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Transportation and Telecommunications Committee
November 28, 2017

[LR176]

The Committee on Transportation and Telecommunications met at 1:30 p.m. on Tuesday, November 28, 2017, at McCook Community College, McCook, Nebraska, for the purpose of conducting a public hearing on LR176. Senators present: Curt Friesen, Chairperson; Bruce Bostelman; Suzanne Geist; Mike Hilgers; and Dan Hughes. Senators absent: Jim Smith, Vice Chairperson; Tom Briese; and John Murante. [LR176]

SENATOR FRIESEN: Well, welcome everybody and we'll open up the hearing for the Transportation and Telecommunications Committee here in McCook. We've got a...looks like a good turnout. I appreciate everybody; nice facilities that we have here. And I'll just kind of go through a few of the procedures that we'll have here. I'd ask that you turn off all your cell phones and other electronic devices. If you'll be testifying, legibly complete one of the green testifier sheets and hand the completed testifier sheet to the clerk when you sit down to testify. When you begin your testimony, it's very important you clearly state and spell your first and last names for the record. And if you happen to forget to do this, I'll stop you and ask you to complete that. So I will introduce the members of the committee that we have in attendance. We have a really good turnout. We have Senator Geist from Lincoln; Senator Hilgers from the Lincoln area. And to my right is Tip O'Neill, my committee legal counsel. And next we have Senator Dan Hughes whose district we are in. And then Senator Bostelman from the Brainard area. And then Elice Hubbert is my committee clerk. So we have a...I'm Curt Friesen, in case you didn't know. But we have a, I thought, a really good turnout from the committee. Senator Smith and...let's see, who else is missing? [LR176]

ELICE HUBBERT: Briese. [LR176]

SENATOR FRIESEN: ...Briese, Senator Briese couldn't make this one, and Senator Murante. So I think they might be...some of them coming to the Central City hearing, hopefully, and otherwise I thought it was a pretty good turnout. We'll open the hearing on LR176 and it's an interim hearing to study the broadband issue. So with that, I will kind of set the stage here a little bit that we're not going to use the light system if you'd try and hold your testimony to roughly five minutes. I don't know how many of you are willing to testify or going to, but we'll just kind

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of run it free for all today. I think if it runs longer, fine. Try and hold it down; try not to repeat too much. But other than that, I mean, we're just going to...we're hoping here to get good comments and some ideas on how we proceed in getting rural broadband out into these areas where we really need it, I think, for economic development purposes. And I think it's as important as a good highway to a community. So we're going to start the hearing off with the Public Service Commission. Mary Ridder is here. We'll open it up with Public Service Commission testimony, and then we'll just open it up to whoever, no regular order. Welcome.
[LR176]

MARY RIDDER: (Exhibit 1) Thank you. There's copies here for each person. Good afternoon, Chairman Friesen, members of the Transportation and Telecommunications Committee. I'm Mary Ridder, spelled M-a-r-y R-i-d-d-e-r. I'm commissioner from the Public Service Commission's fifth district and I thank you for this opportunity to testify today and welcome to my district as well. The FCC once referred to broadband as the great infrastructure challenge of the early twenty-first century. It's often listed as a utility alongside water and electricity. In 2009, Congress made broadband a nationwide priority. But in order to measure it, we need to map it. So federal grants went to states willing to collect and map broadband data and this populated a national broadband map. Our commission received such a grant. We collected and mapped broadband data in Nebraska, studied challenges in its deployment, and developed strategies to overcome barriers to its adoption. We collaborated with a number of entities including the University of Nebraska-Lincoln, NITC Community Council, NDED, and AIM Institute. In December of 2014, this group released a statewide broadband plan which included ten recommendations for broadband deployment and adoption, focusing on encouraging investment in infrastructure, developing a skilled IT work force, using broadband technologies in business and ag, and increasing digital literacy. The milestones outlined in that plan were very ambitious, announcing a goal to increase broadband availability of 25 megabytes per second down to 90 percent of households, and one gig down to 25 percent by the year 2020. As it turns out, this was a realistic goal. Cullen Robbins will follow me today from the Public Service Commission and will give you specific information where we are statistically with those broadband metrics and how its deployment has evolved over the years. As you can well imagine, one of the greatest challenges in Nebraska and nationwide is how costly it is to deploy broadband service to our rural areas, some being extremely remote. So this past April, I learned of a call for federal

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infrastructure projects. I pulled staff together and by May we filed a white paper explaining how states were best suited to determining where infrastructure needs exist and how we could leverage funding that was already being used. Our white paper identified the formation of a task force to further develop these ideas. This task force, we gathered stakeholders from agriculture, education, technology, government, and telecom. And a list of that task force participants is attached to my prepared testimony which you should have. This group met July 13 and again October 10. In preparation for our second meeting, I asked the following questions: (1) Should there be a Nebraska-specific definition of broadband and should it be based on minimum speeds or some other measurement? (2) Should Nebraska formally adopt a policy goal of ensuring ubiquitous broadband availability, regardless of cost? (3) Should there be technology preferences for the means by which broadband availability is deployed? (4) Should the state of Nebraska maintain restrictions on the provision of broadband services by political subdivisions of the state? Or in the alternative, should exceptions be allowed that would enable the formation and operation of public-private partnerships toward broadband deployment? And (5) are existing cost recovery mechanisms adequate to ensure that all Nebraskans will have access to broadband services that are reasonably comparable in cost and service quality? There were a range of opinions and no succinct answers to these questions. Everyone had their own unique vision of what a robust broadband deployment initiative looks like and what the overall objective should be. What type of broadband speed or service is good enough? What type of provider or support mechanism is best situated to help us achieve our goals? So my recommendation is twofold. First, this committee and the Legislature should create a formal task force to set goals for broadband deployment in Nebraska and develop an official statewide broadband plan. The 17 percent of rural unserved or underserved Nebraska households are made up of people and businesses. Those businesses are powerful economic drivers of this state, whether agricultural or small business, and we must reach them. Our state's \$1 billion-plus budget deficit points to the critical importance of a healthy and connected agriculture. Second, you need to know where we are as a state. I recommend you set up a biannual reporting requirement as part of the statewide plan, designed to provide you with updates and to trigger continued growth in this rural broadband effort. The commission stands ready to assist this committee and the Legislature as you move forward. I am happy to try to answer any questions you may have. [LR176]

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SENATOR FRIESEN: Thank you, Ms. Ridder. Any questions from the committee? Senator Bostelman. [LR176]

SENATOR BOSTELMAN: Thank you, Chairman Friesen. The question I have, excuse my voice, I have a cold that's going...losing it fast, on the 17 percent of rural unserved or underserved, is there a way to break out our urban major population areas from this and see what the real...I think there's a real picture of...I think that 17 percent is pretty low personally myself, just because I'm one of those underserved. (Laughter) So I'm just kind of curious if there's a way...have you broken that out a little bit more to kind of explain what that is. [LR176]

MARY RIDDER: There is, and Cullen has maps that he has brought that have been really helpful to people when they ask that question, so we will show you that, yes. And that...you notice it said unserved and underserved. Unserved means I have nothing. [LR176]

SENATOR FRIESEN: Right. [LR176]

MARY RIDDER: Underserved is by the definition of FCC under 25; well, I'm underserved, so. [LR176]

SENATOR BOSTELMAN: Right. All right, ma'am. Thank you. [LR176]

MARY RIDDER: Okay. Um-hum. [LR176]

SENATOR FRIESEN: Thank you, Senator Bostelman. Any other questions? Senator Hilgers. [LR176]

SENATOR HILGERS: Thank you, Commissioner Ridder, for being here. Thank you, Chairman Friesen. On the December 2014 report that I had the list of the recommendations, it sounds like some of the milestones you said were ambitious, but reasonable. But it also...you said there were ten recommendations. Do you know what they are and what...how successful they've been and...? [LR176]

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MARY RIDDER: I read this, and again I'm going to defer to Cullen, he was part of this group. He's more familiar with it than I am. [LR176]

SENATOR HILGERS: Okay. [LR176]

MARY RIDDER: But I did read this and I remember reading it after we had already pulled our task force together thinking, I think some of the work has been done, I think we need to just pull everybody together here. [LR176]

SENATOR HILGERS: So you anticipated my next question which is your current task force, can you explain...you have your second meeting, can you explain, sort of, where you are in the process and what the end game is for that? [LR176]

MARY RIDDER: We're on hold. In my opinion we're on hold. That question was asked during and after. Where do we go next? I said we go next here. And then we see where we go after that. I'd love to see this task force more in to a more statewide task force with some of the participants, obviously, at least representing some of the entities. Yes. [LR176]

SENATOR HILGERS: Okay. Okay, thank you. [LR176]

SENATOR FRIESEN: Thank you, Senator Hilgers. Any other questions from the committee? [LR176]

SENATOR GEIST: I guess I do have one. [LR176]

SENATOR FRIESEN: Senator Geist. [LR176]

SENATOR GEIST: Thank you. And thank you for your information. Can you give me an idea, you said there was a range of responses in what people felt the definition of broadband was. Can you give me an idea what that...was it all over the board or...? [LR176]

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MARY RIDDER: It's just...it's just like when you read about broadband and deployment all the time. One person says I don't have enough and they have 25, and the next person needs 100 for their business. So it was...it's such a difficult answer for each individual entity, each group that came to us. It's hard for me, it's frustrating for me to come and say to you I think what you need to do is set up this statewide task force to make this plan because you think that's what the commission would come to you and say, this is what we need. It's such a hard thing to nail down. I don't think numbers are necessarily the answer, because as soon as you said it, the number moves. As soon as the FCC...we go for the FCC number then (inaudible) moves. I think more importantly is how do we reach them. I didn't answer your question, but I can't answer your question. [LR176]

SENATOR GEIST: No, that's fine; that's good enough. Thank you. [LR176]

MARY RIDDER: Okay. [LR176]

SENATOR FRIESEN: Thank you, Senator Geist. Any other questions from the committee? Just following up a little bit on that, I mean we talk a little bit about setting limits and so when we say 25 by 3 is our standard now, ten years from now that probably won't be our standard. So how do we make sure what we do is not setting a floor or a ceiling or...sometimes it's a ceiling we're setting instead of a floor. How do we make sure that that doesn't happen? [LR176]

MARY RIDDER: I'm not the person who would answer that because I think that's more of a technological and technological advances question. I think we just have to always look over our own shoulder and say don't trap us in one place. [LR176]

SENATOR FRIESEN: So you're in a rural area and I'm...fortunately where I'm at, we have fiber to the home in the rural areas. [LR176]

MARY RIDDER: Right. Right. [LR176]

SENATOR FRIESEN: So I feel very fortunate. But then we look at the cost and what kind of service we each have. And so some will say, well, you know, if you're in a real remote area, you

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shouldn't expect as much as they have in Omaha and Lincoln. I mean, how do you...I've sometimes said, well, you know, I'm living in the country, I understand it costs a little more to serve me, I'm willing to pay a little bit more. How much should that be or should there be a difference? Should it... [LR176]

MARY RIDDER: FCC says we should all have comparable, affordable. How we define that might be within our own state borders. But there's an argument that could be made that would say, well, you live seven miles outside of a village of 500 people, you can't expect to have what you have living in Lincoln or Omaha. And, you know, all entities in our...all services in our country have to go through that same argument: postal service, roads, access to airports, you name it. We are subsidizing rural places. That's what the Universal Service Fund does. It subsidizes; it takes from everybody's use and then it helps subsidize our more rural, difficult to reach, more expensive areas. And there's a good reason for that. The more connected our state is, the more we can connect our businesses, the better off we are as taxpayers or residents of our state. So I have...you say the word economic development; I like that word. But I know that we have rural businesses that we're not servicing as well as we could. And I mean rural living in the country. I know people in my county that get an office in town so they can have access to broadband. It's not so their customers will reach them; their customers don't live there. I have had an office in Callaway so that I can have dependable Internet. So you can make an argument that you don't need to worry about those 17 percent, but I'll make a really good one against that argument. [LR176]

SENATOR FRIESEN: So the Public Service Commission, the NUSF fund and how that's been playing out over the last few years and the declining revenues, and I read now recently where you're going to change...you're thinking of changing to a connection-based system. [LR176]

MARY RIDDER: Right. [LR176]

SENATOR FRIESEN: Could you explain a little bit how you see that playing out as we go forward. [LR176]

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MARY RIDDER: We're just beginning that work, but we have already ruled on wanting to go to connections. And the whole point is to stabilize the fund. It does not need to get any smaller. On a federal level, they're trying to do that; many states are trying to...well, a few states are trying to do that. We're kind of up in the front of those states. But connections we believe to be a more dependable...we don't believe the fund will dip more. And so...but again, we're just starting that process. [LR176]

SENATOR FRIESEN: Do you look at adding any more types of entities that might be able to receive Universal Service Funds or have you established a very narrow criteria of what kind of businesses receive that or companies? [LR176]

MARY RIDDER: Within what we're legally able to do, we're doing. [LR176]

SENATOR FRIESEN: Okay. [LR176]

MARY RIDDER: Yeah. [LR176]

SENATOR FRIESEN: You don't see that needing to be changed at all? [LR176]

