

### IIJA Broadband Programs Pre-NOFO Technical Assistance Webinar #3

Moderator: Evan Feinman

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Evan Feinman

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Alright, thank you very much everybody for joining us today. We are here to talk about the enabling conditions to make sure that y'all are really able to hit the ground running and make sure that you can administer these broadband programs very effectively. My name is Evan Feinman. I'm the Director of the BEAD program, which is one of the many broadband programs that was created as a result of the Infrastructure and Jobs Act. And we're really excited to get into it and talk about it with you. As you can see, I'm going to be offering you some opening remarks. I hope you feel welcome that's the purpose of these remarks. Then Amanda Martin Herrera is going to talk through some of the policies and mechanisms that you're going to need to have a good understanding of so that you can properly administer these programs. Asset mapping and overview from Geoff Jordan that's really important at the end of the day we're going to have to have a good understanding of where there is and isn't broadband infrastructure, so that we can build it where we need it. And then I'm going to be moderating some Q & A for you back at the end of it. So, you know that is the overall agenda that we want to discuss today and then moving forward, I just want to be really clear that this is first of all, not the last time you're going to hear from us. Far, far, far from it. We're going to lay out some of the things that both the state offices, as well as local governments are going to need to think about. So that you're ready to administer these programs or participate in the administration of these programs in a you know really powerful way that serves the needs of your state, territory, or community. Additionally, want to make sure that you're ready to absorb additional policy guidance that is going to come out from our office in mid-May. And so turning from there I'd love to hand it over to Amanda Martin who's going to walk you through some of the policies and mechanisms that you need to have a firm grasp of so that you can be as successful as possible. Thank you very much. Look forward to the Q & A at the end.

Amanda Herrera

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Good afternoon, my name is Amanda Herrera, and I'm a Telecommunications Policy Analyst within the Office of Internet Connectivity and Growth at NTIA. I'll be covering the policies and mechanisms section of today's webinar. Today's focus is on policies that can support faster broadband deployment. We're going to cover policies in three different areas. First, we're going to look at right away policies. Second, we're going to look at burry deployment and dig once policies. And finally, we'll look at areas deployment policies which include pole attachment issues and one touch make ready. It's important to remember that context is key. Well, the policies in this guide have been successful in many locations they're not universally applicable. States and localities should take into account their specific context and weigh the costs and benefits of each one of these approaches to make a decision that's best for each jurisdiction. First, turning to right away providers need an efficient and affordable way to access

rights way. Broadband networks are built along either public lands that run alongside roads and railways or private land and facilities, known as rights of way. For new broadband deployment providers need access to the rights of way and this process can be slow and costly. In order to help facilitate access to right of way, streamline policies are good ideas for local jurisdictions. Jurisdiction should consider policies that streamline right of way access so that they reduce deployment time and the cost of deployment. Jurisdictions and private land-owners grant providers easements to access the rights way. They also provide permits to providers or reach lease agreements with them to build broadband infrastructure along the right way. Jurisdictions looking to streamline right of way access can identify and alleviate bottlenecks and these processes, while ensuring safe construction practices. There are several benefits to the streamlining approach. First it can significantly reduce deployment time and cost. Second, it can simplify complicated permitting and increase local capacity to handle the permitting process. Finally, it can promote newer practices such as micro tune chain and small cell wireless facilities that when installed correctly can be faster and more affordable for providers. When designing right of way access policies, local jurisdictions should consider three things. Permitting, parameters, and excess capacity. First, jurisdiction should look at streamlining permitting and inspection. They should consider simplifying the number and complexity of permit applications and consider a one stop shop permitting process. They should offer expedited permitting for minimally invasive construction practices and put in place an e-permitting system. Second, local jurisdictions need to define parameters as it relates to right of way access, they should consider appropriate sizing and location of conduit small cells and other broadband infrastructure to ensure safety and durability. For example, many cities, including Los Angeles and New York define the parameters for micro trenching, which is the lower impact method that when done correctly can reduce construction costs and minimize disruptions. Finally, jurisdictions should consider whether to require excess capacity. This is where they would require excess capacity within the conduit to ensure that the installation of our future proof, meaning that they have the capacity to meet future needs. As jurisdictions are considering rights of way policy, there are several risk and other current considerations to look at. First is safety and durability. Safety measures avoid potential risks to workers, pedestrians, roadways, vehicles, and public services. Additionally, natural phenomenon, such as earthquakes or icy weather and other construction can damage poorly installed conduit and aerial facilities. Additionally, local jurisdictions should look at staffing and resources to handle the permitting process. Lack of staff is a common barrier that slows down the process. Jurisdictions should think realistically about staffing needs to prepare for IJA funding. As we all know, this is a historic investment and many different types of infrastructure and may increase the demands on permitting offices across multiple jurisdictions. Permitting offices can be self-sustaining with reasonable fees. Going to the next section, dig once policies can make burry deployment, more efficient and cost effective for providers. Buried deployment is where providers run cable underground for terrestrial broadband and fixed or mobile wireless backhaul along the rights of way. Historically, project owners have dug trenches each

