

>> Good morning. We are going to get started now. My name is Doug Kinkoph and I'm the head of the NTIA broadband programs. I would like to thank you all for joining us today here in Seattle. I am pleased to state that we are teaming up today with Next Century Cities and the City of Seattle to bring you today's broadband Summit. This is our sixth regional summit. And it is our second that we are doing with Next Century Cities. NTIA -- just a little bit on NTIA. Part of the Department of Commerce and we are the principal advisor to the White house on Internet and policy issues. One of our key missions is to promote the deployment, adoption and efficient utilization of Internet services. And to accomplish this we have been working hard on multiple fronts to ensure Americans regardless of geography, social economics and demographics have the access tools skills needed to benefit from Internet access. Central to this effort is our new broadband USA program, which is providing free hands-on technical assistance toolkits guides webinars and other support to communities across the country that are attempting to expand broadband and adoption and deployment. Today's workshop is a critical component of broadband USA. Today we will be discussing wide range of topics to evaluate local broadband needs, different types of business models, financing options, how to apply for federal and state funding and how to attract private sector investments to communities. As you can see, we have a very full agenda today. We have a great lineup of speakers and panelists. Said this time I will turn it over to Deb Socia who will give you more on the logistics of today's events. Deb, with Next Century Cities, please. Thank you. [Applause]

>> Not being as tall as Doug, we have a solution. Just so you know why I look so tall. I'm usually so close to the top of this, it's interesting to have a view. Welcome to digital Northwest. We are so excited to be here. It is a great venue. Wonderful city, we are very lucky to have the opportunity to be part of this event and work with NTIA and the City of Seattle and the CTO, who has been a fabulous partner in this effort. I am the executive better -- director of -- we support cities and communities across the who either have or want to have fast all affordable broadband. Many of the people in this room are members of Next Century Cities. Representing 27 Americans. We are excited about the interest in ensuring that all have access to fast affordable reliable broadband and we are pleased to spend the day today talking about how we can make that happen. We actually have 90 cities represented in this room today which is very exciting. We have 250 registrants. We are live streaming the event and it will be available afterward on video. A couple of housekeeping details that are important. One is that the Wi-Fi is Bell Harbor conference center. If you need the password it is Bell 0316. #-number-sign-hash tag digital and W. Let's make that trend today. If you are on Twitter, take some pictures, take some courts, get us some attention on this issue. We do have three sponsors today that I want to say thank you to. We can't do this events without the help of folks who can provide us with the resources necessary to make it happen. First I like to thank our platinum sponsor and that is Google. If any folks from Google are here if you could stand up we will give you a round of applause. [Applause] . Thank you Brian. Our Gold sponsor today is KeyBank. Be folks -- folks from KeyBank please stand. I know they are here. Stepped out for coffee at the exact right moment but we will clap for them anyway. [Applause] . And our silver sponsor is Corning. Is Corning here? Also Steptoe for coffee but it was very nice of them to sponsor us so we will give them a hand as well. [Applause] . One other housekeeping detail and that is that if you are interested in going to NTIA sponsored office hours tomorrow, if you are looking for information,

support, assistance around a specific issue, there are folks there to talk to about grants and financing and they are also folks that represent Next Century Cities cities who will give your hand thinking about what your city's plans are and whether or not you would like to pursue a pathway that they might have pursued and that sign up is all at the front desk. You'll see a sign-up sheet there and that is for tomorrow morning. If you're interested in that come up please do so. It is so my honor to introduce Mayor Murray. He became mayor January 1, 2014. Previous to that he was a Washington state legislator representing the 43rd District for 18 years. He sponsored legislation to legalize marriage equality and also to increase funding for affordable housing. The same dedication to social justice shapes Mayor Murray's agenda currently as mayor. To make Seattle a safe affordable vibrant and interconnected city for all. Please join me in welcoming Mayor Murray. [Applause]

>> We had to wait for the train.

>> Thank you, that was embarrassing. I came from Capitol Hill and got stuck in traffic. Good morning. It is an honor to be here this morning and welcome to the Digital Northwest broadband Summit. I particularly want to welcome might elected officials who are here today. I think everyone who is here at the NTIA broadband USA Next Century Cities and the Seattle department innovation and technology are all here and contributed to making this happen because we know that this is a very important issue for us and our future. Particularly when it comes to the issue of moving our economy forward and bringing everyone along. I also want to thank the states Chief information officer, Michael Cockrill who is attending on behalf of Governor Endersley. Access to broadband Internet is critical to the success of the 21st century. It is nearly impossible to run a business to search for a job, to succeed in school, or to do our work in government without it. But as we know that digital revolution is leaving some behind. And as a result, many of today's most challenging social problems income inequality, the outcomes in our public education system and workforce readiness hard a direct result of the digital divide. This is true even in Seattle. We have an incredible economy, Amazon and Microsoft, people are flocking here from around the country and around the world. But not always are they the young people who are coming out of our public education system. 93,000 homes, 50% of Seattle households do not have access to the Internet. Many are low income families and many are immigrants and refugees. Today's Seattle, one in five seat Seattleites is born in another country. Seattle knows it needs to do better and we know that technology and access to the broadband Internet is part of that. And I am looking forward to the exchange of ideas that happen today, here, so that we can learn how we move forward. And it is my hope that together, we can find a way to overcome the digital divide, actually end of the digital divide. For our part, Seattle is working on a common nation of strategies. When I came in office I was very excited about the possibility of municipal broadband until these studies came back and indicated that it would be literally the largest tax increase in Seattle and this is a city that shows some willingness to increase taxes. We launched instead last year the digital equity initiative that is looking at how we deal with issues of equity in business and education and nonprofits in a bout -- about of week or so we will have significant programs to announce as a result of that. We teamed up with Google and made personal Wi-Fi hotspots available for checkout in our public library's. And when this first came out they were gone the first day. They were checked

out with waiting list that went on and on. We are adopting a three-pronged approach to moving forward. And that three-pronged approach consists of three basic strategies. Reducing regulatory barriers. What can we do to actually make this market work? One of the first things I did as mayor was remove a director's rule prohibited certain types of technology and thus entire companies from functioning within the Seattle. Public-private partnerships. This is something that we are going to have to do with the private sector. And finally, how can we actually find a way through a combination of strategies to be better players in municipal broadband. And we have had some success as a result of the strategies. 60% of Seattle homes now have access to high-speed gigabit where only 5% did when I came into office. You're going to hear from her achieve technology officer Michael Matt Miller shortly about these programs. I also have to tell you that we have explored options around municipal broadband and there may be strategies that would work. And it may be ultimately the best way to solve the issue of the divide. We're not going to be able to do it as we are not going to be able to do a lot of things unless we see an aggressive approach by the federal government to work with local jurisdictions to make that possible. We have more access in most places that are parts of this country that are desperate in the problem is much larger so hopefully at some point we will have a partner once again in DC. I look forward to working with you and our work with next century cities so that we can make progress in this issue. And again I believe it is going to be a combination that really is going to be a combination of what we can do in the public sector in conjunction with the private sector. It really is going to be our ability in the situation not just to partner with them because we need to read -- the resources but to partner with them because technology is changing so fast. And the economy is changing so fast. That the models we are going to have to develop in the public sector are going to have to be very nimble. Because of there not nimble and we don't have flexibility and our regulatory environment is to structured we will find ourselves having set up a situation to deal with the issue of equity only to find ourselves behind because of the lack of flexibility on our part. It is a really brave New World for government and we know this as we deal with things such as Uber and Lyft, Air BnB, technology is radically changing and what happens? Suddenly issues about the ability to pick up your phone and get a car, the ability to find a place to stay in another city and what happens in that other city to neighborhoods when those folks -- one places are rented out, all of these are connected and all come back to our ability to regulate in a way that is updated and not calcified, to respond to the changing market and to constantly realize as is market changes, the issue of equity keeps coming back. So you are -- you all know much more than I do, you will hear from Michael who is a person who we heard who understands this in a way that I don't. I look forward to learning from all of you how we move forward in this brave new world of the 21st century. Thank you and again my apologies for being delayed. [Applause]

>> Thank you Mayor. Really appreciate you being here this morning. It is not my pleasure to introduce Dr. Adelman. His special assistant to the President for economic and technology policy. In his current role, he oversees the administration policy development and implementation across a range of economic policy issues including broadband competition and access, technology trade, consumer cyber security, data privacy, and patent and copyright performed. All of which have been highlighted in the President's state of the unit -- Union addresses. It sounds like not like a broad range of topics. Following his remarks, Michael the

CTO for the City of Seattle will be joining him on stage to moderate a question-and-answer session. Please join me in welcoming Dr. Adelman. [Applause]

>> Thank you. I was torn as to whether or not I should use the box. I am mid- box height. Good morning everyone. It's a pleasure to be here. Thank you for the kind introduction and thank you Next Century Cities and NTIA for your leadership and thank you to all of the municipal and state leadership we have here. This is why we come here. To get out of Washington, out of the bubble and do the best we can to provide a little bit of our insights and lessons learned to the extent they can help those of you here around the country in developing more and better broadband for your citizens and to partner with others in the nonprofit community, private sector and beyond. I want to spend a few minutes today talking about first what the administration has done in broadband. What we are doing and where we are headed for the next 10 months and the change we have tried to put into place that many of you can help take forward in your own communities. If we have one North Star on broadband issues it is this. In the 21st century broadband is no longer a luxury. It is a necessity. Broadband is an enabler of Sony things that we try to deliver for citizens everyday. It is an enabler of economic growth, of the sort of opportunity to put small businesses on a competitive footing with big incumbents every single day and to revolutionize entire industries like you heard the Mayor talking about just a moment ago. It is a pathway to education and opportunity to learn skills and to learn from those who are not in your immediate area to get the absolute best of knowledge that is available, something as simple as looking up a fact or learning a new skill through -- or some of the technical education available now regardless of where you live. And an enabler of building stronger communities. Distant, isolated, families that are isolated have challenges and these are challenges that historically been difficult to overcome. The proximity that fast broadband can provide. A simple to any of us who had a loved one, spouse or child move away and be able to talk to them face-to-face enabled by technology. Can make a huge difference and bring our communities closer together. All of these are reasons why broadband is the key enabler to so much of what we are trying to do in the federal government and beyond. And as a result it is a top priority for us and how the federal government deliver services, thinks about opening up new opportunities and frankly how we think about how the US economy can compete in a global competitive ecosystem that we live in now. The last seven years have delivered a once in a generation leap forward in connectivity in this country. Let me tell you a story of four programs that we think made major progress but still highlight exactly what work is left to be done. For the first one let me take you back to 2009. A very scary time. It was for a lot of you in this room. And 2009 we were in the middle of the worst economic downturn in a generation. At the unemployment rate was double what it is today in this country. Investment was flat. At the S&P 500 was half of what it is today. The Dow was a third of what it is today. Consumer confidence was a third of what it is today. This was a bad marketplace for the average worker. A bad marketplace for an individual's trying to save. A bad marketplace for a country. Whether they wanted to make hard capital [Indiscernible]. Present -- the recovery act. The recovery act put America back to work. Long-overdue investments in broadband was a shiny example of the success. [Indiscernible], broadband technology opportunities program and NTIA, and USDA made some really crucial investments. Middle mile investments to dramatically upgrade broadband core infrastructure. The result there, 114,000 miles. Related upgraded. 140,000

miles over the course of the recovery act. It wasn't just a public investment. The past it tax breaks. S-uppercase-letter-capital S and that were unprecedented. Anytime the private sector investment was flat. Tens of billions of dollars were invested by the wireless industry, by wireline broadband to create what was functionally a revolution in the way the average American got online while every other industry were not making those sorts of investments. We have a federal government were freeing up more wireless spectrum and resulting in the last spectrum over \$44 billion. Of gross revenue that is money that didn't have to come out of taxpayer pockets. Smarter use of government resources and the results, these are not just economic results that us technical people like to talk about. You are feeling them everyday in their homes, in their broadband. In the last seven years, the average wireline broadband speed in America has tripled. For the average consumer about the same price. And you are probably not paying more. That is a tremendous improvement across a 15 or 20 or wireless, 98% of the American population is covered. Is covered by a 4G LTE wireless. 90%. When you travel to Europe, 4G LTE is that a lot of places still a patent. US was the first country to deploy 4G LTE at scale across the country. That is tremendous progress and something you can see and feel everyday in your mobile broadband expense. Anytime into thousand nine through the end of the recession recession when we should have been falling behind as a country, we pushed ahead and we delivered broadband that today for all of its limitations is leading the world. Let me talk about some areas that we knew were limitations that we had to take more progress. Those figures are important but it doesn't work if every American doesn't have access. Both in their homes, on their mobile devices and institutions a frequent everyday. The most obvious example of this is one that I think about a lot in schools. Every institution we know and we will talk more about this can benefit from Frost fast broadband. Schools if you take a look at them seem to be one of the few areas in the American world that are functionally on perturbed by both macro economic conditions and technological change. If you talk to the teacher and compare that to a teacher experience that 25 years ago many tissues will tell you that the amount of technology in our classroom is incredibly limited. This didn't make sense. If you're a teacher technology in the classroom gives you an opportunity to save time and do less grading. If your student or parent you demand that because it provides you for personalized learning much you learn at your own pace to be able to review materials at your own pace to have more kids of diverse skills in the same classroom. This is a no-brainer. Why wasn't there more technology in the classroom? Why was the classroom a slow adopter? Part of the answer was it was not a market opportunity. There is over a trillion dollars global market in education technology. That's a lot of money there for the taking. The reason why technology was falling behind in the American classrooms was simple. In 2013, under one in three American classrooms had the most basic connectivity, reasonably fast wireline connection and wireless was in the classroom to do even the most basic teaching and learning. Even the most basic, something like streaming to videos into two different classrooms at the same time. In two out of three American schools, that was not possible. If you are an economist you look at that and you suddenly realize that is the single point of market failure. When I talk to investors in Silicon Valley das das h-dash Silicon Valley as a wise and education technology a key opportunity for you? Four years ago the answer was consistent. It is a broken market, no infrastructure and I won't invest when there is no infrastructure. We set out to change that. It was something of a national travesty and when the present went to Mooresville, North Carolina, he said in a nation

where we expect free Wi-Fi with our coffee, we should demand it in our schools and in every one of our libraries. And so the President announced a goal that was at the time incredibly ambitious. 99% of every classroom around this country to high-speed broadband and wireless, not in 20 years, not in 15 years, in five years. 99% in five years. It was a bold goal and it was one we could not do alone. We had tremendous partner's. The FCC which rose to the challenge and announced a billion dollars of new funding for school funding that is in use right now. The education department built a network of educators which today is called the future network 1200 school districts representing 25 million students that of all committed to this vision of helping teaching and learning improve two more technology in the classroom. The private sector rose to the challenge saw the market opportunity and committed to billion dollars of free technology from some of the biggest companies, many of whom have devices on these tables right now free technology and classrooms and classrooms that needed that most. Those commitments are in use in all 50 states by over 2 million students. Combination of private sector public-sector coming together towards a vision of improving technology entry cap three years ago it was a good idea and today this program is delivering \$10 billion in a national movement to revolutionize our schools. Just three years that program has Losey digital divide in American schools by half. Over 77% of schools we sent under one and three. The reason I spend time talking about this is progress that everybody community the resources are there, ability to do over these of partnerships. Every state and every city's leadership. Apply for the funding. Push to prioritize. Allow experimentation in the classroom. Allow zones there can be a model of where its working. And you can see where it isn't. They can make a huge difference in proud to state thanks to connect add. In the classroom all of the country. That the education technology think broadband networks. And I will limit my take a look to the presidents visit to Cedar Falls Iowa. [Indiscernible], play a little town in Iowa. 100 times the national average and they pay the same amount that I pay for my cable Peggy's every single month I lived in Cedar Falls and I tell you as a Minnesotan, that pains me to say. They delivered something really special. Community broadband is a topic, a solution that is working. Is not a solution that will work for every city. But is one the President felt very strongly is an option that needs to be at the disposal of cities and states and communities. Something that should be in the hands of communities. We believe that community should be able to decide but we also took a step back one of the great challenges to driving more broadband investment in competition was a lack of focus on the issue. Since most Americans are going to have broadband were competitors is a good thing. For your average American when you're talking about fast broadband speeds, many of them lack more than one competitor at what we consider to be true broadband speeds today.

>> Part of what we launched that day was something called the broadband opportunity. First of its kind effort that brought together over two dozen departments and agencies across the government. If you try to list two dozen departments and agencies would finish run 18 and say who else could possibly want to take part? Broadband is an issue that brings almost every agency of our government together. Even those that wouldn't think about it intuitively as part of their mission. Thanks to great leadership by NTIA, Department of Agriculture we have been able to marshal offer from every single agency. Obvious ones, small business administration, once you might engulf less like Department of Housing and Urban Development, library

services, a three race to the presidential level the idea that every agency had a mission they needed to execute on that involved creating more broadband opportunity and how they did their jobs, suddenly ideas materialize. We didn't have to impose these ideas on the agency, they came up with them themselves. Over two dozen recommendations were issued, approved by the present right now they are being asked to acute it on. Department of Housing and urban development realize that right now it was very hard to get broadband in public housing and public assisted housing across the country. Their old buildings, wasn't part of the requirements. Hide it the federal level could make one small room change that would result in every single new construction of public housing in this country if it is federally funded to be prewired or capable for broadband. One rule change. Didn't take much but it was a change both in how they thought about delivering on their mission to provide broadband for the communities that were living in public assisted housing and it provided a new way for them to prioritize actual investments. Real dollars that were going towards broadband in communities. A great example of bringing together and the reason I tell you this is because we want you to steal this idea. We want you to franchises model. It is nothing magic. It is a simple as setting the goal, more broadband competition. Bringing together all the departments and agencies even those that don't think it is part of their job and asking what can you do to contribute to this mission? We have had tremendous excess -- success. Changing the regulations is not the sexiest thing in the world but it means real broadband in the hands of those who didn't have it all over this country and this is something that we think and be as powerful if not more powerful when it's brought to the state and local level because so many of the barriers the private sector and others find when they're making broadband investment decisions are happening at the state and local level and the reason why this is so important as this. Civic leadership nowadays means putting technology within reach. The market for population for economic growth, these are competitive markets. You are competing for minds, competing for job creators, that is a competition in which every city in America is going in as people become more and more mobile. Seattle will not be competing with Los Angeles on whether, Chattanooga will not be competing with Seattle on coffee, they will all be competing with each other broadband. This is an opportunity for smaller cities to get ahead and if you want to see more examples of us take a look at examples we will be talking about over the course of today. Small cities that are driving job creation more investment by virtue of having world leading nation leading broadband. It can be a real attractor for business in addition to all the social benefits I talked about.

>> What we have seen here thanks to efforts like these is that tens of millions of more Americans in the institutions they rely on had joined the digital age in the last seven years. There's more work to be done and when I say more work to be done consider this. If you make under \$25,000 year, you are half as likely to have the Internet at home than if you are well off. Top income quintile. Have is likely. That is not good enough in this country especially given how much low income Americans can benefit from connectivity, benefit from the online to reduce the cost of being poor, keep communities together, move up economic ladder. This is a national imperative. Just two weeks ago, in our latest average combat this, in the run-up to the presence business to the SXSW conference, we announced what will be our capstone effort for the rest of the administration. And effort to focused national attention to fix the digital divide, bridge the digital divide and we did it with the same form, a bold goal to connect 20 million more

Americans, some of the hardest to reach Americans of this country, connect 20 million more Americans to broadband by 2020. We based in on reforms of the current lifeline program, the reforms that we are proposing to lifeline which if enacted will provide a voucher for every low-income American that is eligible it means that millions of Americans will not have to choose between putting bread on the table and paying their broadband bill. That's what this means and I can be the cost of getting more Americans online. In addition to lifeline reforms we unveiled a new national call for partnership for nonprofits and from government to ensure that low income Americans can get both broadband they can afford as well as two other key components. Low-cost devices they can use and digital literacy skills that they need to make the most of getting a mine. We are tremendously excited about this new connect all initiative and what it can do to ensure no one is left behind from the digital revolution. This is a record we are tremendously proud of. It is elevated broadband from a mill you technical issue to the top of our agenda. It is helping us do our jobs better and it's helping us deliver services better and it's helping to provide more opportunity for more Americans. That is momentum we want to continue and thanks to events like this one and your leadership and your being here today we're confident we can continue long after we leave office. If there's one take away from a conversation is this. Had in America, connectivity is opportunity. As a nation we have an obligation to ensure we are delivering this. I'm pleased to welcome on stage Michael Mattmiller, the CTO of Seattle and we will do a couple of questions. [Applause]

>> Thank you so much David for coming to visit us here in Seattle to talk about the amazing successes this administration has had. I especially like your statement that there is nothing magic about the types of partnerships and when you look at the success of connect Ed and connect home and now connect all, the makes and see very. How do cities and states and what can we think about doing locally?

>> Thank you all in think you for your leadership in Seattle. We talk about connect home. Housing and urban development. And broadband. And federal level. Federal level, almost all of at the local level, of 2827 and they are building partnerships themselves to individual cities lift up and announce connect home public Housing Authority I have the ball Boys and Girls Club expanded hours for digital literacy. Leading through municipal leadership focused on one nothing magic a one identifying clear leadership in a clear goal. Getting that list of partners out there and just asking how can you help. Hardest things the world to do and shop and say hi you are a for-profit company how would you like to give away what you are doing for low income Americans? We have been consistently impressed whether private sector nonprofits on the desire and willingness to get out front of this issue and take an opportunity to show they are part of something bigger than just a two-day efforts and donor base and customers and that's what we have been able to deliver through connect home and something that can be replicated across communities all over the country.

>> That's great and we are very proud of the city over Seattle and many of the organizations in this room at our connect home can meeting in April and is David keys here? And we will get that and a favorite example and connected we shall be looking to?

>> The truth is -- I am nervous the truth is different examples work for different people but stories we have started to hear and changes in classroom and connected we get letters from teachers I taught at a school we got a letter from a kid -- they all have iPads. They they can see what it means and stories like that whether it's a student or teacher and to check back with those same students. Me principal stood up hold off on buying paper textbooks and we assume that you know tour three things or I've got ESL students and connect add. Closing hard for the average American who didn't have an iPad going to basketball practice has without a it can enable that help motivate us. 5 miles that way. It can help resume. Connect you to those stories are there to help connect. Not the sort of specialty media.

>> What can we expect from the administration over its remaining nine months

>> The last 10 months of administration.

>> So high as to be insurmountable. Initiatives branded was connected own part. We see this as a capstone to identifying the hardest there is to connect. Public housing, schools that were far behind in this housing market. Lowest income, we if we solve those we saw the hardest challenges in this country. When it comes to connected obviously we've made great progress connecting the last half of the unconnected schools is going to be incredibly hard. Capital-intensive different series of challenges when it comes to for instance a lot of rural schools, really far out there schools that are necessarily going to be the same kind of infrastructure that would be true for dense urban areas. When it comes to connect home making sure that everyone of those partnerships has to succeed if it's available to them able to learn from and on connect all sit with fingers crossed issued our formal views on the matter. Our hope that the FCC will continue in the direction that we hope it will that the FCC has headed. And if it works out as Tom Wheeler the FCC in under a month of the poverty level I broadband subsidy around \$10. Low income Americans getting online. A huge change help supplement that, federal programs and new partnerships. Continuing against our goals. On helping to lift up success stories. Like the ones it talks about. Institutionalizes progress. The purpose of doing a lot of this is to build the leadership and momentum at the state or local level and the permanent agencies that can carry it from. Making sure that even when I turn into a pumpkin who know NTIA across the federal government our time in office and I was fine design.

>> What can we in this room do to help you over the next two months to make this a reality?

