**Transcript: Boulder/Livewire Podcast**

♪ [music] ♪ - [Andrew] And so I think it's absolutely sustainable and so we don't need government funding. We don't need local taxpayer money. We don't need federal money for this to be a viable solution for the long haul.

- [Christopher] If you want to learn about how some schools have made innovative investments to bring broadband access home with students, you are in the right place. Welcome to the "Sustainable Wireless Strategies for Keeping Students Connected and Learning" podcast series. This series explores off-campus wireless solutions that school districts are deploying as a sustainable solution to provide home connectivity to students and educators.

The podcasts are brought to you by the U.S. Department of Education's Office of Educational Technology and a company that recently released Wireless Network Brief that is now available at tech.ed.gov/wireless-brief. I'm Christopher Mitchell with the Institute for Local Self-Reliance. I'll be hosting these with my co-host Lisa Palacios.

Welcome back, Lisa.

- [Lisa] Thanks. I appreciate the ability to be on this series.

- [Christopher] And we also have Andrew Moore, the Chief Information Officer from Boulder Valley School District. Welcome.

- [Andrew] Thank you. I'm happy to be here.

- [Christopher] And working with Boulder Valley School District, we have Jim Hinsdale who's the CEO and most other important titles at Live Wire, which is a partner in the broadband expansion program. Welcome to the show.

- [Jim] Thanks, Chris. Happy to be here.

- [Christopher] This podcast may contain the opinions, views, and recommendations of non-federal participants. The U.S. Department of Education does not control or guarantee the accuracy, relevance, timeliness, or completeness of any outside information included in this podcast, and the opinions expressed do not necessarily reflect the positions or policies of the U.S.

Department of Education. And with that, let's roll right into talking about Boulder. And I should just say that I'm excited. We've been having discussions with the six school districts that are profiled in this wireless brief. Yours is more partner-y than many of the others and in some ways, I think, is less intimidating, more replicable, depending on different circumstances. But I want to start by just asking you, Andrew, about the nature of the area.

People who aren't familiar with Boulder… I know half of America is moving to Boulder as we speak, but what's Boulder like?

- [Andrew] Yeah, I think you're right that about half of America is moving here. It's an awesome place to live. I was one of those transplants 22 years ago from the San Francisco Bay Area and I've never looked back. But we're a community about 25 miles northwest of Denver, and we're nestled right up against the Rocky Mountains. And so the school district is 30,000 students, 55 schools.

We serve not only Boulder but the suburbs around Boulder and also a couple mountain communities to the west of Boulder as well.

- [Christopher] And, Jim, tell us about Live Wire. I assume you had an identity before you fell in with this crowd.

- [Jim] Yeah, yeah. Absolutely, Chris. I worked in telecom in the '80s for a couple of different common carriers, started a cabling and installation company in 1990 when a buddy of mine talked me into it. And then we started our internet business mid-90s I guess, and then formally we had two different companies, and we merged them into Live Wire in 1999 as a corporation.

- [Christopher] That puts you definitely in the more dinosaur scale for many of the ISPs that are around today.

- [Jim] We've been around a while, yeah, for sure. You know, it does seem like it's been so long, but we just moved this last week to this new office, and we've been in that location for 26 years. You know, it's just, wow, time just got away from us. But, yeah, we became a CLEC in 1999, a regulated CLEC in Colorado.

And so we're a voice provider. You know, we're interconnected with machine trunks, and 911, and all that fun stuff. And so we focused mostly on small business. You know, we started doing DSL and business parks, right? And some of the business parks up in Boulder we had trouble with making the loops work because all the cables were run aerial.

It's called Boulder for a good reason. You know, geographically it's nestled right up against the mountains and so there's a lot of rocks in the ground and so it's tough to excavate. That's how we got into wireless. So we were leasing local loops and couldn't get them to work consistently. And we started some of the wireless, experimenting with, back then, one of the new wireless techs called WiMAX.