time they have installed infrastructure or done maintenance. In order to help streamline this process, jurisdictions should consider dig once policies. Dig once refers to a range of policies that encourage installation of conduits for future use. Dig once policies encourage or require project owners to install multiple conduit or micro ducts or both for future use. This can apply to any type of construction, including telecom, transportation, utilities, that fall along the public rights of way, especially highways and roads. There are several benefits to dig once policies. First, it can reduce future costs by minimizing the need for future construction. Second, it can minimize disruption to services. For example, a road may only have to be closed once to allow access to trenches along the right of way versus multiple times when multiple providers are doing work. Third, it can take advantage of other IJA spending to help make investments in broadband. For dig once policies, local jurisdictions need to consider the mechanism and the cost of ownership of the conduit. In terms of implementation mechanism, there are two main ways the policies are implemented. First, it can be a legislative or it can be a legislative action or an ordinance. Typically, this mandates that dig once apply to all construction along the public rights of way. And it's more - because it's a mandate - it's more likely to ensure that the conduit gets installed. On the other side, another way to implement dig once policies are executive orders. Typically, the jurisdiction promotes public notice for upcoming work and providers choose to add conduit. Because this is more of an encouragement unless the mandate it's less likely to ensure that the content gets installed but does not require the legislative action of an actual law ordinance. One example of implementation of this is in North Carolina a 2019 executive order mandated dig once. Per state transportation projects, a provider may decide to install new conduit, in addition, they have to provide notice of joint trench opportunities, allowing other providers to negotiate a joint access agreement to also install conduit at the same time. Second, jurisdictions also need to consider the cost and the ownership of the conduit. Who is going to own the conduit and who pays for it? There are two main options. First, is that the jurisdiction can own the conduit itself, this involves more of a process on the part of the jurisdiction, but it also allows the jurisdiction to use that conduit or to lease it to providers. Another approach is for private entities to own the conduit. The jurisdiction role is more hands off, but it doesn't provide the same benefits of conduit ownership. An example of implementation is found in Illinois. The state passed legislation that requires state agencies to install conduit for state funded projects along state roads. The state pays for the conduit owns it and leases it to providers with market based non-discriminatory pricing. When looking at dig once policies jurisdictions should consider a few things. First, engineering design. The permitting agency can ensure that the conduit is X, that is accessible in the long term. For example, in pull boxes or manholes additionally the installation should allow access to other installed infrastructure should this be power lines and sanitation pipes. Your city should also consider the marginal cost increase for a non-broadband project. It does increase capital and installation time, although typically only a small amount in comparison to the overall project. For a project that is close to break-even point, this can impact project viability on the margins. Moving on to the next section of the presentation. Poll attachment policies and one touch

make ready can help streamline aerial deployment. This is where providers attach cables to utility poles along the right of way utility. Poles with multiple existing services such as telephone, electricity, cable, may benefit from policies that regulate pull attachments. In this section we're going to cover both general pole attachment policies and one touch make ready. Pole attachment policies regulate the process for providers to attach cables to utility poles. Pole attachment policies address rates, access requests, timelines, procedures to mediate disputes, and other terms for incumbent providers. Pole attachment policies influence operational expenses. For new attachers pole attachment policies can be a potential barrier to entry if they make a proposed project economically non-viable, particularly in an unserved rural area or delay the implementation timeline. There are benefits to having good pole attachment policies. First, this can reduce costs for new deployment. Jurisdictions can determine streamline attachment processes and reasonable rights working with all interested parties. Additionally, these policies can provide certainty consistent pole attachment policies provide clarity to the marketplace and allow relevant interested entities to incorporate this process into their long-term planning. It's important to note that the FCC regulates pole attachments in 30 states. Section 224 gives the FCC authority to regulate pole attachments. Those states can exempt themselves. 20 states and the district of Columbia, have done so. It's also important to note the FCC rules do not apply to cooperatives or municipalities. In 2019, the FCC adopted a one touch make ready policy that permits new attachers to elect one touch make ready process for simple, make ready wireline attachments in the communication space on a pole. Shortly we'll talk more about one touch make ready. Pole attachment policies and one touch make ready covered in this presentation applied to states that set their own pole attachment regulations, as well as any regulations that fall outside the FCC authority such as poles owned by cooperatives and municipalities. In looking at pole attachment policies local jurisdiction should consider regulatory authority and policy applicability. Under regulatory authority jurisdictions need to identify which entity, has the regulatory authority to create policies as it relates to pole attachments. There are several different options in this area. First the FCC could regulate the pole attachments or quasi-public agencies such as TBA. It could be a State Agency or a local authority or the pole owners themselves. For some examples of how the different regulatory authority works, we can look at the Tennessee Valley Authority which works to works with the FCC to set rates and other policies for broadband providers to attach two poles owned by local power companies within the TVA system. Illinois statute grants pole attachment authority to local governments and provide specific parameters in which they can operate, such as requiring permitting decisions within 45 days. In Idaho pole owners are in charge of reaching pole attachment agreements with attachers, but the state PUC will set rates, terms, and conditions and make ready costs when the parties cannot reach an agreement. Looking at applicability, jurisdiction should consider aligning policies for all owners, including municipal and cooperative utilities, and working with these groups to address their specific circumstances and needs. In looking at pole attachment policies, there are some risks and other considerations to look at. Economic impacts are important in this area. Jurisdictions should be aware of the economic impacts

