NWX-DOC-NTIA-OTIA-(US)

Moderator: Lynn Chadwick
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Coordinator: Good afternoon, and thank you for standing by. And welcome to the Leveraging National Data to Jumpstart Your Broadband Plan.

Your lines are in a listen-only mode until the question-and-answer session of today's conference. At that time, you may press Star, followed by the Number one to ask a question.

Today's call is being recorded. If you have any objections, please disconnect at this time. I would now like to turn the call over to your host today, (Karen Perry). Thank you, you may begin.

(Karen Archer Perry): Thank you for joining us today for BroadbandUSA's Practical Conversations about Broadband. It's a monthly Webinar series on topics of interest to policymakers, decision makers, practitioners and consumers.

I'm very excited for our topic today, which is Leveraging National Data to Jumpstart Your Broadband Plan. As I have learned more about the data that is available on a Federal level about broadband deployment, availability, consumer needs on computers and the Internet, I've been very impressed that

we have some excellent data sets, but I've also noticed that sometimes I have trouble finding exactly the right information.

And I have had a wonderful pleasure and benefit in being able to work with three experts in the field of data collection, data analysis and data management and been able to learn much more about how to capture the data that's there and use it as a platform to start local conversations about broadband.

So, I'm really pleased to bring three experts to the table to tell you each to tell you a little bit more of the data sets that they're very close with, as well as answer your questions and kind of give that platform of understanding the data better to you.

I'm also joined by a Co-Moderator, (Emy Tseng), from our BroadbandUSA team. (Emy) has got an awful lot of field experience of working with people in data and program planning and development, and she is going to be moderating questions and bringing your voice into the conversation.

Before we get started, I'd like to introduce you to (Rafi Goldberg), who is a policy analyst at NTIA, (Steven Rosenberg), the Chief Data Officer for the Federal Communications Commission, and (Bob Ballance), who is a Presidential Innovation Fellow, and he is the Lead Architect for the Broadband Connectivity Initiative that we're building here at BroadbandUSA.

I'm going to ask them each to introduce themselves and give you just a little bit of background on what they do, and then (Rafi) is going to open it up by talking about the data set that he has been managing for a number of years. (Rafi)?

(Rafi Goldberg): Great. Well, thank you, (Karen). I'm (Rafi Goldberg), and I work in the Policy Office here at NTIA. I am fortunate to have a very broad portfolio here, and I've had a chance to contribute to our thinking on a wide range of issues, from intellectual property online to net neutrality.

You know, but of course one of my favorite projects — and which I'm going to be talking about today — has been running NTIA's Computer and Internet Use research efforts for the last few years.

(Karen Archer Perry): (Steve)?

(Steven Rosenberg): I'm (Steven Rosenberg). I'm the Chief Data Officer at the Wireline Competition Bureau at the FCC, as (Karen) said. I also have a long list of things that I do, but most of my time is devoted to broadband data: the collection of the data for the Commission, and the application of those data to policy, including Universal Service Fund programs and the Commission's Broadband Progress Report to Congress each year.

(Karen Archer Perry): (Bob)?

(Robert Balance): Thanks, (Karen). This is (Bob Balance). I'm a Presidential Innovation Fellow, and I'm working right now full-time with NTIA and BroadbandUSA on the Broadband Community Initiative application.

I had the pleasure of really being a client of (Rafi)'s and (Steve)'s. They're providing a lot of data sets. And we're endeavoring in our work to make sure that that data is localized to your city, your county — to make it really relevant to you.

I like the quote from (Penny Pritzker), who has just retired from Secretary of Commerce, who said, "Nobody really cares about the average temperature in America. What you want to know is, 'What's it like in my town?'"

And so, I'll be talking a little bit about how we use the data and how we're going to apply it in the tool.

(Karen Archer Perry): And (Emy)?

(Emy Tseng): Sure. I'm (Emy Tseng), and I'm a colleague of (Karen) at BroadbandUSA. My work focus is on technical assistance, where I offer (technical) assistance and advice to a number of communities across the country on their digital inclusion and broadband adoption plans.

I'm also an affiliate and former Fellow of the Burkman Klein Center for Internet and Society at Harvard.

(Karen Archer Perry): Thank you very much. And I'm (Karen Archer Perry). I have the pleasure of being able to work with this team. And we are creating a new broadband planning framework for communities called the BroadbandUSA Connectivity Initiative. That online tool will go into the field later this spring for our initial users. And we'll be telling you more about that at a later Webinar.