And this was 2004, 2005 timeframe, and so that's how we got into wireless. And it worked and things just took off from there. And then as 5G is rolling out now, we're looking for places to put antennas, and we came across Andrew and the city of Boulder apparently at the right time and we're able to strike up this agreement.

- [Lisa] What are you guys doing? What is this partnership? And how does it work for you?

- [Jim] Basically, you know, like I said, we were looking for places to expand. You know, our market is really competitive obviously. You know, we're an extremely small fish in a very large ocean. And so we have to constantly be on the lookout for what's coming around the corner. In the last, you know, three to four years, it's all been 5G, 5G.

You know, we keep hearing about it and so we're thinking, "Okay, how are we going to make this work?" And pragmatically as well, at the same time, we're looking at the technology, and the best way wireless works is if you have a really hot signal, low noise, and your customer, you know, is as close as possible, right?

And that's what really 5G is all about. So we've been doing that anyway for the last 4 or 5 years and realize that that's the best way to do it. So we were looking for places to put antennas. We came across Andrew. They had the ConnectME program that they were trying to get off the ground. And, you know, we basically started to say, "Look, you know, we need a place to put antennas," and Andrew said, "All right, we need a company to help us get, you know, service into these low-income families."

And that's how it all started.

- [Christopher] Now, how did you actually meet though? I mean, you said "come across" but…

- [Jim] I had a sales guy that I had hired, a business development sales guy, and he was out looking for deals, you know, customers as well as opportunities to expand our network.

- [Christopher] Vertical assets as you call it in the business, right?

- [Lisa] Exactly.

- [Jim] I believe. Isn't that how it happened, Andrew?

- [Andrew] Yeah, you know, the original first conversation was not with you, but it was one of your sales guys. And at that point, you know, we were just in a place where we had tried to run internet into a housing development but ran afoul with FCC rules with E-rate. And so we were looking for other creative ways to get these students connected. And so when we had that first meeting, I can't even tell you exactly how our paths came across but that first meeting quickly turned into discussions on, "Hmm, I wonder if we could put wireless antennas on our buildings and basically get our students connected for free."

And I'll tell you the early discussions evolved into the contract that we now have in place which, you know, is unique, which I found out is unique, right, as we've been talking with other school districts across this nation. But it basically amounts to Boulder Valley School District giving real estate to Live Wire, the real estate is our schools.

That allows Jim to put his antennas up on those schools. We backhauled Jim on one strand of Dark Fibre that we're not using. In exchange for that, what the district gets is free internet for any student within Jim's ability to connect them, the radius of those schools, if you will. And we also get 25% of gross revenue for customers that Jim is signing up as his customers, ISP customers, internet customers just like would sign up with Comcast or CenturyLink in our area.

And so we felt it was a win-win. But when this all went down, I think it was 2018, maybe late '17, we wanted to pilot it. And so we started slow in all honesty. I think the first school, Jim, you actually backhauled on microwave, not using Dark Fibre. Is that right?

- [Jim] Yeah, correct. Yeah, it was over in Lafayette is where we started. And it was Alicia Sanchez Elementary School, and it was just a couple blocks from one of our existing points of presence on our distribution network. So it worked out great just to fire it up and get it going. And like Andrew says, it's pretty sleepy where we're doing maybe three to five orders per month back then.

And we finalized it in 2020.

- [Andrew] We did two additional schools. So before we got the big contract in place, we went to a middle school and a high school as well also in Lafayette. And those two we backhauled on our fiber, so we proved out that technology, that we could effectively make it work for Jim and it didn't disrupt our own network. And then the pandemic hit of course.

And that was March of 2020. In April of 2020, the Board of Education inked the contract with Jim for putting this technology on virtually all of our schools. And so, you know, you think about that March of 2020, we're all starting to figure out what the pandemic means.

And within weeks, we executed the contract and that's simply because we had those couple of years, three schools under our belt, knowing that it would work. And now it was basically saying, "Oh, okay, Jim, are you willing to go all-in with us?" And Jim was willing to do that, obviously we were, and then boom. The contract's inked.