MARY RIDDER: That I don't know. [LR176]

SENATOR FRIESEN: Okay, just...any other questions from the committee? Seeing none, thank you for your testimony. [LR176]

MARY RIDDER: Okay. Thank you very much. [LR176]

CULLEN ROBBINS: Should be a couple of things: a copy of my testimony, then some maps that are coming along there, too, that I'll kind of point to as we go along here. Good afternoon, Chairman Friesen and members of the Transportation and Telecommunications Committee. My name is Cullen Robbins, C-u-l-l-e-n R-o-b-b-i-n-s. I'm the director of communications at the Nebraska Public Service Commission. I appreciate the opportunity to share with you where the state is with respect to broadband deployment, and what mechanisms are in place to continue

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broadband deployment, through both the federal and state Universal Service Funds. As Commissioner Ridder discussed just a few minutes ago, the grant that the PSC received in 2009 enabled us to develop our understanding of broadband deployment in Nebraska through our mapping efforts. I'll direct you to the handout that shows the results of these mapping efforts over the last seven years. This map shows the different methods by which broadband is provided, from traditional wire line methods to mobile wireless. And you can see from the map how much deployment has occurred for all broadband technologies. These deployments reflect the results of federal and state Universal Service Funds, technology improvements, and capital investments by providers. And while this deployment has been impressive, there are still many areas of Nebraska that are considered unserved or underserved. As Commissioner Ridder also mentioned, the broadband planning team that was formed in 2010 developed a broadband plan in 2014 with goals that at the time were considered very ambitious. The FCC defines broadband as 25 megabytes downstream, 3 megabytes upstream. The 2014 plan stated the goal of having 25-meg service available to 90 percent of the households by 2020. As you can see from the map on the second page, that level of service is currently available to 83 percent of the households in Nebraska as of June of 2016. And on the bottom of that map, you can see where we were in 2010 when we started to collect that information, which is there are less than 1 percent of the households in Nebraska had access to that level of service. So it appears that we are well on track to meet that goal. The plan also stated the goal of having 1 gigabyte per second, or 1,000 megabytes per second, service to 25 percent of households by 2020. Our data shows that 49.7 percent of households in Nebraska have access to that level of service today which exceeds the goal set in 2014. And again, in 2010 this level of service was only available to less than 1 percent of households. I'm going to take a moment now to talk about what federal universal service is doing in the state through its Connect America Fund, which I will refer to as "CAF." The FCC has two programs under its CAF Phase II plan that currently provide support for broadband. In each program, the FCC has determined unserved or underserved areas within the state that are eligible to receive federal support to build out broadband at levels of 10/1 service in most cases, and 25/3 in a few areas. The map on page 3 shows the areas that the FCC has deemed eligible for support. When you factor in the areas of the state that already have access to 25/3 service and those areas that are receiving, or will receive, federal support through the CAF II programs, you can see the areas of the state where there are specific efforts to deploy broadband, and that's on page 4. That leaves a number of areas that still require attention, and these are almost exclusively

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rural areas. Over the last couple years, we have targeted our state fund to fill these gaps through our high-cost fund, even though declining remittances into the fund have put our ability to do so at risk. We require price cap carriers, the three large multi-state companies in Nebraska, to apply for most of their high-cost funds through a grant-based approach, and we are exploring whether to make this a requirement for carriers eligible for high-cost support in Nebraska for all carriers. This approach allows us to target support to areas that aren't already being supported through the CAF and where competitive providers don't already provide service. I want to close by bringing to your attention one of the challenges that we encounter as we administer our state fund. First, you might have noticed that the CAF II program is supporting services at levels of 10/1 in most cases, yet the FCC itself defines broadband at 25/3. The PSC has declined to provide support in areas where the FCC has already provided or will provide support, but if a carrier only meets that minimum service level definition of 10/1, are those areas going to receive broadband that meets the needs of today, let alone the future? A clear definition of broadband and concrete goals for deployment would enable our commission to further our statutory obligation to provide all Nebraskans with access to telecommunication services. Thank you for your time and I would be happy to answer any questions that you might have. [LR176]

SENATOR FRIESEN: Thank you, Mr. Robbins. Any questions from the committee? Senator Bostelman. [LR176]

SENATOR BOSTELMAN: Thank you, Chairman Friesen. My question kind of follows up on 17 percent. I know I asked the commissioner, and we've kind of talked about this before too. Is there a way to kind of take out...because two questions really I have is, one, the realistic look at the underserved and those who don't have anything and who have a little bit like we do, you know, 25 miles outside of Lincoln, and separate the urban city areas from the rest of the state because it's a smaller population in those areas, granted, but there's a huge need there. And then the other...the second part of that is, is when we're looking at 10/1, 25/3 and that, how realistic, as you look at the future, is that really going to meet the needs of the people? For like where we're at, I'm not talking about doing gaming or Netflix or anything...I'm not talking about doing file uploads and downloads, if we don't have better access as far as broadband downloads and uploads, we're keeping a lot of businesses from what I call rural Nebraska because you just can't function with those speeds. [LR176]

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CULLEN ROBBINS: Sure. [LR176]

SENATOR BOSTELMAN: Kind of two questions there to answer. [LR176]

CULLEN ROBBINS: Okay, yeah, I'll try to answer your first one. So about six out of every seven households are in urban areas, so that gives you kind of an understanding of how that breakdown is, urban and rural. And, yes, 83 percent...what was it...17 percent of the households are, what was it, considered unserved or underserved by the 25/3 definition of broadband. So you can kind of see that breakdown falls a little bit the rural/urban divide, but that's maybe a little bit too simplistic of a way to look at the situation because there are plenty of rural areas in Nebraska that do have great access, but, obviously, like we said...or like I said in my testimony, there's a lot of still remaining unserved and underserved areas that need support. And again, you know, a little bit of it gets back to the definition of what is underserved. And that's a little bit, I guess, of what I pointed out in the testimony is that it depends on how you define what service is to somewhere. If it's 25/3, then that certainly delineates kind of where...what is underserved in Nebraska. If it's 10/1, that sort of changes the areas that we'd have to be targeting support in Nebraska. And your second question was... [LR176]

SENATOR BOSTELMAN: Well, really, I'm sorry, really, if I may,... [LR176]

CULLEN ROBBINS: Sure. [LR176]

SENATOR BOSTELMAN: ...it really depends upon is that small business development. You know, if you're a business that has large file uploads and downloads, you just can't function. [LR176]

CULLEN ROBBINS: Sure. [LR176]

SENATOR BOSTELMAN: And that's not even getting into the agricultural applications,... [LR176]

CULLEN ROBBINS: Yeah. [LR176]

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SENATOR BOSTELMAN: ...you know, with modern machinery and stuff that's coming out, autonomous vehicles, you know, self-driving tractors, combines, sprayers, those type of things, that's not even getting there, being able to...the latency reduction there and just get that connection because there's a huge growth in that area that we could bring to the state if we had that connectivity. [LR176]

CULLEN ROBBINS: Right. [LR176]

SENATOR BOSTELMAN: And so it's more of a small business, meeting those needs, not necessarily getting stuck on...I think probably maybe something that Chairman Friesen talked about before, not getting stuck on the numbers,... [LR176]

CULLEN ROBBINS: Yeah. [LR176]

SENATOR BOSTELMAN: ...but the usage, you know, the need. [LR176]

CULLEN ROBBINS: Right. And we've been a little, I guess, as a commission, we've tried to not limit ourselves by defining broadband by a speed. In some our proceedings, we've said that we would prefer scalable technology, whatever form that takes, something that's, you know, forward looking and not meeting the needs of yesterday, instead looking into the future and what will meet the needs then. So it's, you know, it's...I don't know if that answers your question. [LR176]

SENATOR BOSTELMAN: I think we both have the same answers, like it needs, but I don't know what that looks like right now. Thank you. [LR176]

CULLEN ROBBINS: Sure. [LR176]

SENATOR BOSTELMAN: (Inaudible)...thank you. [LR176]

SENATOR FRIESEN: Thank you, Senator Bostelman. Senator Hilgers. [LR176]

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SENATOR HILGERS: Thank you, Mr. Chairman. Thank you, Mr. Robbins, for being here. I'm sorry. Commissioner Ridder, I apologize. A few questions. One is on the 83 percent, can you tell us a little bit about the trajectory? Six, seven years ago, it was at less than 1 percent; now it's at 83. Has that plateaued, is it rising, is it...? [LR176]

CULLEN ROBBINS: Well, that's a good question. Tough to say exactly where it will be. I mean, we are collecting data...or the FCC actually collects data twice a year so we can...we'll be getting another round of data here soon where we'll be able to update this map again and update that percentage, so we can kind of follow that. It's...I don't know that I have a good answer yet for whether it plateaued...will or has plateaued. I mean I think, you know, sort of intuitively you'd think a lot of the easiest-to-serve areas probably have been, but that's a little bit of probably conjecture on my part and not something I have data to support at this point. [LR176]

SENATOR HILGERS: Sure, I appreciate that. I want to ask you a few questions, if you don't mind, on your slides. [LR176]

CULLEN ROBBINS: Sure. [LR176]

SENATOR HILGERS: On the first one you've got a number of...you've got the color-coded maps with all the various types of technology for transmission. Does this imply a certain rate of speed? I mean, certainly you would imagine with cable that it's probably 25/3 or higher. The map is helpful, but does it tell us anything about the speed? [LR176]

CULLEN ROBBINS: Right. Speed is a little bit different. I mean, that's something else that I could certainly produce if that's wanted. But, yeah, it's...for example, DSL and cable have different capabilities and it really depends on the network itself. I mean, even DSL systems...the DSL systems may not have the same capabilities. I guess the one thing that's really safe to say about that map is the locations that indicate there's fiber, that's pretty much, you know, limited by technology and electronics; they can pretty much meet whatever demand is there. DSL and cable, again, it kind of depends on location. [LR176]

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SENATOR HILGERS: Yeah, if you could provide that, I think that would be really helpful, if you have that information (inaudible). [LR176]

CULLEN ROBBINS: Yeah, and I should probably mention we have an on-line map that shows some of the speed tiers; you can click on and off speed tiers and look at where different speeds are available in addition to just technology type, so I could point (inaudible). [LR176]

SENATOR HILGERS: Thank you for that. Slide 2 reflects the households that have the 17 percent, it's color coded, it's very helpful. I don't know if you have this, but I think it would be helpful. We have maps that show...reflect where from a land perspective there's no Internet access. But what we don't have, at least I can't tell in here, you may not be able to have, but I think it would be helpful for the committee is to see where the population...where's that 17 percent? Is it just distributed sort of evenly throughout a lot of this...the land mass that we're seeing that's not covered? Is it clustered in certain areas? I mean, do you have that information at all? Is that available? [LR176]

CULLEN ROBBINS: I guess I've never done that specifically. I mean, you know, I mean I'm sure you kind of understand the...just the population makeup of the state; you know, I'm sure you're going to have a lot more of your 17 percent of the population sort of on the eastern part and it will certainly taper off as you go west. But I...you know, I guess I don't have that available, but I could certainly do something like that. [LR176]

SENATOR HILGERS: Yeah, and I...I know it was a big lift just to get to 82 percent, so I'm not suggesting you...you would have...you probably could backdoor maybe if you had the raw data of the 83 percent and then (inaudible) a map of some census data. But anyway,... [LR176]

CULLEN ROBBINS: Okay. Sure. [LR176]

SENATOR HILGERS: ...I may talk to you off...outside the committee hearing. [LR176]

CULLEN ROBBINS: Sure. [LR176]

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SENATOR HILGERS: On the third slide, I have just a couple questions if you don't mind, Mr. Chairman. [LR176]

SENATOR FRIESEN: Go ahead. [LR176]

SENATOR HILGERS: I wasn't...I didn't quite follow your testimony on the third slide. [LR176]

CULLEN ROBBINS: Okay. [LR176]

SENATOR HILGERS: I understand CAF and I understand the difference between price cap carriers and the rate of return, but I wasn't sure if this showed these are eligible for grants, or they've already applied for grants (inaudible)? [LR176]

CULLEN ROBBINS: Those are the areas that are eligible and that will, theoretically, be receiving support for broadband deployment and so, yeah, those are the eligible areas. There's sort of some subtleties on whether they accept support for all the areas. But essentially, those are the eligible areas that could receive support through CAF. [LR176]

SENATOR HILGERS: And is there...so theoretical and eligibility are one thing, but actually getting the supporter is another. I mean, can you say, you know, what's the time horizon for these areas to get these that kind of support (inaudible). [LR176]

CULLEN ROBBINS: Right. The CAF money, I think, goes through about...and it depends on whether it's price cap or regular term, but I think they have somewhere between five and six years left to complete that deployment under the CAF. And, yeah, again...I don't remember the exact percentages, but basically they need...they're required to provide that level of service to virtually all these areas. There's a couple of little tradeoffs they can do, but... [LR176]

SENATOR HILGERS: I'm sorry, I don't mean to talk... [LR176]

CULLEN ROBBINS: No, (inaudible). [LR176]

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SENATOR HILGERS: sorry. And that...but if I heard your testimony correctly, that won't necessarily get us to 25/3. [LR176]

CULLEN ROBBINS: No. [LR176]