on pole attachment policies on pole owners particularly in rural areas. Utility owners have to install more poles per customer and have smaller customer bases, on average, so they may rely more on pole attachment fees than an urban-areas. And to our last policy of the day for the section one touch make ready designates contractors to complete all make ready tasks, at the same time. Make ready is the logical and regulatory tasks needed to prepare utility poles for new cables. It can be an arduous, time-consuming process that slows deployment particularly and unserved areas. A one touch make ready policy designate one or more contractors to complete all make ready tasks, at the same time, rather than having the pole owner and each incumbent provider conduct their own make ready sequentially. There are several benefits to this type of policy. First it can reduce make ready costs for new attaches. The contractor conducts planning and adjust poles simultaneously. Second, it can avoid potential complications. It reduces the number of parties involved and empowers the contractor to make choices in the community's best interest. Finally, one touch make ready can support new market interest without one touch make ready logistical challenges and safety concerns can delay new attaches. When designing one touch make ready policies, consider the designated contractor and additional costs. Looking at the contractor jurisdictions or pole owners must determine the appropriate designated entity or entities to conduct the one touch make ready work. Several options include either the new attachers or a designated contractor under FCC rules. The new attacher can choose to request one touch make ready, and they are responsible for all make ready work. Other jurisdictions use a designated contractor and work with the pole owners and incumbent providers to develop a reasonable selection criteria for safety and competence. One example of application of this principle is in Hawaii in 2018 the Hawaii PUC approved a plan for Hawaii electric a local electric utility to take over ownership of roughly 120,000 jointly owned utility poles from Hawaii telecom, the state's incumbent local exchange carrier. While not officially a one touch make ready policy, the plan function similarly, in practice, as it removes one entity from the make ready process in order to make pole management, including new poll attachments more efficient. You're switching should also consider costs when looking at one touch make ready. New attachers typically pay make ready and negotiate additional cost with the relevant parties such as pre-existing safety violations and polar replacement costs. Jurisdictions should be aware that additional cost issues will likely arise.

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There are several considerations when looking at one touch make ready. First, safety and access. For utility Poles with multiple existing services, concerns over worker safety and service disruption often delayed projects. Though there's no civil silver bullet, one touch make ready can help avoid long delays. Additionally, jurisdiction should consider grid resilience. The IJA allocates funding for electric grid resiliency one touch make ready can maximize the impact of resiliency funding as a designated contract can pull more efficiently incorporate poll upgrades. And that brings us to the end of our policy and mechanism section of the presentation. I'll now turn things over to my colleague Jeff Jordan to handle asset mapping and management.

Geoff Jordan

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Thank you, Amanda. This is Geoff Jordan from the infrastructure division of OICG. Today I'd like to talk to you about asset mapping in management tools. Asset mapping and management is process collecting, organizing, and tracking, data of relevant infrastructure assets that can be used with broadband deployment. It's very important. It's going to significantly reduce your deployment costs. It's going to reduce the time to deployment. And most likely it's going to help you deliver government services better to constituents. The challenges, the biggest challenge with data mapping services - a lot of the information isn't publicly available. You can have to go get it and assemble it and it's going to be in a lot of different formats, different software programs, that people have collected over the years and a lot of it's going to be outdated and much of it might have to be digitized. And it's very difficult to you so it's good to take a significant effort to get it in place. Let's talk through why it's important and how you're going to do that. Okay, so what can these asset mapping do to accelerate your broadband deployment? First and foremost, you can leverage the IJA funding that's coming down. You can reduce deployment costs. You'll definitely be able to streamline your permitting process and right of way access issues. It'll help you with these construction programs that are going on not to disrupt your existing infrastructure, where those communications your other assets in the communities and also should improve your ability to reach your constituents and provide them government services down the pike. Okay, so what are those assets that you should be mapping considering mapping? First and foremost, is existing infrastructure for communications networks, whether those cable companies telcos. You should be able to map your existing conduit infrastructure. You should be mapping all of your right of way items, so that people can see where they can be building and should be building do the end do permitting little quicker. You should be mapping all your utility infrastructure, where the poles are and where pole attachments exist or where they don't exist or you've got room on those all attachments as well as your other infrastructure is there for community services, water, sewer, gas lines. You should be mapping your anchor institutions places inside the community where networking equipment can be housed and also some for the sake of wireless deployments should be mapping all of your tall infrastructures, so if we go back through that one by one. So be able to map all your existing network infrastructure and certainly all your conduits you should be able to work with those providers who are going to be building out these networks, and it should be able to see where they can leave some infrastructure, maybe run some dark fiber through some existing conduit systems, rather than having to rebuild or overbuild a lot of those networks. By mapping out all of the right of way, and all the right of way holders in areas should be able to accelerate the planning process so as you're building these networks people doing the planning process again, you can look at these rights of ways and see where that it's most efficient to start building out those networks into all the different communities. The anchor institutions it's very important, so people know where they can put their network equipment, where they can put some infrastructure in there. And

then, finally, of course, all the taller infrastructures that are publicly owned to privately owned should be mapped, including on these maps as well, so people that are planning on doing wireless infrastructure can easily see where that should go.