And so we're about a third of the way with deployments now. Jim is doing the best he can to get as many schools connected as fast as he can.

- [Lisa] So, to tech directors listening to this series, that's a theme that we're hearing is it's a proof of concept. So definitely do pilots and definitely, you know, prove your concept before you actually go out and push the whole thing through. So, Andrew, was it a coincidence, or was it the pandemic that actually made that April 2020 contract go through?

- [Andrew] It was the pandemic that sped it up. We've been working on it, but our district is also doing a lot of other things. So the Board of Education, my boss is Superintendent, you know, they're focused on academics, you know, throughout our district. And this program, although very important to get kids connected, became extremely important when the pandemic hit.

And so we just accelerated. In all honesty, I think we would have inked the contract probably mid to late-2020 had the pandemic not hit because we had made good progress and I was ready to go in front of the Board of Education to say, "Yes, this is worth it. It works." The pandemic just gave it that push and that energy to get it done sooner.

- [Lisa] Silver lining, yep.

- [Christopher] Up here in St. Paul, almost all of the schools have macrocells on top of them from the big mobile carriers, and I say this as someone who... My son is in preschool and he sits underneath two macrocells and within 100 yards of a third macrocell. I am not worried about the health implications of that but I understand that a lot of people are particularly in communities like Boulder.

And so I'm curious, did you face any pushback in these negotiations from parents or things like that?

- [Andrew] We only have cell towers on a couple of our schools and I think one of those is actually going to be not renewed and taken down. This technology is different than cellphone towers and I reiterate that in every early conversation that I had. It's all FCC-approved equipment. And it is very similar to your wireless network that you've got going, you know, in your home. Jim and his team was very helpful in providing us materials on that so that we can have the right conversations.

That's not to say that there isn't anybody in Boulder that would prefer that we did not have this set up, but the positive far outweighs any scientific evidence of the negative.

- [Christopher] Were there other hard points in the negotiations? I mean, Jim, to give up a percentage of revenue, that's always hard especially when you're giving out a free service on top of it. You know, what were the challenges in the negotiations?

- [Andrew] I think I wanted more than 25%, Jim. I know we settled on 25%.

- [Jim] Well, 25% is adequate, I think. It's a pretty big chunk. Usually for sales agent deals, you know, you're usually talking around 5% to 10%, sometimes up to 15%. But the fact that Dark Fibre is there and it's readily available is huge. You know, there's other school districts.

Like, we've talked to Denver public schools, and they don't have Dark Fibre. And so, you know, that was big. And for us, we're positioning ourselves to get out there and try to play in this 5G world somehow, and we have to get out there fairly quickly, and this is a great way to do it. Having access to the rooftops for distribution gets us into a whole new business model for a really good residential play in a great high-end county.

The other side of it, you know, is, yeah, you know, it's free service, but we're also now able to be compensated because we started a process of becoming a Lifeline provider here almost a year and a half, two years ago and finally we got all that approved. You know, we were hoping to be able to use the Lifeline program to help compensate for some of the hookups set for the families, right?

But then they came along with the EBB program.

- [Christopher] The Emergency Broadband Benefit.

- [Jim] Correct. Yeah, and that gives us even higher compensation. It's like fortune, good luck, or plain living or who knows what, but it's all, kind of, clicked into place right at the right time, and, you know, it looks like it's going to work well for us with the assistance that we can get. Now, obviously, the EBB program is a time-limited deal and that's not going to last forever.

But when that doesn't, we've got the Lifeline program to help subsidize part of the cost and the school also has very generously offered, you know, some subsidies for some of the families that need higher bandwidth where, I believe, there's more than three kids.

Boulder Valley Schools will actually pay Live Wire for an extra bandwidth for that family.

- [Lisa] Live Wire in this deal provides free WiFi to your students who are free and reduced lunch and they have the ability then to sell their service to all of Boulder Valley.

- [Andrew] Correct. Right, so you think about the free service to those that are eligible, that's what I want. Jim as a business, he wants to be able to sell internet to anybody who will buy it from them. And that's where this… It's a win-win partnership. I've got two big assets that Jim needs.