SENATOR HILGERS: That just (inaudible). [LR176]

CULLEN ROBBINS: CAF is...their minimum requirement is 10/1. The rate of return, so the smaller companies, they have some areas that they're required to provide 25/3, but for the most part, yes, 10/1 is the service level that's required under CAF. [LR176]

SENATOR HILGERS: The last question I've got is, do you have a map similar so...in your testimony you talked about almost 50 percent of households have 1 gig or more. Do you have a map or information on that (inaudible). [LR176]

CULLEN ROBBINS: I didn't include that. I do have that map; I can provide that, yeah. [LR176]

SENATOR HILGERS: Okay. Oh, my last question was, do you have that report that I've discussed (inaudible) there? Could you send that? [LR176]

CULLEN ROBBINS: Oh, um, I don't have a copy of it, but we can provide that to you and... [LR176]

SENATOR HILGERS: Yeah, would you mind providing? That would be really helpful. [LR176]

CULLEN ROBBINS: And, um, just maybe to answer the question that you asked Commissioner Ridder, I don't have all the ten goals in there, but there are really just a few of them that were targeted at deployment, kind of what I talked about. The other goals, I think, were a little bit about adoption and some other things related to broadband, so. [LR176]

SENATOR HILGERS: Let the record reflect that the committee counsel had a copy of these; generously given it to me on loan. Thank you very much, I appreciate your testimony. [LR176]

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SENATOR FRIESEN: Thank you, Senator Hilgers. Any other questions from the committee?
Senator Hughes. [LR176]

SENATOR HUGHES: Is there any difference between unserved and underserved when it comes to fund allocation? Is that all one group or are they different somehow and what would the criteria be? [LR176]

CULLEN ROBBINS: I guess it kind of depends, at least from the state fund perspective. You know, we tend to favor support in underserved areas, tend to favor providing support for unserved areas. I mean, if there's no service, it's certainly a priority for us to get service there. But we would provide support in an underserved area as well if (inaudible). [LR176]

SENATOR HUGHES: So do the feds differentiate there? Or is that just considered one category?
[LR176]

CULLEN ROBBINS: I think they kind of...well, the feds do it kind of differently. They...if it's unserved and really, really expensive to serve, it's not included in their allocation of support because it's just too expensive. So they...I would say they tend to target more of the underserved areas than unserved. But if it's above a certain threshold, like I think if there's a competitive provider providing 10/1 support or above 10/1 support already, they won't provide support in these areas. So they kind of...I guess I would say that they favor the underserved areas rather than unserved. [LR176]

SENATOR HUGHES: Okay. [LR176]

SENATOR FRIESEN: Thank you, Senator Hughes. Any other questions from the committee?
Just a couple of questions that I...when you look at price equality across the state, do you think most areas receive about the same kind of service for the same amount of dollars? [LR176]

CULLEN ROBBINS: Are you talking broadband? [LR176]

SENATOR FRIESEN: Broadband. [LR176]

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CULLEN ROBBINS: Well a couple of things, one is that we don't have any price regulation on broadband. [LR176]

SENATOR FRIESEN: Right. [LR176]

CULLEN ROBBINS: So it's not something that we really track or have any say in. So I guess the short answer is I'm not...I don't really know. [LR176]

SENATOR FRIESEN: Okay, just curious if you watch that at all. [LR176]

CULLEN ROBBINS: Sure. [LR176]

SENATOR FRIESEN: So what do you feel is the biggest obstacle in serving some of these areas? I mean, you talk in this map of areas that are eligible for CAF II funds. Now do you also...you don't serve those then with any kind of...? [LR176]

CULLEN ROBBINS: We, at this time, we will not provide additional support in those areas. [LR176]

SENATOR FRIESEN: So they're...if they're eligible, then you'll stay away from those areas,... [LR176]

CULLEN ROBBINS: Yes. [LR176]

SENATOR FRIESEN: ...let them go after CAF II. [LR176]

CULLEN ROBBINS: FCC is...yep, FCC is already providing support, so we're not going to double up money in those areas. [LR176]

SENATOR FRIESEN: So what do you feel is the biggest obstacle of getting broadband...high-speed broadband access, 25/3 or greater, into some of these areas? [LR176]

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CULLEN ROBBINS: The biggest obstacle...well, at least from our standpoint it's just available funding. I mean, we've, you know, we've modeled the cost that it would take to sort of build a kind of utopian network across Nebraska and our state fund just isn't big enough to do that. [LR176]

SENATOR FRIESEN: Do you have an estimate about what you think it would cost to do that? [LR176]

CULLEN ROBBINS: Yes, and there are a lot of factors that kind of go into it, but the figure...again, to build sort of the utopian network is about \$250 million a year; and that's to build and provide ongoing support for that network. [LR176]

SENATOR FRIESEN: Oh, we need to do maintenance? [LR176]

CULLEN ROBBINS: Well, that's right. You build it and it doesn't just work into perpetuity on its own, so, yes. [LR176]

SENATOR HILGERS: Two hundred and fifty million dollars to do what? To do a...he said a utopia network? [LR176]

CULLEN ROBBINS: Well, I guess that's what I called it, yeah, sort of like the best, you know, the best, sort of a...a fiber-based network everywhere, every person. [LR176]

SENATOR HILGERS: With first mile...last mile to all... [LR176]

CULLEN ROBBINS: To everybody, yep. [LR176]

SENATOR HILGERS: And how much...(inaudible). I'll follow up with you after the hearing on that. [LR176]

CULLEN ROBBINS: Sure. And that's a modeled cost, so. [LR176]

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SENATOR HILGERS: (Inaudible.) [LR176]

SENATOR FRIESEN: Thank you. Thank you, Senator Hilgers. Senator Bostelman. [LR176]

SENATOR BOSTELMAN: All right, thanks, Chairman Friesen. I have a follow-up clarification for me. [LR176]

CULLEN ROBBINS: Sure. [LR176]

SENATOR BOSTELMAN: On 3, page 3 on the map here, the yellow and the red, did I hear you say those are areas that you're not necessarily...that the state is not necessarily looking at...that's federal funds that are available for that? [LR176]

CULLEN ROBBINS: Federal funds. [LR176]

SENATOR BOSTELMAN: So what drives that? Because...point blank, I mean I live in that area and we've lived there for 15, 16 years and we've been asking and we keep being told by our provider, oh, it's coming, oh, it's coming, and it's never going to come. So it hasn't in 15 years, I can't see where this is going to do...what's the incentive? Is there a way we can incent to...what can be done to try to get that pushed a little more to where we actually get service? [LR176]

CULLEN ROBBINS: Well, I mean, that's a requirement now that within the length of time that funding is available that they have to complete that upgrade to a minimum of 10/1 service to those areas. So within the next...if it hasn't happened already, then it will be within the next several years that that build out will occur. [LR176]

SENATOR BOSTELMAN: And that...does that mean either satellite, hard wire, what? [LR176]

CULLEN ROBBINS: No, that means...typically what it means is that...I think they will be sort of pushing fiber further out into the network. [LR176]

SENATOR BOSTELMAN: Right. [LR176]

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CULLEN ROBBINS: That won't necessarily mean that it will be to the home. [LR176]

SENATOR BOSTELMAN: Right. [LR176]

CULLEN ROBBINS: But it will be moving it further into the network to enable greater speeds at your location. [LR176]

SENATOR BOSTELMAN: Thank you. [LR176]

CULLEN ROBBINS: And it will be wire line. It won't be satellite or fixed wireless. They're supporting the...sort of the (inaudible). [LR176]

SENATOR FRIESEN: Thank you, Senator Bostelman. Any other questions from the committee? Seeing none, thank you for your testimony, Mr. Robbins. [LR176]

CULLEN ROBBINS: Thank you. [LR176]

SENATOR FRIESEN: Okay, I think we'll just open it up to whoever wants to come and sit in the hot seat first. Step up. If you have any handouts, you can give them to the clerk, Elice, and she'll distribute them down to the rest of us. Welcome. [LR176]

KEN PFISTER: Thank you. Good afternoon. My name is Ken Pfister. I'll spell it: it's first name, K-e-n; last name, P-f-i-s-t-e-r. I'm vice president of strategic policy of Great Plains Communications. We're a company that provides broadband and voice services across Nebraska, including in the McCook and surrounding area. Purpose of my testimony today is to briefly, I emphasize briefly, discuss the importance of the Nebraska Universal Service Fund to Great Plains and our customers and how that program operates in partnership with the Connect America Fund program that you've referenced by the commissioner and Mr. Robbins from the staff that the Federal Communications Commission recently instituted on an optional basis for Great Plains and several other rural companies in the state and hundreds of other companies like us nationally. First, just a little information about our company just to set the stage. We're the largest state-based telecom provider in Nebraska. We serve about 14,000 square miles. That's an

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area, just to give you some perspective, it's comparable to the states of New Jersey and Connecticut combined. Unfortunately, we don't have quite the population of New Jersey and Connecticut, which is why we have Universal Service, which is why we have hearings, which is why I'm here. However, our customer density is less than two per square mile across the entire state. And if you look at a map of Nebraska, Great Plains serves a great geographic dispersion across the state. And it means we serve a very rural population. So when you're talking rural, Great Plains knows what rural is all about. To meet the growing broadband demands of our customers, we'll also emphasize...and I emphasize this, meeting our obligations to provide voice service to each and every one of our customers. We do rely in part on support from the Nebraska fund that's been referenced, as well as the new Connect America Fund program that I referenced. Both programs are essential to our ability to meet our customers' growing broadband expectations in the very rural areas we serve. And I want to emphasize that, that we're really focusing on the nontown areas as what we're...that's the senator has been referencing. Those are the areas that we're really focusing on. Most of the towns, I think we've come to agreement, are pretty well served. Thanks to the NUSF, Great Plains has been able to provide broadband to thousands of our customers across our sizable footprint while continuing to meet the voice service needs of our same customers. Our broadband deployment has accelerated recently thanks to the Connect America Fund program made available by the FCC for the first time to our company and others like us in 2017. So this is an important year for us. Under this...and it's a ten-year program for rate-of-return companies like ourselves. Companies such as Great Plains were able to accept the option of accepting specific broadband build-out obligations in exchange for receiving pre-specified funding determined by the FCC. It essentially is an agreement between us and the federal regulators in exchange for this amount of support over this ten-year period we will agree to this amount of build out at varying levels of speeds over that same time frame. Because of this program, supplemented by the support we received from the NUSF, Great Plains has completed or is in the process of completing and then operating--I appreciate the comment on operating; it's true--several broadband construction projects in a variety of locations across the state. I want to highlight some of those if I may just to give you an idea of the geography. In rural areas around Wynot (inaudible) in northeastern Nebraska, we recently completed a large project up there; in rural areas outside of North Bend and Herman in the eastern part of the state, completed projects there. In and around Tryon, which is in the Sandhills in central Nebraska, we're in the midst of a big project there. Across vast areas of Gordon and

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Rushville, which are very large service areas if you know anything about those parts of the state, up in the northwestern part of the state, we're in the midst of a very large project in those two big areas. And here closer to home, closer to this part of the state, in nearby rural areas outside of Stratton, Trenton, and Palisade, we've completed projects there. I'm also pleased to let you know that we will be bringing these and eventually many more broadband construction projects to customers around the state. In just this year alone, we've installed 400 miles...I want to emphasize that. It's a lot of miles. This is an expensive state to serve. But we have installed about 400 miles of fiberoptic cable just this year in the state. Next year, our plans...again, kind of playing to the locale that we're in here, our plans do include a major project in nearby rural Imperial. So that's something for both Senator Hughes and folks in his district to look forward to. I'll close then by acknowledging the importance of accountability that's been built into the Nebraska USF program that's administered by the Public Service Commission. The NUSF has made it possible for companies like Great Plains to edge out our broadband services, while ensuring we have adequate resources to keep our rates reasonably affordable, as has been mentioned by some of the committee asking questions about affordability. I do think it's a fair statement that our rates are comparable to those in urban; not quite on the same...we charge a healthy rate. We have to in order to help recover the cost of the services, but I do think our rates our comparable to those that you find in urban areas. The Nebraska PSC, I want to emphasize, is now in the process of reforming the contribution mechanism, as has been mentioned, by which customers pay into the NUSF. This is a very important proceeding to companies and customers that we...to our companies and to our customers. These reforms are necessary to ensure that the future sustainability of a fund whose revenue base has been drastically declining that this can occur. I would urge you upon the Legislature and this committee to closely follow the commission's progress as it reforms contributions. This is really important and it's getting national notoriety, and deservedly so and necessarily so, as well as keep in close contact with our companies through our people and other companies like us as we expand our broadband service offerings to as many Nebraskans as possible. With that, I thank you for the opportunity to visit with you today and I welcome any questions. [LR176]

SENATOR FRIESEN: Thank you, Mr. Pfister. Any questions from the committee? [LR176]

SENATOR GEIST: I have a couple. [LR176]

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SENATOR FRIESEN: Senator Geist. [LR176]

SENATOR GEIST: Thank you very much for your testimony. Do you know what percentage of your build out that you've talked about the projects is supplied by either the NUSF or the CAF funding? [LR176]