>> Being here is a huge star. And the presence test at the cabinet secretary level and -- with help drive this agenda I think one thing is to what a family agenda not relegated to the techies in the room you are completely screen up to this is not something not social agenda, that is not getting the attention that it observe. That they haven't City Hall. It really is true. Were to put this agenda item at the top and if we can be helpful in doing that look is what is happening. Look what is happening the White house is prioritizing, look for much time the President's spending on this issue. If we can be helpful to a. Elevate this issue and if you have ideas for a partnership, if you have great stories, that are happening in your area let us know. I'm consistently shocked at the dearth of e-mail that I get to this effect. I know I will catch a dozen

of you after this, municipal broadband network. We've got a different ISPs we've managed to deliver the service in a way that is not happening anywhere else. I hear that on the margins I never get an e-mail clear both points he constantly wants to talk about stuff now for us it's about lifting leadership sharing your success device it is closest to. The three states nearest to want to replicate the success. It can inspire them to put the issue again back at the top of the agenda.

>> One less question. How it would extend beyond the end of the administration. What trends are likely to continue the trends here are really solid. Open up the New York Times everyday. The amount of -- being devoted to print media or national consciousness to technology. Is -- will continue unabated. Unmitigated good for the work of those that are trying to deliver faster better broadband. Everyone of these technologies comes back down to do you have the ability to get online. As part of our national conversation not about can I start the next Google in my garage in Seattle but is this -- is broadband available so the poorest Americans can help overcome the cost of being poor and get discounts on their groceries or apply for college that cost him twice as much or can I deliver food stamps or nutritional assistance or get a better sense of low income are part of those conversations that is going to be tremendously powerful. I think that is a trajectory and I have no question regardless of who is elected President next that the branding will change. President Clinton's connected initiative and maybe it will and that will be wonderful. And they are both on some level self-executing so they continue so they are not bound up on one personality we have the present go to Mooresville to announce a sort of thing. Whether we make progress of whether or not in helping to drive by sheer force of White house well alone. Neither could connect home. That it could be broadband opportunity Council. When you see programs like broadband USA that lives at an agency those things were really optimistic, we'll continue and continue to provide value.

>> Thank you for visiting us again. A special assistant to the President for economic and technology to the White house. National economic Council and office of science and technology policy. A round of applause.

>> Thank you.

>> [Applause]

>> Thank you. That was a wonderful presentation. I'm glad we took the time to get a few extra questions and. We will reset the stage quickly. I'm Chris Mitchell with the Institute for local self-reliance and Next Century Cities. And though I been very involved with Next Century Cities, I want to take no credit for this event. I about out from the planning and when you think of this event you should be taking NTIA and Next Century Cities specifically Deb and Todd, Brendan, a number of other people that are pitched in to help out. I don't want anyone to think that I helped. This will be might minute here. We will do a five person panel. With me as moderator talk about local government solutions. As someone who cares deeply about local governments I am really thrilled and appreciative that in this event today we are talking about what the federal government can do, what local governments can do, what private companies can do,

what municipalities can do, this is really an all hands on deck type approach. It is the only way we will solve this and make sure we get the networks and connectivity we need so I wanted to make sure that is fresh in people's minds that this is all about the solutions we can muster. With that let me start encouraging my palace to come up and grab some seeds. And I also wanted to extend one more thank you to the sponsors that have made this possible. It is wonderful to have a dish in event. To have an event of this caliber with these great speakers. People coming on from all over. It is quite remarkable. Thank you to the sponsors one more time. [Applause] Being someone who cares deeply about local, I've decided to introduce the panelists in order proximity to Seattle. We will start with me or Boudreaux. A founding member of next century cities. In your second term of Mayor at Mount Vernon. Take a minute to tell us a little bit about what you have done.

>> Over in and for all of you that don't know about us, 32,000 people, small city in rural [Indiscernible] County. We believe very strongly in a philosophy about our Seahawks here in Seattle me possible but why not us? We are a small city in a rural county for we're surrounded by nearly 8 million people in Seattle between Seattle and Vancouver BC. Quite frankly we offer just as much amenity sitting between those two populations is anyone does. For us we have a broadband structure, I inherited this, I can't take credit for it at all. It was started to be discussed in 1996 with [Indiscernible]. Our IIS manager is here today, on the ground of getting this deploy. Institutional network, in the early to thousands, and commentaries [Indiscernible] into commercial and industrial zoned areas. We have grown since I've been in here in office, talking with this as an economic driver. 340%. Attracting small and medium-size countries. Broadband connections of 21 gigabyte. Platforms. But not only we offer that connectivity, a very unique quality of life. That we are finding is really important to tech related industries. So I can talk more about some specifics but we think we are very unique, we think we are one of the most awesome places to be in our country obviously and really proud of the founding of that municipal network the building on the success from there.

>> Great. We will avoid any discussion about many jobs have left Seattle to go up to Mount Vernon. We will move a little but south to Sandy, Oregon. Beautiful community. Consul present. Jeremy Pietzold hints here. Professional background with fiber networks. As being a public official. And we spent nine years of the City Council and longer on the board. Please tell us a little bit about what Sandy has done.

>> Sandy is a town of 10,000. And we are about 20 miles east of Portland. If you're not familiar with Sandy, if you are to go to Portland to go to Mount would over to bend, you would go through Sandy. To buy donuts and gas. We wanted to be a little bit more known for something been just donuts and gas. The city hall was trying to get DSL, so I was at City Hall and found out that they could eat get thatthat. And the incumbents there didn't provide the service. That's when the Council at the time decided we better do something or we were going to dry up as a community. We formed a municipal ISP offering DSL and wireless. That we did a project where we were able to do some fiber runs a businesses. And now we have passed 100% of the homes and Sandy with fiber. So now we are known for gas donuts and high-speed Internet. We believe we are the cheapest fiber in the state of Oregon. And so it's [Indiscernible].

>> Excellent. For people who may not be familiar. What passing means is that every person in the community could take service and more than 50% of people are taking service already. Moving down the coast to the City of Santa Cruz, this City Council member David Trusses who has been very technical savvy member of the local City Council. History the committee that is led to municipal fiber investments in the city is going to tell us what a great partnership. So please tell us what is happening down and Santa Cruz.

>> Thank you Chris. Santa Cruz has a population of about 70,000 residents and it could Drupal size based on tourism and our university population. It is very tremendously. Else have one of the slowest data speeds in the state. Over the past several years we were approached by local tech businesses but what we could do is policymakers to really focus our efforts to transformer city. After work on a subcommittee we led several efforts to prioritize broadband policy. Through our permitting processes through making it easier for people to set up shop in town, through a business licensing programs, and network let us to a public-private partnership with a local ISP and through that we are looking at building a municipal broadband system that will pass every resident in the City of Santa Cruz and be one of the first in Silicon Valley for a city to pursue this ever. Also looking at how we work with that local Internet service provider actually to operate the system. Municipally owned and privately operated. And for us what it does is it relies on local technological expertise and also reflects our community values. If you go online and look at two Santa Cruz .com you will see a lot of the businesses we have that are operating in Santa Cruz and they vary from a genomics Institute that is affiliated with the University of Santa Cruz that relies on -- requires a lot of high-speed data to local creative's as well as our schools which you heard about earlier. We are very focused is a city to increase the innovation in our city and also respect all the local businesses and educational providers that really rely on high-speed data. I'm really proud of this effort and you are looking at building out this network by 2018. The partnership with cruise I/O, a value member of our community has embraced our partnership with the city so we are proud of this highly local effort to increase connectivity in the City of Santa Cruz.

>> I am really in love with cruise I/O, it's one of this ISP is that have been around forever. The name is a play on input output. It is just one of the best named companies I have ever come across. Our final panelist, Mayor Wade Troxell, in his first term as mayor. Previously was on the City Council for two terms. Fill us in on what is happening on -- in Fort Collins.

>> Fort Collins is a ton of 160,000 citizens and we are 60 miles north of Denver along the front Range. We are the home of Colorado State University and in Colorado we have state statute that basically doesn't allow municipalities to offer any kind of broadband Internet even like in City Hall that have an open broadband unless it goes to the vote of the citizens. And so basically about four or five years ago, we started discussing as a Council heading in the direction towards having ubiquitous broadband within our community. And in this past November, it was on the ballot and it passed by 83%. An important part I think of what we did was we have been actively engaged with our community on this particular issue. And there is a lot of input with where it is we are going. I would break it into two parts. The first was really around benchmarking and

benchmarking where we were and that led up -- and what kind of community we are in the kinds of services that people would like, expect, and would support. And with that, being a high-tech community, HP, broad, Intel, AMD and others as well as Colorado State University, 32,000 students, 8000 of which are graduate students. So basically, it is easily not enough capacity. There are a lot of lone Eagles. I talk about in one of our coffee shops there is one guy that always has two laptops going and he is probably burning more CPU cycles on the universities supercomputer and he is a consultant to another one of our businesses in our community that has a root headquarters there. And so there is a lot of people that really require a lot of bandwidth and everything they're doing. Also I think an important part, I mentioned benchmarking. Now we are really putting together a business plan and we will go to the voters in April 2017. Which will be on the investment and we are really looking at the full spectrum of options and what are the risks and opportunities related to those particular options going forward. All the way from it would be our fifth utility if it was a city-owned utility, or some in the middle with public-private partnerships. And so that's what we are assessing right now and we will take that to the voters in 2017.

>> Excellent. Our goal for the rest of this discussion is to be very light, shortcomings, back-and-forth discussion approach. One of the things that is true of all of you I think is that you engaged in long-term incremental type games. Something that I found striking in listening to Mayor Murray earlier talk about how the cost of doing this all once is too great. And I think that something that many others who have looked into this have found. I'm curious if you give me a sense of how you broke this up into different bite-size pieces in order to get where you arch that. Maybe I'll start with you Jeremy.

>> the City of Sandy, we start off as an ISP offering DSL and wireless. And we started off just with what we could pay for. A little money and we were able to expand a little farther. With DSL having limitations as you know wireless was the way we progressed quickly and just started encompassing our entire city with wireless as we could pay for it. Until we could get 100% of our entire city under the umbrella of the wireless. And what we found in that situation was we were getting to where -- Netflix happened. To be honest. We were so dense that just that free wireless spectrum we could not continue to grow. And so we needed to look at the next model going forward. We looked at fiber as being the ultimate and product medium to be able to provide Internet service to the customer's. And how to get there. We looked at doing a pilot project. Which you know a lot of cities have done that and looking at our pilot project in this time of 10,000, we realize the cost to roll that trucks to build that fiber for a small area of town was going to be not economically feasible comparatively to just doing the entire city at once. Plus there is the political backlash of Whited that neighborhood get the fiber and we don't and we need to wait two more years to see if there is more were cannot. That's a little bit different in a large city but a ton of 10,000 can be -- a neighborhood of a different larger city of 100,000 or something like that.

>> Seattle may have some of that many people in some of the building's.

>> That's what we found in our community. We save a lot of money when we went to old Phibro to the homes. We decided to go with what's do 100% of the homes were we do that. As well.

>> One of the benefits I think as you had put fiber in the ground over the course of the years you are doing it. That's one of the ways that Moberg and has found ways of expanding can you tell us a little bit about that?

>> The initial buildout was really institutional between Police Department and 911 safety communication center. As we started doing that, we said okay, the hospital is this far away, with the health system be interested in investing getting a staff art. It is been the leapfrog incremental growth. The Mount Vernon network has never been in that. We have always been able to pay as we go. But I think that's a testament to each city is very different. You have the ability -- you have the ability to do aerial and conduit underground so depends on wave got. Conduit is super expensive. We have been able to do it really well for our size. And I think as Sandy is experiencing the smaller, you can maybe get things done a little bit easier. What we have really found is that when we say we want to go into a certain area we will literally go knock on doors a businesses and cite we are going to come this close to you, would you pitch in a little but more to get this far which then enables us to reach more of the businesses and so it's been a really nice segmented growth knowing that it is a valued piece of the community oath for institutions and our businesses and they're willing to get on board and partner with the city to make those connections and that expansion happen. We look at our fiber and infrastructure as just as important as a sewer or a road, and I think that's an attitude that comes from the leadership and government on down. Which then doesn't add barriers in there with us.

>> I am curious, was there a challenge in pushing for this idea of more municipal fiber before you knew you would be working with a local partner?

>> From the very beginning we partnered with local technologists in the city. We knew we had a problem with our data speeds and from our constituents that we needed to prioritize broadband policy. We formed an ad hoc subcommittee and we engage them directly to come to the city so we could hear from them on what their needs were. And as a result of those discussions we implemented policy broadband policy to look at policy in the City of Santa Cruz, to screen -- streamline the process and came up with a lot of initial opportunities to increase our ability to get acceptance of broadband policy in the city. Through those efforts, we led to additional work to partner with cruise I/O, it has been a valued community member in our city. When we work with them on this it is a true community partnership to look at how we can work together to actually build out a broadband network for the city that passes to every home. To increase the level of it is a true community partnership. What we started with those initial discussions, for us as a community not only the console priorities but also help to develop an adoption and a willingness to transform policy forward even more.

>> I want to introduce -- we had a great -- great Sand dunes and in Zion is 3000 square foot -- center and into stone. A lot of time people look at Hercules and test me think how are we ever going to get there in the long-term under grounding process. It turns out your family was involved with before you there.

>> If we do go the direction of the full service utility around broadband, and a little bit of perspective, in Fort Collins we are 99.9% underground as an electric utility. And we are one of the few in the United States at that level of underground in. That was a decision made by counsel in the 1960s were my dad served on the Council to underground the electric power lines. That's when the community was 30,000 people. Now it's 160,000 people. And it was a decision that I don't understand everything about it, but I know it had always been a difficult decision because it would add a lot of cost and for what benefit? You would always have to make that. They made that decision and it's one of those things today, people talk about nice views and that sort of thing that they don't see what they don't see in that is a lot of wires and things like that. It was decisions that were made years ago the puts us in a place today where we want to be in the future. And I think I look at the broadband issue and much the same way. It will be a major undertaking, and it will be a large investment, and to leverage the assets that are in place such as the underground, and we have conduit currently laid and we have expertise and in that arena as well, and other sorts of things, and I look at this as a large generational kind of legacy, kind of a project that would enable certain things to happen and we have had a broad discussion within our community, and our city staff level, that cuts across the entire organization, including our so -- social sustainability and our IT and utilities and it cuts across and it's one of those things where it is really looked at is fundamental for the communitycommunity, and what we are doing now is in what form well that be.

>> One of the things I would be thinking about, that's great, if I had a time machine I sure would go back and start those policies, 10, 15, 20, 50 years ago. I'm curious, your seen this and lived through it but if you put yourself in that position, is it too late to get started on those?

>> Personally, I don't think it's ever too late. What you do is you start chipping away at it. And it finds funds from various resources, streets and others that enable the decisions to be made in that direction, when you repair a Street that provides an opportunity to do some infrastructure. We have improved curb, gutter, and other things. It is one of those things that is making a decision to get you on the path. One of the things we have as a City Council, we will call futures committee. It is one of those things, I encourage other communities to think about what are the things that we are trying to do as a community and think about the horizon and we are caught up in a lot of the incremental things we have to deal with, and is the horizon aspect and the build towards those outcomes and that will happen I think naturally, organically through the normal processes of running the city.

>> One of the things that Dr. Adelman them met in their conversation. And we are doing their projects, these to be in the room. Where that conduit should be going. Doing a large major -- public works project. We didn't put it in. Because he wouldn't -- he wasn't in the room, we think about the technology piece when we are doing flood protection projects. When we are building

infrastructure, new library's and things like that but that is part of the conversation along with obviously ordinances and things like that.

>> The same thing in Sandy, we are having projects being built where they will build a water main, three or four or five mile stone the road and come to counsel, and of course I was the first one that said where is the conduit and fiber? That change the perspective of it and now we have the technology director/general manager and every single development meeting, he is at the meetings for all of them so technology doesn't get forgotten along the way. A lot of communities we think of technology. It is a newer technology in the last 20 or 30 years versus -- or maybe even 10 years versus water and sewer or roads which have been around for 100 years.

>> One of the things that I often hear from economic development had folks will we talk about this is I don't know what the return is going to be on putting the conduit on the ground and I want to briefly touch on that because I think you don't just put in the ground, you develop a plan and that sort of thing. As you are thinking about the City of Santa Cruz and Sandy in particular because both of you have more technical backgrounds. What you do and you don't just say put conduit in the ground. So you can come forward to the year 2016. And have the kind of successes you are now seeing.

>> Being the service provider and providing the infrastructure for others to take loudest to have widespread data for a lot of our providers. Public safety and health. Working with a lot local partner we were able to leverage their knowledge a civic industry structure. And that's when we feel and we've used to retain the businesses we have now.

>> In Sandy, all these lines I work and we put conduit in at that time. And when we went to do the fiber in the home projectproject. To even do aerial. And even managing that fiber. We decided let's put it all underground. We don't need to go out and buy bucket trucks. And windstorms and a storms. We don't need to have storms in the middle of the night on top of a bucket truck. It does cost more to go underground. And things underground. As well for some of the security. Not to state aerial is any less secure. I think aerial fiber can be just as secure. I storms and someone hitting a telephone pole in a car accident as much as you do having a backhoe dig that up. Where that is located. We've had we've had back close and other things get mismarked and pull that up at all. In the process of it we've looked at -- if I don't have to have -- buy bucket trucks and train staff to be up on polls and those types of things it will be a cost savings and a lot easier to maintain for us.

>> When we had a previous Next Century Cities events Mayor Boudreaux, -- I am suspicious very timing in the anecdote how is the health system impact in Mount Vernon from the fiber network you have built being open to different providers?

>> I gave a little talk about frisbees and fiber, and how that intersects. My son injured -- hurt his foot paying Frisbee. He had some films done there and that film automatically went to his pediatrician, podiatrist and the surgeon, and it was an example of how they connectivity in our

healthcare system is so important to save money economically, provide better healthcare and also be an attractor into our community when people are looking to relocate. So our hospital system is in three different hospitals now. In a couple of different counties. All of their hospitals and many of the other private providers are hooked onto an electronic medical record. What has been great because we have the fiber network we have the capability to send really high-volume images through -- you can think about MRI and what kind of bandwidth they need so we have really been able to help the hospital system expand, provide them that ability to do their jobs better. Just recently the hospital announced and \$80 million project to convert their medical record to a new vendor and hired 53 people to come into Mount Vernon to make that happen. As you can see the intersection between good healthcare, technology, job creation, and the betterment of the community is very evident in a simple way. So the ability for us to help and that is really crucial, although I had to say some of us forget how we have to plan for that. So when the hospital least a new space the CEO and I were at lunch and I said you guys have fiber to that building, right? And somehow that all got missed. Fortunately we had a big pole right in the parking lot and they got connected very quickly. It was an example of who was in the room when we picked that property? It was a great story for us in our community to show the benefits and many different fronts of that broadband access.

>> It isn't just the hospital, but your hospital is growing and adding on more capacity than it otherwise would. You have that guy from Microsoft, I know that was very innovative.

>> We host men's Northwest, which is a provider regionwide. They were contracted to deploy these electronic medical records throughout the entire region and they happen to be based right in our historic downtown. We have the ability to give them strands of their own. We have a vault in city hall that they use currently in a much more Northwest Washington ability to provide that, not only just for [Indiscernible] regional health but others as well.

>> Inc. Santa Cruz, what are some of the benefits? When I first met your economic development director, he talked about an unsafe road that this would possibly save lives by having a fiber network.

>> There is a variety of benefits. Not knowing the specifics in our economic development director or managers [Indiscernible], and he is someone who has been very focused on helping to implement broadband policy within the city. I think that our two Santa Cruz .com site lists the breath of our businesses that we have operating the city. University to private entrepreneurs and I think that the scope of our interests in making sure that they are satisfied with the infrastructure in the city is a priority for city government. I think that also what we look at our infrastructure we are a ton that just celebrated this year in fact is our 150th anniversary. Our wharf just celebrated it's 100th anniversary. What we look at investing in our infrastructure, we have a lot to do. Our roads are deteriorating, we have infrastructure that in many ways is substandard, and I think of whether it is the safety of the road that Jay mentioned, or the security of our infrastructure, it is a priority for us to do the most we can to make sure that we have world class facilities in a town that is not only historic, but one I feel is one of the more beautiful cities along our coastline. And the more we can invest in that

infrastructure to make it state-of-the-art helps us to grow the types of businesses to keep people employed there, and also allows us to foster a future economy that is vibrant for families and the type the residents are living there now.

>> I think you're expecting people to be staying there. And working from there more often than commuting north to the Silicon Valley.

>> Thank you for bringing that up. We have about 20,000 people that the Santa Cruz every date to commute to Silicon Valley, to Santa Clara County and when we look at that environmental footprint we look at investing in broadband technology, one that helps to decrease the number of people to Highway 17 every morning, and it also creates a highly local economy, we have a lot of technologists in town and the more we can tap into that to help grow that it helps our economy, helps great jobs but also helps create a sense of localism for us to look at all the businesses that have been prospering there, based on our proximity and university culture and so I think that for us there are a lot of multifold success stories when we look at our broadband policies.

>> I will finish up with two questions here. In the sense of if you have a question, be ready to give me a very brief question for the panel please. We have to Mike's that will be available so I will look for hands in a minute. And then we will circulate some Mike's. And keep your question as brief as possible so we can get a few extra in. Next Century Cities, we did a video with you about the sandy net. We talked with local real estate person who said that constantly hearing from people who want to move in a question is do they have access to fiber. How is that impacting Sandy in terms of the people saying you should build out?

>> Requesting. So Sandy was if it's going fast the city and the state of Oregon. And they are starting to pick that up. And with real estate we have real estate on our City Council as well. And what we hear from them is that the number one or number two question looking for houses and Sandy is doesn't have fiber? Is the fiber on the house already? Because they want that. The housing market there is really like filled up. It is very hard to find homes and when they call in the market. Also notice that the story the other day. People will put a picture of their house and a picture of the all the amenities of the house and they will take a picture of the fiber. And put that on the page are. So it is very popular. And we charge [Indiscernible] and a gig for 1595 a month. Up-and-down note contracts, no bandwidth caps. If you don't like this, you can drop us, we must not be doing our job in providing that service and you can say we are quite popular. We are right in the middle of actually expanding our urban growth boundary, in the state of Oregon we have a lot of laws around how you increase your urban growth boundary so we are able to a -- only increase it by 333 acres for the next go around. But we are seeing people already lining up to want to do development in Sandy and we have a lot of other great amenities as well but we know fiber is one of that amenity that they are asking for and so much so that we have a three month waiting list to get connected. We just cannot connect them fast enough. And our staff is trying to do it as fast as we can and we have about 10 to 15 new sign-ups every week. Our fiber to the home is only 22 months. We don't even say years yet. We counted by months. About 22 months old. And we had the initial build out and then

after that buildout it was -- they just keep coming. We think it will slow down. Eventually we will run out of things to build. In doing so but it's really change. There are a lot of people. A lot of younger generation first-time homebuyers. Getting out of that Metro region called Portland out to be able to afford of to buy a house in their pickings in it.

>> [Captioners transitioning; please stand by.]

>>Colorado is insane for local government local broadband. The interest there and the models that are flourishing is fascinating but you have a little bit of attention between the smaller rural towns around you and yourself.

>> Right. So we are landlocked and with the communities around us we are not going so we are and infill community. We actually work well I think with our area communities. One of the models that demonstrates that is for municipalities that make up Platte River power Authority that has a lot of the fiber links between our for communities and things like that. That has been built out over the years. I think we do have a good sense of regionalism and I would just point out as our community we think of our community and our city government as a platform for innovation. That is broadly speaking. So you take whatever area but clearly broadband is key to any area. June open to -- opened an exhibit at the Smithsonian and it featured for Collie and's -- Fort Collins. When you talk about Smart Grid and those sorts of things that's all necessary to have the infrastructure necessary and the idea with a platform for the city government for innovation is we do demonstration projects that help move the needle for the federal government and others to understand how to implement in a broader way and so we look at it as a core strategy I think for economic development as these demonstration projects with the city is a platform.