I've got space in great locations, right? Right in the middle of neighborhoods basically or schools, and then I've got fiber in the ground. And so the fiber in the ground that was not paid for by E-rate money is the biggest asset here. It makes us unique right now on being able to help Jim do what he needs to do. So it's 2007 that the bond was passed in Boulder Valley School District, and the construction of two fiber rings, one around Boulder and one around the suburbs started to be built.

And so that was completed in 2009, the buildout, and you think about 100 miles, when you get into Boulder, and as Jim mentioned before, it's Boulder for a reason, we've already done the boring through the boulders, right? So we've got that in place, and that is what makes that network so valuable to this whole public-private partnership.

- [Christopher] What is the capacity of the service that's provided for free to the students?

- [Jim] It starts at 25 megabit and now we're doing up to 50 megabit for the free service through the EBB program.

- [Christopher] Did Andrew… Did you say it's 25/5 then or, kind of, combining what I heard from the two of you?

- [Andrew] Yeah, 25/5 is off the shelf that's what we get. And then for those families where there's more than two students, then the district will compensate Jim to increase the speed. I think we can go all the way up to 100 megabit down, you know, in that scenario and up to… I forgot what it is, Jim.

What's our highest upload speed?

- [Jim] 100 by 25, I believe.

- [Andrew] Yeah, and so we're willing to pay when we have those situations where you've just gotten more than a couple students on the network, right? It's important. And in all honesty, Jim is… I think he's got a kind heart for students because Jim is not charging us an exorbitant amount to increase those rates, which we appreciate of course. And it allows us to have flexibility, right, not to overprovision where it's not needed but to have a way to flex that when needed.

In comparison, we've tried to get the same agreement with Comcast for their internet essentials, and they will not write a contract with us to allow the standard speeds, which I believe right now are 25/5 as well. They will not allow… or 50/5. They will not allow us to raise… What we really to raise is the upload speeds, right?

When you think about all the video conferencing we're doing, if you get three, four, five people on that line, then 5-megabit up doesn't hold. So, you know, we're thankful that Jim has allowed us to have a different pathway on that.

- [Christopher] Jim, have you run into challenges delivering that to the homes and in particular I'm always curious about apartment buildings and the kinds of places that, you know, when you're just serving customers, you might not have to deal with because you're not allowed in, but now you're trying to figure out how to get service everywhere it's needed.

And you, kind of, have a different mentality.

- [Jim] The gear that we're using, Chris, is the CBRS 3.5 gigahertz, you know, fast frequencies. And that's working well mid-band, you know, essentially frequencies as they call them. And, you know, similar to the 2.5 gigahertz range, it gets down through what we call canopy, you know, trees and coverage in neighborhoods fairly well within a mile or two.

But, yeah, we've had connections with a system that are, oh, heck, as far as 5 miles if you have line of sight. And, you know, even at that range, we're doing, you know, 50 to 70 megabit. It's pretty effective, you know?

It's working well. You know, and the schools are nice because geographically you've got a school every two, three miles, and it tends to work. As we're building out, we're realizing… Well, like, right now, we've got some of Live Wire's distribution sites in combination with the schools, we can work the angles so that if, you know, it doesn't work, if we can't get a connection to a house from one particular location, you can shift it over, all right?

And so, kind of, developing a matrix or a mesh network in some ways, if you will, and it does tend to work but within that one to three-mile distance limitation.

- [Lisa] So you guys received CARES Act funding obviously as we all did. How did you use that CARES Act funding to push this forward?

- [Andrew] Yeah, great question. So in our school district, we used the CARES Act money for a lot of different things. In the technology side, one of the things we did was use State CARES money that came in through grants. So it wasn't directly to the school district, but the Colorado Department of Education, and we could apply for grants.

And one of the things it was eligible with the grant was broadband-type infrastructure. And so we went for our contracts to see if there was anything preventing us to help Jim with the capital cost of the equipment. And so long story short, there wasn't and we applied, we explained our story, and we were granted a grant that has allowed us to pre-purchase the equipment that Jim is now using to install.