But here we really wanted to kind of get under the surface, and really geek out on the data, and tell you what we've learned, and give you some more tools so that you can get it yourself and use it for whatever is meaningful and important in your community. (Rafi)? Start us off.

(Rafi Goldberg): Great. Thank you. Well, hopefully, you can all see the slides, and I'm really excited today to be talking about NTIA's Computer and Internet Use research

efforts. And what's great about this area is that we at NTIA, we get to actively contribute to data-driven policy analysis, having sponsored, designed and analyzed data from the nation's longest-running and most robust survey of Computer and Internet Use in partnership with the Census Bureau.

So, for those of you who may be new to our survey data, let's quickly go over some basics. NTIA periodically commissions a Supplement to the Census Bureau's Current Population Survey, also known as the CPS.

I'm going to be spending most of my time today talking about NTIA's CPS Supplement, because that's where we do most of our work, but I will also touch on the second new resource of some Federal data on Computer and Internet Use from the American Community Survey, also known as the ACS, because we love acronyms.

So, the CPS is the official source of some of the nation's labor force statistics, including the national unemployment rate that you hear about every month. Each month, the Census Bureau surveys over 50,000 households around the country, asking about 120,000 individuals, ages 3 and older, who live in those households.

It's one of the largest surveys in the United States, and the large sample size enables data users to calculate reliable estimates — not just a the national level, but also for individuals, States and arrange a demographic breakouts, including race, educational attainment, family income, disability status and a number of other breakouts.

In addition to being a very large survey, the CPS is also one of the longest-running surveys out there. It actually has its roots in a WPA project from the 1930s during the Great Depression, and it has been administered by the

Census Bureau since 1942. It's been in the field every month for seven decades, run by some of the best statisticians and survey design experts in the world.

Over this time, the Census has conducted around 40 million interviews. So, at this point they definitely know what they're doing. In fact, the CPS gets one of the highest response rates of any voluntary survey in the world, averaging between 85 and 90% of the contacted households.

So, that's all great, but how do Computer and Internet Use figure into a survey about unemployment? Well, the Census allows other agencies to sponsor Supplementary questions to be asked at the end of the CPS, enabling them to leverage the CPS infrastructure to learn about a range of topics such as (truth) security, voter turnout, even tobacco use.

NTIA first commissioned the Computer and Internet Use Supplement back in 1994. But actually, data collection in this area goes back a whole decade before that, when the Department of Education asked about computer use in some of its school enrollment Supplements in the 1980s.

NTIA has sponsored 13 Computer and Internet Use Supplements so far. And our 14th edition, slated for November, 2017, is currently under development. And we've used the resulting data sets in some important studies on the digital divide and other important challenges in this field.

So, what data do we collect? Our surveys have evolved a lot over time, but in general we ask what kinds of computing devices people use, whether and where they use the Internet, what types of Internet connections are used by a household to get online — so, you know, whether it's a Wireline connection

like cable or DSL, or a satellite or mobile broadband. And also, what people do once they're actually using the Internet.

We also ask households not reporting Internet use about why they don't go online. In recent surveys, we've been able to ask over 50 questions. So, it's a very extensive data collection. I've put up a few examples on-screen, each from a different section of our most recent survey.

One thing that's important to note here is that while the CPS is a survey of households, many CPS questions ask about each individual within the household. So, as a result, we're able to gather data on both households and people.

For example, we know what proportion of households say that they use satellite Internet service at home. And we also know how many people in America use the Internet from home. So, it's always important to keep the universe for a particular question in mind.

Now, you may be thinking 50 questions times 120,000 people makes for a fairly large data set, so how do we actually use it? And in fact, the data sets produced by the Census Bureau are quite large, can only be opened with a statistical software, and area best employed after reading hundreds of pages of technical documentation.

This sounds like a lot of fun to some of us — myself certainly included — but it's not the most successful solution for everyone. Historically, the answer had been for NTIA to produce lengthy in-depth reports with their own analyses of the survey results.

It was a great way to show off our own research and enable people to learn a lot about the state of Computer and Internet Use without poring through large data sets or writing code.

This worked well in a lot of ways, but it didn't address the needs of anyone looking for data points we didn't happen to discuss in a particular report. And it also left those researchers who actually wanted to make use of our raw data sets on their own to figure it out.

So, with that in mind, a few years ago, we set out to modernize how we report on our data. And in October of 2015, we launched NTIA Data Central. With Data Central, we're aiming to serve three different types of data user.

For anyone looking to read about NTIA's own research using these data, we created the Digital Nation Blog. This way, rather than waiting until we've completed an entire report, we now publish our analyses in blog format as they're ready, so we get them out to the public much more quickly than before.