>> Do we have any questions? Where are the microphones? I am boat guarding them. We haven't question in the back. As the microphone is moving toward you let me just say very brief comment broadband is doing interesting things in terms of how cities interact. The dividing line between Missouri and Kansas is legendary for jobs, tax credits, throwing money at site locations to get firms to switch to one border or the other. Chattanooga is spending millions of dollars for the rights to offer its incredible comparative advantage to its neighbors. I find this astounding and am curious as members of local governments have you seen the way partnerships in regional brands that can help change the dynamic of the competition at all? And quickly because I want to get to the audience.

>> We have about 120,000 people so we have the benefit of a smaller geographic area. We have four major cities and we are separated by nothing but Rivers. Across the river is Burlington and we are always available to help them if anything they need -- they have there on fiber in the ground. That extends them from Burlington to the port to the industrial area and I think almost business is on fiber at the port. Andrew is here somewhere with that. And then [name unknown] is a little further and 80 -- anything we can do to help them -- just recently they have resurrected a plan in a conversation about an entire countywide fiber plan and what they would like to see before they help us with the district -- distressed county funding. They tell us

how we need to deploy and work together and they have some resources to help so we are able to do that in a cooperative environment. We don't look at it as a competition. We are helping all of us raise economically and for the residents. We are small enough to do that.

>> I agree. The city of Santa Cruz is the county seat of sunny -- Santa Cruz county and has created a discussion that has spilled over into surrounding counties. Monterey county which some arguably would say it's the [Indiscernible]. We have a lot of areas that are not connected and it has created an opportunity for us to look at how we connect surrounding communities. The discussion alone in the policymaking that is taking place have really prioritize broadband policy development and other areas in the greater Monterey Bay.

>> For Sandy one of the things we did -- we've been an ISP for 13 years. Our county itself went out and applied for a grants. One of two different counties that received that and -- in Oregon all the way to the top of Mount Hood that the very top but the government can't and that all the way down to Wilsonville at the other side of the county and out through a huge national Forest area where it is hard to get these speeds to connect the schools and anchor institutions. We are just the first of the big cities to help use that and have a backhaul into Portland where you can get cheap ISP. In doing so, that collaboration -- we are seeing other communities around us say Sandy is only 10,000. They are that mountain town attitude and we want what they have. How are they doing it? There is a lot of political push and comments and a lot of phone calls and questions of how we did it in Sandy because they want to do it in other communities in the region.

>> Anything else?

>> I touched on the Platte River power Authority but I think another aspect that is relevant is being the home of Colorado State University, they have statewide mission. One of the reasons we have strong computing historically is the old ARPANET and those sorts of things. Being a land-grant University and across the United States we are right on that because of the University and I think that's an important integrator as well and communities beyond our own.

>> Excellent. Question over here?

>> [Indiscernible] as a school district be taken advantage of the program [Indiscernible]. We have 7% of our kids at don't have Internet at home [Indiscernible]. Are any of you partnering with your schools to provide low-cost to families of students and do your districts have [Indiscernible]? Any similar thing like that with the schools?

>> In our school district, our city is the hub but it goes way beyond the city up to Mt. Hood and down to Boring, Oregon. We have about four sites in the school district and we currently get fiber from the county provider as part of that grant that we are able to -- since we passed all of the street and business in Sandy we have now partnerships and said we are just going to give you free fiber for that to help out the schools. Good well as well is it doesn't really cost us additional money to do that. They are able to get that. As far as going to the homes, right now

we are starting out -- we don't know where we will land on that. We are not a very large ISP and we don't encompass the whole entire school district. We offer wireless services outside -- we have several towers around our town. We cannot hit the entire school district so it is hard. When we is we keep the rates as low as we can keep them. That's where we are landing at this point. We are looking at building and have some grants to build MD use and lower economic -- in lower economic areas of town.

>> For Mt. Vernon we are an open service provider network so we have nine ISPs that connect the service because the school district was part of the original old out, they have their own connections. They say significant amount of money because of that.

>> I'll also say that for the city of Santa Cruz, like Sandy, the school district extends out of the border but we prioritize the connections to all the local schools in town as part of the buildout.

>> One of the things that we've seen -- sorry. We have other people. It has been within the local government but there are one of the other founding member he's -- members which is Winthrop which is part of a small farming community in Minnesota. They built a co-op with a combination of other local cities and they will be talking about that in a later panel. They built the boundaries to include the school district and there's a couple of other presidents -- precedence. I think that shows some evolution on the subject.

>> Good morning. [Indiscernible - low volume]. There are two states that are having weird policies about allowing municipal services, Colorado and the state of Washington -- I'm interested in what your perspectives are about the state's role in either encouraging this involvement are discouraging it.

>> I think the state does have an important role in it from an economic development perspective and a social equity and some other sorts of things just competitive this and other. With respect to that one state statute, SB152 in 2005. That was incumbent that cable companies got that passed and is yet to be repealed and if you look at the broad -- I've lost to the count of number of communities that have basically brought back their home rule [Indiscernible - multiple speakers]. I think it's a groundswell of public opinion that really counter to the way our state General assembly has operated, I think that is a direct indicator. I think the state does have a role in right now I don't think they are standing up to that role.

>> I think on a political level I get highly irritated by some of the rhetoric around this idea that states should tell the cities what they should do infrastructure wise. I think we should graduate and it's kind of nice to see some of the White House standing up in the most recent FCC rulings about fiber access being treated as a basic infrastructure and it should be similar to how our country wanted to make sure electricity went to every home in the country. As a Mayor of a small city and what I feel is most connected to the body of our country and our residents, it irritates me to know and that they think they should weigh in to protect maybe private interest. I don't see big corporations coming in and building out in small communities at the city of Mount Burton. To try to prevent that is wrong. It would be cool to see some of our presidential

candidates have anything to say about this particular subject. That might be cool. Maybe some of our Twitter comments could get around to that conversation.

>> Usually a provide balance in the other direction but I would say that one of the things to keep in mind is that we are moving from a system in which the federal government required a telephone companies make significant investments and spread that and make sure they could recover the costs. The federal government decided to do away with that system and I think states are dealing with the repercussions of that in different ways. I don't want to -- there's a lot of people in this room who have different opinions on the matter and we as for local governments that have all taken action themselves, we have one point of view. Additional questions?

>> City of Auburn. For those of us who have already gotten into the policy issue and the public partnerships and the departments working together -- how many of you and you have advice for us is there any grant funding? I don't have the patience to wait. I have schoolkids that need access now. What kind of advice do you have or how many you -- of you have tapped in to that build out?

>> In Auburn California?

>> Auburn, Washington.

>> In California there are revenue bonds that will be floated to help finance the infrastructure so there won't be any cloud on our revenue for our general funds. We will be able to help finance this and with revenues through the lease we will pay back the system so for us we have AAA bond rated cities so we have good rates. We are able to help leverage that good credit rating and provide financing to build out the infrastructure.

>> We did a revenue bond to build out our infrastructure. We were able to do that easily because we are -- already ran in this -- as an ISP. There are some grants going forward, VTOP allowed us to get the backhaul outside of the community which allows us to provide service insider community. We have that dark fiber infrastructure that leaves the community.

>> Can I ask you to follow up on one particular question? You didn't just get a revenue bond. You spent more than a year agonizing over spreadsheets to figure out how to make that decision. How did that work before you were able to go to the market to get funding?

>> It was more than a year. It was several years. We did a reverse model. A lot of companies will say what is the cost to do this and that's what we will charge people. We took an approach of our basic service we didn't want to go above \$40. We said this is what we want to charge people and let's figure out how to make it work charging that dollar amount. It took us a lot longer. I think people were telling us we could charge \$50 or site -- \$60 and people would still buy the service but we wanted it to be a livability issue and keep that money on the table for

our residents and do it as cheaply as we could. It did take us several years to figure out what that model and how we could actually hold the system to meet that target for \$40 a month.

>> We've had some county funding available to compete for grant wise so I don't know what you would have but we did that. I know there is some USDA type of funding but I'm not familiar with all of the federal grant programs but places where you may not realize could be available. That might be something but one of our recent projects is running fiber up little mountain in our city and that was a direct fund between the Skagett 911 and the city of Mount Burton. We pitched in and cell tower revenue came back in so we partnered for those bills.

>> I would point out the city is a platform and doing demonstrations and there's a lot of areas that could add to the investment for the infrastructure in different sorts of ways. Things related to all the Smart City's initiatives that would directly align with these broadband initiatives. We got our advanced metering infrastructure for our you -- electric utility in partnership with the feds and so forth. I think there is opportunities like that to think about it more in this holistic view and you can also improve the infrastructure and that's where you need to have probably some matching funds. That's where you are leveraging money that you would be spending already through other initiatives that would be directly in line with broadband.

>> Mark, can I ask you to stand up? For folks interested I would encourage you to look at him. If you are interested in how small communities were able to leverage and attract other monies with that. Mark's model with Minnesota is terrific and you may want to ask him about it. We are working on a case study that we will be releasing soon. We have time for another quick question. There's a lot of people raising their hands. You have the microphone. Do we have another microphone? Last question.

>> I'm with the Seattle [Indiscernible] and I have two questions. What's the production rate around [Indiscernible - heavy accent]. And what strategy do you have in supporting non-English residence?

>> Jeremy can answer that question. To be cleared you are the only one communing -- serving everyone in the community currently. There are two that are going in the direction of going to be serving and you are serving businesses. Do you have any sense?

>> Like Chris said we passed 100% of our community. I don't have statistics on those numbers that you are asking for. I don't have a feel for it but we're trying to keep up with the demand of wanting to put it in. We have attached over 50% or 60% of the homes in Sandy. That is in 22 months. We have 10 to 15 people signing up every week and eventually we will run out of homes to hook up. I don't have those numbers for you.

>> I think that's the next great challenge. You have networks that are already built in our expanding or you are about to be building and once you get the fiber some people think you are done and you can relax but the next step is to make sure everyone can benefit from it. To that end I would like to end with a short round of asking you what does success look like in your

communities? From a position of where you are today. How will you know you succeeded when you get there?

>> I think success for us is we are right in the business plan and we are putting together an expert panel to basically critically analyze what we're doing and then with the next step being the option if it goes to the voters for whatever that next step is but I think success for us is to be -- and we tend to think about going slow to go fast -- be very intentional about what we're trying to do in order to make the decisions where we have the buy-in of the community and then to execute any way that meets that trust of our community.

>> Great.

>> I think it's a hard question. Success for our community I think would be where people don't think of the Internet is even being there. They just -- it's there. Just like we have electricity. We don't think if we have enough electricity to power the appliances we have in our house. We don't think about is there enough water coming down the pipe to whether or not we can flush the toilet or take a shower or take a drink. I think the success is just being invisible in a way because no one is complaining about not having the speed to be able to do something. They are not complaining about -- we have to get off the Internet and do homework. Stop streaming that TV show because I'm filling out a job application over here. It's just part of our daily lives. It's being able to not be concerned with a spinning wheel or bandwidth caps that we have. They can get out and enjoy the things around us and not be concerned about starting that download or anything about a job were commuting because that fiber is in place.

>> For me in the for the city of Santa Cruz I think -- and for the city of Santa Cruz I think it is a bridge to close the divide in the community. We have an opportunity to build the infrastructure for this generation and the next. I mentioned that we are celebrating these anniversaries of major infrastructure projects that are former collected and staff prioritized our warps and constructed the infrastructure of our town that we have relied on for generations. This is the type of infrastructure that's going to create Jobs for the Future, for the economy, the cultural resources for the students the code to school there and for me I think it's building that foundation for them. So having that local bridge using local businesses and local technological resources for me is like coming full circle to some of our historical [Indiscernible-background noise].

>> We rely on property tax in sales tax to provider basic services and we haven't -- have an imbalance of industrial so in a selfish way it is the acceleration of economic growth. We would love -- in the next few years and that in turn generates revenue and jobs which in turn helps us reach that social development piece with broadband access. I would say for a concrete goal is going to be seeing those new companies come in and the exciting small to medium-sized whether it is tech companies are not we have an organic fruit broker because they can do it. I think that will be the measure for us is that success. That's the beginning and it trickles down to the society as a whole.

>> One of the things I wanted to end and drawing attention to something you said that may have slipped by in all the other great information on the panel which is when somebody sells their home in Sandy, they don't just put photos of the house, the kitchen, the bathroom. They take a photo of the device that proves they have fiber in their house. That's pretty remarkable.

>> They said that the other day and I said really? You are putting up the greatest pictures of your house and then there is a picture of the electronics.

>> Let me leave the audience giving you a warm round of applause. [Applause]

>> We will have a 10 minute break and be back here just after 1105 -- 11:05 PM those -- 11:05 AM.

>> [The event is on a break. The session will reconvene at 11:05AM PST. Captioner on stand by.]

>> We are going to get started in two minutes. Come on in and take a seat. We have to minutes. Thank you.

>> -- We have two minutes. Thank you.

>> We are going to get started. Thank you all so much. While you are taking your seats I wanted to mention that during the break one of our cities and the community here came up to me and said, 100 Mb symmetrical for 3999 -- \$39.99. I did also want to mention that a couple of other quick things. There have been some questions on financing. Please know that we have a breakout session on financing options and at the end of the day we have a bunch of folks from NTIA and hard and the FCC who will come and talk about options that they have. It's important us they for that and hear what they have to say. Interestingly enough, our #is now getting spammed. That means we are doing great. Keep tweeting. Also for folks that are following us live we are trying to take questions from you on Twitter. It is digitalnw. There were so many questions, we didn't get to the mall. A good problem to have. It's now my pleasure to introduce Michael Cockrill, the Chief Information Officer from Washington state. A position he has held since 2013. Michael brings to the state more than 20 years of operational experience building both software and software companies in the private sector. And he is also a nine-year veteran of Microsoft. Please join me in welcoming Michael Cockrill. [Applause]

>> Thank you. On behalf of the governor I would like to thank everybody for being here and in particular to thank the NTIA and Next Century Cities and the city of Seattle for pulling this all together. It's a super important thing to be focused on and thinking about and it is -- the governor asked me -- he may -- he had to change his plans but he did ask me to try to reinforce how important it is that you as the leaders in the broadband industry are willing to come and take your time and be part of this discussion. Thanks again. As I was preparing, it occurred to me that me talking to this group of people about broadband would be a little bit like bringing coals to Newcastle. There's not a lot I could tell you about broadband so instead what I wanted to do is talk a little bit about the politics of technology. The reason I'm doing this is I want to

invite you to ask yourself how can you play and that million. I'm going to tell you a little bit about what is going on in Olympia right now and spend a few minutes prognosticating about where I see technology going as it relates to public policy. That's really the issue, particularly in the last 3 to 5 years it has become a more and more obvious -- to the people making public policy that technology is moving out of the back room and into the boardroom. As we get closer and closer to -- as what -- as technology gets closer it becomes more crucial that the policymakers start to understand and think more about public policy as it relates to technology. That's really where you come in is asking yourself in your businesses how can you play in the ongoing discussion about the overlap and intertwining of public policy and technology. That's the broad brush stroke. Let me tell you about what's going on in Olympia right now. First of all, for people who live in Washington and paying close attention to the news, the legislative session is not yet over. We are still fighting about budget and that is really the backdrop that everything in Olympia is happening under that but particularly as it relates to technology. McCleary -- the McCleary case is now and probably will be for the next 3 to 4 years just overshadowing everything that happens in Olympia. That said, we still try to move forward and get things done so I think the two biggest issues -- three biggest issues that you are saying coming out of Olympia as they relate to technology our number one cyber security, number two digital privacy and the number three, the significant issue around the digital divide. As it relates to security, on the governor's desk right now is a bill that would take the office of cyber security in the executive branch and move it from being a choice that the governor makes any choice that directors make to moving it up into -- written into the law so what -- it is embedded and public policy and is specifically is designed around creating -- the way the law is written is creating a partnership with leaders like people here in the room. It lays out all of the people that need to be involved to create a whole state approach to cyber security. And again, that has moved from being something that the governor thinks is important and I think is important notably to something the legislature thinks is important. A similar thing has happened in the area of digital privacy. There is an act on the governor's desk called -- I forget what it's called. What it does is create a new office called the office of privacy and data protection. And what that is doing is again saying digital privacy is one of the most important things that public policymakers can start to think about. Questions like what are you -- what kind of access will you have to your digital percent of? -- Persona? Where does the government play between big companies that are saying I'm going to move my stock price by protecting your privacy and other companies that are saying actually your personal information is the product that I am selling. Where does the government play in that role? We are at the very beginning of that process and you are starting to see Olympia as well as many other states starting to write that into law. The other thing to note about that particular office is when it was created it was created with two goals in mind. One of them was all about digital privacy and the other one was about access. In particular access in rural areas. The author of that bill actually wrote into it a broad set of instructions for my office to go out and do a whole range of work. We ended up and -- working with that author and say that -- if there is actual hard dollars it's never going to pass in the session. She backed that out and only created the office and then said in two years you have to create a report that talks about specifically the digital divide. I tell you that for two reasons. One, until we solve the \$5 billion whole that education represents and our budget, most other issues that require a significant amount of capital are going to get pushed out of the

way and it is an unfortunate reality. We spend a lot of time looking to DC and focused on the kinds of things that David talked about this morning. But the other reason I tell you that story is it really underscores that this issue is bubbling up across the entire legislature. That bill -- the author of that bill really had to push hard to take out the requirements about exploring the digital divide but she knew it wasn't going anywhere without the funding. She had broad bipartisan support. This is definitely an issue that you are seeing in Olympia just as you are seeing it at the federal level. That's kind of where we are in Olympia. You all probably keep better track of things at the federal level than I do but I think the other thing I want to put in your mind is I want to prognosticate a little bit about where technology is going. Again with the intent to invite you to ask yourself how are you going to play in that as the public policy starts to change around technology? First of all as I've said several times, until McCleary gets out of the Olympia pipeline be looking forward or back to DC when you are talking about concrete funds to be able to move things forward. There's a lot of well but not a lot of weight in Olympia at this point. I don't see that changing until McCleary moves through the pipeline. When we look at these other two big issues, both of them are bubbling up to be drivers of people writing laws. One of them is security. And how broadband place in the security of the country, I believe, is going to be a significant driver for where investment is going to come in. If you look forward seven years down the road, one of the things you will see is that the federal government is going to realize that cyber security is not only a federal mission. States, critical infrastructure providers, they will be considered part of national security. When the military ends up with the role of how do we protect our critical infrastructure? Which is all the stuff you guys are leading. Then you will see two things. First of all, you will see the budgets. I forgot to mention, this is one of the few places cyber security -- where federal budgets are going up. When the feds it starts with knowledge that cyber security is a critical issue around national security and that means critical infrastructure and that means working with you all as it relates to broadband -- you will see them go up in two places. You will see -- there is a fight in DC right now between the DoD and the Department of Homeland Security. Between the military and the civilians. Right now all of the money for things like broadband in the civilian world comes from DHS but I think you will be able to see the DoD and their increasing budgets be more focused on protecting critical infrastructure. So as you think about what role do you play, start to think about that. Think about how you are going to end up needing to partner with the military because you are the leaders that will be contributing to this whole of the nation approach to security. And I have one minute so I want you to think about this other thing it is -- as it relates to privacy. That is privacy concerns that will be driven by the Internet of things. I'm prognosticating here but I believe we will see a significant consumer backlash that will affect broadband providers and regulators and everybody in the industry and it will -- right now it is being driven by two big things. Buddy cameras and drones. Consumers are starting to pay attention to privacy issues because broadband has created the possibility of so much more surveillance. That is going to get amplified as a policy issue. And I think it will -- you will see a big consumer backlash around three new things. Around very personal things. One of them is consumers will figure out how much we track their vehicles. Every one of your cars today if it was built after 2000 has a black box and it and it's keeping track of where you go in there is an interesting policy question about who gets to see that information and what they can do with it. It all runs on the back of your networks. You will see issues around vehicles, home

automation, and personal devices. FitBit recently became HIPAA compliant. Does everybody understand what that means? There's only one reason that you become HIPAA compliant. Those three issues I think are going to end up seeing a big consumer groundswell. You will see privacy and security as they become important in public policy issues affecting your business every day. That's about all the time I have. I want to make sure we're back on track. I might have time for one or two questions. Anybody? Please.

>> I'm curious, all the things you mentioned are obviously putting urgency on the work we do. One of the things two amp that up a little more is the consumption of bandwidth going forward. It's going to in essence further the necessity. I'm curious whether you have codified where we are, what kind of consumption of bandwidth because for not holding for it now it's going to be a problem.

>> We have not quantify that consumption of bandwidth problem at the state level. We really rely on the private sector to help with that quantification. I think the one exception would be FirstNet who is doing a greenfield ground-up approach to understanding that and forecasting the bandwidth needs but I don't think it's in a broad context.

>> Security, I'm always interested in wireless versus fiber in terms of security. And what your view is. Is one better than the other? I have my own ideas but I'm interested to hear what you have to say.

>> I think it's a short-term, long-term problem. And the reason it is is because at the end of the day security is primarily a technology problem. Technology problems go away and equalize and long-term. What I believe is that as more broadband gets done over microwave and wirelessly because of the economics, you will find wireless security catch-up with the wireline security.

>> I'm getting the zero minute thing here. On behalf of the governor, thank you for taking your important time to be her. [Applause]

>> Thank you, Michael. I know digital security is an issue we all care deeply about. Our next panel on digital equity will be talking about vulnerable folks who face issues around digital security that we really need to be thinking about. I'm going to ask the panel to come on up and have a seat here. Let's get started. First, I want to mention that digital equity is a topic close to my heart so I am blessed to be on this panel with these wonderful experts. I was a former teacher and principal and then I ran a digital equity project in Boston called tech goes home for several years. We have a great group of folks here, incredible experts with a deep understanding of the issues. I think the conversation you will find rich and meaningful. I will ask each of our panelists to give us a brief introduction of who they are and what their role has been around issues of digital equity and then we will hop into some questions. We will start with Andrew.

>> Good morning my name is Andrea Alexander and I am a tribal member. I cochair the Affiliated Tribes of Northwest Indians technology and energy committee that is an association

of over 55 tribes in Oregon, Washington, Idaho and Montana. I hope conduct outreach to all the Washington state tribes around the FirstNet needs. Thank you for the invitation.

>> I Mary Beth Henry with the city of Portland, Oregon manager of the office of for community technology focused on creating a competitive, affordable broadband and wireless market and digital equity. We have just completed and I just tweeted two minutes ago our proposed digital equity action plan which goes to the city Council in early April and the county commission a week later. Very exciting.

>> Congratulations. My name is Michael Mattmiller on the chief technology officer for the city of Seattle. CTO has three responsibilities, connecting to the government, ensuring a productive workforce and increasing digital equity throughout the city. We are proud that Seattle has a 20 year history of working on digital equity issues and Marybeth peters to the punch but next week we will unveil our digital equity action plan. It has been a labor of love by our digital engagement staff who was here today as well as more than 100 members of our community to develop the plan over the past year.

>> Thanks. I'm John Morris. I had the policy office at NTIA. My office is more of a general-purpose policy shop so we do with cyber security and privacy and Internet of Things and drones. Most relevant to your conference today, we do two things. We represent the executive branch before the Federal Communications Commission. Just a couple weeks ago we were the ones who filed the administrations positions on lifeline that David Adelman had mentioned earlier this morning. And then also our office does data collection on broadband adoption and usage and we first started collecting data in 1994. We collect data from a very large sample size. 54,000 households across the country. It is the largest data set that really looks in depth at Internet use. Because of the size, we are able to break down our information on a state-by-state basis and look at some of the demographics of ethnicity and income education. I look forward to talking to you about some of that data today.

>> Thank you. John, let's talk a little bit about that because I understand that you been collecting data on this for about 20 years and that you currently have a brand-new data set. We have all kinds of announcements appear today which is awesome. Can you give us a quick top-level view of what you -- your findings represent?

