of the NEBP, indicated a clear threshold of tolerance for projects measured based on a total cost per household ("Cost/HH") statistic. As such, in its 2015 analysis, in recognition of the evolving nature of the NEBP and the dynamic space it

⁷ See NUSF-92 P.O. 3.

which it operates, staff modifies the Group Assignment methodology.⁸

The method to designate a Group Assignment value of one (1) remains unchanged; any project comprised completely of unserved areas receives a Group Assignment value of one (1). Staff utilizes the Group Assignment to facilitate the Commission's direction to prioritize areas determined as unserved,⁹ using the broadband mapping data as a starting point for its review.

Designation of a Group Assignment value of two (2) is now reserved for an applicant's highest ranking project, based on the individual project's total score, if not previously identified as Group Assignment 1, provided the project's Cost/HH value falls below the Cost/HH Threshold ("Threshold"), described below.

Staff then triaged the projects into categories, or groups, based on the Cost/HH of each project. All remaining projects, not identified as Group Assignment 1 or 2, receive a Group Assignment value of three (3) through five (5), based on the respective Cost/HH.

Staff rejects any arguments that this modification is arbitrary or exclusive. The Threshold utilized is a function of historical, empirical, statistics derived from those NEBP projects previously approved by the Commission;

⁸ See e.g. NUSF-92, P.O. 1, Comments filed by N.E. Colorado Cellular, Inc. d/b/a Viaero Wireless at p. 8 (filed August 4, 2014), suggesting more consideration of the value of each project using a measure such as cost per subscriber. Staff utilizes cost per household to be consistent with the model's overall methodology.

⁹ See NUSF-77 P.O. 5 at 7.

a clear indication of the Commission's appetite. Further, as implemented, any project subject to the Threshold is subsequently assigned a Group Assignment based on its relative Cost/HH. The Threshold is, therefore, not a "cap" as it does not exclude any project from eligibility. Further, the Threshold does not limit the total amount of NEBP support sought by each provider in any given year, nor does it limit the number of projects submitted. Rather, the Threshold is a mechanism of fiscal prudence.

Q: What happens next?

A: Lastly, in a further effort to minimize any potential opportunities for gaming, staff determines an applicant's highest ranking project at a holding company level.

Staff utilized the Jenks optimization method,¹⁰ also known as the goodness of variance fit (GVF), to identify natural breaks within the Cost/HH dataset. Based on these results, the following Group Assignments were designated; projects with a Cost/HH value less than or equal to the first break value received a Group Assignment value of three (3); projects with a Cost/HH value 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 Cost/HH value in excess of the second break value received a Group Assignment value of five (5).

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.

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

A: Yes. The staff proposes the results identified in its May 11, 2015 Staff Recommendation with exception to the change I noted above.

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

A: Not at this time.