But of course, sometimes our users want to explore the data on their own; perhaps find some numbers that we haven't touched on in our own work. For them we've created Data Explorer, a fantastic visualization tool that's really easy to use and that I'll demo in a moment.

You can use Data Explorer to track dozens of different metrics over time, and break them down by demographics and even on state-by-state maps. Data Explorer is powered by a spreadsheet of precomputed statistics that contains over 95,000 numbers. So, there's a lot to explore.

And finally, for those who have access to statistical analysis software and want to use our data sets in original studies, we have the Research Center. In the Research Center, we have all of our data sets available for download in multiple formats, lots of technical documentation, and even sample code that shows how we produce the statistics we use in every block test.

So, let's take a quick look at Data Central, which I'm going to pull up onscreen now. And let me just get it on here. All right. Minor technical difficulty — there we go. So, you can also find it yourself by going to NTIA-dot-D-O-C-slash data, or else clicking Data Central in the left navigation bar anywhere on the NTIA Web site.

And you'll see right at the top here are links to the three areas that I just mentioned. (Unintelligible) first, check out the Digital Nation Blog. Our most recent post — which has my photo on it — talks about our next survey, which is slated for this coming November.

If we scroll down a bit, you will see we've covered a wide range of topics when analyzing data from the 2015 CPS Supplement, such as the Rural/Urban Divide, the Internet of Things, and Privacy and Security Concerns. There's a lot of great concepts in there. The Blog is pretty self-explanatory, and I'd encourage anyone to read some of the posts to get a better idea of how we use these data.

So, next, I'm actually going to go to the Research Center, because I want to save the coolest demo for last. There's a lot of text in this section, but if you're a researcher looking to use our raw data sets, that's actually, exactly what you need.

We have links to download all of our data sets in multiple formats along with technical documentation, and we actually post the code behind our Digital Nation Blogposts as examples of how to use our data sets. And this is what some of our code actually looks like. Don't worry if you don't understand what it means.

Finally, the most exciting part of Data Central is our Data Explorer tool. We launched this a little over a year ago, and we're already on the second major version of it. We developed it completely in-house at NTIA, and one of our IT professionals wrote all of the code. And this is what it looks like.

When you first open Data Explorer, you will see this great-looking map showing Internet Use by State with a table underneath it. And there's a lot you can do here with just a few simple controls.

This menu near the top here shows the dozens of metrics that we're tracking over time in the Summary spreadsheet. For example, if you want to look at tablet use, just click here, and the map automatically changes to reflect tablet use by State.

Or we could also go down here and – sorry – and track the decline of dial-up use over time. Which at this point, thankfully for all of us, is very low in every state.

The display instantly changes based on what you're looking at. You can also select a different data set — let's see what it was like in 2007 — to see what the country looks like during past years. And the best part — let's start at the beginning — if you click the play button here, you get an animation of how the country has changed over time.

And as cool as this is, we're actually not just limited to maps. If you click the chart button at the top left here, you will instantly get a chart view of how the metric has changed over time.

If, for example, we search to looking at the use of financial services, such as banking, paying bills, et cetera, over time, you'll see that the axes adjust to fit the available data points.

Better yet, we can break down those metrics by number of demographics. Under this menu, which currently says Total U.S., we can switch this to a breakdown by age group, and you automatically look at it by age group. And we can see that Internet users between 25 and 44 are more likely than other Internet users to bank or pay bills online. We also have employment status, race and several other groups here.

Finally, you may have noticed throughout the demo that the URL at the top of the page changes every time we change our view in Data Explorer. This allows us to bookmark specific visualizations, send them to other people, or link to them in a Web page, and it will always go directly to the chart or the map that you were looking at when you copied the link.

So, that is Data Explorer and Data Central. And let me just go back to the main Data Central page here. And I also wanted to mention that we also have a link here to join the Data Central mailing list. It's a very low-volume list. Only NTIA employees can send messages, and we mostly only do so when we publish a new blog post or have something else to announce about our data.

So, before I end, while at NTIA, we mostly use the CPS Supplement — let me just switch back to the presentation here. So, I also want to talk a little bit

about the American Communities Survey, because it is another important resource for people in our field.

Computer and Internet Use questions are relatively new additions to the ACS, and it actually took an Act of Congress to get them there. The ACS is the successor to what used to be the long form of the Decennial Census. After a few years of testing, the ACS replaced the Census long form in 2005, and since it goes into the field every year, it actually gives us new data annually, instead of once per decade.