>> Sure. We are excited and we released a new data set today. The way we do the data collection is we commission the Census Bureau to add on questions. We added on about 50 questions to the current population survey, the data was collected in July 2015. It takes the Census Bureau a while to process the data and give us the final data set. We got it late last week and so we are pleased to be able to release it. It is now on our website and available. Including some tools that you can use to look at it. The data that we have just gotten has some very good topline news which is that we are still making progress on broad Internet usage across the United States So compared to 2013 we've gone up four percentage points to 75% of the country is online either at home or in some other location. It also has good news that we are making progress on digital divide issues. If you look at all of the categories in terms of

ethnicity, education, income -- we are somewhat closing the gap. Just looking at it -- seniors for example. The data went up from 51% usage 256% usage. Over a two-year period, that is a good bump. But the flipside of that data is that it is clear that we still have an awful lot of way to go to close the gap across all of the difference factors and different slices.

>> Thank you. I wanted to ask Andre, how does the information you are hearing connect or not connect with the tribal communities that you support?

>> Thank you, John, for that information. One of the biggest challenges working with the tribes in the Northwest is the lack of data that we have because our population is so small. It is hard to participate and even the census has not been able to engage. We are lagging behind in making our case in the data but what we want to do is we have partnerships here in the state of Washington and also Washington State University and University of Washington that is helping us build a separate data set here that secures in private that we can build on and add on in the future to really measure our success because we have so many tribal communities that really lack the access to the Internet right now.

>> As a follow-up can you tell us a little bit about the primary barriers that you are facing in your tribal communities when it comes to providing access?

>> Yes. I think everybody that's here is aware that we are lagging behind on the policy. The FCC policy has not kept pace with the demand. If you go to [name unknown] a population so small we lack the business case for our provider, century tell to put -- to expand the infrastructure. We are seeing a lot of social inequity because our congressional leadership has not kept pace with the need for infrastructure so if we can come together and work as all the tribes are working on the next administration to develop and it -- it. Until we develop the infrastructure, there's no way to connect to the providers. That is the root cross right now.

>> Right. Some communities have access and struggle to get folks to take that access and use it wisely and develop plans for it but in your community you can't even get to that. Mary Beth, considering what you've heard about the data here can you tell me a little bit about how urban and rural maybe could work together to help reach the digital divide?

>> Sure. One of the things we have going for us in Oregon is called Oregon connections and it is a gathering of community nonprofits, vendors, but providers, schools and libraries and the whole thing started with a focus on rural 25 years ago and it's an opportunity for a couple of days to let go of the differences and work on the common vision of creating broadband equity in Oregon and it's been really useful with forming the collaboration or at least getting to know the people. We have pockets in urban America where people cannot afford to be online, they don't have the devices and they don't have the training. Some of those same issues exist in our world parts of our State. -- Rural parts of our State. We are working through the Oregon broadband Council which is a statewide Council that has rural and urban folks involved in providers to address those issues and in fact in the last legislative session a bill was passed requiring that the Council prepare a report on the State of rural broadband in Oregon. The

tribes are very much involved in the Council. They have a seat. While there are many differences between urban and rural, I feel that digital equity and broadband is one area where we can work together to address the issues.

>> We share the same goal.

>> Absolutely.

>> Michael, Seattle has done a lot of work in addressing the issue of digital divide. What recommendations would you have? What best practices can you share about the work you've done?

>> Seattle does have a long legacy of working on these types of issues and it was interesting for me to come into my role in the city and to think about where does the IT guy fit into making sure our public has access to equal broadband. The more I learn from our team that's been working on this and the more I talked and community members, I realize the tremendous power we haven't government. This morning the Mayor talked about how great it would have been if the city of Seattle could of built-up the municipal broadband network. We're about \$660 million short of pulling that off. In reality it's this notion of partnerships. How can we bring people to the table next identify resources --? And identify resources. One of the things we do in Seattle is produced a quadrennial technology indicator report where we go out and collect our own data about how the public uses technology and notionally we are using that to think about how we're delivering government services. It has increasingly become the barometer we used to see how well we are doing and encouraging the public to into -- adopt Internet at home. Our last report from May 2014 found that 90,000 households or 15% of her city are not yet purchasing Internet services at home. On one hand that's great. By Brookings count back in the summer that makes us the eighth highest penetration of broadband Internet and the nation. Is anyone here from Bremerton Silverdale? One person. Bremerton is number three in the country. I think 88% penetration which is incredible. As great as these numbers are we know that doesn't reflect our tribal lands or the small towns across the State. The types of partnerships that we found useful that I hope others will consider adopting is number one, working very closely with our providers. You may have read that in the fall Comcast work with us to provide a half-million dollars in digital equity grants that we can use as we see fit to help close the divide. We went -- worked with Comcast and CenturyLink to work on low income service and this year we will go out to make sure our community knows about the discounts and knows how to take advantage of and to get the service. The other thing we're focused on is to think about the value proposition of why you need Internet access at home. If you look at the increase in Internet adoption over time we are hitting that plateau point. There are many reasons for that but not the least of which we have to think about how the household where the parents have never had Internet access and yet they have children in our school systems in those parents don't understand the potential harm or loss of opportunity by not purchasing that nine dollar per month plan.

>> I think one of the tricky parts of managing digital equity within the city is figuring out how to pay for it. How do you paper programmatic interventions that are going to make a difference? Do you have any feedback on that?

>> It's always a challenge. Scarce resources. We've been fortunate to partner with organizations like Google who provide great resources but it's also interesting to have a convening of your stakeholders and see what resources can be brought to bear. In the city of Seattle we own a lot of poles and wires. One of the projects we are working on this year is a Wi-Fi strategy to see how we can entice private providers to leverage that infrastructure to increase the amount of freely available public Wi-Fi within the city. Similarly within the cable franchising process we've been able to work with providers to have a conversation about what assets are incumbent providers can leverage to increase freely available or discounted services.

>> Very helpful. Mary Beth, do you have any suggestions?? I would echo the convening role. What we found is we began to put together a digital equity action plan is that there are some worthwhile programs. We have the libraries doing incredible work. We have freaky repurchasing devices for those and there are a lot of great programs going on but there was not any overall strategy so then maybe we were using our scarce dollars in the most strategic way. Through the convening collaborations have formed and now in one of the lowest income school districts in Multnomah County, they are looking at with the school resources to extend the Wi-Fi beyond the school boundary into the surrounding low-income neighborhood. Some of these are incremental but when you have scarce resources some times incremental is the way to go. That's how we started. The city has a fiber system that's certainly government entities. That is exactly how we started it. And now we're able to provide incredible fiber bandwidth at very low cost. It's not always going to be possible in today's world to get lots of new money. I know we look to the feds and wish that would happen but wishing isn't going to make it so. I would say the collaboration is the way and the national Digital Inclusion alliance also says working through local trusted partners. Our strategy as well is to help build the capacity of those organizations that are already serving these populations that we want to reach as opposed to creating some new entity.

>> Often the case. Coordination is really important. Andrea, can you tell us the State of funding for projects in the tribal communities?

>> We've actually been really successful in convening all of our member tribes through our technology committee meetings. We have good working relationships with USD, Secretary , office of native affairs and we also have been making a lot of progress as I said working through our universities. One of the breakthroughs this year is the new [Indiscernible] program. At the tribal program and what we're finding is the grant programs were really difficult for small tribes the don't have a lot of staff capacity in place to apply for that grant so one of the breakthroughs this year is that they just announced and you rate grant that will provide funding for infrastructure. This is the first year that be rate funds will help you. One motto we're looking at is linking all the Olympic Peninsula tribes. They all have small populations and what would that look like if we formed a consortium to apply for the infrastructure funds to connect to

permanent infrastructure. That is one idea. I know that when we did -- we did a site visit with USD we brought them up to the reservations and I made sure they stayed on the beach in our beautiful cabins that had no Internet access and no cell phone access. Welcome to my world. It's torture when you cannot call home to your wife or kids and check what's going on. It's really difficult to participate in the economy without that type of access. We are looking at strategic partnerships but we have a lot of smart people in our community. What we do is work together to support each other because when you're small tribes you have to have that unity. We have a history of working together and partnership -- in partnership with the legislative sure and we've had a good relationship with him. We look at the short-term strategy and what money is there. We have to be connected with the federal agencies. That is our first line. Getting the access and then building the capacity of the community to take on these new systems. That is important. The long-term strategies for helping all of the tribes get project ready. When the new administration comes in, we already have the tribal delegation fanning out across the nation. We just don't fit in the pockets. We are unique as sovereign nations that we don't fit nicely in the pocket of a lot of these funding sources. That's why I'm glad that NTIA is here. We had a great work session with Jean Rice to look at their community connections initiatives and be one of the models. It's not only increasing access but how do we develop the capacity of those communities to bring a new programs both in energy and technology and we see that is the future for tribes to develop their economy.

>> Brilliant move to have them come to the community with no access. [laughter] John, we are talking about Northwest US and how each of these communities are doing. What kind of dated you have specific to this area of the country?

>> This is why I have sheets appear. I could not possibly remember the data. We did look at the states around here. The story here is a positive story. Generally speaking Washington, or a gun in Idaho are all three better than the national average. We're looking at 79% penetration. 81% in Idaho. That surprised me about Idaho. I'm not sure in such a world community we get that but it is good news. The states are also way ahead in some of the newer measurements like how many users are using tablets. Clearly on the cutting edge in Washington. It is 34% in the community that are using tablets. But we also do document that there are still more than 2.5 million people in the three states that are simply not online at all. It is good news but it is still work to be done.

>> It's interesting because everyone talked about partnerships and how important they are in bringing forth the end result you looking for. I have a question about -- maybe we can go across the panel and talk about this. How do you get people excited about this issue within your community and have you get the community itself on board? What steps have you taken to up the urgency when it comes to the issue of digital equity?

>> I will jump in. Creating a plan, we really appreciate the data coming out of Washington. But there is something about collecting loaded it -- local data that is important because you may want to trust but we like to verify. We put together five focus groups and considered the populations that you are trying to reach. We provided childcare, we paid each of the

participants \$25 and we conducted the focus groups in the native languages of the Spanish, Chinese and Vietnamese. Other than English those of the top languages in Portland. We had an African-American group and people with disabilities also. How you gather the data is just as important because you want to reach the right people. You go into their neighborhoods on their turf with people they trust and that's what we did. We got some really good data out of the focus groups and then we moved to putting together has a workshops for the larger community, nonprofit schools, governments, providers, vendors to craft a plan. In terms of the role of local government, the convening role -- we do that really well and we usually know at least the beginnings of the right people to have in the room and then what ended up happening is what about this person or that person and did you know that dress for success in addition to providing quality -- clothing provides devices? I didn't know that. You need to be open-minded and one thing leads to another and pretty soon out of each workshop a collaboration on some specific strategic action occurs and folks are beginning to move and get excited. I think the final thing is the stories. Make sure it's about stories. A lot of people don't understand gigabytes. I want to know what is it going to do and how will it improved my well-being? We need to make it real for people and be in their rural.

>> I agree with that. It's really important that we have to help grassroots community members with the vision of what that will look like. What I and community development is develop models and projects that we can replicate in other communities and that's one of the programs that we are partnering with Senator John McCoy and professor Bill early. How can we grapple -- replicate the model. 10 years ago he was able to work with the tribal Council to develop a very state-of-the-art travel technology project which is really fueled their economic development of the Marysville. By laying the infrastructure out they been able to move on to other areas but that wasn't without a cost. They had to go to the Council and advocate for their own investment because there wasn't any funding from the State or federal levels or even the foundations were not funding that at the time. As a result it is really successful and we still have that information. We don't want to reinvent the wheel. Let's use those models and replicate them and move on. I would hope people in the Northwest and in these rooms would work together to form partnerships to advocate for the needed funding. We keep saying there's no funding. There is if you have a group of committed people working together. I'll believe that. I'm a fun greater. -- Fundraiser. There's a lot of money but how do we work together to aggregate for that as a priority. If we have members of our society that don't anticipate, they are out of opportunity. They can't take their high school tests, apply for jobs. We don't have access to public service. I think that is what is really important for everybody here in the Northwest is to work together on that and again I'm pleased with the congressional delegation and the leadership they provide to support innovative methods there.

>> That makes sense in so many ways because we in government have always wanted to get as much civic engagement and participation as possible and it's hard to do that now without that level of technology.

>> I think that is interesting and to build on that, when we looked at our digital equity program here in Seattle and we had some really tremendous community players that we have worked

with for the years and we said we need to come up with new ideas and think of new ways to solve this challenge. We brought them in the circle and we had the Mayor invite companies and other organizations that you wouldn't stereotypically think about been involved in the digital divide and asked them to come to the table. Was a group of community leaders to help tackle the problem. At the same time he also told 10 of his department directors I think you have some role in this challenge and I want you to be part of it. That level of executive leadership not only brought people to the table but we heard some interesting things. We heard a technology company, and I know that is unique to Seattle, read that this might be a fund-raising Askin said we can't give you any money but we will replace the of -- we replace our employees laptops every year and we could get those two. -- To you. Because they were asked, they came to the table with that offer. The other interesting thing that you pointed out is how we tell stories. One of the programs that has been successful for us in Seattle is what we call the tech knowledge he matching funds -- technology matching funds. We give community-based organizations for helping to bring conductivity or access to the communities and we call it the matching fund because any organization that applies for grant must either match the amount we give them with a similar amount of cash or with time and talent. What we find with these grants is that it doesn't take a lot of money to have an impact. Some of these are \$5000 to buy digital cameras or to put a computer in a senior home. When we hear the stories that come out and we always bring these recipients to the city Council every July and they pack the chamber and talk about how the money could have an impact, that is when we get ideas and when we bring more partners to the table and it is a perpetuating cycle. It's exciting to hear about how we can change our city. One last plug, a representative our community technology advisory committee today. It is the oversight board for my department that advises the Mayor and award those grants so we are thankful for how they reach out into the community as well.

>> Thank you. I will mentioned that Senator McCoy is going to speak this afternoon.

>> Let me just add, the data really confirms why the community engagement that we've just been hearing about is exactly what needs to happen. In terms of our data we ask why aren't you online? And absolutely cost is always one of the considerations but frankly the leading reason is consistently a perceived lack of need. As my NTIA collies can tell you, it is only at the community level that you really can explain and get the message out about how critical broadband access really can be in terms of getting jobs and education. Certainly even at the national level it is clear that community engagement is the way to go.

>> When we reduce costs it gets easier for folks to jump over that hurdle and understand the value. Tell us a little bit, John, how you have done this and what you think are the biggest barriers at this point to really impact digital equity?

>> Lack of need and the expense are among the most -- those of the two leading once and they had been for years. That's not a new development. If you dig into those numbers were deeply and really you can understand that expense is a very critical point because if you look and -- at people that used to have Internet access but now don't and if you look at that subset cost is far and away the reason they don't. Once they have it they perceive the need for it but cost is a

factor. The data also shows how your job is getting more complicated not less complicated because more and more wealthy, educated Americans are going online with many different devices and are going online wirelessly and with fixed broadband. At the lower incomes we really see one method, which is great, or none.. It's clear that to solve the digital divide we have to solve it not just getting folks a single conduit in the long run we need to have --. In the long run we need to have a robust set of capabilities. There was a story about the kid with a tablet at the basketball game. It illustrates that there are a lot of different ways that citizens need to build connect.

>> In one minute we will ask if there are questions from the audience so you might want to start thing about that if the folks with microphones could prepare for that. You are talking about the collaborations and in a lot of cases the digital equity effort are manned by nonprofits. In what ways can government really help those nonprofits? You talked about having small grants but what are other things that officials from the cities can do to help empower those nonprofits and make the process easier?

>> Certainly awareness is the first set. There are organizations that do tremendous things but may not be able to market themselves or make themselves known so one of the things we do well is maintain a website where we can call out the organization's and there's a capacity building. These organizations that are serving one slice of their community and see in need to offer skills-based training or literacy the total how to do that can benefit from our experience of be the resources and materials that have been prepared I think those things are very helpful. I'd also say it's very important for these organizations to reach out and partner with other types of companies or federal resources or State resources that can offer grants. Municipalities can be in a great position to make those and advise what is worthwhile.

>> One of the things of surprise about is we don't have more innovative finance models for technology, training or the infrastructure and you have a good mix of private and public partnerships. Whenever I do a deal in the community when we built the arena, there was a certain amount of loans -- low interest loans and there were grants. There are different ways to fund projects and programs and I think we need to look outside the box when we are funding innovative training programs where we are developing private public partnerships to model and health trainer communities in the use of technology and how we're using that as a tool whether it is collecting natural resource data or helping our kids in school. I would really hope that we could think more strategically about leveraging those private public partnerships and we did that a lot in the foundational community. We worked with the gates and the Paul Allen foundation and Washington Mutual to fund the community technology project where Randy Harris over here -- my cochair, he ran a program that was funded by some grants to help community technology access. Those flavors when away and so I was pleased to hear NTIA talking about advocating for foundations to fund this kind of work. I think that is important. We don't have -- there are very few technology training teachers. What are we doing around education for technology? I think that is something we can step up our game and that would empower a lot of people to participate in these groups.

>> Also spreading the responsibilities. Just informing our digital equity action plan. I didn't have enough money in my budget so I went to the Multnomah county library and second you contribute? Went to the city of Gresham and asked them. Became a matching and then other people stood up so if you spread the burden, if you well, out among many players each can contribute what they are able to and then the nonprofits showed up and gave up their staff time in terms of creating the goals and objectives getting the culture where you want to contribute what you can and have so many players commit it makes it possible.

>> I would add to that one of the things that is so wonderful of this community of people working on this issue is they are so willing to share what they've done. If you are looking for a successful practice there are plenty of people out there who are willing to share that practice. Certainly when I was working in digital equity I reached out to Portland, Seattle, Austin. There are a lot of players who are doing great work and are willing to share.

>> A big I want to talk about training to differentiate when we look at strategic planning is to types of training and technology. One where we focus on the end-user in building up individual skill sets. The other one is the communitywide technology programs especially for small rural communities. Government with limited budget, I know that with Randy -- he cannot because he is always running the day-to-day headaches of maintaining the tribal nation system. How do we develop those two pieces that will help run the community technology programs as well as provide the end training.

>> And it is a capacity issue. We are going to look out now and see if we have any questions. We have one over here.

>> And Gary Carter with the city of Santa Monica and I appreciate the topic of Digital Inclusion. I question is in surveying the other cities with programs a lot of it is focus on access or no access but there is not a focus on an equivalent broadband speed given to the under-represented or lower income communities. I wanted to know if either of you have included that in your plans for any approaches for Digital Inclusion?

>> We recently launched our project in Seattle in partnership with the open technology Institute at new America foundation and I know that Georgia Bolan is here somewhere that can answer those questions. We recognize that same challenge. We have data that tells us that 85% of our public has Internet access and we have some data that breaks down what percentage is for cable versus DSL versus fixed point wireless. It doesn't tell us the speeds people are achieving. While there has been great work, that data is not granular. What we did is said how do we croaks versus information? How do we understand from our users the speeds people are achieving at home in their overall broadband experience? OCI had a technology called and lab which is a speed test much like you white -- might try at home. Working with community here in Seattle and with OTI we were able to take the technology and turn it to the interactive Seattle broadband met. You can now go to the website and take the test. It will tell you your upload speed and your provider and how much you pay per month and what speed you expect to receive and then we plot that information on a map and we aggregate it. We create a heat

map of the city to say by district what are the actual broadband speeds people achieve. It's interesting information. We've had about 1800 test run and what we're hoping to understand are the disparities across the city. Those disparities don't necessarily mean that I have a terrible provider. We know people do subscribe based on cost and so the data is going to help us understand where we see different types of speeds being purchased. We might be able to target particular outreach efforts. For example, if we see a community that is only purchasing 5 MHz with the speed and we know the new FCC definition is 25 Mb we might need to help the community understand why that increased speed is important. So we are on the front end of this but we encourage other cities to look at the same type of data collection.

>> We're going to build on that.

>> [Indiscernible - multiple speakers] You build on it and can make it better and then somebody will make it better than us. What's interesting is that in our focus groups every one of the groups, this issue came up. They didn't believe that they were getting what they were paying for and that there was some discriminatory element

>> Let me add to that. Based on the research we do what we have determined is that simply asking people how fast is your broadband is a very ineffective way of finding out. Ultimately we have stopped asking that question because it was not providing data that seemed to connect with reality. It is so difficult to create a question that doesn't use jargon that is not available to the folks asking the questions.

>> And when a census -- when a data collector calls the house you are not always necessary connecting with the most technologically knowledgeable person in the house who might know but even that person may not no.

>> We had another question here.

>> My name is Judy and I'm with May. This question is for John. The penetration rate was about 80% in Washington and I guess I was a little surprised by that number because I know and I've been to a lot of rural areas in the State , what is that number really measuring?

>> Sure and there are lots of ways to slice the data. That number is based on do you have Internet access anywhere? That is both at home or you might have it at work. You might use the Internet but through a library. Through a community center. You also can look at our data just looking at the home and the numbers are lower their. Absolutely. That's what that number does. It is a self-reported survey the number of people that we are able to ask comes in with a relatively good margin of error. That's what they are reporting in terms of having access somewhere.

>> Thank you. Other questions?

>> Wi-Fi these days to address the commercial opportunities, there is a lot of demographics being collected over Wi-Fi networks. It would seem to me with the urban core of Third Rural homeless that is both the city of Seattle's Mayor and counties executive amped up, that your build out of the Wi-Fi could help a significantly [Indiscernible] of that challenge population. I'm curious the Metro used to have Wi-Fi on its buses. Which is possibly another opportunity for your network. I'm curious as to how far down the road you are because I know the city has tried the Wi-Fi multiple times over it seems where apparently the cost to the county is why they got rid of the Wi-Fi on the buses.

>> It's interesting. I live in West Seattle so if we look out the window that one over there. Every morning I take the water taxi to work which is just a boat -- I passed the city's main fire station on my walk. Whether it is in the morning or late in the evening you see a huge congregation of people in front of the fire station and when you look at why they are there, they all have devices out. There's a very strong Wi-Fi coming out of the city building and it is free. For those who are housing insecure or perhaps not able to have Internet at home, our data and anecdotal experience shows those people are likely to have smart phones or other Internet capable devices but they may not have a data plan that allows them to be online anywhere. We do recognize the need for increasing equity by providing more Wi-Fi across the city. There have been numerous efforts in Seattle to offer municipal Wi-Fi in some capacity and I think we saw some trends in the mid to thousands where there were some commercial business models that ultimately didn't work out. Where we are in the city of Seattle today is we recognize that we have a lot of assets that we could make available to help encourage additional Wi-Fi invest yet much like the \$660 million cost of building out fiber to the home, to build out and maintain a municipally owned Wi-Fi network is still cost prohibitive. We have a piece of work coming up this year that the Mayor proposed to the Council and was champion last year to develop a strategy to bring city assets together to encourage private investment and communicate with our city about where Wi-Fi is available. Both by private partners and the city. We are embarking on that right now in our commitment is to go to the city Council with a plan for what we would call equity zones throughout the city. Where can we do play Wi-Fi at some skill with a private partner and have the greatest impact. Where there is the lowest home penetration of available. Are strong hope is that through the research we do in identifying those zones in assets we can make available that we can run some kind -- type of competitive process quickly and be able to have an impact if not this year but very soon.

>> That's an excellent idea because as we all know those of us that worked under the grants when we did the mapping what we found is that the service areas, there are a lot of areas -- errors and there was a lot of gaps that existed especially for some of our travel communities that prevented them from being able to apply for grants because they said they are covered but they were not. That is a challenge I think we need to as a body and industry here -- we need to do a better job of collecting accurate data and keeping it -- I would advocate for third party to make sure we have not the private companies but where we can access the information. Right now you cannot access that information and it's difficult to provide coverage when you don't have the correct data.