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Alright, so very importantly, as you do this process and start this process, you have to realize that you're working in the real the real world. One of the options you've got is to build an asset mapping system of capabilities. You're going to want to do this over one or several projects, rather than trying to do it all at once with one particular project. We will see as we go through this that asset mapping is not a one-time thing it's something you have to do, constantly and put your considerations as you do this. You have to understand, we have to anticipate whether this is going to be public information. Whether you're going to charge for this information, whether it's going to be a mix of public and private information. How interactive it's going to be so people could query this, people could download this, people can use this for planning purposes. It's going to want to integrate into multiple different GIS systems and multiple different software databases, so it can be shared and utilized by a variety of different people using a variety of different platforms to do this. It's very important also, as you as you start this project, that you put a guideline in place for people so that they know how you want to collect this information. What information you're collecting, what's the best way to manage this information. So you do want to create a guidebook for everybody to follow, so that you don't make the problem worse by using by getting different pieces of data in different formats that become either cumbersome to work with or impossible to work with. And then finally it's got to be something that you can update constantly and consistently and on a regular basis, so that as projects have finished the maps get updated as projects are ongoing. The maps get updated and then, as people do the planning for the next development project that information is available too.

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Some examples of what that might look like got three different layers here three different views of what some asset mapping might look like. On the left hand side you've got from Virginia a map of some vertical assets in place, water towers, tall buildings, other things, so you can see, and this database, by the way, should also include for the least who owns that particular infrastructure, whether it's on a municipality, whether it's private ownership, the county made on it. It's very important include that information so people know the contact people when they start doing the planning process. In the middle we've got Boston Massachusetts, this is a map of their underground conduit system, and one of the practices that Boston followed was whenever someone who was putting in conduit under the ground they had to put in multiple conduits that weren't owned by them, the city ended up taking ownership of, and then they leased to carriers down the road that we're trying to put in some additional fiber assets. And then Blacksburg, Virginia over on the right-hand side is a nice map of some existing infrastructure in place today both aerial and underground

fiber assets that are in place there. Okay, very, very importantly, how are you going to go about doing this, this is probably the most challenging thing you're ever going to do. But best practices would say that you should have one agency lead this entire effort be in charge of everything from deciding who can have access to the information. Someone that's going to be able to leverage the existing relationships you have with carriers and other asset owners in the area. Someone that can bring together all the different constituents and key stakeholders. In order to be able to communicate exactly what you want to do with this asset mapping tool and how the tools, going to be used. You should have a project team in place. You should map out exactly how you want to do software you're going to use, what resources, what assets you want to collect. Then you've got to go get buy in from everyone, from the key stakeholders, from the municipal government, from the county governments, whoever owns that particular infrastructure so that everyone agrees that that they're providing this and what terms of providing this information, how they're going to access and how they're going to use it. Some of that information is going to be proprietary. A lot of carriers and other people who don't want that information publicly accessible. So you can have to address the security concerns that they might have relative to their proprietary information. At all times you've got to clearly communicate to the people what you're doing how you're doing it, how the data collection is going to work, how the transfers going to work. And most importantly, not most important, very important, you have to listen to what everybody's saying. The people that home this particular infrastructure people that have this data that you're trying to collect are pretty good at understanding what data they have and how they're using that data might be a little bit resistant to change on how someone else is going to be using that data, so you can listen to those stakeholders. And then, once you've got all this information, you certainly have to make sure just putting it in a database and putting it in a system that makes it very easy for everybody to use. You've got to tag the physical assets, you've got a label absolutely everything in there, so that people could see it down the road. You can have to digitize a lot of the paper assets, you have. All that information needs to get into this database you use. And then you've got to work with software that everyone's going to have access to it's got to be something that's queryable that has to be something that downloadable. People have to be able to view it and they have to be able to print it. Part of the planning process, it requires that they'd be able to use the information in a real time basis, so you have to make it available to them.

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All right, so what are the benefits of doing all this? There's a lot of them but the key stakeholders have to be involved in all of this particular thing you've got to get the state governments. There they've got the rights of way information for the highway systems county and local governments have to be involved, since they have the right of ways plus they have public information. The county assessor's office has the information about ownership. And a lot of cases that alone, some of those underlying assets. And working with a dedicated broadband office at whatever level that might be whether that's state and municipalities. Working with them to get those people that buy into the process



as well. They could be huge. The providers, the cable companies, the telcos, those are the people that we really need relationships with in this process so you're really going to need those relationships. They have they own most of those network infrastructures and they're very good at understanding where their network is and very poor to understanding where other networks are. So you really need to get their buy in and get their help and getting that those networks put together that mapping pool put together. Then there's third party owners of things, whether that happens to be buildings, whether it happens to be a private right of way owner, whatever that might be, you've got to get their buy in as well so that you can get a really, really robust tool put in place for everybody. And that's it for today, I want to point out a couple other resources that are available to you. Homeland infrastructure foundation has website, you can go to use to find some of their best practice and, of course, the 811 call before you dig is there as well. Now we're ready for some question and answer so I'll turn it back over to Evan.