And so, you know, the benefit for us, of course, is the installation now goes faster, and we get the whole thing up and running. The benefit for Jim is that he's avoiding capital cost. Now, he has to take on the replacement cost, the breakage, you know, warranty, whatever for that equipment, but the CARES Act helped accelerate the rollout.

- [Christopher] It's funny you say that, Andrew, because we did a podcast previously with the folks from Clear Networks over on the western slope, and they also were pretty innovative in working with school districts on using the CARES Act funding what I would call unconventional ways that will spread the benefits long beyond when that money runs out.

- [Andrew] Yeah, and I think things like the CARES Act money works really well for one-time purchases. Exactly what this is, right? Jim has mentioned he's not that big of an organization, right? So capital for smaller companies is always a bit of a challenge. And so by solving that problem, we're now rolling out. So I think we've got six more schools that are going live before August.

And so with every one of these installs, right, the capability for us to get free internet not using hotspots but using this much better technology increases and it's a huge positive. In fact, right before this podcast, I was in a meeting on making sure we have a good pathway to collect hotspots.

We've basically given out during the pandemic as they switched over to Jim's network at Live Wire.

- [Christopher] Jim, what are some of the challenges of, you know, for a company of your size? You suddenly have this opportunity. And how do you scale up and handle those pressures?

- [Jim] Oh, that's a great question, especially now because it's a tough labor market. It's really hard to hire people right now. And so we have to do a lot of on-the-job training with new people that haven't done some of this stuff before.

And so it's, kind of, a mixed bag but we're making it work somehow.

- [Christopher] I want school districts to… I just want to pause you for a second. It's like I want school districts to hear the pain in your voice because they really do have to understand. I think that these partnerships are important, but it's also worth noting that a lot of companies like yours right now, I mean, you're seeing significant cost increases. You're seeing labor cost, materials cost.

You're under a lot of pressure right now. So cities and school districts need to be aware of that.

- [Jim] Yeah, I use the Road Runner cartoon example/analogy, if you will, because now that the pandemic is starting to wrap up and, you know, the immunization level here in Colorado is pretty good and pretty high over, what, 70 some percent now, I heard. You know, so everything's ramping up, and there's a lot of businesses that have been displaced that are moving.

And so we're seeing that pressure from our customers. They're calling and saying, "Hey, we're moving next week. That's not a problem, right?" And so it's just like, "Oh, yeah, great. Okay, here we go again." And that's every day, right? And we're trying to get all this other construction work done, and, yeah, that's a challenge. I think the biggest asset, you know, for us, in this whole thing, is as a service provider we've got a lot of nuts and bolts infrastructure history.

You know, we started as a cabling and installation company, and so we've got that to draw from and all this is just nuts and bolts right now, getting conduit in, getting frames up on the roofs. And so as school districts are looking at partnering with people, they need to consider that.

Whereas, there are some service providers, and I know wireless providers out there, that are bigger than us, and they would probably not be able to do this because they just don't have that nuts and bolts, you know, infrastructure level experience and capability, right?

There are more macro guys that put towers up on mountain sites to shoot out, you know, 10, 15 miles instead of 1 to 3 and so they just aren't geared for that really. Yeah, I think as a partnership, you know, there's a couple reasons that this works; one is the size of Live Wire is good. Some larger companies may not even consider that because obviously that 25% revenue share is going to turn off a lot of carriers.

For us, it's all upside because there's so much growth potential with what we're doing, you know, that it works. And as we build out, especially with the grant, you know, it takes our CapEx off the table. So it's a pretty good program. You know, we're really happy to be a part of it.

- [Christopher] I think it's time to go back to the FCC, Lisa.

- [Lisa] So basically Pres. Biden has put out a whole bunch of money again, and the FCC has been contemplating their rules on how this new money will be used.

- [Christopher] By giving broad flexibility to the school districts to use it in the ways that they feel is appropriate for their conditions.