>> In terms of why five Portland we have about 90% of the city buildings and so there are community centers throughout the city and all the libraries. It is kind of an incremental approach at this point but we at least have one building in the proximity of every neighborhood and we're hoping to get to 100%. There are community gathering places where a lot of people come. That as a starting point and then if we can bleed out the Wi-Fi into the surrounding neighborhoods that is one of the strategies that we are looking at.

>> Thank you. One more question and then I'm going to ask a final question of the panel.

>> Dan Moulton with [Indiscernible]. I am not a board member of but I do attend the committee meetings and want to congratulate David Keys and Mr. McMillan. My question returns to the community building efforts that you put into digital equity and other types of planning. I heard the words about innovative financing and trying to be more innovative. And counterbalancing that are being contradicted by a lack of capacity in both the nonprofits and the city staff, there is a restriction there. For community I look at best practices for change management and from the agile methodologies they all State the actual customer being in the room, not a voice of the customer or representative of the customer. Sometimes at the nonprofits can't or don't represent everybody inside their communities. Is there a way that you can look at being nimble, taking on agile and concepts in the future to try to have the voice of the actual customers at the beginning and sometimes throughout the process and including them in the community outreach? Thank you.

>> Does anyone want to take that on?

>> Thank you for the feedback. It's a great point that we thought a lot about when we started our digital equity action committee last year which is how do we balance the membership between people who have an interest in the topic and have knowledge but then also are part of a community? Is something that we do need to keep in mind as we have these conversations. Bring in the institutions and the individuals and here in Seattle the advisory board help us do that.

>> Mary Beth suggestion was really interesting I thought about bringing together focus groups. That was a brilliant way to get the boys of folks in the room. I will have to ask us to move to the last question because we're getting very close to lunch which you never want to miss. I will mention that David Keys will be here tomorrow as well if you have one-to-one questions and you want to talk to him about digital equity in your city. Is it -- he is an incredible expert. I'd like to go down the line here and tell us what one piece of advice you have for a city are community that is just beginning to address this issue? What would be your first step?

>> I get that all the time because we have a volunteer committee. We have new people that were just assigned to work on technology for their tribes so what we do is develop a pretty secure peer-to-peer network of other tribes and then we also connect to key resource people that help us and so we have a great team [name unknown]. What we really try to do is really wrap around services of our technology committee because these are -- when I was living on

the reservation you are isolated. You have to figure all this out. There is no roadmap on how you get to develop a technology program. We tried to impart as much information as possible and look at successful models and for example, a representative here from the [Indiscernible] tribe, they imported a lot of knowledge from Arizona where the tribes have it -- made more advanced than. We look at peer-to-peer learning and we have to have it culturally competent because the issues we address a sovereign nations are unique and different from what you will do in a city or another municipality.

>> To think that issue of cultural competence is --

>> All of these communities, Seattle, Portland, Minneapolis, Austin, Philadelphia are all in the process of figuring this out right now and totally willing to share information. There's an incredible resource, the national Digital Inclusion alliance. It is for people who do exactly this work. They would love to share information with you. You don't need to reinvent the wheel. Just steal like an artist.

>> Yes, don't be afraid to ask. Ask anyone in this room or elected representatives. Get the ideas out there and definitely steal from others who are doing those exact same things.

>> On the theme of data let me urge you to go to and TIAs website -- the NTIA website. You'll get to a Explorer tool that allows you to look at the data dynamically. It does not yet allow state-by-state drilling down but also at data central you can download the entire data set. Any of the data sets back to 1994. You can take the data set and drilldown to your own State and that is as far as you can go with our data set. But that is helpful. I would urge you to go to the NTIA website.

>> Wonderful. Before I give you directions for lunch, I would love to give a round of applause. [Applause] we are going to eat in this room but in order to get lunch we have a nice pathway to make this work. We will go out the back door because the next room is where the buffet is. Go out the back door, come back in the front door and sit down with your lunch. We will have a keynote speaker in just a few minutes. Once we get our lunch we will get started with that. Thank you all so much. [Captioners transitioning]

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>>> [The event is on a short break]

>> Good afternoon. We will kickoff the keynote speaker here if I can get your attention.

>> First I want to thank you for a fabulous lunch. I have the privilege of introducing Lawrence Strickling , I will give high-level overview. He is assistant secretary, he was sworn in June 2009, as assistant Secretary for communications, this focus includes leading initiatives to expand

broadband access and adoption, and ensuring the Internet remains an engine for continued innovation and economic growth and free speech. Please join me in welcoming him.

>> [Applause]

>> Thank you. I hope you all enjoyed the morning. This is our sixth regional broadband workshop and we're joined in this effort by our partner, how about a nice round of applause for their work.

>> [Applause]

>> Together we've assembled experts and you've heard many of them already you hear more this afternoon, from local governments, state governments, industry to give you information that hopefully you will be able to use to meet the many challenges of expanding broadband access and adoption, how many of you this morning learned something that you will be able to take back and work on after you've? -- After you've? Be seen everywhere you have been across the country, so we've had a great turnout here we had a great turnout wherever we have done needs and that's reflected in the importance of this issue.

>> Mayor Ed Murray, asked for a stronger federal partner to help communities and their broadband efforts, I am here today, to offer NTIA as your partner and to urge you to take advantage of our expertise on these issues. Thank you to this effort is the new broadband USA program which offers technical assistance, guidance and resources to communities across the country. Seeking to expand their broadband deployment and adoption.

>> We launch this program last year to build on lessons that we have learned in the best practices and collective wisdom that we have gathered, from our broadband program and to leverage the federal investments that we have made through those programs. Today's digital Northwest Summit is an important part of this new initiative as we travel the country to convene folks such as yourselves to study the broadband challenges they face and to explore solutions.

>> As part of this initiative the technical assistance team is here to provide free one-to-one support to you today and tomorrow if you want to get some time with our team, during the office hours, please sign up at the registration table.

>> Why is NTIA well-positioned to help you?

>> First, we're passionate about ensuring that every American has access to broadband. Over the past seven years we have seen firsthand through our \$4 billion program how broadband can stimulate economic growth and empower our people. Funded for money from the 2009 recovery act we finance about 230 projects across the country, that the critical network infrastructure, upgraded public figure centers and established broadband adoption of digital inclusion programs. The state broadband initiative program invested in other \$300 million to

help states collect data for the national broadband map and expand their own statewide broadband capacity.

>> When we developed this program seven years ago we made a promise to communities across this country we promised the Obama administration's investment in broadband would create jobs, stimulate investments and economic developments and open up new opportunities and employment education and healthcare. Most important it would improve the lives of average citizens. I am proud to say, we have delivered on those pledges.

>> The broadband grantees have deployed more than 116,000 miles of new or upgraded network miles they are connected nearly 26 nearly 26,000 community anchor institutions such as schools and hospitals and they've installed or upgraded more than 47,000 personal computers in public at sex centers. The grantees have enrolled hundreds of thousands of people as subscribers to broadband services.

>> With our infrastructure projects one of the major goals was to prime the pump for private sector investment by supplying critical middle mile infrastructure the local providers could use to deliver affordable broadband to more homes and businesses. That's why all the works built with recovery dollars are subject to open access rules that let all other carriers interconnect with these networks unfair and nondiscriminatory terms. We also encourage our grantees to connect directly to the key anchor institutions in these communities due to the higher brand with needs of schools libraries and other institutions.

>> It is still early to gauge the full economic impact of these investments but we do have some early results. We commissioned an independent study to look at the social and economic impact of our broadband grant programs. We released the report last year, what this report found is that in only two years communities that received our broadband grant funds experienced an average estimated 2% greater growth and broadband the nobility the nonprint communities. The report also commuted -- vindicated additional infrastructure built by our grantees could be expected to create more than 22,000 long-term jobs and generate more than \$1 billion in additional household income every year.

>> The report documented the community anchor institutions served by the grantees benefited from significantly increased speeds and much lower cost, as an example, the median price paid by libraries in the study was \$233 per megabit per month before the grant program, with a medium speed of only 3 Mb per second, but as a result of the grant program called that median price drops to \$15 per megabit per month and meeting speed increased to 20 Mb per second.

>> Here in Washington the Northwest open access network, is a great example of one of the successful projects. We used was \$140 million in recovery funds to add more than 1200 miles of fiber to its network, allowing it to reach some of the more remote regions of the state of Washington. It connected on 300 committee anchor institutions, NOAHnet sign broadband wholesale agreements to provide new access to 50 providers enabling these providers to offer faster and more affordable broadband to their customers. For example we heard yesterday

from the director of the Stevens County information services Department who set this project has helped improve the health and safety of the county's residents and is boosted economic development in this county. The county's public utility district has provided wholesale Internet service to local Internet service providers which is enabled to local manufacturing companies in the county to expand their businesses and hire additional personnel. At the same time the NOAHnet network has allowed the county to provide mental health services to patients in the region through telemedicine. Another example is the Pend Oreille County utility district process, using its \$27 million grant they don't 585 miles of fiber enabling the Internet service providers to offer service to 5000 residential homes. It also provided improved broadband access to 14 anchor institutions most of which were medical and healthcare providers.

>> Community health Associates of Spokane partner with the county, the network allow patients to use broadband video and voice to communicate with the pharmacist and receive appropriate prescription drugs from a vending machine at a clinic in northern County which is more than one hour's drive from the nearest brick and mortar pharmacy.

>> In addition to infrastructure projects refunded \$250 million a sustainable adoption grants, as we consider what's new for broadband today we cannot lose sight of the importance of adoption. Once the facilities are built we need people to subscribe to use the service. And we have made great progress on this front over the past seven years but there is still more work to be done.

>> Through our adoption programs we have learned important lessons about what works and what does not. An important take away is that digital literacy is fundamental to sustainable broadband adoption. The grantees around the country have demonstrated that successful digital literacy training must be tailored to the specific needs of the community and the individual. Based on our grants we have developed a portfolio of innovative approaches to offer this training. But sustainable broadband adoption projects and public computer center projects are reaching people who may never have even turned on a computer. The group that includes a disproportionate number of lower income Americans senior citizens, and number of minority groups. In teaching them how to navigate the Internet set up an email account write a resume and even apply for a job over the Internet.

>> On the broadband adoption site I want to highlight a \$4 million grant to Ed lab here in Washington, which you some of that funding to work with Seattle to bring resources to the city's public technology centers. Seattle was able to utilize its partnership with Ed lab to explant -- recreational sites and community centers to serve Seattle's at-risk immigrant and refugee communities. Multilingual training a digital literacy classes were held to reach further into the Vietnamese Chinese Ethiopian and the city's other immigrant communities. The Chinese information and services Center began a Mandarin language program that couple computer technology with financial literacy training. Overall EdLab opened up 22 public computer centers throughout the state and provided more than 150,000 hours of training to more than 26,000 people. As we move beyond these projects we recognize that our target keeps changing. We launched the recovery act grants in 2009 the Federal Communications Commission still find

broadband at a speed of less than 1 Mb per second. Today the FCC recommends download speeds of 25 Mb per second. And USENET rate, nearly 51,000,000 Americans still do not have access to a wired broadband connection. And we can expect that need for speed only to continue to increase.

>> We are making measurable progress, today as you have heard, we released new data from our census survey the survey samples 53,000 households in our new data shows that 75% of Americans are using the Internet from any location up from 71% in 2013.

>> Demographic groups that have historically by using the Internet such as senior citizens minorities and Americans with lower levels of education also made gains in the last two years. Internet use among those age 65 or older increased five percentage points in the last two years and then that same period growth in Internet use among Hispanics and among American Indians in Alaska natives also outpaced the US population. Internet use among Hispanics grew five percentage points in two years while use among American Indians in Alaska natives grew 9%. All of this data is available to you on our website, through our data central portal which is an easy to use source for looking statistics and charting trends on computer and Internet usage over the past 20 years.

>> Even though the recovery act which program is complete we continue to be a lead agency supporting President Obama as he continues to emphasize the importance of broadband we talked about connect Ed Watson 2013, a public-private partnership to connect 99% of America's students to the Internet within five years, last year the president followed up with connect home initiative aimed at expanding high-speed broadband to families of public housing across the country. And last March the president created the broadband opportunity Council made up the key cabinet departments and agencies to determine what actions the federal government could take to eliminate regulatory barriers to broadband deployment and to encourage investment in broadband network and services.

>> Earlier this month present Obama took another important step forward financing connect all, the initiative to help Americans every income level get online and have the tools to take full advantage of the Internet. The president set the protocol of connecting 20 million more Americans to broadband by 2020 and is part of that effort we found comments on behalf of the administration with the FCC recommending that the commission expands its lifeline program to include broadband services.

>> As part of the connect all ever we provided an update on the community connectivity the initiative which we propose as a broadband opportunity Council recommendation last fall. The initiative will empower communities across the country by giving them the tools they need to support accelerated local broadband planning and deployment efforts. NTIA in close collaboration with our partners will create a comprehensive online assessment tool to build community leaders identify the critical broadband needs and to connect them with expertise and resources, the tool will provide a framework of benchmarks and indicators on access adoption policy and user communities. I'm excited to say the partners include many of you in

this room and from the region including next century cities, new Americans open technology Institute and the city of Seattle, as well as the towns of Kenmore Oak Harbor in fact since our announcement two weeks ago many more communities and partners are indicating the support and interest in participating and I understand we signed up some more people even the last two days. The affiliated tribes of Northwest Indians, and other groups that will be joining with us and starting tomorrow, here in Seattle will be holding a workshop to solicit further feedback on this initiative, to bring more of you stakeholders into the process and work to develop the online assessment tool. If you want to participate in I think there's more information outside, you can ask for more information.

>> NTIS broadband USA staff has been working with communities across the country and we have heard time and time again the challenges facing communities to identify sources of funding for broadband and to know where to turn within the federal government for answers to these questions. One key recommendation of the opportunity Council which we are spearheading, is to create a portal for information on federal broadband funding and loan programs to help communities easily identify resources as they seek to expand access to broadband. This will help communities find broadband related policy guidance and key agency points of conduct and best practices but in the meantime while you're waiting for the online portal to go up, we have this print guide to federal broadband funding which is available upfront and I encourage you to get a copy of that today.

>> In closing, my message to all of you here is NTIA can help you. The broadband USA team wants to work closely with communities seeking to expand the broadband capabilities. We learned a lot over the past seven years, and we have learned that one thing that does there is no one-size-fits-all approach that works. We know every community has unique needs and challenges after the broadband USA initiative were now leveraging that knowledge and expertise to help you another communities in your broadband expansion -- expansion efforts. So do you need to sift through the labyrinth of the programs, we can help, as I said, take a guide with you. You need to learn the best way to design and develop an adoption program, we can help. You can take the broadband adoption toolkit, copies are available.

>> You need advice on how to plan for and attract broadband investment in your community? We can help. The technical assistance ranges from workshops and webinars to more personalized one-on-one community assistance. In the next few weeks will be issuing the planning guide to communities to help them improve broadband access and adoption but as I said at the outset, you do not need to wait, sign up to meet with our team tomorrow. Best of all, we are free. So let us know what sort of help your community needs, and the team will help you accomplish your goals.

>> Thank you all for being here today. I look forward to the discussions this afternoon, and to working with you to expand broadband access and adoption and support greater economic development for all citizens in the Pacific Northwest. Thank you for listening.

>> [Applause]

>> We have a choice, where 10 minutes behind schedule. I can continue to make you further behind schedule by taking questions or we can go right to the afternoon breakout sessions. What do you want to do?

>> We will take one question then we will breakout.

>> I am from Portland. I have a company and we have been working with communities helping them develop broadband telecommunications. We work with [Indiscernible] and gotten award. We now serve the entire community with telephone and broadband.

>> We talked about being 98% 4G wireless, you mentioned about connecting the committees and connecting people with wired connections. My concern is the 90 & the country -- is that 90% of the country has wireless. That is not true on tribal lands. I believe to get the broadband speed that we need, we do have wired connections and yet the FCC and the government is going away from wired connections. Towards the wireless mobility world. There is a split between the push for wireless, wireless mobility, broadband, which doesn't exist everywhere. And the real need to have fiber and wired connections throughout the country. Were not focused on that. -- We're not focused on that.

>> Is a multi--- multifaceted problem. I do not think the government is favoring one over the other. There are goals in both areas and the wireless side the goal is to have 90% of the American population able to procure 4G within a certain period of time we've now hit that make it.

>> You can have large geographic areas in this country where that is not available but those are also among the less densely populated areas which is why the 98% holds. There is still in recognition that there has to be a strong fiber deployment even to support the 98% of people using 4G because you're only wireless for a very small portion of that communication and you need very robust networks in order to be able to provide a backhaul even in a wireless environment but I think what we find is when we look at the individual, a typical family, that many -- we're seeing a trend were more more people are able to access the Internet and to download and serve and explore for the information they need. Using a wireless device. We need to reflect that and understand that as part of our policymaking is this greater importance that handheld device is making for so many people.

>> It doesn't solve the problem with connecting anchor institution it doesn't solve the problem with bringing in the kind of bandwidth you have to bring in to every community to support whatever her unstructured you're looking to sport that will be fiber-based and it has to be done the old-fashioned way by bringing the physical facilities into the communities. When you have seen in the last few years is a tremendous focus on this at the Federal Communications Commission through the programs that they operate, when you have not seen as a further response from Congress the on the initial recovery dollars that we got in 2009, which we all knew at the time wasn't going to come close to solving the problem nationally in fact, what we

spent the \$4 billion is a fraction of what industry has spent every year to invest in their own networks. There's been no appetite in Congress to continue to provide that kind of funding to let us explore where we can make the kind of impactful grades that we made in 2009.

>> I think that's a gap that you are seeing in that simply one I think that reflects the economics and situation in Congress of not wanting to fund these types of projects any further.

>> Thank you very much.

>> [Applause]

>> Thank you for all you do. The breakout sessions will begin at 1:30. You have a little time to finish what you are eating. You can get dessert. And to network.

>> We're going to have the business models in this room, models 101 will be in the sound room, raw broadband applications will be in code partners in innovation uses in Washington state will be in -- in the Marina so if you're not sure how to get there, there are people I can point you in the right direction. There's a description of each of these in your packets so feel free to take a look to see which one is of most interest to you. At the end of the breakout session, we have a good snack. So lunch was great. Hopefully this snack -- we can come to Seattle not have salmon. It was quite fabulous. We have a great snack and we were going to hear from Google fiber and we will have a final panel on fine too. Relax and at one back 30 we will get started out on our breakouts. -- Relaxed and at 1:30 PM we will get started on our breakouts.

>> [The event is on a short break and will reconvene at 1:30 PT]

>> Welcome everybody. Given how big a room this is, if you would like to move up closer, that is great.

>> I don't see anybody moving which is also just fine.

>> We have an excellent panel today. People who are skilled in a number of business models, and people with experience -- people who have experience doing this and meeting people from around the country who are developing a broadband plan for the communities. We want to keep this conversational, I think to start off we will have self introductions if we could. We have great people over here and another moderator right here.

>> Eyman Joanne Hovis the president of CTC technology I have worked for almost exactly 19 years on public sector broadband strategies and I'm an attorney by training.

>> I am Dave Spencer the chief operating officer and treasurer for Northwest open access, we are municipal at work that has points of presence around the state of Washington, if you think about broadband in your community, we are here to help.

>> I am Mark Reynolds, vice president of government affairs for century link, that entails legislative affairs, affairs with the regulators, and also municipal government affairs, I have 35 years with Pacific Northwest, and century link, so I have been around a while. Look forward to the panel.

>> I am Thomas Coverick the managing director with KeyBank capital markets, we are firm which specializes in many other aspects of public finance besides broadband, we have worked with issuers in Utah as well as here in the Pacific Northwest we work with MINET in the ceiling or area, and were the lead bankers for the utopian millwork as well as the Utah infrastructure agency.

>> I am Chris Mitchell the policy director of next century key cities, I'm also the director of the committee networks program with Institute for social reliance, I run networks.org which focuses on local governments can do to improve Internet access, where fierce supporter of the right to build municipal networks, we recognize it is not right for everybody so that decisions to be a -- should be made at the local level. We'd like to get into the details of how local governments are crappy policy to solve problems.

>> I am done Williams and I will moderate the panel. The last six years I worked with NTIA on the grant program at the last couple of years on broad technical assistance to communities around the world, developing broadband plans and working on [Indiscernible] and try to work with them to make certain that they had taken advantage of all the thing -- all the things that are out there.

>> One of the nice things is that we are working with communities are trying to do a lot of broadband planning using a lot of different models, one of the things I think we will find out is broadband is truly local, we have heard that from some other panelist earlier, on plan is not going to fit another community even if they are next door to each other. One of the nice things about working with NTIA is we accept all kinds of broadband models. That means that when we provide technical assistance to a community, we will look at every kind of possible model that there is. I think today we had a great group of panelists who can speak to a lot of those models already.

>> Mark, let's start with you. Thanks for being here. You just got a significant amount of -- money and one of the things everybody is interested in is what was the process for your application, and secondly, what exactly is it to accept that money, what does that entail? And how is it when you are thinking of where to invest the money, what kind of metrics are you looking at for making those investments on the assumption that there is not enough money being given to you to do everything you want to do.

>> The easiest way to understand the whole process is to go back to the federal universal service fund, this was instituted as a result of 1996 act and if funded \$1 billion in subsidies, one portion of it is the high cost subsidy that's related to the process otherwise -- others are lifeline,

rural healthcare, schools and levers, those are evolving as we have heard on the prior panel, as we speak, in 2011 the FCC issued an order with regard to high-cost funds so this is not new money, this is high-cost, subsidy that was instituted as a result of the 96 act, in 96, when [Indiscernible] were forced to open the market and the networks competition, could no longer sustain subsidies so they made the subsidy explicit and based on cost models that determine high-cost areas, we receive funding as an [Indiscernible] as many other people do as well, in the Secretary they decided that that system was somewhat Rogan and he needed to be -- somewhat broken and needed to be addressed, they would formulate a transition to a broadband deployment fund the high-cost fund, the funding under the high-cost fund has been frozen since 2012, at the end of last year, the FCC based on some very specific criteria, determined grants that would be let on a state-by-state basis to price companies, the FCC regulates telecom companies from a price perspective that is we have price caps and are typically larger companies, and there are returned carriers, the two deployments are specific to the price companies and the amounts were determined based on \$1 billion per year that historically has been high-cost funding and they utilize a cost model that develop a range of funding and also a national broadband map, and the range of funding is between 50 and \$200 per location per month.

>> Based on that, and working with the national broadband map, they identified on a census block basis by state, the amounts of money that would be let for deployment, I'm probably going on too much.

>> The deployment offers were made to carriers, for century link the offer that was made and we took the offer and 33 of the 37 states, it is 505 it is \$505 million a year and represents 1 million locations that we have to build out over a six your timeframe, -- six your timeframe, the state of Washington is roughly 60,000 locations at a funny rate about \$25 million, and -- at a funding rate of about \$25 million, we have to have 40% completed by the end of 2017, we have to have 60% by 2018, 80% in 2019 and 100% in 2020 and in 2021 we have an opportunity to cure any shortfalls that we have. There are penalties, significant reporting we have to do, there are penalties associated with not getting the marks over those years. The actual business model piece of that and many of communities are interested in this, is my community on the list, it's important piece of information and I can tell you were becoming more and more certain or 2016 to try to do a five-year planning schedule 433 states is an ominous task. Especially with the challenges that are out there in rural America, or building cycles, due to weather, the rural nature of what you're facing, but given the range that we have to build in and the specific census block, we will probably build the more dense areas first, and then the less dense areas will be towards the end of the build plan in later years, it makes sense economically and allows us to build more census blocks or build more locations for the money we get, we are held to the number of locations so we have to come up with a plan that will deliver 59,000 locations in the state of Washington, over that six your timeframe now one thing that is not understood, is that as we build out the census blocks, there's a halo effect, we will be building out through a committee that is non-eligible that there were uneconomic for us to serve in the past, and it will become more economic forced to serve so even though the bogey is a 60,000 bogey in the

state of Washington, we may build multi-fold more than that during the broadband deployment so it's a good news story I think the economically for rural Washington

>> Joanne, you've had experience working with a number of communities in different sizes, a number of them have involved public partnerships, one of the questions cities have is what can I do that puts me at no risk whatsoever? To get broadband into my community? And become a gated community is there such a thing?