The ACS is an absolutely massive survey — one of the largest in the world. It takes an entire year to complete each data collection, which totals over 2 million households annually.

This makes ACS data particularly well-suited for making estimates about small populations, such as Congressional districts and larger counties and cities. What's more, Census aggregates five years' worth of ACS data to produce estimates for really small areas, down to block groups and individual Tribal areas.

The trade-off, however, is that there are only three very basic Computer and Internet Use questions on the ACS. Specifically, it asks households about computer use, whether they have Internet service, and what type of technology is used to get that Internet service.

I should also note that the five-year estimates I mentioned for these questions are not yet available, because we've actually only entered the fifth-year data collection for these Computer and Internet Use questions. The first five-year estimates should appear around the end of 2018.

As with the CPS Supplements, ACS public use data sets are published for use by researchers along with extensive documentation. The Census Bureau also has a great tool powered by ACS data called American FactFinder, which you can find at FactFinder.Census.gov.

So, with that. I'd be happy to take questions. And I'll add that we are always eager to hear how others are using our data and how we can make our products even more useful. We have an email address set up, specifically, to support our data users, so if you don't get to ask you question today, please drop us a line anytime at data@N-T-I-A-dot-D-O-C-dot-gov.

(Karen Archer Perry): We're going to ask that if you have a question that you put it in the question box, and I'd like to ask (Steven Rosenberg) to present next, and then we'll take questions on both of those topics before (Bob) talks.

What (Bob)'s going to talk about is really how to leverage both of these data sets in your own work. And the data set that (Steven Rosenberg) is going to talk about is quite different and very complementary to the Digital Nation data.

So, let's kind of put that foundation down, as well, so that you get a good perspective on some of the key sets that we've got to offer here.

(Steve), I saw the slide and then it disappeared again. So…

(Steven Rosenberg): Yes, we had this glitch earlier so let me…

(Karen Archer Perry): Let me make sure it's there.

(Steven Rosenberg): There we go. Is that working?

(Karen Archer Perry): Yes. You've got it.

(Steven Rosenberg): Okay. Great. So, thanks, (Karen), and thanks, (Rafi).

I'm going to walk you through some high-level information about the FCC's primary data collection relating to broadband, which is Form 477.

We actually collect more than broadband data on Form 477, but I'm going to ignore that in this conversation. The Form 477 data collection began back in the Year 2000. We collected then only a small fraction of the data we collect today. So, you won't find a full-time series for most of the data I'm going to describe, with the Commission having made major revisions to the collection in 2004, 2008 and 2013.

The data we collect comes from facilities-based providers of broadband service, and we collect the data twice each year, so it's data as of December 31st and June 30th each year, submitted to the Commission about two months after each of those dates.

And it captures information about broadband lines that are capable of delivering at least 200 kilobits per second in at least one direction. That's speed dating back, not (surprisingly), only to the Year 2000.

Before we dive into the details, a quick word about nomenclature. The words I'm going to use to describe the different data sets are often influenced by legal and/or technical requirements here within the FCC. I've seen a lot of confusion about the data sets over time, even among people who work with broadband data a lot.

So, I want to make sure we're careful in how we talk about the data, and I'll come back to that in a little bit to talk about some of the challenges I've seen.

So, we collect two very distinct types of broadband data on Form 477. First, in that top row, we have what the FCC calls deployment data. This is basically the same as what NTIA called availability data when it was running the State Broadband Initiative, or SBI, that fed data into the National Broadband Map.

This collection captures where broadband networks are capable of providing service. For fixed broadband, we collect data at the Census Block level. If you're not familiar, Census Blocks are small. There are over 11 million of them in the country, with about 6-1/2 million of those being populated. They are often literally blocks. City blocks or suburban blocks. They are often larger in more rural areas.

For each Census Block and provider, we get the technology that that provider has deployed, whether they offer service to consumer and business, and the maximum advertised download and upload speeds.

It might be that there's one offering for both consumers or businesses, or might be that there's a business offering using fiber that's, say, 1 gigabit per second, while there's a consumer DSL offering 10 megabits per second. We would have two entries in that case; one for the business, one for the consumer.

This is a large data set. Given the number of blocks and the number of providers around the country, including satellite providers, the nationwide data set is about 62 million records. And it accounts for about 10 gigabytes of data, if you do the download.

So, as (Rafi) was saying with the CPS data, this is someone you're going to want to tackle with a statistical or database package; it's not going to work very well in Excel, at least on the nationwide data. All of the fixed broadband deployment data are publicly available, and I'll have links to that coming up.