- [Lisa] Exactly the way they need to use it for. So, Andrew, talk to us about how this worked for you.

- [Andrew] Well, you know, I think ignorance is bliss until it's not any longer and the way this...

- [Christopher] Until you get a call from D.C.

- [Andrew] Exactly. So the way this all started was that I teamed with a school district over a decade ago now, but I came from Sun Microsystems, right, a Silicon Valley, high-tech innovative company. The mindset there was "figure it out," right? If there's a problem, figure it out. So I come to Boulder Valley School District, and one of the big problems that I quickly ran into was, "Hey, there's a lot of kids who have no internet at home, and we're switching over to the Chromebook platform. Cloud-based homework is expected to be done, you know, in Google Docs at the time."

I'm thinking, "Man, we've got to solve this problem." And then I quickly started to understand that's called the digital divide or the homework gap and so with our fiber network in the ground, our network happened to run by 1 of 11 Boulder Housing Authority Complexes, and this is where low-income families typically live.

And so I met with the director there and I said, "We can just run our internet in, and then you pick it up, and you put the WAPs in, the wireless access points, but I'll provide the internet signal." And so we're like ignorant and, "Great, let's do this," and we got the whole deal done, lit it up.

Roughly 60 students were connected and then I'm blogging about it. And then my parade, kind of, got rained on a little bit when I was informed that I was in violation of the E-rate rules. And of course I read the E-rate rules and it says that, you know, this E-rate money can be used to run internet into schools. And so my argument back to the FCC was school is anywhere, anytime, anyplace, right?

We learn as a society any place. We could even be at grandma's house doing our homework. We may be at home at night doing our homework. We may be Googling something or Binging something to search for it and learn. And so they were cool about it.

In all honesty, they were like, "Yeah, we get that but that's not the way that we will allow E-rate money to be used." And so they helped me get in contact with CU Law School. So CU Boulder is in our backyard, and there are about 30,000 students as well. I got connected with the dean over at the law school, and long story short we worked with two sets of students over two semesters to write an FCC waiver request.

And the request basically says, "Can you waive our restriction and allow us to run BDSD-paid internet with E-rate money into homes that students would need?" And so that was 2015. It went through the entire public process to get comments. The vast majority of comments were positive in support.

There were a couple comments that were not so supportive, primarily from the telco industry. And so it's there. So now 2016 comes or, excuse me, the end of 2015 and the election happens, the presidential election in November and Pres. Trump was elected. Party switches, FCC board switches from Democratic control to Republican control.

And without getting into all the politics, what it basically means is that it was a less maybe open position from the new FCC board to rule in favor of what we were requesting. And so the good news is it's stalled out and they never ruled one way or the other on it. And it's still sitting open right now.

Since that time, the state of Colorado, our attorney general used to be the dean at CU Law, so he has filed his own waiver request on behalf of the state of Colorado. There are other states that have done the same thing. And so we're hopeful that one of those would be ruled upon which would open this up for every school district.

So you may remember Jim said that Denver public schools doesn't have Dark Fibre. That's because they lease their fiber likely with E-rate money. If this were to be opened up, then that would likely open up a scenario for them to do something similar and a bazillion other school districts across the nation.

- [Christopher] I think to some extent that's part of the concern for those negative comments in the sense that E-rate is a limited fund. I mean, I think there's two components and one is the cost of building a physical infrastructure out to these different places and then there's the cost of just providing the service, which is effectively nothing above what you're already doing, right?

You're using E-rate dollars to flood the schools with bandwidth. And if you're able to then share that, that is no real additional cost to the E-rate program. And so, in my mind, that certainly should be possible to do that. And the other part of it I think I can understand that there would be some concern that E-rate would be doing nothing but that for many years if school districts started building out to public housing and things like that.

And so I just want to provide a little bit of a contrary opinion for people to get a sense of why there are some concerns for it.