>> There is not. Traditionally, localities have had two options one was the tourist option which was to ask the incumbents would you please update your networks or expand your footprint, absent some kind of factor that push for private investment, that really was not going to happen. The other option was 100 prisoners model, was the 100% risk model, the municipal optician work for many communities I give them credit for what they have done, the incumbent upgrade, the request of elected officials is not sufficient to change the economic calculus that there simply was no rate -- return on investment that justified an upgrade and that's how the private sector makes determinations. There's a potential for other kinds of models to emerge where we see a different kind of zero risk versus 100% risk, and that is a very interesting thing about this moment, this incredibly preliminary, around the country, we had a substantial handful of projects that shows us what private partnerships could look like and we may be on the cusp of something extraordinary with hundreds of them emerging, but we may not and I'm always really reluctant to predict what will happen in this field, this is not a safe field in which to predict. At the short term. But there is a moment right now where there's an appetite on the part of private sector investors and an enormous appetite on the local government side which is displayed here and has been all morning, for something that's different. What I would say is I think we're seeing the emergence of the class of projects represented by the councilperson from Santa Cruz California, where we see a new form of innovation emergent driven by local governments that is interesting, what's happening in Santa Cruz is that the city is going to build fiber optics to pass every single home and business. The city is not going to do anything else it's not going to buy and equipment that requires electricity, or operate an optical network, it's not going to send out bills, or do customer service, all the things the private sector is excited about and can do well would be the role of the private sector in that model at it is currently developing. The city will do something that is really in the city's expertise which is to build and maintain passive fiber optics. It's a public works project. There are a handful of projects like this one around the country, Santa Cruz was the second one. The most recent, is Huntsville Alabama, Google fiber is a private sector company that will lease the fiber, pay the city, and operate and offer services and the city will be in the public course -- works fiber roll.

>> Here is an example, of something that is not 100% municipal risk, the shared risk, it is innovative. It leads to potential for new infrastructure and for competition.

>> Key banks made a number of interesting loans, and funding projects, if you are municipal official, a broadband chanting, what is a community need to think about when they are trying to access private capital?

>> I will tell you it is probably one of the most exciting projects to be working on because when you look at the support from constituents, from staff members, from the politicians, there are so many touch points that are positive, but when you address a room that has that much energy behind each one of these individuals, and you talk about finance, I can see people who look like deer in the headlights. What we're dealing with is cities for Tiscali constraints, they have limited sources of revenue to build the network, they have limited abilities to support any type of infrastructure that is required to administer the buildout, call centers, so when you start to look at some of the financing parameters, communities are overwhelmed with infrastructures that they already have, much less the infrastructure needs and demands that something like this would require.

>> It's different than when I go when I am working on a school district financing, or a toll road, so from my perspective there's a lot of momentum the issue from the public sector side in terms of providing financing in terms of balance sheets, or lending, or access to the capital markets with investors, is simply without some skin in the game many lenders investors will not bite off on in an investment. We have seen reluctant -- reluctance. Some of the things we have worked on include Utopia which at the outset in 2004, was strictly a project finance-based model. Where the cities participating in Utopia banded together, with the financing, and they backstop the bond deal with sales tax. So they knew to a certain level, the sales tax would be tapped and that is what is being used to repay the bonds presently, but the sales tax would be tapped. We heard the Councilman talking about how they went -- how they went about their cities credit to a certificate of participation or a lease appropriation structure and without that lease appropriation structure those bonds probably would not have been sold and they were double A- fonts. Those bonds. Without the pledge behind those bonds, right now, it was difficult three municipalities to enter the capital markets or achieve any type of lending from banks where you will have a significant reduced rate so when you look at different models, there are different things that need to be done I think, in terms of, financing today, that's not to say that down the road is the market matures, that we cannot build in certain mechanisms were the bonds could be called early work with the extraordinary resumption provisions or if the network is sold, there are things we can build in the financing that will allow for flexibility, as the market matures, it's different right now to sell a broadband revenue bond issue than it is to sell a water bond issue.

>> Those are deemed essential services by the investor community and by lenders and so, to the extent one day and I think there's a lot of us in this room that agrees, one day the market will realize that this type of infrastructure is an essential service, once the market responds in terms of lenders and investors, for the short term, there needs to be some type of a backstop, a security pledge, that is broader than just the system revenue

>> I think most people in this room, think that broadband is actually a utility. Many times you hear it is just as important as what her, electricity, -- is just as important as water, electricity, that may well be true but the investor community doesn't feel that way.

>> Nor do the banks.

>> David, what do you think in your experience has most important thing that a community looking at broadband needs to think about an focus on at the early stages?

>> Locally, is the leadership model, making broadband global. We've heard some -- we've heard from some people that have the vision and are making things happen, and convening the groups together, in regards to financing, NOAHnet was created 15 years ago on using revenue bonds, that were backed by public utility district. At the time, it was risky and it did lead to credibility, broadband had to have a detailed business model behind it, we're taking for granted the homework has been done at this business model, that the multi-year performance and the paybacks have all been done.

>> In our case, the PD's at the back to bonds the first few years. We started at zero revenue, and we have reached a level of sustainability where we are covering the debt payment and all the capital and operations. The startup bonds retire this year. So the startup is over. It worked.

>> Looking back at other financing options, public-private is a buzzword. It has worked for us. The private has kicked in millions into NOAHnet to build infrastructure but so has NOAHnet we have taken the same contract and how that returns, so it is a public-private working together and finally, we pointed out, the grant programs, \$140 million, a lot of money came into the state, NOAHnet added six co-applicants not to mention counties, public safety, ports, that all women to secure this money, but what is forgotten is there were 40 million in match and we still have to come up with \$40 million to pull this off, then we did five -- did that by collaboration. To make it happen. So my take away, it is a leadership model, and all hands on deck, a lot of different models are at work. We are in a good position that we have more resources today than we ever have.

>> Chris, I know public partnerships are incredibly popular, in terms of speaking about them. Almost all of them involve local government. When you think about local government and risk allocations, revenue allocations, opportunity allocations, many things have to be allocated. What do communities -- what can they think about to lower the risk in the long term?

>> [Captioners transitioning]

>> If investors are responding to whether or not brunt that is a utility or whether it has a monopoly -- I think communities need to think seriously about risk. When you talk about lowering risk as a part of a partnership in the long-term, the first thing to do is be Frank about the risk. There are some entities that are seeking to partner with mucinous polities that will say there is no risk. I share JoAnn sent dismissal of that. If it is possible for the private sector to build these kinds of networks without risk, the incumbent telephone companies would have blanketed the countrymen multiple times over. These things involve risk. If you are working with someone that is working in saying there is no risk, maybe you should check with a second lawyer to go over the contract. I think some of the risk that is sometimes ignored, and I'm a supporter of public private partnerships, I am worried that sometimes that the level of it can

only move us forward have an important role to play, but not the sole role. They will be a growing role. They are going to take a percentage of the solutions that are embraced. They don't have a lot of evidence thus far. We have seen is that one of the ways that local government can reduce their long-term risk is by putting in some of the details from the contracts that we have seen from the networks that JoAnn has worked with. In the case of Westminster in Santa Cruz, the municipality will own the network. That is important because it can be around for 20 or 30 years. Your partner, no matter how long it has been around as a term, it can't plan ahead 20 or 30 years. We don't know what Google will look like in five years, that alone in 20. The ownership of the network is something that I would fly. Another thing that we have seen is a right of first refusal to purchase assets that were jointly created in the event that a company is selling itself. This is turned up. We're working on a case study about a few of these partnerships and we are just about to go to the press. This network in Illinois -- the partner that was rooted locally -- has decided to sell to a firm that was based for money coming out of New York. No one knows the history of it. The community has the ability to negotiate. The community may stick with the new firm, but the house and leverage. It is entirely possible that they signed a different contract and they would have no say over where the network went next. I think that should be troubling to communities that are putting up effort and money. The final thing is that if you are working with someone who says here is the risk and this is where you would find it, that is a good partner to work with. Trust and verify. If you are talking to someone who says there will be no risk, I would be very concerned.

>> I completely agree. I did a number of feasibility studies in the 80s and 90s. When people tell you that they perform at 20%, they don't. Market, back to you. What kind -- what can a community do to make themselves more attractive?

>> May I ask a question.

>> Good idea.

>> To answer your question, I think that if investors and lenders were going to look at those types of technicals, they would not need a backstop. They would already understand the market. They would understand the industry. They would be delving in to those types of details in terms of networks and pledges from the broadband network. What investors will look to is right through the primary punch. They will look to see what is backstopping it in the strength of the backstop. They really do want to know that the city is standing behind the network and that the city is not only supporting it from a political standpoint and an administrative standpoint, but also a financial standpoint. As the market emerges, those types of questions may start to become more germane to a conversation, but right now, the market is not there and investors are not at that point to be able to scratch the surface.

>> For private investment in a broadband network, one is a utility tax. Everyone pays, whether you take the service or not. That is a good backstop. You have a sales backstop. There are also situations where, unless a private company comes in and says here is the deal, here is the paperwork, we are going to be partners. I need to make 35% penetration rate in order to pay

my debt. If I don't make that number, then the city pays whatever the difference is. Is that also a reasonable approach?

>> Absolutely. The city is on the hook. I think that is where the rubber hits the road. When you start to look at -- it is what is behind the strength of the pledge. The credit is going to drive the structure to the extent that the investors that I work with in the municipal bond world are not going to want to be purchasing a corporate credit. We have to go a different route. To the extent that there is a municipality that is willing to assume risk, and that is the consensus of this panel is that there needs to be a risk assumption and that has changed a lot over the last few years. A few years ago, no one would want to assume any risk. Now, it is changing the risk because there is such a demand. From our perspective, when we go to market bonds or when the folks at the bank start to take a look at credit, it ultimately comes down to the strength of the revenue that is available to pay for the bonds. I do think that whether it is a take or pay model or whether it is a sales tax model or a franchise fee model, any hybrid that includes those types of models as well as just a general obligation, to the extent always helps. Joanne, I know you want to comment on this. Let me preface with this. One of the things is if you have a penetration model, you have to make a certain number of passes. A certain number of the passes have to take the service. That is demand study. It is hard. They are not that easy to do. If you are a community and you have this nice public either partnership working, but the private company has to make a certain amount of penetration in a certain amount of percentage. How does a community gain some certitude that that is a highly likely prospect.

>> I can give you an example of how we addressed it in one negotiation and then I would love to ask Tom a question also on the finance side. To answer the question, you have a community making a significant investment or taking a certain amount of risk. How does it ensure that it is either partner is really knocking itself out to make this thing work? The answer to that is you negotiate and structure the details of your relationship in a very particular way and you probably can't have too many lawyers involved. I say that as someone who does not practice law. That is not me marketing, it is me saying to yourselves at every stage and in every way. In the city of Westminster, which was the city just outside of Baltimore that pioneered this, the way it was structured is that the private partner wanted to pay based on how many customers it was able to secure. The city said we don't know how good you will be, but we don't know how good you will be a sales. We need to make sure you are invested in this at some level. What we negotiated was a deal where the private partner pays in part based on how many customers it gets and it pays in part based on how much fiber has been deployed. If indeed it does not put the effort into marketing sales that it needs to to make this thing work, it still has to pay the city every single month. It has a financial obligation to the city. There is an incentive there to bring in business because it has money going out every month. Related to that, the private partner also agreed that in any quarter in which its obligations to the city did not meet the city's debt service obligations, the private partner would cover 50% of the shortfall. The private partner is essentially backstopping some of the city's debt. What that means is that it is either win win or lose lose. That is a real partnership. That is when you start to understand. They have smooth out the risk between the two of them and they both have to make this work or they both are in real trouble. That is what is so attractive with that model. What we saw in

Huntsville, which is a similar business model is that Google fiber appears will pay based on the amount of fiber it uses. We can all presume it will not disclose to the city how many customers it has or to anyone else. That is fine. The city now has a very predictable revenue stream that is based on the city's own rate card for what fiber should cost. If Google fiber is not successful in terms of sales and marketing, it's still owes the city what it has agreed to pay as part of their contracting process. That may not be enough to cover all of the city's costs. It will have other users of the fiber. It will have other uses internally, but it has that predictable revenue stream and it is not dependent on whether the company is able to bring in customers or not. That is a couple of different ways that we seed these kinds of deals structured to provide some comfort to the city. There is still a lot of risk.

>> My question by the way relates to that.

>> Conversations are good.

>> It is intriguing to me that we seem to be in a new world in terms of the potential of markets and financing. What is intriguing to me is that we have struggled over the years with localities to make it work. So-called municipal broadband, seems like a very high risk matter to the bond markets I wonder if the Huntsville situation transforms that. This is not municipal broadband anymore. This is a debt where the holder of the debt has a long-term contract with the world's most valuable company to pay an X number of dollars per year. I believe they said it was a 20 year deal. The documents are not public. Does that start to change things? Is there a potential that they could go out and replicate that model if they wanted to get revenue bonds on that portion of the debt where the revenues from the company would cover debt service?

>> I have no idea. I am not familiar with that transaction. When I look at other deals that get done, Sandy is a perfect example. Sandy was able to market their bonds had 1.35 coverage on a historical basis. Even with that type of revenue coverage, they still needed to invoke the city's general obligation in full faith and credit. I don't know. I don't know the answer to that question. It is more of a corporate type of credit and a true municipal credit. It depends upon if the city is actually willing to do a lease appropriation structure and make those types of payments whole. I don't have the answer. I wish I did. It is something that is very different. I also have questions on Huntsville.

>> Mark, what can a community do to make itself more attractive to your company or other private sector companies to either expand in a community? What is it that communities can do to make themselves more attractive to defray the costs of [indiscernible].

>> It has a lot to do with access. I heard earlier about the HUD program where they are going to require that multitenant units be prebuilt with access to the tenants. If you take that up a level to a small municipality and in a larger one, you get different levels of access. Access is critical to a company like mine where communities are already built. They may have a lot of aerial plants. If they have an aerial plant, access to the poles, they may have access to utility poles. It would help. It would allow us to overlap shower facilities. Even new technologies and micro trenching,

access is so difficult in a prebuilt community that it often is a barrier to us wanting to expand any money to come in. I hear the financing going back and forth, but what is better than having the provider take the risk that having the municipality smooth everything out to make it easy for serving the community. I just scratched the surface on access. There are other things such as favorable tax treatment in the way we market the product. You can work your way down through an entire chart. We have a computer program that evaluates public-private partnerships. We have the most favorable cost of where you're going to negotiate. Short of having to own anything, to the extent that they are starved for broadband services, they might want to expand some tax dollars to upgrade their community to make it attractive. It is not going to be just for my company. It will be for other providers that may want to get into the game as well. Coinciding with what is going on over the next six years with this deployment, it is critical. Those communities that want to raise their level up and raise our interest can do so by sitting down with us. The other thing I would say is: us. We have had communities put RFI's out for public-private partnership and we have our plans already on the table. Communities should talk with us before they engage in risky adventures. We never know what we will have on the planning boards. We can share everything. Incumbents are cautious about primary information. We also talk about the interest in potentially partnering. We have a lot of communities that don't talk with us. They run straight to the bank. They get Muni fever and take off. There might be something a lot less risky for them to do by sitting down and talking about their incumbent provider.

>> I love the idea of Muni fever, by the way.

>> One of the things that happens is that there has been a significant amount of academic articles in terms of open access and financing networks. I am a proponent of open access because that is what our middle mile networks have been and they have allowed a lot of carriers to jump onto our networks. They run by a community in the community itself connects to that. There are other instances where the open access model seems to be like a disincentive for private capital to come in. I am wondering, and your experience, what are the drawbacks between open access from your point of view?

>> No one can agree on what it means. That is the real challenge.

>> That is why we have paperwork and attorneys.

>> It is not a dig at you. What I talk to people, they say that they want open access, and then ISPs say they want to have a handoff of this kind of technology. Open access can occur on different levels of the network stack. Can get a sense of what you mean by open access. Open access broadly takes a model and gives you a carrier or municipality building a network. It is hard to get cash flow in a reasonable amount time. That is a reason why we argue. If you turn into open access, you are adding a third party to share revenues. Of course, it is even harder then to make a cash flow. One of the things that I think we may see, and we have seen it in some cases is a local governments that say that open access on the network, however we define it, is going to be our roads where we had different entities using the roads and we are

going to build our roads with massive subsidies. The user fears -- user fees from the license plates does not come close to paying for our roads. We subsidize that. We keep it open. We are starting to see communities talk about that. They are going to raise their property taxes or utopia open access. We are not expecting the network to break even financially. This network is not going to pay for itself entirely. Our roads so paper themselves. Our network is not going to pay for itself. It is going to be open to multiple parties because there is a subsidy going into a. I think that is a bargain that communities should be able to make, particularly if it is truly open to multiple eyes fees that are going to be using it. To answer your question, open access is hard to make it the network fund its own capital. The revenues are not big enough to pay back of the capital with the interest rate. The interest rate is what kills you.

>> Dave, you have an open access network.

>> There are a lot of providers on it.

>> What is your thought on open access and financial viability?

>> Now that I've said it is hopeless.

>> [laughter]

>> I think the challenge in open access is the local move. It is making the business case work out. It is a 10+ year return on that. Does open access mean you can give someone an exclusive? Can you truly keep it open and rely on non-facility-based carriers to come in and support that retail play century link is a facility-based carrier. You want to use their facilities. They are not necessarily going to want to use the local open access facility if it makes more sense is this wise to use theirs. Will century link possibly use other people's facilities? I think it is an open question.

>> Will they?

>> We use yours.

>> We do.

>> I would say for knowing that it works. We are a middle mile network. We get into the communities. We add drops of the information superhighway in those, immunities. We have a lot of people who want to get there. We have 100+ wholesale customers that want to get into the local loop. What they do is what we are trying to answer.

>> I want to make it clear that I like open access. I was just identifying problems with it. I think that public-private partnership we will see more. I don't want people to walk away thinking it is hopeful -- hopeless. We will be seeing more of it in the future.

>> From the point of view of investment banks, what are you thinking about open access? Is that a harder sell?

>> What is going to pay back the bonds? It is a simple. Is a toll road having a certain schedule that allows it to maximize its revenues? Sometimes they care. They want to make sure that those revenues are going to be there with their bond payments are due. I wanted to revisit the question that JoAnn asked me because I have given it some more thought. I think that one of the things to remember is that the uniqueness of each project and the financing model it has put together is going to be just as unique. To think that a network will be financed completely with the municipal bonds may or may not work. It may work with some private investment money. The other part may work with municipal bond these. Another part may work with a true triple P type of solution. As you try to put your model together, whether it is open or fiber or whatever you want to do, I think that when you look at the financing, you are looking at it as a puzzle. Put things together that makes sense and maximize the ability to be flexible. As you put the pieces together, think about what will happen in five years or will happen in 10 years. If anyone had the answer to that, they probably would not be sitting in this room. To the extent that you marginalize your financing components, the same way you put together your network, on the backside, that will be very helpful to make sure you have the flexibility in the future as well as the most cost effective borrowing that you could possibly have. I think that is tremendous. I don't think that leaving -- leaving the room thinking you will do it as a municipal bond issue or as a triple P is a way to think about it. I think the way to think about it is to engage in all of the conversations with all of the constituents that you have both on the resource side in terms of your staff and in terms of the folks that are helping you make these decisions, but also to reach out to the community on the other side. That is the banks, the incumbents, and those types of decisions are critical. It is not just one size fits all. Everything is going to be extremely unique.

>> There is another question that often comes up with communities I work with. I used to do this as well. If the performer did not sing, it was not a good performer. Have to put in equity. Increasingly, for economic development purposes, sometimes the performer is not going to sing in terms of revenue coming in. The benefits to the community in terms of economic development are hard to measure. They are long-term.

>> They are very intangible.

>> Yes. I guess my question generally is how does a community think about that part? They are building a broadband network. They may have a provider who is doing a great job, but not particularly serving the business communities. Maybe they're not going to industrial parks. On the other hand, they would like to get broadband to keep their businesses or attract businesses. Back project does not seem to be paying for itself anytime soon. How does the community think about the other benefits that community has in terms of economic growth, job creation, job retention, economic opportunities for education, etc.?

>> I think it is one of the issues that communities need to define what the return is on the investment. One of the things that we have seen from municipal networks thus far is that when you don't to define what the benefit is and what you are expecting to achieve a, the result is that the return is expected to be cash flow. The network is paying for itself. The network is paying down its debt in generating extra revenue. That is how people will evaluate to the decision of their elected officials. Unless some entity, and it should be the local government, our goal is to bring in new businesses. It is to allow existing businesses to expand. It is to lower prices through competition. It is to engage to give us more freedom to lower the cost for a certain group that needs subsidize access. There is a whole variety of metrics that we have seen as to why local governments would do this. I would say that the local government has to make sure that it is front and present in some people's minds. They need to say that we are borrowing this money and taking this amount of risk. We expect these ends. You have to be upfront. If the network is going to pay for itself, that is one of the five things that we are looking for in terms of knowing that we are successful. I think you can define it in those terms. How will we know we are successful?

>> I go back to the uniqueness of every project and every community. The demographics are going to help decide what type of project there will be and what type of private investment there will be. They will also decide whether or not they want to assume that type of risk, whether they go through an election process and they remove their elected officials if they don't like a decision or whether it goes to an open vote. I think that from a public safety perspective and from an economic development perspective, those are intangibles that people have a very difficult time seeing. Everybody wants instant gratification. If they vote for this network or they approve the network, they want to see businesses pop up immediately. We all know that does not happen. Economic development takes some amount of time. It is a lot less tangible than a referendum where we all vote for a new school. The new school pops up and the school buses Poppa. It is a very different process. From our perspective as a bank site, we have committed to development initiatives. We know those are longer-term. It is a hard question to answer. I just don't know.

>> One of the ways I've been thinking about this with communities is not so much to quantify what's the increase in their local GMP is going to be order increase in the number of job opportunities is going to have, but to work with their economic development agency nearby and see when they go out and present a package to attractive businesses into the community or when they are trying to retain businesses in the community or stabilize the population, talk to them to see how important it is for the people who you're trying to attract to do this. That is not something that you are going to enter into on the spreadsheet and say that it works now and we can do it. Mark, what are your thoughts on that stuff?

>> You are asking corporate America to comment on altruism?

>> I am. I am very diverse.

>> You can say in terms of economics that indirect benefits and spillover effects.

>> I think it varies by every community. I think a community that has no broadband is huge. Obviously, they are going to be willing to pay. They are going to do the cost-benefit analysis upfront. They are not going to care if the revenue covers it. They are going to be willing to pay more in taxes. Like the city of Seattle where you are inviting a third entrant in, it is harder to measure the economic gains of that happening. From a corporate perspective, that is something that the community has to decide. We are a part of a lot of communities. We are three companies that came together. CenturyLink, CenturyTel, and a bell . We served rural America. It is a very important part of our fabric and being. To see that there is a great feeling that we get when we go in to a rural community and are able to lift it up. Are we willing to do that for nothing? I don't think so. That is the beauty of what I went through earlier with the cat program. You have to have adequate funding. I think I heard Mary Beth say something about coalitions. We may be able to do a piece of it. We may be more than willing to do more than we normally would do if we felt that there was equal input or greater than equal input from other parties that were involved in this enterprise. We are a part of the community. We live here. We do business here. I think there is something to it. We are a for-profit company. We need to make profit at the end of the day to keep going. Are you willing to go the extra mile to raise your community up? I would say yes. Absolutely.