For movable broadband, we collect something a little bit different. It's digital mapping data. Basically, digital shapes are polygons of geospatial or GIS data. Each shape has information about the technology — so LTE versus some of the older technologies — spectrum band, and the minimum advertised download and upload speeds.

It's kind of like the coverage maps you see on the carriers' Web sites. A map by provider, technology and speed. Note that there's no breakout here for consumer and business, unlike fixed. Where there are sometimes dedicated business offerings; we just don't see that with the mobile networks.

The mobile deployment data, as (I said), are mostly available. The shapes are available for download by provider and technology. Some of the data are not made publicly available. There are also tabular data that show the relationship between those GIS polygons and the same Census Block data that we use for fixed. So, all of that is one type of data – deployment data.

The second type is what we call subscription data or connection. It's the number of connections the providers report by download and upload speed. For fixed broadband, we collect these data – the number of connections – at the Census Tract level.

Tracts are much larger than blocks. They're about 74,000 tracts with some population in the country. 74,000 is a lot, but much lower than the over-10 million total blocks in the country that we find in the deployment data.

The fixed broadband connection data breakout consumer and business connection into the technology and use, as well as the speed of the connection. Note that the connection data are mostly confidential.

On a side note here, I noticed that there were a number of PUCs that were signed up for the call, and I think some have joined the call. There is a data-sharing agreement with State Public Utility Commissions in States that can abide by our confidentiality rules. And so, you can get more than just the publicly accessible data if you are a member of a State PUC.

For the rest of the public, we don't publish provider-specific information. So, the data we do release have to be aggregated. It may be aggregated to the national level, but broken out by technology or by speed. Or it might be at the local level, at the tract level, aggregated over speed and technology, and I'll show you some examples of that.

For mobile broadband, we collect connection data at the State level, which means an even larger starting point for geographic aggregation.

Obviously, these are two very different broadband measures: deployment and subscription. And they tell you different things. If a community has an area that lacks deployment — networks aren't in the area to deliver service — then adoption programs will not address the underlying problem and will struggle to move the needle.

Conversely, if an area has network deployment but subscriptions are limited, building new networks isn't the most direct route to getting more people online. That may sound obvious, but I've been in a number of conversations

where people get a little bit confused about which data set they're referencing, and so get confused about what that's telling them about possible solutions.

And that brings me back to my point about nomenclature. I try hard to make sure that we avoid some words which are ambiguous that I see people use to mean both kinds of data.

So, one word that I've seen people use is "penetration." Some people talk about what fraction of all homes in an area have services deployed to them – how much of networks penetrated into the area.

Other people use "penetration" to describe how many homes that can adopt do adopt. This is how a company's sales force would think about penetration. How much of our addressable market have we sold into. Because of that possible confusion, I try to avoid that particular word.

Another one that I've seen that's difficult is "access to broadband." It's something I've seen get people into trouble. When you say "access to broadband," do you mean that networks have been deployed so that people can purchase this service — what I'm calling "deployment"? Is there access to a network?

I've also seen people have it mean that broadband is on in a home, and that people can connect to it. So, do people have access in their home already on? And in fact, I've seen people use it both ways in one publication.

There was a paper I saw by a respected organization, recently, where they looked at subscription data and how people had limited in-home access — they hadn't subscribed. But then, seemed to recommend more deployment as the solution.

So, it's something that I want people to be very conscious of is the difference between these two data sets, and what each of them tell you, and how they're a little bit different.

My point here isn't to be the language police, although it does sound different, but this confusion is out there, and it's something that I think people can avoid some pitfalls if they pay attention to it.

So, with that little bit of preaching out of the way, let me talk to you about some of the resources the FCC has available. I'm not going to read you the links here. As I understand it, you can, if you haven't already, you can get this document with the links, or will soon be able to. We'll make this available to you.

But I do want to kind of talk about the different information. The top row here is information – just reference information on Form 477. That includes information like the instructions, and what kind of data are collected, and what's required of providers. That will include for PUCs, I believe – the information about how to get access for Public Utility Commission is there as well.

Following that are two lines with links to the deployment data that are available for fixed broadband and then mobile broadband; fairly straightforward, full documentation there about what the data fields mean, and the values and things like that.

Below that are links to the twice-annual reports we publish that are mostly about broadband subscription data. The Internet Access Services Reports. And the link after that is additional data that we release with the Internet Access

Services Reports, all of which is the aggregated data that we publish on subscriptions and the reports and the additional data there.