Evan Feinman

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Thanks a lot Jeff. That was really great. Amanda couldn't stay with us for the Q & A but you know we really appreciate her presentation as well. Y'all should take this opportunity, if you haven't already, to share some questions with us. But just right out of the gate, Jeff, why don't you talk a little bit about how jurisdictions might be able to specifically to address the question of: How broadband providers can get access to private rights of way, so you know it's easy to it's not easy, but it is more clearly approachable to talk about publicly controlled rights away, are there any best practices around private rights of way?

Geoff Jordan

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There's two different things right. So the first thing you want to do is, if you look like you're going to have to access a private right of way, you're going to want to pull the records database from the county. Find out who the land-owners are - that would be best first step. And then, if you plan on contacting them the best practice I've seen would carry in the carrier world and the private sector orders go out there and tell them what it is that you're trying to do, how long it's going to take and be really forthright with them about what you're trying to do in this particular example. I think you probably find that those right of way holders are pretty amenable. If it's a private right of way that were privately controlled right of way that's probably regulated perhaps utility that's got poles then you shouldn't want to go to the regulatory agency first and take a look at what the regs might say about terms of getting access to those rights of way.

Evan Feinman

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Thanks, and this should be a quick one but can NTIA help states identify qualified contractors to help with asset mapping?

Geoff Jordan

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Boy that's a really good question. I wish I had a really good answer for you, I think the first place I'd start with if a broadband office exists inside your state. that would be the first place I go and take a look. In the second place, and this might just be my own district I call a local University of some type of engineering school that's in there and see what type of programs they have for people that are for undergraduates or graduate level students that are doing mapping it's something that's very popular in universities today and I will take a look at that and see if you can find some resources on that route.

Evan Feinman

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That's great advice we were partnered with Virginia Tech when I was in the broadband office.

Geoff Jordan

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University is a great resource.

Evan Feinman

Next question is. Can asset mapping be used to discipline the size of grant requests under BEAD, for example, you know, could you use an asset map to show an ISP is asking for an unreasonably large grant or to otherwise negotiate that out? And I'm happy to respond to that for the BEAD program. Yes, is the short answer. The thing that we really want to make sure that we're doing is right sizing all of our bills. There are a lot of resources right now for infrastructure, but not so many that we can afford to be building where we don't need to. At a minimum we've got to make sure that we maintain the right amount of resources, I also want to be clear, though, that you know, there are a lot of best practices when it comes to the patient. Sorry, our mail just came, and that is my dog's nemesis every single day, and he is I think successfully shredded whatever we just got in any event. You want to be very clear that there are a lot of best practices once your state office is implementing it sub grantee routine around how to make sure that you've got the most up to date data. The FCC maps that come out are going to be a snapshot in time, they are not necessarily going to reflect conditions on the ground by the time states are granting out information. This is a great question Geoff, with respect to the asset data what's the best practice for dealing with the aging of data different stuff is going to come in at different times, and of course the underlying conditions are changing too?

Geoff Jordan

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Well there's that is a problem that's going to be really persistent through the life of this if you're creating a database that's going to be sustainable over the years, should you constantly be tackling this. The first thing you need to do is make sure to digitizing the correct assets. You're going to want to validate that the assets you're looking for are actually true for you're starting to import any of that particular data. Beyond that, I think, working with someone that's qualified to do this type of mapping to do that database conversion is that is the best practice you're going to find. But first and foremost, you have to validate that the assets are accurate. Old data isn't always correct data doesn't mean it's

wrong though, there's databases out there 20 year old five of those put in the ground or five or 20 years ago it's still there. Again, universities are the best bet.

Evan Feinman

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Next question is uh. Let me find it. Does this mean that NTIA will help match up BEAD funding, with the original NTIA Tribal broadband applications? In that original application, we were asked to put in for projects that would solve the problem for the long term, we were asked to put in design for what we needed to connect our villages and encouraged to applying consortia. All of our tribes have invested in this broadband application we haven't received anything yet. The short answer to that is yes. What we are certainly going to be doing is creating comprehensive state plans and so all of the different broadband programs under NTIA as well as any information related to previous federal expenditures in your state should get wrapped up into the state plan that your state broadband office is going to create. We're not going to leave you in the lurch on that. They're going to be NTIA staff working directly with each state broadband office to make sure that those plans are both comprehensive and forward looking and we're really excited about the opportunity to create plans that will address digital equity, access, and affordability for the entirety of a state, all in one go. The next question. Geoff back to you, are there any best practices on data ownership should the state own the data or allow a mapping vendor down the data in a long term?

Geoff Jordan

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Well I'd be partial to the state owning the data, but the most important thing you can do is make sure that you've got a tool it's interactive that everybody can use, but where possible the state owning that particular data makes a lot more sense. You need to be able to put controls on this data as well if you're collecting data from private organization, especially cares who might not be in the wholesale business you don't necessarily want competition and other assets are you going to want to put layers of protection around that and, since this is a program that you're essentially driving you're I think you're going to want to take ownership of that particular.

Evan Feinman

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Yeah, I would tend to agree a next question is. Can you talk about how providers could be the most useful to local jurisdictions as they're looking at policies that support faster broadband deployment?