>> Dave, what is your experience with the NoaNet network and how has that contributed to economic development? Do you have any feel for that or numbers?

>> Wow. I had a feel. Numbers, those are hard to come by. I would say that the numbers are in the tens of millions. The investment that the public's in the private sector made. The Quincy Davis centers, that is a huge investment there. Now, they are the who's who of data centers in the state. How did that come about? A tremendous amount of private investment. That is a macro scale. I think that the point that I want to make on this is that we can have effects on a micro scale, even if a fiber line extension needs to get out to the local hospital. How does that cash flow? Does that tie into a different kind of infrastructure? Can we work with the private sector to make that happen? The answer is generally yes. If we can start getting these one offs and put a network together, pretty soon, it is working. For NoaNet, we operate the back office for a number of networks today. We are the 24 seven call taking. The idea there is it is an economy and scale. We don't need to have a six people manning the phones all night. You can outsource that. You can pool that effort. We make it work on a micro scale instead of just coming in with one big macro project.

>> Excellent.

>> I know this is off-topic, but earlier, there was a banker for a renovation in Green Bay. If anyone has been to Green Bay, Wisconsin, you know the economic benefit of the Packers to that community. Wynn Stadium was renovated in 2000, there was a referendum that was on the ballot and it asked for the support of the community. There was an unbelievable turnout for this vote. For anyone that has gone through a referendum in the room, you know how challenging those can be. The approval on it was almost 60%. It was a very successful

referendum. I point is that for a community to understand the true value of a project, they need to know the true benefit of a community. It is obvious that it is a driver for economic develop and. If there was something that large in a community, then the community should know about in the economic the relevant aspect would already be a self-fulfilling prophecy. That is the way that we don't need too much education. They know they already don't have broadband. They know their incumbents are not doing what they need to be doing. It is a question that is not answered necessarily. That has been my experience as a banker.

>> We now have nine minutes left.

>> I have so many questions about incremental bills and expansions. We don't have that much time.

>> I would add to this that communities should think about this kind of initiative. We have two sets of books. The first set of books we are going to capture. What are we spending and what are we bringing in? Then there is the other set of financial statements that are not financial statements because it is so hard to quantify. The mayor of Chattanooga, Andy Burke says a lot of things about their remarkable gigabit network. The thing that struck me the most when I heard him say it was that he said that this changed the way that we think about ourselves. It gave a city that did not have confidence in itself a sense of an incredible future. I don't know how to quantify that, but someone needs to put it on the other set of books. Form Westminster, Maryland, that factor is control. They don't care if it costs them money. A want to know that five years from now, they will have an option in town other than Comcast or whatever comes after that. There will be mergers and there will be consolidations and there will be shifts in the market. 20 years is an unbelievably long period of time. We are only at the 20 year mark now of the birth of the commercial Internet. Most of us in the room will remember that. It really is not that long ago. That is why it is so hard to predict what 20 years from now looks like. What Wes Minister has done is gotten a psychological value out of earning the underlying asset that is good for 40 years. It will always be useful. That is the one thing that we know about communications. We don't know what the Internet will look like, but we know it will run over fiber for the rest of our lifetimes. That is a non-quantifiable value that they are able to book in a certain sense. If we think in those ways, it helps a lot. No local government goes into this because they are thinking that they will make money. It is all the other stuff. You already know what the other stuff is. It is just methodically thinking it through and trying to catalog and express it even if you can't express it in monetary terms.

>> Great. I know I have many more questions. Let's go to the audience and ask questions. The microphone will be passed around.

>> I just want to say that the interplanetary system will be wireless. Everything else will be fiber.

>> Like I said, not in our lifetime, but okay.

>> [laughter]

>> I have a question. Our County is fortunate to get a beat-up grant. The economic boom to the County, the problem is that it is only 10% of the county. The other 90% of does not have anything. It is a real problem. We brought it only to the County C because of the way that it came through Highway 20. The rest of the County is on quest, legacy, and century. We are trying to work with CenturyTel on what is going on with those lands. The other committees that are here with us today are trying to figure out if we would overbilled that or we need to know what they are doing so we don't overbilled. My question is how do we work with those with operation managers so that the leadership of the county can work and not do it twice.

>> That is a good question. What is the community again?

>> I apologize. It is Stevens County.

>> Got it. We will sit down. We will talk with communities. One of the problems we ran into with our funding is that we do have more locations identified and we have to build two. We have flexibility in shifting plants around. We are fairly certain about what we are going to do for 2016. As I said earlier, it is an awesome task to try to plan a five years out. After this is over, I will talk with you and see if we can't put something together and provide you with some better information. It is very difficult. One of the worst things we can do is say that you are on the 2018 bill plan, but when we get there and take a look at the plan, we would find out that it is an uneconomic bill and leave you sitting for two years. Is that worse than giving you information up front as to whether you stand a chance? I understand what you're up against. We are in a difficult position. We have to be prudent and cautious about how we talk about what our bill plan looks like. We have a tentative plan over a six-year period. The only one that is final is 16. Let's talk.

>> Thank you.

>> I know it is a little utopian in the current political moment, but is there anything that the federal government could do to help with the access to capital problem that seems to keep coming up?

>> We have been talking about and infrastructure bank for a long time. Broadband at -- is part of a banquet as part of the Clinton platform. I think it would be a really interesting model or variation of. Access to capital, some support some types of modest learned guarantees that would potentially change some of the calculus's here that would be really interesting. I wish we were seeing similar suggestions coming from both parties. I don't see why there is any partisan element to this particular issue. I think that would be one a relatively powerful tool that is still pretty modest. It is not massive funding. That would be nice as well.

>> Let me just say, it is nice to see you again, Fred. I have not seen by Johnson and quite a while. I saw him today and thought it was great. If you look at these [indiscernible], that has

been incredibly helpful throughout the tobacco regions. If you take Virginia for example, that is funded for a couple of thousand miles. That has labeled all kinds of businesses to relocate their including call centers. That would be good because the tobacco areas were hurting just like of the coal industry is. We are out of time.

>> There is no lack of access to capital for communities that are willing to take on some risk. That is a little bit of an overstatement. One of the things we have seen is that where investors know they are going to have security, they will give you money. It is out there.

>> Let's give our panel a round of applause.

>> [applause]

>> [The event is on a recess. Captioner on stand by]

>> We're going to get started again. Please take a seat. We have some great information to share with you. Thank you all so much. Wonderful. It has been a great day so far. I appreciate everyone sticking with us and being with us toward the end of our day. I think we have some really interesting information to share with you as we complete the day. We are going to start with Brian Bell from Google fiber. Working with the city is one of the first questions they ask me is how can I get Google to come to my city. I am really pleased to have Brian here to answer that question instead of me. I wanted to say that Brian joined the fiber business from Google's legal department where he represented Google fiber and other Google teams working with projects related to Internet access, Wi-Fi, and various new technologies. I am pleased to have a Brian here. He represents the Northwest region. We will be able to hear a little bit from him about the work he is doing here.

>> Thank you for having meet -- having me today. Thank you for the invitation to speak. As debit said, my name is Brian Bell and I weave expansion efforts for Google fiber in the United States. My team is responsible for clearing the obstacles and putting the please is in place so that our construction team can deploy the network and bring service to residents. We work closely with cities and other stakeholders with public and private to align on processes, negotiate and execute a business agreement and contracts work we have to navigate through local ordinances and regulatory issues. Many of you are probably familiar with Google fiber. We are lucky enough to get a fair amount of attention. I will give you a quick update on what we have been up to lately. We started building our first network in 2011 in Kansas City. Since that time, we are offering service, actively constructing, or exploring office and service in a total of 22 metro areas. Those metro areas have suburban communities. It is a long list of municipalities that we are working with. We are excited that our work with these 22 metro areas has helped penalize faster Internet speeds and lower prices in the markets. We have done a little bit to add to the national conversation around the importance of rock band and gigabit speeds. Here in the Northwest, we are actively exploring the possibility of being fiber to the city of Portland Oregon as well as five neighboring communities. Those municipalities have a great partners and we are really excited by the progress there. I think we can all agree that deploying new fiber

networks is challenging work. There are a ton of issues to address and to navigate through. We are grateful that so many cities, counties, other stakeholders including you today are thinking hard and working to figure out ways to increase the availability of abundant high-speed broadband. At Google fiber, we have learned a lot since we started building in Kansas City five years ago. I would like to reflect on some of those key learnings and best practices that we have seen along the way. I will focus on more general themes.

>> We've learned how important it is for city workers have a clear broadband vision and to make broadband a public priority in your community. We have heard good stuff about that today. Writers like Google fiber want to know that if we invest in a network in your city, that the residents and businesses in those communities will use it and understand the importance of it for their lives and businesses. As leaders and policymakers, you can advocate for better technology for students to support technology for those individuals. You can help develop digital literacy programs to get some of the digitally divided communities online. By advocating for faster more ubiquitous Internet access, you not only help your city become more globally competitive, but you also show potential fiber providers. The second thing I would like to touch on is that fiber builds require a ton of coordination and closed collaboration with many departments and many different stakeholders at cities and other municipalities. We use our Google fiber checklist as a way to help us understand the local policy framework and the moving pieces involved in a network buildout in any particular communities. You can help that process for Google fiber and others by identifying a clearly defined cross functional labor working group that spearheaded by a clearly defined single point of contact who is empowered to make decisions and interact with potential investors. In Portland, our primary port of contact, Mary Beth Henry, is a tireless broadband advocate who can efficiently connect us with relevant folks in different departments throughout City Hall. She is available to problem solve whatever new issues come up. She meets regularly with her cross functional colleagues to make sure that they are lying and there is a consistent message throughout City Hall. That is critically important with moving a large scale project forward. Thank you for your hard work. We have learned how important it is for cities and other regulatory agencies to support initiatives and policies designed to facilitate faster, less disruptive and more predictable local construction. Let me give you a couple of examples. One key area relates to pull attachments. I hope you had your coffee because we're diving and. In most places today when a new provider like Google Iver seeks to attach to a pole, we have to work with the other attackers on the Apple to clear space so that we can go on in a way that is safe and consistent with local relations. We can take multiple construction crews visiting the Apple to move one equipment attachment up or down. It can take several months for this to play out. Utility poles are located across streets. That means traffic headaches every time a construction crew is out. They are a lot of people's yards so that means disruption to residents. In short, the system is not very friendly to new fiber providers or residents who suffer the headaches of it. We strongly support something that we have called one touch make ready. Those policies are in to make the pole attachment process more efficient , safer, and less disruptive for local communities. You may have seen reports about this in Louisville, Kentucky where the city Council and Mayor supported and past an ordinance on one touch make ready. We are grateful for that support of the initiative. One touch make ready policies are an effective way to reduce disruption,

inconvenience, and delay by allowing any communications provider that wants to attach to the poll the ability to attach as long as they are using engineering designs that are approved and a contractor that is also approved by the poll owner. Just like sensible policies are common throughout the country, we think that one touch make ready is a sensible policy that should be supported. As another example, we have learned that to attract investment and potential fiber networks, it is important that the local policy framework is up to date. In many cases, things like right of way ordinances, franchise laws, it and permitting processes may not have been updated in quite some time. We encourage cities to take a close look and make sure that those laws reflect today's reality and are friendly to potential investors. Just like it is not easy to put a square peg in a round hole, a new provider often can't navigate through outdated regulatory regimes. Finally, we have learned that one size does not fit all. To date, we have been billing most of our network from scratch. We are laying thousands of miles of new fiber. Every city is different. This model won't work in all markets. The specific needs of the city have to be considered when thinking about what type of fiber works for the community. We are always looking for creative ways to bring fiber to more people. In seven Cisco, we recently announced that we are partnering with existing fiber providers to offer services to residences without doing the heavy lifting up construction since it was not a good fit for that market. We are excited to bring fibers to public housing facilities in the months to come. We have started working with cities that have or are installing their own fiber networks. We recently announced that we are partnering with the city of Huntsville, Alabama and its municipal owned electric utility to bring fiber service to residences and small businesses in the city. Huntsville utility has been exploring a fiber network buildout to support its smart grid and other interconnect city facilities. They decided that as part of that plan, they would make available fiber to private companies on a nonexclusive basis and those companies could use the fiber to serve residence with high-speed broadband and a TV. Huntsville and its leaders had a vision for a connected community, energized by gigabit speeds. We are excited to help make that vision a reality and have signed up to be an anchor tenant on that yet to be built municipal network. This is a city led long-term investment that will allow both Google fiber and future providers to deliver ultrafast Internet to Huntsville residents. Huntsville is not the only city looking at that model. We think it is an exciting and interesting approach and a great opportunity to bring more Internet to more people more quickly. To close, I want to acknowledge and appreciate the elected officials, staffers, private partners, and many others who are working together to tackle these big and collocated, but really important fiber deployments. Thank you for all of the work that you are doing and thank you for having me here today.

>> Kaun -- [applause]

>> I am just going to stand.

>> I will get you another seat.

>> We are good.

>> Are you sure?

>> I am sure. I don't mind standing. Thank you. Problem solve. Good afternoon. Thank you for staying with us all day. This is our last panel of the day. My name is Amy and I am with an TIA. On behalf, I want to thank you for being here. With that, I am going to get to the panel. This is our federal funding panel. I am pleased to be joined by an esteemed group of federal colleagues who have an amazing amount of federal government experience. They have all been dedicated to federal service for the last few years. First, I have Keith Adams. I will just refer to my notes for titles. Erie is the assistant administrator for the rural utilities service at the US Department of agriculture. Keith is responsible for a portfolio of about \$1 billion annually. He has a \$4 billion loan portfolio that he is responsible for as well. He is going to go into all of the federal funding that our US offers. I have Lora Routt who is from the housing and urban development administration. She is the senior advisor to the deputy assistant secretary for grants program. Lora Routt works on the community development grants and quite a number of other programs. She has great local and county government experience as well. She has been in some of your shoes. I have Carol Matthey , who is the deputy bureau chief of the Wireline Bureau at the Federal Communications Commission. Carol used to work at the NTIA as well. We are pleased to have her as well. She is our universal service guru. She works on everything universal and had a lot of hand in changing the high cost fund and the setting up the connect America fund. Finally, I have Karen Hanson who is my colleague at NTIA and is the director for partnerships and interagency affairs. She has spearheaded our work on the broadband opportunity Council along with Keith to make sure that we are working collectively as a federal government with other agencies to see what barriers we can reduce in the federal government and what additional funding might be made available for broadband. With that, I am going to let each of the panelists give you an overview of what their programs cover and what types of funding they have available so that you know that. We can get into some questions.

>> Good afternoon. I am pleased to be included in this panel. I am honored to be here. I am here with a few USDA colleagues. I want to make sure I introduced Joe Bradley and Steve Cornell. I don't know if the state director is here. Mario Villanueva is here. We thank you and Mario and your staff for coming. We are part of the world element program area. We are responsible for making sure that we are providing opportunities to change people's lives by economic growth in providing infrastructure for utility service we have electric loans, water and waste loans, and we are responsible for telecommunication loans and grants. As Amy mentioned, we have \$1 billion in loans and grants. We have two major loan programs and two major grant programs. The first loan program is our telecom infrastructure program. That is our traditional program. We have about \$690 million available in that program this fiscal year. This year, we have our farm bill broadband program which we have carried over from the last two years because of some regulations that we had to have approved. We have about \$55 million in that program this year. We are currently evaluating applications in that program with our traditional program. We have approved 12 the loans for about \$200 million and we have nine more loans that we are processing. Then, we have two smaller grant programs which provide equipment for universities, educational institutions, hospitals, and other institutions that need a specific equipment. That program is about \$19 million. We have a community connect grant program which is for areas that are really considered to have no Internet service at all. That is

about \$11 million. The distance-learning and telemedicine notice of solicitation of applications just ended on March 14 it is now in the process of tallying up how many applications we have in going through the approval process there. Our community connect grant program and solicitation of application should happen sometime toward the end of this month into the middle of April. Those are our main grant programs.

>> Can ask you a couple questions?

>> Sure.

>> Can you tell us about who is eligible for some of these programs?

>> The to grant programs, anyone who is serving a rural area is eligible for our telemedicine program. That is probably the only program we have where large universities or large hospitals can apply for our services. It has to be in an area that fits the definition of rural. With community connect, you can draw your service map, but it has to be in areas that have no service. For our traditional program, it is for communities of 5000 or less. For our farm bill broadband program, it is for communities 20,000 or less.

>> You mentioned areas that are defined as rural. Can you tell us what that means?

>> That has a different definition of rural. For us, it is going to be communities of 5000 or less. For the farm bill program, it is 20,000 or less.

>> Great.

>> Good afternoon everyone. Thank you for the invitation for coming here. Typically, when people hear about the US Department of Housing and Urban Development, you think about a section 8. We have a new secretary who has been there almost 2 years. His interest has been broadband. It is increasing the access to low income families. With this being a big emphasis of President Obama, he is taking charge and coming in and wanting to do so many things with our funds in making sure that we are increasing our access to low and moderate income families. He knows the important of having the adequate resources and being able to succeed. He is super ambitious. Nonetheless, he is committed to making sure that our department is doing the best that we can. Recently, we put out frequently asked questions on to grant programs that are already in many communities across the country. We have a community development program which is a formula grant. It is given to cities, urban counties, and states. With those funds, you can use the funds if the community has come into agreement that this is what they want to spend their on this on doing. It is being able to provide computers or literacy to low income families. Basically, anyone that is 80% or less of the area median income will be eligible to take place or take part in this program. The funds go to the city. They are the ones that decide if this is what they want to do. I will talk about that a little bit as to how it works. Many are already doing that. We just put out a free Willy asked question to remind people that it has to meet a national objective of which one is to benefit low to moderate income persons either

individually or areawide. It has to be able to do it with those funds, but with our affordable housing grant program. You can also use those funds to wire multifamily or single-family housing. During a construction or rehab, we have those questions already out there. People are aware. We have let our 2000 or plus more grantees know that these are eligible expenses. The other thing that we are trying to do to enhance those programs ability to outreach or enhance the access to broadband is considering rule-making. Two things that are going to be required is for any project that is a new construction project or a substantial rehab project, they will have to make it wired for Internet. This is probably going to be for multi family because we are trying to get the biggest bang for our buck. That would mean being able to buy the equipment for being able to have a computer room, wiring it because the one thing that our secretary says is not acceptable is that so many schools are requiring students to have access to Internet to do research papers, homework and the like. You can't do it on a handheld. He wants to make sure that in the housing HUD assist, that they have a computer room to be able to do their homework. They should not have to go to the library. Nine times out of 10, the computers are broken down or they are unavailable because other people are using them. They should not have to go outside of the home to do their homework. We are going through the rule-making process on that. The other part is what is known as our consolidated planning process. This is the framework that we have for all of our communities to do their community development and housing development planning. That is a three to five-year plan and a half to identify what are the parties within the community. They meet with the stakeholders. We have these funds available. How they want to spend them and this is an opportunity for anyone that wants to meet with your local community development department to say that we want to partner with this nonprofit or this company and be able to increase the broadband. We are going to be asking our communities to do their community planning and do an assessment on what their broadband needs are. What other areas within the low income areas that need access to broadband? What are you going to do about it? You need to come up with a plan. We at HUD cannot force them to do it. It is a local driven process. We will strongly encourage them to do it. Those are the two things that we are doing to make sure that this is more accessible to the low income families of the nation. That is what we are doing now. The other thing that we have in place which is not have money attached to it is our connect home program. It has gone into effect. We have 20 communities including Seattle that is participating. Public housing authorities are working with local providers and being able to provide the broadband access and being able to have partnerships to make the services more affordable and maybe reduce significantly or free. We do have some partnerships already being established with broadband assistance. We have communications, Google and some other communications. We also have digital literacy education and skills training. Not only do we want to have our students be able to have Internet access, we want to have their parents, who are typically underemployed or unemployed, and as we know, in order to look for a job you have to have Internet access. Everyone's application processes are now online. A lot of time, they are not able to have that equipment at their home or even have the access nearby to be able to get on or look for a job. It gives them an opportunity to get some skills on the training on the Internet. Some partners that we have so far have received ABC mouse.com, the American Library Association, Boys and Girls Club, Best Buy and a few others. These communities have already -- we picked the competition process. We already had a pretty good foundation anyway. To be able to do that is

to be able to hit the ground running. It is going quite well. Seattle is doing very well. The able mentation plans are in. The end of the process for this round ends in June and hopefully we will have some readouts on the levels of success. Our department is doing quite a bit with being able to provide the funds and have violet projects to see how we can specifically address the needs of those that are in the lower income brackets.

>> Great. Did I see on one of your connect home releases that CenturyLink is a partner ?

>> Yes.

>> I just want to make that clear.

>> I did want to ask a question. When he talked about the community level needs assessment, do you have a sense of what that entails for folks that are taking this information back to their own communities?

>> Sure. It is called the consolidated planning process. It is not just on the level of national. It takes about 18 months of planning to actually get to the document. What the grantee is required to do is to let everyone, including the nonprofits universities, anyone who has a stake holding interest in the program, we notify them and say that we are going out. We come out with the next plan, and we asked them to participate. We usually have a big kick off for everyone comes. You break off and talk about housing. Then it gets more specific to be able to serve veterans or the youth. Education, public safety, economic development, community development, it is several areas that we have to touch upon to be able to get a good assessment of the needs of the community. We meet several times. We come up with a list of priorities that everyone wants or the city to consider. You go through a couple of public hearing processes in addition to all of these other meetings that are going along and they will let you know that they have taken the considerations. These are what we will have as a low priority, medium priority, or high priority. Given that our funds have been reduced over time, most communities can only address what is in their high priority. They cannot, at this time be able to fund any project that is not already indicated as a need in the consolidated planning process. Even if we were to give them money now, you still need to go to the public to seek comment. It is usually about an 18 month process. A larger jurisdiction may only take about a year. It does take time and we want to get as much input from everyone is possible. We will take comments throughout the year so that when they have to do an allocation of their annual funds, they can keep in mind the kinds of projects that we need to fund in making sure that everyone's input is in that as well. That is another public hearing process. We try to get out to as many people if you don't already have a relationship with your community development department. You should reach out and let them ask when the consolidated planning process is. Be able to introduce yourself and let them know what you can do.

>> Great. Thank you.