- [Andrew] You know, Christopher, I think you're absolutely right. And I think if the FCC ruled that the E-rate internet signal could be used for this purpose, it would actually cost the E-rate program zero dollars. It would basically just be opening up something that is restricted not because of money but simply because of a policy.

And, you know, I can understand that maybe the government doesn't want to fund building out of private networks and I can say we have a solution right here that did not rely on the E-rate money to build out this solution. So as maybe a first step, allow the waiver for the internet signal, and maybe as a second step it could be looking at whether funding should be used for school districts to be able to build out with the actual physical infrastructure.

- [Christopher] Yes. Yeah, very much so. And, I mean, especially because if there's one thing we heard, it's a recognition that after we build healthcare networks and school networks and we build all these different siloes and then we're surprised that homes didn't have service and we couldn't use those assets in more creative ways.

So it's definitely something in which I feel like needs to be revisited seriously. So I want to end with a question about, like, whether or not this is a long-term solution. You know, I always worry about programs like the Emergency Broadband Benefit because it just looks like you have to keep dumping billions upon billions of dollars into it and rely on Congress to keep funding it.

Is this program sustainable by itself do you think without needing appropriations at the local level, the school district, the E-rate, anything like that?

- [Andrew] Absolutely without a doubt. And the reason why I say with that much energy and just confidence is because Jim is able to create revenue by selling internet services. So he has a revenue stream to keep him afloat, to make his profits, to do what he needs to do as a business. For us, as a school district, we already have the fiber in the ground, and we didn't overbuild our fiber.

It's just when you put fiber in the ground, you figure out what you need, and you buy the next bundle up, right, of the number of fiber strands. And so those strands are there and they don't cost us anything being in the ground doing what we do, and so I think it's absolutely sustainable. It's certainly a win for us. It's a win for Jim just as long as he can attract customers.

And so we don't need government funding. We don't need local taxpayer money. We don't need federal money for this to be a viable solution for the long haul.

- [Jim] Yeah, I agree, Chris. We started our network in Boulder for several good reasons. Number one, you know, it's a progressive town and so people are open-minded and they're very willing to give an alternative smaller provider like Live Wire a shot.

A lot of them are looking for companies like us. And so if we can get the service out there, we know we can get the customers, you know, a little bit of marketing. Once we get this construction, as it starts to wrap up, and even before we'll start marketing out, you know, into those neighborhoods. And we know we're going to get business.

So that's not an issue even after the EBB program ends. That's not going to be a problem at all. So it's having that CapEx, you know, I think, number one, having the fiber in the ground, having schools, you know, the space available, and having that CapEx program for this initial volley of hardware that we need is…it's all crucial.

- [Lisa] I just want to circle back to what Andrew was talking about earlier about how learning is everywhere, and the whole reason that these networks are important are for instructional reasons and for kids to be able to learn wherever they are with the devices that we have. And that has to be the focal pushing point for these networks to go forward and the one commonality in all of these successful networks is the fact that everyone's focused on the needs of the students and the needs of their families.

And that's what in addition to the win-win wonderful negotiation and trust you've built in creating this partnership, that's what's making this work.

- [Andrew] You know, that is so true, Lisa. And, you know, I often say now that this is a program focused on our students to make sure they connect. But another benefit is that families get connected, too. And I fully believe that, if you don't have adequate internet, you're not able to fully engage in society. You know, it's further created an opportunity gap between those who are connected and those who are not.

And, you know, this opportunity gap is big, right? It includes education. It includes job searches, e-commerce, you know, even shopping on, say, Amazon. It's being connected with the employees' families and friends. And, you know, I believe in my heart that the internet now is so entwined in our society that it is a utility, right?

We wouldn't expect people to operate without clean water or electricity and, you know, it's time, in my mind, that every American has an equal opportunity to fully participate in our connected society. And that's strong that I believe these changes have to be made so that everybody can engage.

- [Christopher] That's a wonderful way to leave it off. Thank you, Jim. Thank you, Andrew. Thank you, Lisa.

- [Andrew] You're welcome. A pleasure to be here.

- Thanks, Chris. ♪ [music] ♪