KEN PFISTER: Yeah, let me start with CAF, because NUSF has been on the decline, and to be, I guess, I hate to be cliché, to be honest, as if I wouldn't be, it has been very unpredictable... [LR176]

SENATOR GEIST: Um-hum, okay. [LR176]

KEN PFISTER: ...as to what we'd receive year to year in the NUSF. In fact, we just learned this morning this coming year's NUSF and it's down 20 to 25 percent... [LR176]

SENATOR GEIST: Okay. [LR176]

KEN PFISTER: ...from what we received in the NUSF high-cost program last year. So that has been something that hasn't been as reliable in terms of knowing what portion of the NUSF will be...under their formulas where we're eligible for significantly more under their models, but they just haven't had the funding to sufficiently fund it. As far as the federal program, we're going to be with the obligations that the FCC that we accepted, we have between under- and unserved for our company, we will be reaching all but...under that program, all but about 5,000 of our subscribers. Just to put it in context, we have about 30,000 customers. [LR176]

SENATOR GEIST: Okay. [LR176]

KEN PFISTER: So that will get us out to almost everybody but about 5,000. And we're a unique company in this state. I won't bore you with the details about our company, but we have a lot of areas that are out of town. We have 40 percent of our subscribers reside outside of the boundaries of an organized entity, community, so that makes it particularly challenging. [LR176]

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SENATOR GEIST: Okay. [LR176]

KEN PFISTER: But this federal program is really putting a dent in our broadband deployment. It's a game changer. Our goal would be that our...that the state fund, hopefully, when it stabilizes, then it will allow us to really go after those additional 5,000 so that everybody gets something. [LR176]

SENATOR GEIST: Right. So when you do your build out, are you using just fiber? [LR176]

KEN PFISTER: Yeah, we are using fiber. We're not doing fiber to the home everywhere. We have...and Mr. Robbins was spot on in describing the federal obligations. They're a mixture. The FCC decided that for our kind of company's rate of return that they wanted a mix: some fiber, all the way to the prem, 25/3 and beyond, and some 10/1. But that's the...the slowest is 4/1. I could...there's open proceedings...there always are more. We always have...when in doubt, have another proceeding. You know, there's an open proceeding on the federal side, as we speak, that I've been pretty involved in, where they're looking at even bumping up the funding additionally in the model that...for our kinds of companies that they didn't go forward with in the order that they issued in 2016 for implementation this year. But there's a mix of 10/1...primarily 10/1 and 25/3. [LR176]

SENATOR GEIST: Okay. And then one more question if that's all right. Just for the sake of the committee, you've talked about how the PSC wants to change getting funds for the NUSF to stabilize that fund. And you talked about that being a connection based. [LR176]

KEN PFISTER: Um-hum. [LR176]

SENATOR GEIST: Would you explain that? [LR176]

KEN PFISTER: Sure. (Laugh) How long you got? No. [LR176]

SENATOR GEIST: (Laugh) Well, that's up to the Chairman. [LR176]

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KEN PFISTER: Yeah. Every voice connection... [LR176]

SENATOR GEIST: Okay. [LR176]

KEN PFISTER: To over...to greatly simplify it, but really every voice connection... [LR176]

SENATOR GEIST: So every cell phone? [LR176]

KEN PFISTER: Cell phone, every cell phone,... [LR176]

SENATOR GEIST: Okay. [LR176]

KEN PFISTER: ...every VoIP connection,... [LR176]

SENATOR GEIST: Okay. [LR176]

KEN PFISTER: ...either over the top or interconnected VoIP. If you know any of that terminology, we've got VoIP to VoIP and so on. And then your plain old land lines, the diminishing...the citizens that still have those will also contribute. So it's every voice connection. [LR176]

SENATOR GEIST: Okay. And those are the only ones that contribute currently? [LR176]

KEN PFISTER: Those are; that is correct. [LR176]

SENATOR GEIST: Okay. [LR176]

KEN PFISTER: They don't...keep me honest, we're not...are we assessing over-the-top VoIP? Nomadic, nomadic interconnected VoIP we currently are. The commission is looking at every inter...every voice VoIP connection, whether it's over the top or not over the top, ultimately, contributing. [LR176]

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SENATOR GEIST: Okay. [LR176]

KEN PFISTER: That is still...their actual mechanism for collecting is the next part of the big docket that they just put a big order out on. Then, come 2018, there will be a big proceeding to determine what the exact types of connections that will be assessed every...and what will be the level. So we still have some fun ahead of us. [LR176]

SENATOR GEIST: It sounds like it. [LR176]

KEN PFISTER: They made big strides in what they've done. [LR176]

SENATOR GEIST: And my very last question, I promise. [LR176]

KEN PFISTER: Sure. [LR176]

SENATOR GEIST: What percentage do you think that will gain from where we are today in the NUSF? [LR176]

KEN PFISTER: I'll give you my answer. I hope it will greatly stabilize the fund. I think the commission plans to...the actual level of surcharges on the connections and the level of funding that the commission determines is necessary for the state, that's yet to be determined. [LR176]

SENATOR GEIST: Okay. [LR176]

KEN PFISTER: That's to be our...that's to be judged and adjudicated by the body. So at this point we just don't know. Our company will certainly be in there humming hard that we need this fund to be at a different size than it currently is. The Nebraska fund has really declined in size significantly over the decade. [LR176]

SENATOR GEIST: Thank you. Thank you. I'm done. [LR176]

KEN PFISTER: Sure. Thank you, Senator Geist, for that question. [LR176]

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SENATOR FRIESEN: I encourage everyone to ask questions. That's what we're here for. Senator Hilgers. [LR176]

SENATOR HILGERS: Thank you, Mr. Chairman. Thank you for being here and your testimony. I just had a couple questions... [LR176]

KEN PFISTER: Sure. [LR176]

SENATOR HILGERS: ...on costs in generalities. Can you give the committee a sense of what the cost...how the cost compares from building out a mile, say, versus maintaining that mile? So I know there's a lot of different variables that go into that, but is it... [LR176]

KEN PFISTER: Yeah, I'll give you in a build out. We always use a broad parameter of about \$5,000 for a mile of fiber, as the crow flies. I think you can do it cheaper, especially if you're doing volume. (Inaudible) every mile that's 400 we did this year were, especially if you're going through sand in western Nebraska. I'm told our plows can go pretty well. In terms of cost of maintaining, and not to be evasive at all, but it really...it depends on multiple factors: the age of the plant. We've got, admittedly, some aging plant in Great Plains. It's a...we've got cost challenges of maintaining all of what we have throughout the state. We still have very viable copper that if you get the fiber out far enough that's a good job with our limited funding. But maintenance costs can vary greatly. I will tell you, when you've got...the more fiber you put out there, the less your cost of maintaining. Ultimately, you do get to a place where...and that's why fiber is so future-proof, to use another cliché, because the longer...or the more you have of it, the less maintenance it needs. So it certainly becomes enough from a cost-effective maintenance mode for companies like ours. [LR176]

SENATOR HILGERS: Now that makes sense. So another question on the cost would be, can you speak a little bit about the cost of upgrading a line from what CAF is doing, say, if you wanted to take a 10/1 to a 25/3 or beyond versus...does it go down because there's always...already been work done laying it? [LR176]

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KEN PFISTER: That's a great question. This is very...you don't know me. Some do. I can, you know, tell you what the time and build their watch, you know, kind of thing, so you don't want to go there. An important time for us and the feds deciding whether they're going to...they gave us a ten-year program, speaking for our kinds of companies. We're one year in. They're...we're deliberating right now whether or not they want to go what they call full funding of the companies that accepted their social contracts, so to speak. Why it's important, in addition to the additional funding, is if...the longer you go in your construction cycles, okay, the longer...you'll go where they...more of...we have more 10/1 now. If we get additional support, we'll have more 25/3. You build networks entirely different if you're going 25/3 as opposed to 10/1. The sooner within the cycle of that ten years, we know, the more efficient it will be for us to go to the folks who would have been 10/1 to go 25/3, if you're following me. [LR176]

SENATOR HILGERS: Yeah, I'm with you. [LR176]

KEN PFISTER: You build very differently, okay. Now when you're doing a 10/1, it's interesting, you'll pick off 25/3 on the way to the 10/1, because you will be running fiber past homesteads and farmsteads along the way that will, incidentally, get fiber to the home. And I hate to put it this way, but they're kind of the lucky ones when you're building a network. [LR176]

SENATOR HILGERS: So that makes sense if you're in the middle of your ten-year construction horizon, but what if you already have the 10/1 built and now it's a question of upgrading the 10/1 to 25? [LR176]

KEN PFISTER: Yeah. It means taking the fiber from the node all the way out to the prem. And in these instances it's going to be additional cost. [LR176]

SENATOR HILGERS: So I'm with you. I guess my question is additional costs of course, but comparing...I mean, is there less cost...is there less cost because you've already done the work to lay the 10/1 down? [LR176]

KEN PFISTER: There's some...there's definitely some less cost because you've gotten the fiber out to the node that's already servicing that segment of customers. So it certainly has taken some

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of the...it has chewed some of the cost of the total build. But the real cost in our business is, if you're building networks, is...and looking at doing fiber, it's getting...it's those last...you're so...I've heard used the term "last mile." You've obviously heard that. In the instance of what we're talking about, that can be the last 20 miles going to that prem. [LR176]

SENATOR HILGERS: Right. [LR176]

KEN PFISTER: Those decisions just don't get made real easily. That's why it was so remarkable, honestly, that the feds did, for those segment of companies that took their...took them up on their offer that they actually did for a few...some of our customers did fund 25/3 in a way that we actually feel that we can do it. [LR176]

SENATOR HILGERS: That led to my last question which was you said it was a game changer, the CAF program, can you just elaborate a little bit on that? [LR176]

KEN PFISTER: Sure. [LR176]

SENATOR HILGERS: Not just what was so great about it, but can you explain, maybe, some things that could be better or could have been done better or...? [LR176]

KEN PFISTER: Sure. Well, let me first go with what's great about it. It was a model that the FCC had deployed first for price cap companies where they started with...at 10/1. Then they...and this is the way they always do it, they start with the big guys and then they go down to the little guys secondly. And we played pretty hard in this thing. I did more than a few trips to Washington over the last ten years when this thing was being deliberated for a long time. It was a model that was good for Nebraska...is good for Nebraska. It recognized density as a cost driver, which in our business density is the number one cost driver. It's kind of common sense. The more subs you have per square mile, the less your cost. The fewer subs you have, so...the greater your costs. So once the FCC finalized the model, then they went about determining their budget. And then that was what we battled the last year. And I'd say...battle is not the word, we...you know, they adjudicated it and you do cases at the FCC very differently than you do at the Nebraska commission which does hearings and so on. It's, frankly...at the FCC they do what they

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call an ex parte process where you actually go and meet on the public record with the commissioners and/or the staff and everything you say has to be on the public record and documented and filed. So we...a lot of us from Nebraska...that were interested in this program, trudged out to Washington; I probably went out 20 times in the last two years, you know, and they got to know you. It's not a very glamorous life, but it's one that for a company like ours that under the previous system we were pretty much aced out of federal support. The previous rate-of-return program just didn't work for our company for a lot of reasons that can be another hearing if you like. But that...remind me of the second part of your question. [LR176]

SENATOR HILGERS: Not just what was great about it, but what could have... [LR176]

KEN PFISTER: ...what was not great about it. They left out a great portion of Nebraska still in what is funded is some...and they only funded up to a certain level. They had their own budget issues. We did make some progress in the budget with the FCC in those deliberations. They made more available in the final decision that they made...than they had tentatively decided earlier in the proceeding, so that was positive. But yet there's a significant amount of money that's still on the table that they openly had hoped...and they even said it in their order, their goal was to fund it at a greater level, up to \$200 a location per month. They actually funded for our company about up to \$140 a location. You got a \$60 gap. And that \$60 gap makes a big difference in terms of the number of customers that will see something versus won't see something and those that will see either 4/1, 10/1, or 25/3. It's almost like a sliding scale. So we're still pushing. I don't think the FCC will decide on this, this year. I think they're going to push it to a further proceeding in 2018. [LR176]

SENATOR HILGERS: Thank you. [LR176]

SENATOR FRIESEN: Thank you, Senator Hilgers. Any other questions? Senator Hughes. [LR176]

SENATOR HUGHES: Yeah, thank you, Mr. Pfister, for coming. As the vice president of strategic planning, you know, for your company, what percentage of your territory do you feel is built out now for broadband? [LR176]

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KEN PFISTER: I'd say we're built out at...meaning somebody has something. Let's...it's probably best to use terminology and let's say 10/1 is a basis point. I'd say we're approaching 90 percent... [LR176]

SENATOR HUGHES: Okay. [LR176]

KEN PFISTER: ...of the total company have... [LR176]

SENATOR HUGHES: What do you feel you're complete? I mean, are you going to be able to get done within five years, ten years, or the people, the 10 percent that are left are a long ways away? [LR176]