Geoff Jordan

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Well sure that you know carriers are, many carriers, especially in a more urban environment and really well schooled very adept at getting access out their fiber. You know fiber to the home might be a new concept or less 15 years but getting fiber tall buildings, has been around for 30 years and many the carriers that are operating those urban environments are pretty adept at all the things that need to happen in a particular sequence, about the planning process to getting that work done so partnering with them on how to rapidly deploy

network, even outside the urban areas in the other areas, probably going to be a pretty good asset for you. I know, there was a question in there about how to get carriers to cooperate, in this particular instance and I think if you just took a look at what the infrastructure access trying to accomplish and will accomplish I think that's the best argument you have for carriers that network is going to be expanded it's going to go everywhere it's going to the homes. Of I don't know Even can give us a pretty good estimate of how many homes are going to get connected through these programs, but I think the best angle to attack those carriers, is to explain to them how much network is going to get deployed. That you are, you are going to make sure that it gets done and I think they're happy to cooperate if somebody is helping them that someone's going to be funding the deployment of this network. They will you know for them cost avoidance is a very big thing being able to access other pieces of network that aren't theirs today is a very big deal for them. There's a lot of money that you save for these carriers and a lot of reach that they can go, so the angle, I would take a very economically driven approach with the carriers to get them to cooperate, and I think, by and large you'll find them pretty receptive.

Evan Feinman

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To that, I would add, you know the clear mandate of the programs is to get all Americans access to broadband infrastructure and so as a result if there's a question about whether or not a place is served we're going to err on the side of building service to it, to ensure that at the end of the day, the goal has been met. That creates a very clear financial incentive if there's in fact already network being provided to that location for the carrier's to, you know that they'd prefer not to have publicly subsidized competition right, so you know what I would do is create in your sub grantee programs at the state level, an opportunity for which is you know, to the benefit of the carrier's for them to share with the state broadband office exactly where their networks are and aren't in a shielded from a public fashion so you know whatever amendments you have to make to your Freedom of Information Act for proprietary trade secrets, so that we can build the networks, right up to the edges and you know these edges are not clean right. You know they are very unusually shaped network designs and so to ensure a comprehensivity, we've got to make sure that we get everywhere. Next question. How can broadband access prevent exclusion of a single resident? I don't exactly what you mean, but what I would say, is there a lot of really strong validation techniques that you can use to ensure that within a given project area you're getting to universal coverage. One of the best things that we're going to have coming out from FCC is this location based map that was built off of you know what's been termed a fabric which is really kind of a mixture of GIS data and satellite imagery to really create a very thorough cataloging of every location that could be receiving service. So when those FCC maps come out you're definitely going to want to engage pretty aggressively as a state and as a local government, as well as other interested parties, to ensure that those maps are accurate as possible because that's the baseline from which will begin to design networks to solve the rest of the problem Geoff anything to add?

Geoff Jordan

00:44:57.990 --> 00:44:58.980

No, I think that's great.

Evan Feinman

00:45:01.290 --> 00:45:09.150

The next, how are we planning for the future of broadband with new technology emerging every day, how can we ensure this is not a last investment over the next 30 years?

Geoff Jordan

00:45:13.290 --> 00:45:19.590

Well, if you're talking about the network infrastructure itself that is Evan just said, the fiber last as long as you know carriers are pretty good at in engineering firms are really good about making sure that the equipment that you're deploying to them has a path to upgrade. I would certainly speak with all of the network equipment providers and talk to them about what the future looks like. You certainly don't want to go out the gate with something that's going to be that's going to be obsolete by the time it gets deployed. So working with the equipment operators, whether those are routing switching companies and making sure that you've got the right technology deployed in there, as the best path to great.

Evan Feinman

00:45:58.740 --> 00:45:59.010

And to that I'd also add a most of the all of the technologies that are seriously being contemplated at this point, are technologies that can really aggressively scale their offerings at a per location basis. If you've got a fiber to the home connection the usage of that connection, that you are doing right now, relative to the usage that at you know higher levels of service, you could be using is a pretty distant gap. Most people even with multiple users and a household are not even hitting 100 megabits per second and you know most fiber networks can go over a gig at a per location basis. Similarly wireless and satellite technology is continually improving you know they have more limited use cases, but you know they're more flexible, and so you know that situation by situation, but every single year those technologies, improve and people will be able to trade out equipment as it depreciates and add more. So this is a good question are there, best practices for getting access to privately on property for projects in places like mobile home parks, or public housing, where owners are not always ready to grant access. This is especially essential for publicly funded projects to be deployed in low income communities.

Geoff Jordan

00:47:20.820 --> 00:47:27.240

I don't have a best practice for that I really don't I know the challenge that you're discussing it is difficult.

Evan Feinman

00:47:30.930 --> 00:47:31.980

I mean what I would say.

Geoff Jordan

00:47:32.040 --> 00:47:35.730

Turning the citizens on that might be your best approach turning the users on might be a good approach, so I think that's always a good angle.

Evan Feinman

00:47:40.110 --> 00:47:43.950

You know I also think you, should take those on in sort of two different categories.