>> Thank you everyone. It is a pleasure to be here. I have noticed that sitting up on this part of the stage, there is a beautiful view of the scenery. In any event, I have been working on it universal service fund issues since 2000. I directly and responsible for overseeing the connect America fund. In the past, I have also overseen the efforts to modernize the eRate program. The universal service fund is a program that embodies a statutory commitment. It has been in place for many decades. The universal service fund, the federal universal service fund distributes close to \$9 billion a year. The programs are administered by independent administrators known as the universal service administrative company which operates under direction of the FCC. I am going to focus on the three programs that today expressly support broadband. The fourth program is the lifeline program. Several people have already mentioned how the commission will be considering a plan to expand that program to broadband later this month. First, let's start with the connect America fund. For several decades, the universal service fund has supported telephone service. I mean voice telephone service provided by the incumbent telephone companies. The program also in recent years has supported mobile wireless providers and in some instances competitive wireline carriers. In 2011, the FCC reform that program and created the connect America fund. It set out an overall framework that we have been working to implement ever since. Of that, it is a \$4.5 billion annual budget. The commission decided that \$1.8 billion in annual funding would be provided to support service in the areas that are served by the larger telephone companies. That would be companies like century link and frontier. \$2 billion was set aside for the areas that are served by the smaller telephone companies, \$500 million was set aside for wireless mobile services and at least \$100 million annually for service in remote areas. Last year, we implemented what we call phase 2 of the connect America fund. That's basically entailed an offer of support to the large telephone companies and they could accept that offer or decline the offer. If they accepted the offer, then they are obligated to expand broadband to a defined number of locations in every state. In the three states that are part of the Pacific Northwest, the incumbents all accepted the offer. What that means is they are subject -- you have heard about this in the prior discussion. They have a six year period in which they have to build out service. They have a six year term through 2020 Eric in the first year, folks were focused on the planning aspects of it. They will be subject to interim deployment milestones. They will be reporting annual lead to the FCC on where they have spent the money and which locations now have service. They are subject to specific enforceable penalties if they don't actually meet those commitments. In the areas, and I know it is not relevant to this part of the country, but in the areas where the incumbent turned down the funding, the commission decided that the funding would be provided through a competitive process. As part of that competitive process, the commission decided a couple of years ago that it would include in that competitive eating process the extremely expensive areas to serve which were not part of that offer of support to the price calculators. We call those areas the remote areas. That is relevant to this tri-state region because in that competitive eating process, entities would be able to bid on the right to receive support to serve extremely high cost areas. In order to receive funding in this program, the recipient has to be what we call an eligible telecommunications carrier. To be an eligible telecommuters carrier or the acronym of UTC, you have to be designated by the state public utility commission or if the state lacks jurisdiction over that kind of provider designated by the FCC. This is a program that is specifically focused on the service providers. As I said, the larger companies are going to be

working in the years ahead to be building that out. As I said, the program provides support to the smaller telephone companies. The FCC is currently considered in order that will take a number of reforms for those smaller incumbent providers as well. The FCC is considering how to structure that competitive bidding process. Just from listening to the questions for most of this room, I realize that most of you are not incumbent telephone providers. You probably are wondering how to get access to that money. I think the most important thing is to work with service providers and consider whether you yourself could go through that process to become a designated as an eligible telecommunications provider. As I said, in the competitive bidding, if you are willing to become certified and become an eligible telecommute Acacia carrier, you would have access to the money. If you are not that kind of an entity if you are a community or an, it really is important to be working with existing entities in the area and helping to make the business case so that those areas can bid on support to build out the service in the areas that don't have it today. The second program I will talk about is the eRate program. You have heard various people previously today to talk about that. It is different. It is a program that specifically focuses on the subsidizing the cost of service to schools and libraries. Schools and libraries actually apply for funding and they apply every year. They have to go through a competitive bidding process to select their service provider. Eric the service providers are not required to be eligible telecommunications carriers. It can be any kind of a service provider. The FCC did two rulemaking proceedings to modernize the eRate program. In the first order, they created specific goals for what we wanted to achieve to increase connectivity for schools and libraries. It focused on how to increase connectivity within the schools and within libraries. In the second order, the commission focused on expanding access to funding. It raised the funding cap for the program. The cap had been \$2.4 billion annually. It raised the cap to \$3.9 billion. It also adopted a series of rules that would expand opportunities to get funding to build out fiber to connect the schools and connect the libraries. We have been busy at work in the last year putting the mechanical aspects of getting those rules underway. We are looking forward to that in the years ahead. The last programs are the rural health care program. That program was reformed in 2012 to create what we call the healthcare connect fund. There was a pre-existing program called the telecommunications program which has been subsidizing the cost of telecommunication services for eligible rural health care providers. The new healthcare connect fund provides funding for consortia and consortia can be comprised of urban and rural health care facilities as long as the majority of the members of the consortia are rural. The FCC did that building on a prior pilot program that had been put in place in 2006 which provided funding for consortia. The pilot program is still in place with some funding commitments still being dispersed. There are no new applicants for that pilot program, so I will not focus on that. Overall, the health care program in the last funding year provided about 200 million or so, about half of that was for the telecom program. About 100 million of it was for the new healthcare connect fund. That program is the only one of the programs that I have talked about that is for better or worse under utilized. It has a \$400 million hunting cap. There is room to grow. The FCC is implementing that healthcare connect program fully. Starting on January 1, 2014. There is room to grow. Like the eRate program, it is a yearly application process. The entities that apply for the funding are the healthcare facilities like the eRate program. They have to go through a competitive bidding process for service providers. They put in the application and they get a funding commitment. That lending been to phrase the cost of the

service that they are purchasing from the service provider. With that, I will stop and take questions or pass along.

>> A quick question about the rural health care program. What is the FCC's definition of rural X

>> I don't remember.

>> My point is that the government does not make it easy by having some sort of universal definition.

>> I know that there are probably -- I know for a fact that there is more than 20 definitions of rural in that whole funding program. Forgive me for not remembering the specific ones for the rural health care program. I could have answered what it is for the rural telecommunications carrier in the high-cost program. The point is that even within the universal service funding programs themselves, we have different definitions for one program versus another. It is very arcane.

>> That is something to be aware of.

>> Something else that I think that people get curious about when you talk about some of the universal service runs in the ability to build fiber in different parts of the program, are there rules with respect to dark fiber in that program? Are there ways that communities can use that to provide connections to carriers outside of the program?

>> The simple answer is that the connections that are funded by the eRate program only can be connections to schools and libraries. If a community wants to put together a broader project, then the cost of serving the non-schools and not a libraries have to be cost allocated out of the funding request so that the funding only will be provided through the program for the specific portion of the connection. For instance, if you are going to put together a project with 600 strands of fiber and only 20 of them that are going to schools and libraries, then it would be cost allocated so that the program is only going to be providing funding for the 20 strands of fiber and not the other 600. That is one of the things that we hear about a lot. Obviously, communities are interested in serving all of the anchors, not just a subset. We are subject to our overall statutory constraints because under the federal law of the earache program, we only can provide support to schools and libraries.

>> Karen is here to talk about some of the other opportunities that are available across the federal government. Maybe want to start with a little bit of background on the broadband opportunity Council and what happened there and go into some of the opportunities that came out of that.

>> Thank you so much. As you have heard a couple of times today, last year, President. Obama signed a presidential memorandum which created the broadband opportunity Council . HUD and USDA were some of the members of the Council. The FCC was also involved which was a

really interesting and intense process of working with these 25 different federal agencies to see where within their existing programs and regulations and policies they could make changes that would allow greater flexibility to support broadband deployment and adoption. I think that the real big win was recognizing across the board all 25 agencies that rock band is no longer just in the purview of an infrastructure play. It does impact healthcare delivery and education and workforce the relevant. While there was not a new funding and the caveat was that we were just told to look within the scope of existing programs, the agencies did a deep dive into how they could create more flexibility with in their programs. I would also say that the process also involved stakeholder input. We did a request for comment process. We got a lot of great insight from a tribal communities and schools and libraries. There were city governments and county governments. Was a real range of recommendations that came in the door to us and all the agencies took a look at the recommendations that were specific to their programs to see what they could do. The result was this report which is available on the web. You can find it at the NTIA website which details the 36 discrete actions that federal agencies omitted to taking. There was also more. There was a commitment that the agencies made to continue looking for ways to support more broadband deployment and adoption. Represented here between USDA and HUD are some of the largest programs that made changes. I think it is really remarkable to see what HUD did. I want to congratulate HUD and you and all of the work that you are doing. It is a significant pot of the new money -- not new money, but money that was given the flexibility or designation that these funds could now support broadband. There were some others that I think I am wearing my broadband opportunity Council had to talk about. Those agencies are not here today. One of them was the Treasury Department. They were represented on the broadband opportunity Council. They took a look at the new market tax credit. If you go to look at the November 2015 update to the new market tax credit guidelines, it specifies that broadband infrastructure and related expenses are now eligible. You would have to go -- there would be a community development entity that decides for the tax credit in communities that are low to moderate income. That is one new option which is created. A couple of other areas, DOJ through their justice assistance grants programs will be issuing guidance to specify that broadband is also an eligible expense. DOL is also going to be issuing guidance saying that you can use funds that are designated for the one-stop centers and those funds can be used for broadband connectivity purposes. There is a whole range of other actions, specific to funding that were made and outlined in the report. Agencies are continuing to look for opportunities to grant more flexibility to communities. I think the other thing that was done through the process was to find ways that communities could become more informed about their options and how to create those more compelling business cases and how to describe the state of their broadband connectivity and their communities. One of the things that NTIA committed to was the development of a community conductivity initiative, which you heard a little bit about today. We have a workshop tomorrow to go into more detail. One of the benefits of it is going to be giving communities the ability to look across their situation of conductivity and be able to make the case to a provider or in the case of HUD, one of the things that we are looking at doing is making sure that the criteria that goes into that conductivity initiative will also be able to check the box for fulfilling the requirements of the consolidated planning process. Those are a couple of areas that we touched on. I can talk more about some of the other changes that support broadband deployment, but I will let you get to more questions.

>> Why don't you do that after? I think we have a sophisticated audience. We are all used to this. We tend to speak in acronyms. I just want to make sure that DOJ is the Department of Justice. DOL is the department of labor. I did not catch anyone else. I do it all the time. I just want to make sure that everyone knows what we are talking about.

>> That is fair.

>> In addition to making funding clarifications, some of the other actions that the agencies are taking are still in progress. I would say that if you look at the report, you will notice that the action items have milestones that we are tracking. I will share a story from the process. As soon as the report was cleared, he sent a note around to some of us saying congratulations team, now you have to execute. That has always been top of mind. This is just a report. The hard work of getting all of the actions done is currently underway and is going to be underway. One of the areas that I think is a recent win, and we heard about recently from industry, in some of the EPA programs, the water sewer programs, some local governments while the trenches were open, they were being told that they could not at the same time lay down conduit. That came to our attention. We were able to elevate it within EPA here they were able to determine that it was essentially an urban myth. They issued clarifying guidance to all of their regions saying that there is no prohibition within EPA guidelines that will prohibit a local government from laying down conduit at the same time, as long as it does not interfere with other timelines that the governments may have had to agree to for those kinds of repairs. That is one example of a dig once policy and a success story of making the agency aware that there was a barrier. It was a perception, so it was a true barrier. They were able to issue this clarifying guidance. We expect that it won't continue to be a problem. If it is, we will need to do a better job of getting the word out. That is one example of a dig once policy that was issued that we hope will remove some of the barriers that were perceived out there. Another quick one, DOT and the Department of Interior are working hard to try to come to an agreement on how to streamline the process of permitting on the federal highways that also cross over federal lands. That is underway. Is not as simple as you might expect. They are working very hard at trying to find a solution to that problem, which will largely affect a lot of lands out in the West. Those are a couple of other examples.

>> Just to put a plug in for Karen and her team, if you are working with a federal funding stream, and there is something that you have a question about or you think that something should be an eligible cost and it is not clear or you are not clear if you can use dark fiber for leasing to your local carrier, that is what Karen does. Come into us and she will work with that agency. Her team will work with them to see if we can clear up those barriers or clear up any misunderstandings. I just want to make that an option for folks who may not have known that it is one of the things that we do at NTIA. We are working on it very closely. I have a few other questions for our panelists, and then I will turn it over to the group. Carol, can you tell us a little bit about the cycle time for the universal service programs and when they are opened up?

>> Sure. Both the eRate in rural health care program are a yearly application process. For both of those programs, they operate on a funding year that is July 1 through June 30. It is not the calendar or the federal government fiscal year. It is completely different for historical reasons. With the eRate program, there is what we call a funding window where applications have to be in a specified date. We are currently in that funding year window. The funding window typically happens -- it opens January or February and it closes in March or April. It is a specified time period. Because the demand exceeds the amount of money available, you have to file in the funding window in order to be considered. For the rural health care program, because it is never hit its funding cap, people can file for funding throughout the year knowing that they don't run in danger of getting shut out by other applications. For both of those programs, the school, the library, or the healthcare provider, they have to get bids from the service provider, put in an application to get the funding from the US at, and then they get a funding commitment. The funding is then dispersed. The funding is dispersed for that funding year. The connect America fund is completely different. Historically, it has been a stream of funding that you don't apply for. As I said, the vast majority of recipients were incumbent telephone companies. There have been all sorts of complicated rules as to how the funding is calculated. Under the current program for the larger carriers, it is a set amount of money. Same amount of money every month. They don't apply for it. They had the one-time opportunity to accept the funding stream for six years. They accept it or they decline. It is the same amount of money for the six-year period. When we go ahead and implement the competitive bidding process for the additional funding, it will be a one time bidding activity where people will say I am willing to serve the Samaria for this amount of support. -- Same area for this amount of support. Once we pick the winning bidder and the entity undergoes the post selection review process, then that entity will get the set amount of ending over a 10 year term. They won't have to apply again. It will be set for [Captioners transitioning]10 years.

>>

>> Can you tell us about the investments that you have in Washington state?

>> I made this mistake at Mountain View. I went through it a little too quickly. I see it all the time -- I feel like Ben Carson here. [laughter].

>> I wanted to talk about the \$6.8 million in rural America since 2009. I wanted to talk about the \$43 million was invested in the state of Washington since 2009 but we are going to run out of time.

>> Keep talking.

>> Our infrastructure program in the state of Washington week -- we get almost 74,000,000 distance-learning and telemedicine, or broadband initiative projects we get over 62 million. Those were our investments in Washington from 2009 two current.

>> Do you have a sense of what a successful grant looks like? Do you have any good tips? We can talk about this a little bit more during office hours tomorrow -- but just a general overview.

>> Everything you need to know about our to grant programs and or solicitation or notice of funds availability, it gives you all of the scoring of points in that sort of thing and we have changed our [Indiscernible] for distance-learning and telemedicine to include two special programs we have in USDA. Strikeforce and promise stones along with giving special emphasis points for tribal trust area. We have done very well in tribal areas with our grant programs the last few years. This year for our community connect program we had 68 applications for \$130 million and we were only able to give 50 words for a little bit more than \$11 million for of those words were in tribal areas. We received over 200 applications and were able to award about 69. When it comes to applying for grants you really need to make sure you are looking at what we are asking for in the notice and make sure you were talking about the need of the particular area. That's what it really comes down to. Unfortunately as I mentioned with the numbers we do not have enough resources to go around and we often get calls about were the programs but when you are ranking them we have to look at the needs and the poverty areas and the national school lunch program and were all laid out in the notice.

>> Laura, I have a question for you. You and Karen touched on this a little bit. One of the things that we have noticed in working with federal agencies is that the home office may come up with the policy and it does not always get out to the field. How do you work with your field offices to make sure that if the rule changes that they know about those MAR where so they can implement them in communities.

>> This morning I met with the Seattle field office to let them know about this initiative. We have within our department a broadband working Council so each office. I'm in the community planning development office. They are responsible for reaching out to counterparts in the field office across the country. -- The best way to communicate with the field office is the person that had so field office meets with their field office directors every other week. If there is something that is a new policy or in this case we are ready have these policies or are eligible but to remind them or say that you know specific clarity is providing we meet with them in a conference call and say this is coming up. We have these upcoming roles that we want you to be aware so when it gets out you will be familiar. I do want to make sure that everybody knows as far as the rulemaking process once a gets out there we will let everybody know is that you have a 60 day public comment period so the field offices will know this when it will hit the road and we let the stakeholders now in the field offices know what your concerns are and the best way of getting out the word is through every other week conference calls and we also have listserv that goes out to the field offices on a regular basis.

>> I can ask the same question of Keith actually. How'd he get new information that's the programs on your field offices?

>> Have broadband coordinator in each of our offices. We have a network of posting notices online and we have a good working relationship with all of our state offices and probably -- the

most is that we have a group of 25 -- we have one in each part and sometimes we have to states that they are responsible for making sure with things like Mario and our programs and we really are hands-on in that respect they live in the community, they work with the providers and I know what is on the ground.

>> Thank you.

>> Thank you for coming back to me.

>> I think you have heard enough from me and I want to turn it over to the audience for Q&A. If you have general questions or questions about this particular programs please ask them now.

>> I am Randall Harris. The question I have is if I am going to go after a community connect grant and you look at the footprint of the Indian nation and you use a broadband map and it says that there is a provider there and that provider does not provide that commit -- connection in general that connection is probably 2.4. How do I get past that heard all what I want to apply for that grant.

>> If you know for a fact that it is 2.4 we would consider that unserved. He would submit your application we would go through the process and Lincoln and if you had enough points we would make the award contingent on one of our general field representatives going out and doing a test. If we went out and it was 2.4 instead of 3.0 then you would not have anything to worry about. I would just say do your homework and submit your application. This program you can draw your own service area. We're not telling you what service area to drop. You dry yourself and when we go through all the ranking factors and all the points if you are selected than the last thing that we do before reinitiate the grant agreement as have somebody checks this beats.

>> This is sort of address to all of you. This is Steve Bradley near Portland Oregon. For programs that are trying to service families in poverty at all levels the big barriers we are running into is once again into the last people in this population, not only are they poor but they move a lot and they don't always speak English and there is lots and lots of other barriers to getting them to even apply for and maintain eligibility for the program. What are your agencies doing to kind of make the process so easy like once again eligible you get this tag or sticker that you can take with you anywhere and he will be able to get the services they need. [Indiscernible].

>> Okay well with head of -- with HUD that's what we do. With the grants that we award the go to the city or county or state they are the ones that decide how the funds will get to the actual individuals. They usually work with nonprofit organizations that serve the population or the public Housing Authority that automatically serves the population and or other head -- HUD assisted families. They may go from place to place but the housing choice voucher puts them in particular projects or wherever they are wanting to go. Once you are into the housing choice voucher program you are already deemed as being eligible and they work with the Housing Authority to get their services or whatever else they need. In the event of doing something like

a broadband it is easier as opposed to doing something with individuals that would be like an areawide benefit so whatever the service area is defined as long as 51% of the people that reside there are low to moderate income it serves the entire area even if you are above the low to moderate income you can still benefit just as long as 70% in general that get the services are low to moderate income that's all that matters that's been determined you don't have to do income verification or things like that areawide but if it is a clientele it's a little bit more involved but generally it is the nonprofit that is the entity that is responsible for ensuring that they meet the income requirements that if they are moving from place to place they would be able to get whatever services they get now including broadband but it is not the department that really works with that it is the grantee or the state.

>> For our programs it would be our partners. We talk about public-private partnerships earlier today and that is what we do. We don't put any fiber in the ground or any towers up or do any switches. What we do is invest in projects. People come to us with ideas for loans and grants. We would send our general field representatives out and make sure that whoever is getting a loan for us or a grant price was complying with limited English language proficiency. We have them come out to us -- we make sure that the programs we administer are open and transparent for everyone

>> I would add a slightly different twist as we work on digital inclusion strategies I think sometimes the answer is going back to the city sometimes has the closest connection and the city government that touches the populations or the English proficient populations are including a component of digital literacy into all of their programs. It is not like just one department's responsibility but rather it is the group that is working on signing folks up for healthcare are they upgrading digital literacy into that outreach. Are the library is aware of whatever benefits exist throughout the local permits. It's a bit of a both and whatever is happening at the federal level to make the policies consistent but it is also highly were working to make sure that the digital inclusion process is created.

>> If you have city that is interested in -- our colleague Amy is here today she is in the back and she is working with cities and communities on that issue specifically for technical assistance so please feel free to drop by and talk to her. She is also available officers tomorrow morning.

>> Carol did you have anything to add.

>> The FCC is going to be considering rule changes for the lifeline program at the end of the month and one of the areas of focus is how to improve the process of qualifying consumers for the lifeline program.

>> Thank you anyone else?

>> Any other questions?

>> I would like to make a plug for one of the things we did not talk about. NTIA and the National Science Foundation are putting together a research agenda so you should be looking out for that notice that will be coming out soon for a convening of academics and researchers and practitioners to try to look at where the remaining questions exist as far as deployment competition go and we are particularly interested in whether there are new policy recommendations that could come out of that process or where we need to push for greater understanding of the problems. Some of the questions you might have the you feel were not answered consider whether you would like to contribute to that process because that would be a really important voice to hear in that process.

>> I would say that I encourage anyone that had more detailed questions to come to office hours tomorrow to talk to Steve and Joe. We have people here from our state office that could talk to you about rural housing and business opportunities and broadband is a threat that connects all that. Do not miss an opportunity.

>> Office hours just so you know are at the old federal office building at 909 1st Avenue. If you are going to be there tomorrow from 9 to 10 that is when we are doing office hours with federal funding folks so Laura and Carol gracefully agreed to join us as well as the USDA staff and we will also have our technical assistance staff with Amy and John Williams available for this hours as well.

>> We have just a short amount of time left. I did not see any additional questions so let me just see if the panelists have any final things they want the panelists to now. -- The audience to know.

>> I would echo something that David Edelman said about the process that the Brad Wing opportunity Council went through at the federal level and the state level and local level together and the folks that are working on the water and sewer programs are thinking about broadband to make sure that the folks were working on community developments for opportunities that exist. So trying to find where the barriers are at the local level or state level or the federal level really within our purview. Take a look across the board at how you can integrate the thinking about broadband adoption and deployment.

>> With respect to the universal service we have been adjusting and fine-tuning various aspects of the universal service programs in the last five years on this administration that work is ongoing unlike some of my colleagues here in the federal government we do not have field offices in the states. I encourage you to reach out to me and my colleagues at the FCC directly. We do not have a presence in the state to educate us on particular challenges and barriers. That is how we learn what is going out there in the field. Please feel free to do that.

>> I would encourage like I said earlier if you are not already acquainted with your local community development -- community planning and development office or the field office in general to average to them and talk to them and get familiar and see what their funding processes and what funds are available and how they will spend their funds and get involved

with the plan process also to keep aware about some of the things we're doing I urge you to visit our head -- our hud.gov website. We also have an exchange website that every program in the department is on their and that's the best way to get on their mailing list so a new policies go out new regulations or anything that may be of interest you would be instantly notified and that is the best way we can communicate because we have thousands of grantees and the field offices are busy a lot of times but that is the best way of getting the information. We have field office in Seattle as well as Portland and we tried to communicate with them as often as possible but that is the best way to get our friends is to get them involved with our local grantees.

>> I would just say take a look at the broadband opportunity Council report specifically the USDA actions we have four really good actions in her that you may be able to take advantage of one is our facilities program which has some programs that we don't have that may be able to fund and we also have our rural business Cooperative service with industry loans that can be used for consulting and we also have our electric smart phone which can be made available for subsidiaries and they may not be able to take it all the way to the home but they may be able to get 16% of the way there -- 60% of the weather and we are also looking at rewriting or regulation which is out of date to give our administration and more flexibility and to provide broadband in rural areas.

>> I just want to note that most of the questions that we get with technical assistance is where is the money. I think you have a sense of the three biggest funders and the government as to where broadband funding can come from and some ideas where you can take back to your community. I just want to thank all of our panelists for joining us today. [applause] and thank you all.

>> L. We will just do a very good thank you I will say goodbye and then Doug from the and TIA is going to come up and on behalf of Century City I want to thank you for joining us and hanging in until the end of the day. If you would not mind to take a moment to give a hand to our speakers and panelists they did a great job.

>> A quick thank you to KeyBank to Google and Corning for funding today. I really appreciate the help. [applause] and I want to say thank you to all of the people that planned it at NTIA and Century City I want to chain -- thank Senator Cantwell's office and Senator Murray's office all of those folks contributed greatly to this process. I hope they have had the opportunity to network and you have found some opportunist -- information that will be helpful to you and you will be inspired by some of the stories you have heard today. There is some great work happening and one of the panels said you have to take that first step. You have to take the first step and I thought that was a very helpful way to think about it. If you are interested in joining next century cities it's at the bottom of the one pager. I can tell you what the processes I can tell you it does not cost anything to join but we would love to have your community work with us. Now I would like to turn this over to talking tough to say goodbye.

>> [applause] I just wanted to reiterate the comments to the staff. These things come off pretty well and we've had a lot of success but it's a team effort that goes on behind it -- the scenes so for the NTIA Mark Brown Joel Pandora Giselle and Amy if some of you are in the room -- [Indiscernible] say thank you to the team members that you behind the scenes work. I want to thank Chris Mitchell and boil and that for all the work you guys have done. Thank you very much.

>> [event concluded]