In addition to those twice-annual reports, one for each of the Form 477 data collections, the Commission has an Annual Report to Congress called the Broadband Progress Report.

I don't know the specific link here. The last Broadbrand Progress Report was released just over 12 months ago. I can't say when the next report will be out, but I did want to include a link to the 2016 report, knowing that at some point, I expect a 2017 report will be available. So, my suggestion there is to use your favorite search engine, or try your luck with a search on our Web site, and find the latest version of that report.

Last on the list, we have maps. And I did want to quickly walk through some of the maps that we have. We have a good number of them, so I'm going to try what (Rafi) did, and see if I can be as successful at navigating this software here, and jump to the maps. So, hopefully you can now all see the FCC Home Page. Is that right?

(Karen Archer Perry): That's correct.

(Steven Rosenberg): Excellent. So, we're just going to go to FCC.gov/maps, and the first thing you'll notice on FCC.gov/maps is that we have a lot of maps. There are 20 here on the front page. There are more in archive. Some of these may be relevant to you; some of them may not be. There's a lot of maps here about different data about broadbands and its particular application to Universal Service Fund issues.

But you'll also see other things, like enforcement actions and AM/FM radio things. So, there's kind of a wide variety here. So, if you're looking for something specific, there's a couple things you can do. One is just look around. I like to think the maps are nice to look at, so I don't want to rule this out. You might, as you're looking around, just find something that looks interesting.

So, here, these blue maps – these four blue maps here – are maps of mobile broadband coverage, and you can get a little bit of detail here. This one is based on both mosaic data, commercial data source and the December 2015 Form 477 data. So, you can kind of click through and see what might be interesting.

You can also take advantage of the search function here. So, I'm just going to type in "connection." So, that was one of the two data types that I talked about. – subscription or connection data. And what you see here is a series of maps that pop up. Note the dates here. So, a couple that were published just a couple months ago in December, two from August and two more from March before that.

So, these were published with that Internet Access Services Report that comes out twice a year. And you can click on one of them, and it will open up here. And what you see, as the title says, is Connections per 1000 Households as sort of a subscription rate at the Census Tract level.

And these maps are interactive, and so, you can zoom into an area of interest. I'm just zooming into Washington because I live there. But you can get more information just by zooming in and seeing the more detailed data.

Backing up to the main maps level, you can also search for deployment. Unfortunately — and I found this out just this week — that search doesn't work exactly the way that I thought it should. It's something that I'm working with my IT folks to fix.

So, if you search for deployment, you're not going to see all the deployment maps that I have. You'll see a good number of them. But it's not all the ones that you might want to see. That is something that I'm working to fix. I'm not sure exactly when it's going to happen.

You also get some other maps that you may or may not care about. So, here's one related to A-CAM, which is a Universal Service Fund program that may or may not be interesting to you.

For the time being, at least until we get the search fixed, my suggestion here is to look for a progress report, which will call up the maps that we've released with the Annual Broadband Progress Report. And so you see four maps here from January of last year, when we last released the report.

Each of these maps shows a different facet that may be interesting to you to (number). This one's about the technology, and this one shows information about the speed and I encourage you to explore. They each have a search function, so you can enter an address.

This one is interesting, in particular, because as you click on a given area — and you can see I just clicked at random — it provides information about the broadband providers in that block. And for some reason, the map itself is not animating. Apologies. I'm not sure why that is responding so slowly, but I'll look into that for you.

Note here, as I mentioned, the dates on the maps. So, this is the 2016 Broadband Progress Report. It was released in January, 2016. We currently have – and it's based on data from December, 2014. We currently have data available, if you go to the download sites for data as of December, 2015. I expect to have a map of that released this week. It's not yet live, but will be very shortly.

So, if you check back and look for new maps, you'll find the data visualized as of December, 2015. And speaking about coming things, I expect the data for deployment as of June, 2016 for fixed broadbands to be released in a matter of weeks. I'm not sure exactly when, but I expect that to happen very shortly.

So, with that, let me hand control, if I can remember how, back to (Karen)…

((Crosstalk))

(Steven Rosenberg): …and I think that was the point where we're supposed to pause for questions. Have I got that right?

(Karen Archer Perry): Yes. Hand the control back to (Bob)…

(Steven Rosenberg): Okay.

(Karen Archer Perry): And let me — and we will — Operator? (Jill)? Would you see if we have any questions?

Coordinator: Certainly.

(Karen Archer Perry): And we'll take a couple of questions right now. (Emy) is going to moderate the questions, but I do want to point out that — no, I think, (Emy), would you just moderate the question?