The publicly owned housing ought not be an obstacle in this context right, I mean if a local authorities opposed to provision of broadband service to their residents that's something that I would escalate up the political chain, and you know, at some point that'll come to resolution and certainly, let us know we're happy to come in and see what we can do to help solve that problem. As regards privately owned like a mobile home park, you know, one would imagine there'd be interest on the part of the ownership to improve the amenities. If, on the other hand, there's not unless it's a really quite large mobile home park if you can get up to the edge of it, you ought to be able to project a wireless signal into the parks, such that park residents, would be able to take service, you know it would be hard for me to imagine a mobile home park that was sufficiently large to outpace that approach, if you weren't able to do it. Next is, can you talk about the anticipated required processes for states to select builder operator sub grantees, sole-sourcing, competitive bidding? Yeah, happy to talk about that a couple of things. One there are going to be some clear guidelines that are going to come out in the notice funding opportunities that will be released next month. Two you need to look at your state procurement laws and make sure that you're compliant with them. Three you want to make sure that you don't have all your eggs in one basket. I think it is very much a best practice to do many, many smaller you know county sized or metro area sized projects as opposed to single contracts to try to cover your whole state. Both because those contracts tend to wind up being those they turn into huge procurements with tremendous amounts of legal documentation those tend to be inflexible once you meet challenges on the ground. And again, you created a single point of failure, where if you're building out multiple different projects, you know if one of them goes belly up that's okay you've still got 95 96% of your projects on track and you can come back and fix that last one. The other thing I would say is you definitely want to be competitive to the greatest extent you can, and I think a competitive grant program is a is a stronger model than a reverse auction model, but both of them can work provided you put strong enough guard rails around each of them. Sole sourcing I'd be very nervous about. I don't think that's a best practice really in any procurement or purchasing of services context, we are not in a universe in the United States, where there are a very limited universe of people who can be ISPs it's just the opposite there, were a rather large number of providers.

Next, rural cooperatives connect 90% of the rural population own infrastructure across 90% of US landmass with the BEAD program primarily meant for rural areas and with more funds available under grid stability from DOE electric cooperatives get preference when building fiber to the home networks. You know I'm not going to get into the specific scoring criteria, ahead of the notice funding opportunity coming out.

You know I will tell you that electric cooperatives are really key partners in this endeavor. We could not have gotten the job done in Virginia that we did

without the cooperatives and there's no universe where this program doesn't spend a tremendous amount of its time and energy working with our partners in the cooperative space, and I think finding synergies between grid modernization efforts and broadband deployment makes all the sense in the world, especially since so much of grid mod requires the creation of communication networks within the electrical grid, to begin with. We actually changed the regulatory posture of our investor owned utilities in Virginia specifically to allow them to take advantage of that opportunity. You know, they were governed on a least cost model that makes sense when you've got government created monopolies. But in this instance, the idea that you would prevent somebody who was already pulling fiber into an unserved region.

From while it's more technically complex in this pulling a thicker cable, as opposed to a thinner cable and leasing that excess capacity made no sense and that's been a hugely important policy change for us.

Next question what level of data will be needed to successfully prove which areas are served, unserved, or underserved, when faced with challenges from ISPs are contradictory data from federal or state maps? Again, I like a little bit you guys try to peek under the hood of the notice funding opportunities and other guidance documents. Ultimately, every single state is in a different posture and we are going to have to sort out on a state by state level how we're going to validate and ultimately make calls about what is a served location what's an underserved location and what's an unserved location. Those are there's a good reason we have the model that we have, which is that we're setting very, very wide guidelines at the federal level. And then we're pushing a ton of support and we're offering a lot of flexibility to state offices, so that states in partnership with localities and regions are going to be able to make these calls on their own. Ultimately, as I said at the outset, you know we're going to err if there's a good question about whether or not a place is served by infrastructure, we got to err on the side of serving it. We simply cannot, at the end of this project have remaining unserved Americans. That should have ended a long time ago and the time for there to be Americans who can't get online must end at the conclusion of this project.

Um let me see what else we've got. As a provider I'm hesitant to provide any public entity, the details of how my network is configured and what equipment, I have deployed such proprietary information is exploitable by a competitor and yet the whole program is keyed off accurate maps, what are the best practices to ensure that this data remain right there? Well, so you know I'll share with you what we did in Virginia, which ultimately passed muster at least well enough with our partners in the telecom industry, which was we amended our freedom of our state Freedom of Information Act specifically to exclude a network data related to anything having to do with the challenge processes. And so what that allowed us to do was really get down to the location specific information with our providers to validate and you know they needed to submit a signed affidavit saying the information we're submitting you is accurate under penalty law. And then we got to look under the hood and see exactly where they had networking and where they didn't and we kept that secret. You know,

and I think that that is a best practice for broadband offices in the absence of that. You're going to want to figure out ways to communicate within this context where you have service and where you don't so you don't get overbuilt. I would also remind you that there are bright line edges to what's a publicly control document and what's not, and so there were instances, prior to our FOIA amendments in which people came in shared information with us. But then took that information away with them, such that we were never in possession of any documents that would have been subject to FOIA that's a that's a work around. That is a clunky work around and not one I encourage it, you know, but certainly the best practice is to simply permit the sharing of this information in a way that doesn't expose it to the public.