KEN PFISTER: Yeah, I know. I know. Our goal is to get to everybody. And I don't want to sound pie in the sky and not...unrealistic. I think for a company like ours, which is in the business of providing service...we're not in the business of not serving customers. Otherwise, why are we here? I think with a combination of the federal program, particularly if they increase funding to \$200 a location, coupled with stabilizing the Nebraska fund, our company views the Nebraska fund, which assists us both with CAPEX and OPEX, if we can get the fund in the state back to some level of stabilization. Our support this year is less than half of what it was just five years ago so it's a significant decrease there. If we can get back to levels reasonably...reasonable levels, then I don't even...the Nebraska support then can assist us in getting out to those last customers that the federal program isn't getting us to. And I think it's a reasonable opportunity in ten years. And I know it sounds like a long time, but these are...even if you built your head off, and we're building our head off pretty...I mean we really went at it with 400 miles this summer and we went at it pretty hot and heavy. And good thing we're having a nice warm fall so it's extending the construction season too. But I'd like to think we can put a real dent in that additional segment of customers that we can't get to under the federal program with a stable NUSF. [LR176]

SENATOR HUGHES: Okay. [LR176]

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SENATOR FRIESEN: Thank you, Senator Hughes. Any other questions from the committee? When you talk about the last mile and realistically at some point there's not going to be fiber to the home for that last mile... [LR176]

KEN PFISTER: For everybody. [LR176]

SENATOR FRIESEN: ...for everybody. There's going to be areas. [LR176]

KEN PFISTER: Right. [LR176]

SENATOR FRIESEN: What...is there...you're going to provide the technology to provide them some sort of service of some kind or...? [LR176]

KEN PFISTER: It will be fiber to the node for those far out. I use Gordon-Rushville as an example. We're doing a lot of fiber though. Those are huge exchanges--we call them exchanges--huge service areas up in the northwestern part of the state that I mentioned. A good portion of those will be 10/1, so we'll be pushing. And I'm not the construction guy. When...or, frankly, this guy here knows a lot about it. (Laugh) If you get nodes...building fiber to nodes, we're pushing nodes further out to fewer numbers of customers than usually is done to be economic, if you're following me. But in those circumstances, I agree with you, Senator, there will be realistically, unless decisions get made that surprise me, and I've been surprised, I'd like to be surprised, I don't think it's reasonable to expect that the NUSF will fund at levels that Mr. Robbins was describing. The costs that are necessary that are to be incurred to build fiber to everybody in this state, that's probably not realistic. But I think it's our...I don't think, I know it's our goal to, in the long term, do the best to get something out to everybody. And I think there's people at the FCC that we work with, you know? I'm thinking Commissioner O'Rielly. He's been a real fan and he's very close with Senator Fischer. He's a real fan of saying that their goal is to try and get something to everybody, not everybody getting gold-plated, my word, if you follow me, so. But to answer your question, I do think realistically speaking it's not reasonable to expect that we're going to see fiber to the home to everybody. [LR176]

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SENATOR FRIESEN: Right. So do you...I mean obviously you're going to provide them with some sort of service so I think that's...we need to recognize that fact and I guess go that way. When you look at CAF funds, have you ever turned down any CAF funds for projects, or you actively...? [LR176]

KEN PFISTER: Well, this is our first experience with CAF for our company with this program, so it was an offer made in late...or late 2016 and we accepted that offer. So it was one that wasn't...it was a very specific program to stimulate build out to unserved and underserved, and especially unserved, so. [LR176]

SENATOR FRIESEN: Does somebody audit you then somehow to make sure that you're using the money? [LR176]

KEN PFISTER: Yes. They have a very complicated reporting structure. They call it a...they've got a portal that they have set up where you actually, by census block, census block by census block by census block, report by location to the FCC and it's a fairly elaborate program. I'm pleased to say our company was invited to actually participate in the testing of the darn thing. So we cannot complain about something that we helped, I won't say design, we didn't design it, but we did participate in the formulation of the project. So there's some pretty specific reporting that goes on and it feeds into the state effort ultimately. And this will all be publicly available as additional census blocks in the state come on-line, you know, and it's a progressive kind of a program. But we're reaching every month companies. Companies have to do it at least once annually. We're going to be making a big dump into that system very soon for all of this year's program, for all of this year's projects. [LR176]

SENATOR FRIESEN: Thank you, Mr. Pfister. Any other questions from the committee? Seeing none, thank you for your testimony. [LR176]

KEN PFISTER: Thank you. [LR176]

SENATOR FRIESEN: We're going to hold up just a little bit. She's going to move the table so that you don't have to look into the sun. [LR176]

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ELICE HUBBERT: You were the unlucky one. [LR176]

SENATOR FRIESEN: Thank you, Elice. I want them to be able to look me in the eye.
(Laughter) [LR176]

DUSTIN LADENBURGER: Glare off the table...or the windows now. (Laugh) [LR176]

SENATOR FRIESEN: Welcome. [LR176]

DUSTIN LADENBURGER: Thank you, Chairman Friesen and the members of the Transportation and Communications Committee. My name is Dustin Ladenburger, D-u-s-t-i-n L-a-d-e-n-b-u-r-g-e-r. I grow dryland wheat, corn, milo, and have a cow-calf operation near Stratton. I'm here today representing Nebraska Farm Bureau Federation, expressing our support for the continued expansion of rural broadband. In addition to managing my operation, I serve on the Nebraska Farm Bureau state board of directors. This year the state board of directors prioritized the expansion of high-quality rural broadband. Without a doubt, disparity in broadband access in rural areas carries with it a number of adverse economic and social consequences, and the Nebraska Farm Bureau believes there is more we can do to address the digital divide. Throughout our grass-roots policy development process this fall, the Nebraska Farm Bureau board staff and our farmers and ranchers members across the state discussed the number of specific ideas related to broadband deployment. For instance, Farm Bureau policy supports allowing private companies to enter into agreements with public power districts to provide broadband service in rural Nebraska as long as it does not hinder other means of communication. While we don't support the public sector competing directly with the private sector, we encourage the Legislature to consider innovative ways to allow private companies to work cooperatively with public power to utilize or upgrade existing infrastructure or reduce the cost of new infrastructure. Though not explicitly outlined in our policy book, we also discussed the notion of contribution reform to bolster Nebraska state Universal Service Fund. This fund was created to ensure all Nebraskans have access to quality communication services at an affordable rate. But the way dollars have been allocated to the fund is outdated and does not necessarily reflect modern wireless technology usage. We are pleased the Public Service Commission recently acted to change fee structures in an effort to fund improvement in rural

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areas. Our members are also interested in knowing if current broadband coverage maps and cost estimates reflect the number of individuals who technically have access to Internet service but quality and speed are lacking. Upload speeds in agriculture are, in some cases, just as important as download. Finally, we support continued transparency and accountability as it relates to high-cost dollars in the Universal Service Fund and oppose diverting dollars for other purposes. Given the importance of Internet access to agriculture in greater Nebraska as a whole, Nebraska Farm Bureau is eager to work with the Legislature and other stakeholders to improve and expand high-quality access to broadband. On a personal note, as a client of Great Plains, I'm part of their expansion project south of Stratton. I am a mile and a half from their node. My speeds, my download speed is sitting at 12 and my upload speed is at 2.6. They've...my understanding is they've done what they can for where I'm at, but it's still...and what I've learned just from everybody talking today, I'm still being underserved. As far as future farming practices, we are limited as to what we can do and the technology we can because of that. So my brother and I farm together and it, you know, this is our interest area. This is what we'd like to be doing, but we're limited as to what we can do. So thank you for your time and attention, and I will answer any questions. [LR176]

SENATOR FRIESEN: Thank you. Any questions from the committee? So what kind of service did you have before Great Plains came out? [LR176]

DUSTIN LADENBURGER: I had satellite. [LR176]

SENATOR FRIESEN: What kind of speed did you get out of that? [LR176]

DUSTIN LADENBURGER: About...I think it was about the same. But you know, if a thunderstorm come by, blizzard, whatever, I was out of luck, so. And I'm a single guy and I don't have satellite TV either, so radio or...and spotty cell service. So, you know, warning, weather warnings where I might get a text from somebody saying, hey, there's a tornado or something coming towards you, but...so it was...and that's a true story. I had a friend in Mississippi text me. He said, looks like there's a tornado coming at you. I'm like, okay, things to know. (Laughter) [LR176]

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SENATOR FRIESEN: Senator Hughes. [LR176]

SENATOR HUGHES: So you consider yourself underserved. If you had the 25/3, would that be sufficient speed and capacity to allow your farming operation to keep up with technology that you want to implement? [LR176]

DUSTIN LADENBURGER: As far as I know, it should. My interest is in the cattle so I haven't looked into the programming for the farming side of things. My programs for what I'd like to use with the cattle would work at that speed. [LR176]

SENATOR HUGHES: Okay. Okay. Thank you. [LR176]

SENATOR FRIESEN: Thank you, Senator Hughes. Any other questions? Seeing none, thank you for your testimony. Welcome. [LR176]

NEIL GOHL: Afternoon. My name is Neil, N-e-i-l, Gohl, G-o-h-l, and I'm here representing Golight, Incorporated. We're a spotlight manufacturer located just to the west of Culbertson about one mile, about half a mile to the north of Highways 6 and 34. And I guess we're one of the lucky customers that was able to afford to run fiber from (Highways) 6 and 34 up to our facility. Here about in 2015 we did that. A little background on our company: We started back in 1994 in a rural farmhouse and from that we've grown. We moved down to the Culbertson facility in around '96, and we've grown to about 30 employees and we do about \$28 million in revenue each year. We consider ourselves the leaders in the industry of our...in our industry--remote-controlled lighting. So having the fiber at our facility, when it came available it was something that, although it cost just a little bit extra money, we definitely took the opportunity. It really solidified our position out there. We don't have to worry about future moving. It looks like for the foreseeable future, we'll be able to maintain our facility out there, which includes a lot of warehouse space and all of our office spaces. So we've been really fortunate and it helped our...any of our employees that live in the Hayes County, Hitchcock County, Chase County area. I guess they don't have to worry about us moving our facilities closer to the McCook area or anything of that nature. So it's given us some stability in that respect. Our company is international. We do business all throughout the world. We have rep groups that represent us in

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several countries around the world. We do all of our sales and marketing directly out of our facility here. That includes a lot of our media, advertising, including videos, a lot of virtual conferences with sales representatives, distributors; do that on a daily basis. Most likely it wouldn't be possible without the expansion of our Internet capabilities. I didn't prepare anything but if you have any questions, please, fire away. [LR176]

SENATOR FRIESEN: Thank you, Mr. Gohl. Any questions from the committee? Senator Bostelman, and then Senator Hughes. [LR176]

SENATOR BOSTELMAN: Thank you, Chairman Friesen. A question: What's your Internet connection speeds? [LR176]

NEIL GOHL: We have 20 up/20 down. [LR176]

SENATOR BOSTELMAN: And what...does that meet the needs? Do you have future needs? Because you're really...you're an example of what I would put up as what can happen if we get broadband out... [LR176]

NEIL GOHL: Right. [LR176]

SENATOR BOSTELMAN: ...and when we get 10/1, it just doesn't do it. And so I'm kind of curious as to... [LR176]

NEIL GOHL: Right. My understanding is we're operating at 20/20 and we have the capability to take that much higher just due to the fact that we're right on the fiber, so. [LR176]

SENATOR BOSTELMAN: Well, thank you for being where you're at and doing what you're doing. [LR176]

NEIL GOHL: Okay. Thank you. [LR176]

SENATOR FRIESEN: Senator Hughes. [LR176]

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SENATOR HUGHES: To connect your facility with, I'm assuming, the fiber ran down the highway, did you...was that your expense or did you have to...did the provider help with that? [LR176]

NEIL GOHL: Right. That was our expense, I believe, and we've spread that cost over a five-year plan with Great Communicating...Great Plains Communications. So... [LR176]

SENATOR HUGHES: So and... [LR176]

NEIL GOHL: ...in 2020 we should have paid for it. [LR176]

SENATOR HUGHES: But it was totally your company's cost, installation and material? [LR176]

NEIL GOHL: From what I understand, yes. [LR176]

SENATOR HUGHES: So there was no Universal Service Funds or anything like that helped your company pay for that. [LR176]

NEIL GOHL: Not that I'm aware of. [LR176]

SENATOR HUGHES: Okay. [LR176]

(MAN FROM AUDIENCE): (Inaudible) Internet is (inaudible) five-year plan. There was no (inaudible). [LR176]

SENATOR FRIESEN: Let's... [LR176]

SENATOR HUGHES: Okay. [LR176]

SENATOR FRIESEN: Let's not have any comments from the back because the recording is... [LR176]

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NEIL GOHL: So, no, it was footed by our company. [LR176]

SENATOR HUGHES: Okay. [LR176]

SENATOR FRIESEN: Thank you, Senator Hughes. Any other questions from the committee? So when you...just kind of a...when you were looking at options, I mean obviously high-speed Internet connection was important to you and at some point if this option hadn't been there you would have looked at other locations? [LR176]

NEIL GOHL: I guess that would have depended upon our growth and what our needs were in the future. [LR176]

SENATOR FRIESEN: What do you think your growth would have been without the Internet or high-speed broadband access? [LR176]

NEIL GOHL: I think to remain competitive with everything that we're putting out media-wise and, like I was talking about, virtual conferencing, I imagine we may have had to look at other options. But I guess at the time the Internet was serving our needs. I guess I couldn't predict what the...what we would have had to do. [LR176]