(Emy Tseng): There are no questions on the question box, so we can go directly.

(Karen Archer Perry): We'll take a minute here. If (Jill) – tell them how to ask a question.

Coordinator: If you would like to ask a question on the phone line, please press Star one and record your name, when prompted, to be introduced. Once again, it is Star one, at this time. Please stand by.

(Karen Archer Perry): So, while those are queuing up, what we did see in the Chat was questions about when new data will be available and represented, and I just want to highlight the announcement that (Steve) just gave us over the phone, which is that you can expect new maps based on 2015 data to show up in the matter of a week or so, and the new data sets, for those of you who want to download them, to be available soon thereafter. So, that's pretty exciting.

Do we have any questions?

Coordinator: Yes, Ma'am. Our first question comes from (Kathy Johnson). Your line is open, Ma'am.

(Kathy Johnson): Hi. Hello, everyone, and thank you so much for this incredibly valuable Webinar that you have presented this afternoon. I think many States, me included — I am the Broadband Director for the State of Alabama, directly under the Governor's Office.

And we have been begging and pleading for some additional funding to be able to collect data. And what you've presented today shows me that there is some data available that will suffice until we are able to do some State-specific data that we would like to. So, thank you so much for all this incredible, valuable work that you're doing.

My question is very simple, but it might be quite complex as well. The term, "broadband" is becoming quite confusing. It means something different to everyone that I talk to. And the Alabama statute still says, as one of the maps was referring to, that broadband is anything that's 200 kilobits a second in either direction.

With that barely being faster than dial-up service, do you have a term that you foresee us moving toward, knowing that now the FCC has said that adequate connectivity is 25/3. Do you have a recommendation for a better term that we can use than broadband?

(Steven Rosenberg): So, I'll take a stab at this. Others should feel free to weigh in. This is a question that comes up periodically, here at the FCC. In fact, the Commission doesn't really define "broadband." The Report to Congress redefined "25 down and 3 megabits per second up" is, officially, "advanced telecommunications capability," which is a term defined in statute.

We colloquially call that "broadband," but we are not saying that something less than 25/3 shouldn't be considered broadband. We also have different standards for speeds and latency (deferred) requirements in our Universal Service Fund programs.

So, we have avoided trying to define broadband — which might have, you know, advertising and FTC implications that go along with that — and try and

just define the requirements for the particular program, whether it's the Report to Congress in Advanced Telecommunications Capability or USF, you know, exactly what speeds are relevant.

It's a fair point that because there are so many different uses, and you probably have different expectations for speed for fixed and mobile, that broadband can be overly broad, if you'll pardon that formulation, and so, maybe hard to understand the meaning. I'm not sure we've got a better term for it, though, right now.

(Kathy Johnson): Okay. That's very helpful. Thank you.

Coordinator: Our next question is from (Drew Clark). Your line is open.

(Drew Clark): Thank you. Just taking myself off mute. (Drew Clark) with (BroadbandsAxis.com). Again, I also thank you for this very, very illuminating Webinar. Great to sort of (see) from FCC and NTIA and others kind of where things stand exactly.

Let me start – I've got about three quick questions, so forgive me for that. I want to start with (STEPH), and thank you again, (STEPH) for walking us through all those presentations.

Could you just be clear on data is collected semiannually, but there are only annual releases? And again, what I'm trying to make sure I understand is you said December, 2015 data is not yet live, but will be soon? Or the data is live and the map isn't? Could you just kind of elaborate on that, and kind of walk through what's the current status of data, and how frequently we can expect updates in the future.

(Steven Rosenberg): Yes, sorry, I should have been clearer on that. So, the data are collected twice annually. We release the deployment data, both fixed and mobile. We release both data sets. How quickly those happen — they've occasionally gotten batched together — but each of the broadband deployment data sets has been released.

And so, you can get the data as of every six months. The current version on both the fixed and mobile side is data as of December, 2015. All of that is public right now.

We do not have a map yet up for the December, 2015 data. Well, let me be a little bit more precise. We have some maps for the December, 2015 data. So, the subscription map I showed you is December, 2015 data. But the map of all the different views into deployment are not fully – are not available yet. They will be this week.

We also release the Internet Access Services Report twice each year. That's sort of the summary of the subscription data — again, twice each year, and will continue to be. The one thing that's annual is the Broadband Progress Report, which is a report that Congress mandated that we release to them annually about broadband deployment and availability.