Since FCC is only requiring providers give the location and their highest advertised speed be which will never be an affordable option for residential connection when the new FCC map comes out, it will still be very flawed what can stay through the contest these flawed maps? As I said, there's going to be a challenge process. There are going to be multiple challenge processing there's going to be a challenge process related to the FCC map and then there will be future challenges related to deployment plans and maps that will be put forward by the state, broadband office. There are also going to be rules, and you know you can look at the broad strokes in the statute around affordable service provision, and you know we're working on those rules right now.

For the BEAD program or their federal requirements for building open access networks? You know, again I don't want to jump out ahead of the release of the notice funding opportunity. There is a dedicated Middle Mile Program created by the IIJA. Certainly, a best practice when you're making a Middle Mile Program is for it to be open access that does not mean it has to be their circumstances in which middle mile networks that are you know fully subscribed prior to their build can still be really valuable. But you know when you're approaching a middle mile build I think you should certainly start from the posture that open access is the right approach for a middle mile build and then move into a special circumstance if you're if you're already there Jeff do you have any thoughts on that.

Geoff Jordan

00:57:26.730 --> 00:57:28.680

Geoff Jordan: No, I think that's it. No.

Evan Feinman

00:57:30.810 --> 00:57:38.430

Fair enough. Will there be any special consideration for historically low-income communities within urban areas, even if they are served? Yes, so consideration for any marginalized group is going to be an important factor when we're building all these networks out. There is both a dedicated digital equity program that's within NTIA that will also be going live on, or about the time that the BEAD program goes live. You so you guys should stay tuned for that. It's also worth noting that the BEAD program has a prioritization function contained within it, such that you could imagine these as buckets that need to get filled up, at which point any additional resources spill into the next bucket. First



unserved people must be served. Second underserved locations must be brought up to what we would consider modern broadband speeds. At that point, if there are resources leftover and our belief is that in many, many, many states, there will still be very significant resources left over. At that point, states will be able to turn to community anchor institutions and other digital equity and affordability type programs with their BEAD funds and the degree to which that's going to be a part of a state's plan has a lot to do with how much money they're going to get in the ultimate allocation. As well as what their current service population is and that the costs of getting those unserved and underserved folks service.

The FCC announced this week that the detailed broadband data will be built this fall 2020 so the current FCC 477 data is still the old data which will solve accuracy issues. We consistently refer to the new FCC map, so they won't happen until the fall what are alternatives? What I would tell you is based on everything I'm seeing the FCC is going to put out a very good map not based on the 477 now. That said, that takes time. There's simply is not, it is a you know, with all due respect to our colleagues at FCC. You know their prior maps are not very good, and so they didn't have a head start from a tough place building this location-based data and that what that means is: building a new map on this fabric is just a tremendous undertaking and they're going to do their very best and then we're going to count on providers, localities, and states, to further refine that map. In the interim, what I would tell you is not knowing the precisely where the shorelines are on what our otherwise vast oceans should not prevent planning for how to enter in those areas states and localities should have a bias toward action, you know that there are hundreds of thousands of locations in your communities that currently don't have access that won't have access absent government intervention. I would start making the broad strokes of plans to get service out to those folks recognizing that we can refine those plans as we get closer to deployment. Geoff do you have any other thoughts about how states don't.

Geoff Jordan

01:01:02.760 --> 01:01:05.400

I think your last point was the best one. Don't get bogged down on trying to sort out some of these details when people in the state offices have a really good sense for where you need to hit the mark for 80% of the constituents and residents of the other 20% take a little bit more time to sort through with mapping that's great you've got time to do that, but don't get bogged down don't get wrapped around the axle on something like that. Know some of your areas that might be a little bit different than might be more than ours, but I think you know where your communities need to be served should be a good sense.

Evan Feinman

01:01:44.550 --> 01:01:47.190

Yeah. I agree next question. Underserved is defined as 100 over 20 so let's just get in that. So you're unserved if you're below 25 three your underserved if you're between 25 three and 120. So that's the super short answer and then you know what we're going to need to do is get every single location over 100

over 20 and that's the goal of the program. I do not see any other questions so Geoff, do you have any concluding remarks and if any more come in we'll address them.

Geoff Jordan

01:02:20.880 --> 01:02:22.920

know that was it I thank everyone for the time. We're here to help that should be a key message we're here to help you get through this.

Evan Feinman

01:02:29.130 --> 01:02:35.550

We very much are. Are the tribal applications being reviewed within the context of plans? Yep just we're going to create a holistic plan. Our colleagues in the tribal program have gotten out ahead of the rest of us, but that tribal network is still network and tribal lands are still lands within the borders of a state, for all that their sovereign and the state plans will be holistic approaches to getting every single person access to the Internet. So thank you guys very much this is far, far far far, far from the last you're going to hear from us, are going to be quite tired of all of the different times we're going to yammer you over the screen, but please stay in touch if we didn't answer your question, you know I'm sorry. But you know reach out directly and we'll help you work it out. I also want to remind everyone that we are in the process right now of hiring NTIA staff who will be in the various states, and so you will have a direct point of contact for your state on our team who will be able to field all these questions and support all your work. It is hard to find great people in every state if you know of somebody who's the right person for that gig please send them our way. But otherwise we're hiring them as fast as we possibly can, and I look forward to introducing all of y'all to them and myself getting to meet all of them, so thank you very much for joining us today, and we look forward to seeing you again at forthcoming webinars. Bye guys.