SENATOR FRIESEN: Nice to see a company that stays local with its roots and provides those jobs out in rural Nebraska, so. [LR176]

NEIL GOHL: Thank you. [LR176]

SENATOR FRIESEN: Seeing no other questions, thank you for your testimony. [LR176]

NEIL GOHL: Thank you. [LR176]

SENATOR FRIESEN: Welcome. [LR176]

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RITA JONES: (Exhibit 4) Good afternoon. My name is Rita Jones, spelled R-i-t-a J-o-n-e-s, and thank you, Chairman Friesen and the committee members, for allowing me to speak to you today. I'm a CEO at Dundy County Hospital in Benkelman. I've worked with the hospital for 41 years and been contracted as a CEO in the past 15. We're a 14-bed critical access hospital, licensed through Department of Health and Human Services. We also have skilled care in our swing bed program and two rural health clinics, one attached to the facility and one off-site in Stratton, Nebraska. Broadband coverage probably isn't obvious what goes on in the hospital. You know you think of just Internet services, but there's a lot of services that have the basis with broadband. Along with the medical clinics, we have outreach clinics where we bring in cardiology services, urology, neurology, oncology, hematology, orthopedics, chronic pain management, and general surgery. These physicians are actually in our facility physically, some of them once a month, some of them once a week. And without being able to have dependable broadband Internet, it would be hard to keep the satisfaction of these providers because they depend on being able to link back into their electronic records from their home base and being able to pull up reports, being able to record their visits, and all of this saves them time. As you know, physicians value their time greatly. And it would be a problem for us to recruit these physicians to come in and serve our patients if they had to spend more time with their records than they do now. It also provides great continuity and safe care for our patients and makes sure that their problems are managed appropriately. Another use of broadband is through telemedicine services. We have mental health professionals who come in and it's kind of a Skype-type environment that they see their patients through. And as you know, the whole state of Nebraska is underserved for mental health so this is important for our patients, that they can come in locally. They don't have to drive, the provider doesn't have to drive, and they can get the care they need. This type of service is also present in our emergency room. We can actually tap into specialty providers in other hospitals if you have a patient who has had a burn or who has had a bad accident and you want to be able to stabilize that patient to the satisfaction of the physician who's going to receive them. So by having the telemedicine unit in the emergency room, they can actually see that patient with their own eyes and tell what's going on with them. So that's very important. Broadband fiber is also used for transferring our radiology images. And this became very obvious to us how important this is, because back in August of 2011 I'm sure that the whole state heard about the Amtrak train that was traveling from California to Chicago and it derailed just west of our town. There were 22 passengers injured, with 14 of them

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transferred to our facility. And just as of note, there was about six that were transferred to our neighbor, Chase County Hospital, there to the north. So as the doctors and nurses are checking the patients for injuries, they're doing x-rays, they're doing CAT scans, and CAT scans consist of a lot of images going at one time. So between Dundy County Hospital sending their images and Chase County Hospital sending their images all to North Platte, which is our hub hospital where the radiologists are, our system jammed up. And so these films weren't going through quickly. There was a lot of angst among our providers, among our patients, to make sure these patients were cared for appropriately. We did get through the hard part of this and then we had an upgrade and we haven't had that problem since. So the fast speed of the broadband is important to us. We are only a town of 900, but, oddly enough, over the past two years we were able to diagnose and treat two pediatric stroke victims. And without that broadband being able to send those films to the provider, their treatment would have been delayed. But they're back in our communities now living full lives, so once again very success story...successful stories on our broadband communication. So I've talked to you about some, I guess, maybe kind of some heartwarming instances where it has been important to us, but what about each day and every and all day long what goes on with it? It provides the connection that we need to our electronic record with our providers, with all the people that work there, from the doctors to nurses, receptionists, performing admissions, business office workers, for accounting and billing purposes, and it also allows our IT company to communicate with our system and help us troubleshoot and fix it when we have problems. Also, when our staff is on the road, it provides a way for them to access and continue their work--you know, no time off for them. And it even runs our facility-wide telephones. So it is important to us. And last but not least, it's important to our patients and families who want to access our portal, who want to be able to keep in contact with their families when they are patients in our hospital. So my pitch to you is to continue to keep it affordable for our facilities because we would be lost without it. [LR176]

SENATOR FRIESEN: Thank you, Ms. Jones. [LR176]

RITA JONES: I entertain questions. [LR176]

SENATOR FRIESEN: Are there questions from the committee? Senator Geist. [LR176]

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SENATOR GEIST: Do you know how much speed you have? [LR176]

RITA JONES: Actually I don't. [LR176]

SENATOR GEIST: Okay. (Laugh) [LR176]

SENATOR FRIESEN: Any other questions from the committee? How long have you had what you would consider high-speed broadband service? [LR176]

RITA JONES: I think it's probably been about two and a half years. [LR176]

SENATOR FRIESEN: Okay. Was it through Great Plains or...? [LR176]

RITA JONES: It was with...I think Great Plains handles a piece of the line. We have our services through our local company there, BWTelcom. [LR176]

SENATOR FRIESEN: Okay. [LR176]

RITA JONES: The line services are paid down by the USAC funds so...and it's huge. I think the last time I knew, the fees for our line out there were about \$6,000 per month and they're paid down to within I think about \$100. So it's very important to us but it is a lot of money. [LR176]

SENATOR FRIESEN: Okay. Thank you. Thank you for your testimony. [LR176]

RITA JONES: You bet. Thank you very much. And if you have questions later, I did not bring copies of my testimony but my cards are here if you have a question and want to know something. [LR176]

SENATOR FRIESEN: Thank you very much. Welcome. [LR176]

RON ROSATI: (Exhibit 5) Hello. Good afternoon. My name is Ron Rosati, spelled R-o-n R-o-s-a-t-i, and I'm the dean at the Nebraska College of Technical Agriculture located in Curtis about

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35 miles north of where we are this afternoon. Thank you for the opportunity to visit with you briefly this afternoon. I have three main points I want to cover. Those points are that the Internet is extremely important to the work we do at the college. We currently enjoy excellent Internet service in our community of Curtis and I'd like to describe a few of our applications as another example of usage, Internet usage, from a local rural institution. First, some brief background on the college for context: NCTA is a two-year open admissions institution. We are part of the University of Nebraska System, an independent campus as part of that system. We have a statewide mission to address agricultural work force development needs throughout the state of Nebraska. Again, we're about 35 miles north of McCook. The town of Curtis has about 900 residents in it, so it's a small town. Our Internet speed is 100 by 100, so we have pretty good Internet speed in Curtis. I'm not up to speed on all the details of our infrastructure, but I understand the infrastructure is owned by Consolidated. The service is provided by NebraskaLink. We currently have about 255 students on campus. We're a relatively small campus. We have 77 students that are on-line students for the institution. Again, for context, to give you an indication of the success of the college, we're a work force development college and some federal government data indicates that we are the number seven ranked two-year college in the United States for graduate career success. Using IRS data, NCTA is the number 7 ranked institution for graduate career success out of about 1,500 to 2,000 institutions nationally, and we're the number 11th ranked two-year college in the United States for graduate salaries of six and ten years after graduation. Ten-year salary for an NCTA graduate is just under \$50,000. Let me tell you some of the Internet applications we have at NCTA. The first one I'd mention is on-line teaching. NCTA has recently been approved by its accrediting agency to offer all of its programs and courses on-line. That happened just this year. We focus on hands-on education at NCTA but we have some collaborative programs with locations throughout the state where we have partners that do the hands-on component at those institutions and we teach the courses on-line. We just graduated our first two students from York High School, for example, with a certificate in agricultural chemical applications. We taught that program on-line in partnership with the local high school and a local co-op. Ag chemical applications would be the program for students that want to be floater operators. We have additional programs in the works for other communities throughout the state. We also use the Internet to teach our students how to manage information on-line, how to manage the large quantities of information, how to differentiate good information from bad information, a very important component of a good education for our

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students. We expand our employee pool by using the Internet. We currently have a few employees that don't live in our small community. Instead, we take advantage of their expertise remotely. For example, the primary financial aid adviser for NCTA is located in Lincoln and when students want an appointment with her they set up an appointment through one of our local counselors and they go in and they have a live, interactive, video-audio conference with these experts in Lincoln. That way we increase the level of expertise at NCTA and we do so in a cost-effective manner. Our public relations coordinator is also located off campus, located in rural Alliance. We communicate on a regular basis through the Internet. We have an urban agriculture professor located in Omaha. And our chemistry professor lives in North Carolina and she teaches her courses entirely on-line to our students at Curtis and we have local coaches that help with the labs. We manage our campus on-line. Because we're part of the University of Nebraska System, we take advantage of infrastructure at Lincoln and that reduces our cost and increases our expertise at Curtis, helps us deal with reductions in appropriations from the state and also helps us keep our costs low to our local students. Some examples of that, we are currently in the process of moving the college primary computer servers from Curtis to Lincoln. The infrastructure between Curtis and Lincoln has been good enough and it's been reliable enough, has enough capacity that we feel comfortable we can actually move our servers that we rely on hour by hour at the campus. We can move them to UNL and take advantage of some cost savings and some increased capacity at UNL. We have interactive educational events at NCTA using our Internet capability. When there's guest lecturers in Lincoln, we beam those into Curtis for the benefit of our students. We've gone as far as having simultaneous interactive conventions held both in Curtis and Lincoln, where part of the convention is in Lincoln, part of the convention is in Curtis. There's speakers in both areas speaking to audiences in both communities. We're able to expand our academic expertise by utilizing on-line programming. We're able to bring some additional academic programs to our students because we can bring in expertise from out of the region, and some recent examples of that are in poultry management to meet the needs of the growing poultry industry in the state of Nebraska and in viticulture. The campus serves as a gathering place and a meeting place for many people in the local community, like we're seeing here at the McCook Community College, and visitors to our campus utilize our Internet access as guest users. And our students and the employees also utilize considerable Internet access for maintaining quality of life, for example, telemedicine. We do a lot of our banking on-line, shopping, entertainment, communication, and many of our community members more and more

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are seeing their employment occur on-line, not members of the college community but these are people, family members and other members of the Curtis community. I use a personal example there. In my household my wife works full time on-line. She works for an international company, healthcare company, does insurance, health insurance claim processing. And the company put in an independent service to the house specifically for her job. She works from 8:30 to 5:00 in the afternoon, gets two 15-minute breaks a day, a 30-minute lunch break. It's all carefully monitored by the company, very carefully controlled in terms of confidentiality because she's working with personal health records. The business pays very well. She makes an urban-level salary in a community with a lower cost of living. So it's an example of Internet access that brings individuals to the rural community, increases our quality of life. That's an example of Internet access in one of our local rural communities. [LR176]

SENATOR FRIESEN: Thank you, Mr. Rosati. [LR176]

RON ROSATI: Yes. [LR176]

SENATOR FRIESEN: Any questions from the committee? Senator Bostelman. [LR176]

SENATOR BOSTELMAN: Thank you, Chairman Friesen. We were here this summer and toured the campus out there. It was very nice. Thank you for having us out there and thank you for being here today. [LR176]

RON ROSATI: My pleasure. [LR176]

SENATOR BOSTELMAN: We appreciate that. A couple questions with...in Curtis itself, a point of clarification for myself. Does Curtis also have...are they also fiber throughout the town or not, or is it just the university and then, in your case, a provider came in to provide for...I mean just because of job-wise for your wife's job? Or does the rest of the town have connectivity also? Is it... [LR176]

RON ROSATI: It's my understanding that the whole town has connectivity, so let me verify.
[LR176]

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_____ : It's not all fiber but speeds that are above (inaudible). [LR176]

SENATOR BOSTELMAN: Okay. The other question may not...don't...I don't know if it's putting you on the spot type thing or not, but one thing we talk about here a lot and I talk about, I think Senator Hughes talked about, Senator Friesen talked about, too, is our need in agriculture for connectivity across the state. Could you speak a little bit to some of the programs you have and what those needs might be as your students leave campus, graduate, and move back out into rural Nebraska? How does that affect them? I mean what needs do they have that they may not be receiving now, what that might be? [LR176]

RON ROSATI: I think it's very important that they have Internet access, high-speed access when they leave our campus and go out to the rural communities. We work very much in our classroom with information management, data management for agricultural applications, agronomic applications. We teach them how to use the Internet to get information, how to increase productivity, how to increase efficiency on their operations. If they don't have access to the Internet when they leave the campus, they won't be able to use those tools. It puts them at a competitive disadvantage. There's also the quality of life issues that I mentioned--the telemedicine, shopping, entertainment, education--all very important components of quality of life. So we spend a good bit of time working with our students on how to get the latest information and they do that on-line. In our veterinary technology program, for example, our students use hand-held devices to download dosages and treatment regimes for the animals that they're working on, and if they don't have access to that downloaded information, they have to go back to the old style of let's pull out the books and see what it says in terms of treatment regimes and dosages. [LR176]

SENATOR BOSTELMAN: Thank you. [LR176]

SENATOR FRIESEN: Thank you, Senator Bostelman. Any other questions from the committee? Thank you, Mr. Rosati. [LR176]

RON ROSATI: Thank you. [LR176]

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KRISTEN GOTTSCHALK: Senator Friesen and members of the Transportation and Telecommunications Committee, my name is Kristen Gottschalk, K-r-i-s-t-e-n G-o-t-t-s-c-h-a-l-k, government relations director and the registered lobbyist for the Nebraska Rural Electric Association. I represent 33 rural electric systems that serve fewer than 250,000 meters, over 80,000 miles of distribution line. So we do cover a majority of the state. My testimony today is not going to be technical in nature but more about the prospects for what we can be doing into the future. And we look at rural electric history. There was a need to deliver rural electric service in areas that were not being served by private companies. We created an innovative way to ensure that all citizens had equal access to electricity, not a different access but an equal access to electricity. In fact, one would argue that that's been one of the most important events in the history of this nation is electrification of the rural areas. And now that we're in a new technological time, in a rapidly changing technological time, we understand that technology now drives business and, as we've heard from previous testifiers, especially agriculture. And we also hear that there's a significant percentage of households in Nebraska that do have access and that's great. But a majority of the people in this state, two-thirds of the population, lives in the eastern one-third of the state, and that still leaves those households in rural areas without access. But households is one thing. We're now into the Internet of things. Ag and ranch demands, we've heard that from another testifier. When John Deere runs any piece of equipment off the machine line these days, it has a modem. It's meant to interact and to operate for greater efficiency through the Internet. So those things we need to consider and we need to consider them as being as important as making sure that we have high access in the urban areas. And broadband delivery I think needs to be seen in a very similar way to when we advanced rural electrification. Now I'm not saying that rural electric providers want to be Internet providers, but we need to look at the innovation and maybe make better use of the funds, both federal and state funds, in ensuring that the Internet of things is covered in addition to households. And for many areas, as we've heard from testifiers, it's difficult to make a business case even with some of the funding opportunities from the state and feds to provide fiber to rural customers. So again, we need to look at ways to ensure equal access. Now as electric providers, we're always looking for ways to economize and to lower our costs to our customers, and the need for communication technologies to deal with and work with the infrastructure that we use to provide service is one thing that is very important, and that is another Internet of things. But unfortunately also, rural electric providers will have a difficult time making a business case for adding fiber to talk to their, one, to talk to

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their customers or even to talk to the substations, although in the long run we may find that that makes sense to spend that money. So as we begin to look for solutions, we need to look forward and we need to act quickly. We talk about some of this federal funding, you know, you have to make your connections within ten years. Well, technology changes and if we look at getting 10/1 to rural areas, 10/1 in ten years may be the same as not having broadband at all at this time. So this is something we need to look at and maybe we can make a business case for this by combining public and private partnerships. Again, as I want to emphasize, rural electric providers do not want to be Internet providers but we do believe that in some areas of the state we could be part of that solution. And I also think as we talk about this, this isn't just about the traditional telecommunication providers. We need to look at Internet service providers, technology providers, interlocal agreements, unique partnerships which may be technology pools that can be shared, and we also need to look at wireless companies. The emphasis should be that nothing should be off the table because access to Internet for economic development and quality of life is so important, and this may include, if you can't have fiber to every home, the expansion of a wireless bridge to provide that, to bridge that gap when fiber isn't available. But equal access means just that. It shouldn't mean a different level of service. And as we've heard, even the feds have said that 25/3 is good in some areas, but in the truly rural areas we can provide a service that is good enough. Well, good enough is not good enough when we look at what's going on with technology and the needs for rural America. And with that, Nebraska really should set a goal and perhaps that does mean a definition and maybe the definition has numbers: 25/3, 20/20, whatever. But it needs to protect us into the future because we need to see how rapidly technology has changed to this point and how much more quickly technology is going to change. Now one of the things that the Nebraska Rural Electric members have done is we've attempted to form partnerships or began a dialogue with the Nebraska Telecommunications Association. I think those conversations have been very beneficial and it provides us an opportunity on some ideas on how we might move forward. But we need to keep this momentum going. But finally, the last point that I want to make is what do we do if no provider is willing to step up? What is the option? If there are no existing telecommunications providers willing to or able to, because we do understand a business case is important, what do we do? And again, we go back to nothing should be off the table. We need to look at what our options are to ensure we have equal access. With that, concludes my testimony. [LR176]

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SENATOR FRIESEN: Thank you, Ms. Gottschalk. Any questions from the committee? So I guess one of my questions, you know you talked about basically the last mile service. So when you look at that possibility, though, you couldn't make a very good business model if...you would, in the end, you're saying you want to be business partner, a partnership of public-private partnerships with somebody that's going to provide that service. [LR176]

KRISTEN GOTTSCHALK: That's a potential, right, that there would be... [LR176]

SENATOR FRIESEN: So it's not...you had said pretty distinctly you didn't want to be the provider. [LR176]

KRISTEN GOTTSCHALK: Right. [LR176]

SENATOR FRIESEN: You're just willing to facilitate getting those rural customers...providing them with service. So that last mile at least, obviously, from what I've heard from the companies, that's where our problem lies and it's going to take some subsidies or... [LR176]

KRISTEN GOTTSCHALK: And that's the most expensive mile... [LR176]

SENATOR FRIESEN: Yeah. [LR176]

KRISTEN GOTTSCHALK: ...is that last mile and that's why, you know, even as we...the goal of having fiber to every home, I mean that's ultimate. You know, fiber tends to be, at least at this point, kind of a future-proof technology so it would be ideal for everybody to have fiber. We know that it's not possible, at least not in the short term, for that to happen. So are there ways that we can expand that fiber net across rural areas and maybe bridge that gap through other partnerships with wireless providers or other forms of service? [LR176]

SENATOR FRIESEN: Do any of the rural power districts have any fiber currently buried in order to run control (inaudible)? [LR176]

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KRISTEN GOTTSCHALK: Some have very...of the rural electric systems there's a limited amount of fiber out there. We are kind of going through a transition change in technology, the need to communicate with substations and customers, smart metering, that we want to increase that capacity. And so a number of them are beginning to look at and the preference would be to have fiber as a communication tool at a minimum to the substations. [LR176]

SENATOR FRIESEN: Have they looked at a public-private partnership there, too, in order to achieve that goal? [LR176]

KRISTEN GOTTSCHALK: There are some limitations and there are conversations going on, but because of limitations in the statutes none have been effective. [LR176]

SENATOR FRIESEN: Okay. Any...Senator Bostelman. [LR176]

SENATOR BOSTELMAN: Thank you, Chairman Friesen. A question you may not know on power lines, their overhead. How...and it probably depends upon the area, but how often...I guess how much of a problem with downed lines are there? And I know it kind of goes from season to season, year to year. But my thought going we have areas that are going to be extremely difficult to get fiber to. Okay? So we either go wireless, satellite, something else. [LR176]

KRISTEN GOTTSCHALK: Uh-huh. [LR176]

SENATOR BOSTELMAN: Well, what about overhead fiber? [LR176]

KRISTEN GOTTSCHALK: Overhead fiber, we've seen a major proliferation of overhead fiber in the state of Missouri that they actually...and actually the fiber on the poles, as they've managed their systems, the fiber above ground is stronger than actually the power line that may be the carrier below. So it is...and it's my understanding that it may be slightly...where it's more expensive to put electricity underground than it is to string it above ground, it's my understanding in talking to telecommunications providers that putting fiber above ground is a little more expensive than below ground. [LR176]

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SENATOR BOSTELMAN: More expensive? [LR176]

KRISTEN GOTTSCHALK: And somebody else could clarify that, but that's what I've been told. [LR176]

SENATOR BOSTELMAN: And another question would be follow-up to kind of like in your discussion so far. You're talking about either the telecommunications put the fiber down and you share in that cost. Do you have the fiber, share in cost, anything of those? Because once again, as we look back to the map, there's areas that, you know, it would be nice to get coverage to. But you know, if we're going to wait, how long are we going to wait? Because today is kind of too late for some areas, especially talking to the gentleman who farms south of Stanton down here. You know, they have a need today for connectivity. In a lot of other areas we have a need today. So it's just trying to...I'm just trying to hurry it up just a little bit, so. [LR176]

KRISTEN GOTTSCHALK: Well, and I guess we're in the same position. We would like to hurry it up a little bit as well for our consumers but also for our own business needs. And those public-private partnerships could be in any form. I don't think that at this stage we've set a limit on that. It could mean that if we do have sections of line that we're burying at the time that we could share that conduit or that, you know, the trenching with a telecommunications provider to reduce their cost. Or in a case where we might want to use fiber, sharing the cost of laying that fiber either above ground or below ground with a communications provider, Internet service provider, or other to ensure that it serves a greater purpose than just a singular purpose. [LR176]

SENATOR BOSTELMAN: Yeah. [LR176]

KRISTEN GOTTSCHALK: So I guess at this point we're not limiting what we see as a potential for partnership. [LR176]

SENATOR BOSTELMAN: Sure. And there's other public power, you know, entities in the United States, in other states. [LR176]

KRISTEN GOTTSCHALK: Yes. [LR176]

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SENATOR BOSTELMAN: Obviously, this goes on in other areas in other parts of the United States. Do you know statutorily in Nebraska what would need to be changed and are there examples that you have in other states that are doing something similar to this with, you know, public power...or public entities? [LR176]

KRISTEN GOTTSCHALK: When we talk about public power entities, we tend to roll in, in Nebraska, electric co-ops, which are a little different. They're not actually a government subdivision. And so when we look at our counterparts in say Missouri or Arkansas or Indiana or Tennessee, it's the electric co-ops that get engaged. And in most states some form of change in statute has to be made either dealing with the allowing of easements for electric service to also include telecommunications service along that same area. It may create...may need for a creation of an authority to lease lit or dark fiber that's clear and cost-effective. But changes in other states, and I can provide very specific examples to the committee if they want, for example, Tennessee just passed legislation that authorized electric co-ops to get into...to be direct service providers if after a time certain an incumbent or a certificated provider did not provide service. So there's a lot of momentum, a lot of change going on and we just want to make sure that Nebraska stays in step. [LR176]

SENATOR BOSTELMAN: Thank you. [LR176]

SENATOR FRIESEN: Thank you, Senator Bostelman. [LR176]

SENATOR GEIST: And I do have just a quick question. [LR176]

SENATOR FRIESEN: Senator Geist. [LR176]

SENATOR GEIST: Yes. Thank you. Just for clarity, are you talking about actually sharing fiber itself? [LR176]

KRISTEN GOTTSCHALK: It could be. That could be one option, yes. [LR176]

SENATOR GEIST: Okay. That's all. Thank you. [LR176]

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SENATOR FRIESEN: Thank you, Senator Geist. [LR176]

KRISTEN GOTTSCHALK: I don't think we're really proposing anything. We'd like to have that conversation, again, nothing off the table. [LR176]

SENATOR GEIST: Okay. Thank you. [LR176]

SENATOR FRIESEN: Any other questions from the committee? So one of the complaints that I've heard is sometimes access to right of way in order to get from point A to point B. Would your right of way that you currently have access to allow you to put fiber there? Or do you think there are restrictions in place? [LR176]

KRISTEN GOTTSCHALK: We could put fiber in place to serve our own business purposes. That would be clear with those agreements that have been perfected with landowners. It's not clear whether or not we could use that same right of way without some change to allow for a private business to share in or to serve for a different purpose. [LR176]

SENATOR FRIESEN: Do you have to purchase easements, right of way? [LR176]

KRISTEN GOTTSCHALK: Rarely do we have to purchase easements. Transmission lines and larger subtransmission lines, there may be payment for easements. But typical distribution lines, those easements are...were done in such a manner to serve the person whose property you're accessing and to serve others beyond that. So it's limited. [LR176]

SENATOR FRIESEN: Okay. Seeing no other questions, thank you, Ms. Gottschalk. [LR176]

ANN PROCKISH: I'm losing half my audience. (Laugh) [LR176]

SENATOR FRIESEN: Welcome. [LR176]

ANN PROCKISH: Welcome. Thank you. Good afternoon, Chair Friesen and members of the Transportation and Telecommunications Committee. My name is Ann Prockish, that's spelled A-

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n-n P-r-o-c-k-i-s-h, and I am the regulatory and legislative affairs director in Nebraska for CenturyLink. Thank you for the opportunity to speak with you today. Everyone agrees that broadband is essential for economic development in the rural areas of the state. Far from sitting on the sidelines, CenturyLink is working hard to extend broadband as far into its network as possible. However, the cost to build out broadband are great, especially in very rural areas of the state where there are few customers, and it takes time. As much as we would all like it, a broadband network cannot be built overnight. CenturyLink tries to build out its network in the most logical and cost-effective manner possible. Doing so will result in getting broadband service to more living units in the end. As of September 1, 2017, more than 91 percent of the living units in CenturyLink's service territory in Nebraska are broadband enabled, which is up from 90 percent enabled as of the beginning of 2016. I realize that doesn't sound like much of an increase, but in raw numbers nearly 6,500 living units have become broadband enabled in less than 24 months, most at download speeds of between 40 and 80 megs. If you take Omaha out of the equation, more than 89 percent of the households in CenturyLink's service territory are broadband enabled with nearly 4,000 living units becoming broadband enabled since the beginning of 2016. In addition to extending broadband service to more living units, CenturyLink is also working to increase speeds to living units that already have broadband service available. Currently, 18 percent of living units in CenturyLink service territory can receive broadband service of at least 100-meg download, while another 17.5 percent can receive download speeds between 25 meg and 100 meg. Moreover, the number of living units that can receive service speeds at between 10 and 25 meg has actually decreased by more than 2,700 as more living units are able to receive service at higher speeds. The work continues. CenturyLink accepted FCC CAF-II support for Nebraska and is on track to meet the build out requirements that accompanied the funding. Accepting the funding requires CenturyLink to build out to more than 10,000 living units in certain eligible areas of the state at speeds of at least 10-meg download and 1-meg upload by the end of 2021. The FCC determined the areas that are eligible for CAF-II support by looking at census blocks where competitive broadband service was currently not available above speeds of 10/1 and the FCC cost model pegged the cost of providing service between \$52.50, \$52.50 and approximately \$200 per living unit. Using the CAF-II support and supplementing that support with a significant amount of its own capital, CenturyLink expects to build to 2,275 living units in 2017--and given that we're almost in December, most of those have already been built out--in rural areas around Atkinson, Chadron, Central City, Kimball, McCook,

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Morrill, Oshkosh, Scotts Bluff, Springfield, Bennington, Fremont, Gretna, and Norfolk. In 2018, CenturyLink currently plans to build to nearly 1,400 living units in CAF-II eligible areas in around Atkinson, Broadwater, Chappell, Gretna, Humphrey, Loup City, North Platte, and Sidney. While CAF-II is working to get broadband to more rural areas of the state, there are many more areas where broadband is not available at sufficient speeds that were not CAF-II eligible. These areas...these are areas where the cost to build out broadband is so high and the population density so low that CenturyLink cannot make a sufficient return on its investment. In these areas, CenturyLink seeks NUSF broadband grant support to help address the need. In 2017, CenturyLink received approval on two NUSF broadband grant projects totaling approximately \$3.5 million, which will get service to approximately 460 living units in the Saint Paul and Thurston areas. CenturyLink continues to research additional projects and is preparing several more applications for submission to the commission. It should be noted that the CAF-II and NUSF broadband grant support that CenturyLink receives covers only the cost of the initial build out of the broadband network. CenturyLink bears the significant ongoing costs associated with the maintenance and operation of the network, as well as future upgrades, in these high-cost areas. In summary, CenturyLink is working hard to extend broadband in rural areas of Nebraska; however, it is time-consuming and expensive. In addition, there are a finite number of people skilled to do the work and only a certain amount of fiber cable and electronics available, and the nationwide demand for these resources is great. While everyone, including CenturyLink, would like to immediately eliminate the broadband gap, the limitations on these very necessary resources--labor, material, time, and money--contribute to what some may perceive to be a slow deployment of broadband service in the state. That concludes my testimony. I'll be happy to answer any questions. [LR176]

SENATOR FRIESEN: Thank you, Ms. Prockish. Any questions from the committee? So you've used CAF funds, you've used NUSF funds. [LR176]

ANN PROCKISH: Correct. [LR176]

SENATOR FRIESEN: And so your...you said your goal is to get at least 10/1 service to (inaudible)? [LR176]

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ANN PROCKISH: The CAF-II funding and NUSF funding both requires us to get to at least...a minimum of 10/1. We will...our goal is to provide service at greater speeds where possible. [LR176]

SENATOR FRIESEN: So first you're going to try and just get all your customers at least to that level, and then your long-term goal would be to (inaudible)? [LR176]

ANN PROCKISH: Yeah. I mean that's one of the business decisions that need to be made: Do you look at it first in terms of getting broadband service at sufficient speeds, whatever you want to call sufficient, as soon as possible, or do you look at getting greater speeds to fewer numbers as soon as possible? So I mean that's a balancing act that we have to try and accomplish. But it's...there's something to be said about getting service, doing it...being one and done, as (inaudible) talked about future-proofing the network as much as you can, which is difficult to do when that target, that speed target, is constantly moving. [LR176]

SENATOR FRIESEN: Are all of your customers wired or are some of them served wireless? [LR176]

ANN PROCKISH: All of ours are wired right now. [LR176]

SENATOR FRIESEN: Okay. Any other questions from the committee? Seeing none,... [LR176]

ANN PROCKISH: All right. Thank you. [LR176]

SENATOR FRIESEN: ...thank you for your testimony. Welcome. [LR176]

RYAN PATE: Thank you, Mr. Friesen, members of the committee. Thank you for your time. My name is Ryan Pate, R-y-a-n P-a-t-e. I'm the field operations manager for Consolidated Companies, Incorporated. I actually live in Curtis, Nebraska; here today just to give a little bit of history about Consolidated, a little bit of history about what we've done as far as build out, where we're at currently with where our network is at, number of customers that we've built out to. Company was founded in 1947 as a rural independent telephone company. We are a family

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owned and operated company, and we built Nebraska's first distance learning system, in conjunction with the Nebraska Central Telephone Company, in 1990 and 1991. We began building our fiberoptic toll network--started that back in '89 and kind of completing that in '90 and '91--in between our exchanges for toll transport as well as distance learning to all of our schools and all of our towns, which totals 13, including the college campus there in Curtis. We deployed our first fiber to the home system in 2003 in Arthur, Nebraska. Currently right now we have 50 full-time employees and we serve 24 communities across central and western Nebraska. We serve about 3,100 broadband customers and 4,500 voice subscribers. We have approximately 490 miles of toll fiber, 1,726 miles of local fiber. And over the last eight years we've invested over \$14 million of CAPEX into our network, so we've been very good about building out our network. Over that same amount of time we've received a little over \$8 million from the NUSF; however, we all know that support has been declining. Currently a little over 91 percent of our customers are 4 by 1 capable; 86 percent of our customers are 10 by 1 capable; 10 percent are about 25/3; and another 10 percent are fiber to the home. Of the 3,100 broadband customers, most of them served...most of them are served right now via kind of fiber to the node with the copper plant being...serving as the last mile. We understand that, you know, with the advancement of technology and the need for broadband, replacing that aging copper infrastructure is critical and getting fiber to those customers is really key, and that's what we're really moving towards. For a number of years previously we've done a lot of fiber-to-the-node projects, like I mentioned, and then serving those last miles with copper. But at that time we felt that was the most efficient way to spend the dollars that we had to upgrade the largest amount of customers that we could. However, moving forward, any projects that we move forward with, probably in 2018, are going to be strictly fiber to the home and that's due to, in large part, equipment availability for the sparse area that we cover. There's not many equipment manufacturers that will make nodes that are cost-effective for us to deploy them for two to three to four customers. Additionally, you know, the broadband need and demand has increased and so we feel that the best way to serve those customers ongoing is with fiber. In 2015 and 2016 we invested over \$3.7 million on capital improvements on our exchanges and those projects, of course, have just been fiber to the node and fiber to the home. We installed over 325 miles of fiberoptic cable in those two years and upgraded over 380 customers, some of them fiber to the home and some of them fiber to the node. However, the expenses, as we know, do not stop once the fiber is in the ground. We've got to get that traffic from the central office out to the outside

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world, and so we've got to transport that around our ring and then hand that off to other Internet providers that we interface with. Back in 2010, we installed a 10-gig ring around our network. That was in 2010. In 2017 we're already looking at needing to upgrade that network due to capacity reasons. So we understand that the costs do not end once that fiber...once that fiber is to the customer's house, there's still additional costs that need to go on beyond that. Additionally, a lot of our toll fiber that was put in, in '89, '90, '91, nearing 30 years of age now, it's getting old and it's getting harder and harder to splice. And so we're needing to look at replacing that as well. We have approximately, you know, 490 miles of toll fiber. With an estimate of, you know, \$10,000 a mile, per mile, to replace that fiber, it's about \$5 million to replace that. So that's a good chunk of change. Maintenance costs additionally you know with locating, with fiber cuts, with gopher-damaged cable, with lightning are huge, huge costs for us as well. The more and more fiber we get put in the ground, unfortunately, the more and more fiber cuts we're probably going to get. It used to be a rare thing when we got a fiber cut. Unfortunately, it's not as rare anymore. Those things do happen. Additionally, manufacturer discontinued equipment is an issue for us. Some equipment we have been putting in for the last...just the last two years--we started putting it in two years ago--is being discontinued. There isn't a big need for that anymore, so the vendor tells us, and so we're having to come up with replacement ideas for that. More miles of cable in the ground, of course, means more time for our technicians locating that cable as well. So in closing, I just wanted to let you know that Consolidated has a long history of investing the...not only the NUSF and USF funds it receives back into their network, we'd like to upgrade our facilities. We like to provide good services to our customers. I think we do a very, very good job at doing that; however, we still got a long ways to go. Eighty-nine hundred square miles is a long way to go and we've got a lot of miles in between our customers. So thank you very much for your time. And if you guys have any questions, I'd be happy to answer. [LR176]

SENATOR FRIESEN: Thank you, Mr. Pate. Any questions? Senator Hughes. [LR176]

SENATOR HUGHES: Yes, thank you, Mr. Pate. You indicated basically 86 percent of your clients are at 10 and 1. [LR176]

RYAN PATE: Uh-huh. [LR176]

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SENATOR HUGHES: When do you anticipate that you'll be 100 percent built out? I mean is that in the foreseeable future, next few years, or...? [LR176]

RYAN PATE: To have 10 by 1 capability, I would foresee that in the next two to three years and no later than that for 100 percent for 10 by 1. We have, unfortunately, a lot of our...that 14 percent is some of our harder to reach, more expensive areas; however, I know for some planning I've been doing in '18, those are some of the areas that we're looking at upgrading next year, so. [LR176]

SENATOR HUGHES: Okay. So you have a lot of 4 by 1, so that would be in the...that 14 percent that you're going to build out. Is that... [LR176]

RYAN PATE: Correct. [LR176]

SENATOR HUGHES: ...4 by 1, is that currently cable or fiber or how is that (inaudible)? [LR176]

RYAN PATE: Typically, it's fiber to the node scenario... [LR176]

SENATOR HUGHES: Okay, then copper from (inaudible). [LR176]

RYAN PATE: ...and then, of course, we're using the copper facilities as the last mile. [LR176]

SENATOR HUGHES: Okay. So then the 10 to 1 you'll be using fiber to the home? [LR176]

RYAN PATE: Yeah, well, fiber to the home, like I said, anything new moving forward that we do is probably going to be strictly fiber to the home. You know, we've been building fiber out into our network for a lot of years. Unfortunately, early on when we started doing this, the fiber counts were fairly skinny, meaning not a lot of strands of fiber in that cable. We're able to use electronics on either end to help mitigate some of that so we don't have to put the plow back in the ground. But, yeah, some of those 4 by 1 customers right now, those loop links away from the node are just...they're too far to get anything greater than a 4 by 1. So what we're planning on

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doing is coming into that node again and then actually replacing those electronics with some other electronics and then actually building, probably, fiber out from there all the way to the end customer. [LR176]

SENATOR HUGHES: Okay. Thank you. [LR176]

SENATOR FRIESEN: Thank you, Senator Hughes. Any other questions from the committee? Seeing none, thank you for your testimony. [LR176]

RYAN PATE: Thank you. [LR176]

LEE CHRISTENSEN: Good afternoon, Senators. [LR176]

SENATOR FRIESEN: Welcome. [LR176]

LEE CHRISTENSEN: I'm Lee Christensen, L-e-e C-h-r-i-s-t-e-n-s-e-n. I'm a director on the Twin Valleys Public Power District board. And the high-speed Internet has been stuck in my craw for a long time. And last year for the first time I went to the Wind and Solar Conference in Lincoln that is hosted every fall. I get up and mention that we need high-speed Internet just like REA, just like we needed it 75 years ago. I worked in and that's basically what we got to do now. I guess that's what this whole meeting is about. But in...when I discuss this or every time I've gone to a meeting and mentioned that like I did last year and this year at that Wind and Solar Conference, after I get up and speak about what a handicap it is for the whole area, not just myself, why, the next day and a half that meetings are going on, every time there's a break there's two or three people come up to me: I know exactly what you're talking about; I put up with the same thing. It's interesting, one of the people that I visited with in...at that conference this year was from Cass County. The only suitable high-speed Internet he could get was with his cell phone. He had no other way to get service that was good enough. And personally, I spent \$1,500 to put up a tower to get a wireless service that costs me \$60 a month. It's 5-meg service so it, you know, barely...barely anything, but it's three times what I had before using the telephone at \$25 a month. So that part has worked out. But I think we need help. I've been part of our rural development group and that's the number one thing we got to have is high-speed Internet. And

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that's why we're having this meeting here today and I guess I'm here in support of doing what we can. Be happy to answer any questions. [LR176]

SENATOR FRIESEN: Thank you, Mr. Christensen. Any questions from the committee?
[LR176]

LEE CHRISTENSEN: Thank you for your time. [LR176]

SENATOR FRIESEN: Thank you for your testimony. Any others wish to testify? Seeing none, I will close the hearing. Thank you, everyone, for coming. [LR176]