(Drew Clark): Okay, and that's been their Annual Report, and always is. There's been no change from semiannual to annual on any data releases that you're…

(Steven Rosenberg): I don't think it would be fair to say that it has been released every year, but it has always been…

(Drew Clark): It's supposed to be released every year. It is required to be released every year.

(Steven Rosenberg): That is correct. Although, in the initial — so, sorry to get into the legal weeds here — in the initial Section 706, Congress mandated — the word, "annual" was not in the original statute. That was added, I believe, with the Broadband Data Improvement Act of 2008, so the annual requirement has existed only since then.

(Drew Clark): Okay. Thanks for that clarifying. And again, just to be clear, the latest mapping data that's complete is June, 2014, and you can find that on the site. We will be able to find the December 2015 data soon, you're saying, and some of it is available now, but complete will be available soon. And then, in terms of the data collection for 2016, both the June and December, is there an expectation for how soon?

I know you said that it takes two months to collect it, et cetera, (unintelligible) offload that from the NTIA process, but they had a specific deadline by which they needed to release it, and I'm not sure that exists right now with the FTC.

(Steven Rosenberg): So, that's correct. We give the providers two months to give us the data. We then spend time cleaning the data up. How long that takes depends on the quality of the data that we get, and where we do find problems, how quickly the providers respond.

Where providers respond more quickly and we get it cleaned up, we release it as soon as we can. Unfortunately, that's not always the case. And so, when we see long delays, it's usually because we're behind the scenes trying to get data cleaned up.

And if you've been on the Web site – on the fixed deployment data Web site where you can do the download – you actually see multiple versions of some

of the data, where even after we published it, we got cleanups and fixes that were, you know, worth sort of bundling up and publishing. So, that is an ongoing process, even for data we've published.

(Drew Clark): You know, there's a lot of people on this call that have been involved in the NTIA and FTC State Broadband Data Program, and I'm just wondering — I mean, having kind of picked up the baton when the funding for the SBI program, you know, phased out over two or three years ago, what — you know, FCC's basically been doing on your own.

I mean, do you have any kind of insights based on that last two or three years' worth of clean up? Are there things that you're really kind of behind the eight ball, that State input would be really careful – or really helpful?

I mean, you know, I know that the previous questioner raised the point that the States want to do State-specific data. There are about 26 of the 56 States and Territories continue with the data collection program, and I'm just wondering if, again, based on your experience of cleaning the data, if that was a significant part of the NTIA/SBI effort. I'm wondering if you have any thoughts or best practices, as a result of that?

(Steven Rosenberg): You mean, the value of Federalism in the collection?

(Drew Clark): Or the value of centralization. Either one. What's your insights, based on the FCC experience doing it alone over two or three years, versus having the NTIA State engagement?

(Steven Rosenberg): So, there are definitely some benefits to having a single collection, both to the carriers and to the data. You know, what we found was there were some States were very actively engaged and able to do a lot more than other States.

And I think that's reflected, even today, in different positions of States. You know, the capabilities. And so, having that single national collection provides a more uniform view into things. And that's something that the commission talked about back in the – I think it was the 2013 order.

(Karen Archer Perry): (Jill)…

((Crosstalk))

(Steven Rosenberg): …you know we don't have the full force that NTIA did, the people in the States...

(Karen Archer Perry): Hold it right there. (Jill), do you have additional questions in the queue

Coordinator: We have one.

(Karen Archer Perry): Okay. Let me — we're going to end this presentation with contact information on the slides, and it sounds like — I know (Drew) is bringing up some points that are of interest to a number of people, but I think we might have to move some of that conversation offline.

I'd like to take the last question that's currently in the queue, and then ask (Bob) to give us an update on the work he's doing to localize the data and give you guys some tips on things that you can do to take control of this data.

And then, we will stay on the line after the hour, in case there's any further questions. So, we will stay on the line to answer additional questions either in the Chat or as they come up.

So, (Jill), would you give us that last question?

Coordinator: Sure. It's from (Tony Simatone). Your line is open.

(Tony Simatone): Well, basically, (Drew) covered my question, so he beat me to it.

(Karen Archer Perry): Okay. And we can dig into that a little bit more at the end of the call, if you just want to hold on. So, I know it's kind of a longer conversation.

But let me just hand it off to (Bob Ballance) to talk a little bit more about both what he's done to leverage this data in our developing program called the BroadbandUSA Connectivity Initiative, as well as some tips for how you could use the data yourself.

(Robert Ballance): Thanks, (Karen). I will make this fairly quick. What we've seen are some really remarkable visualizations at the national level, including all the way down to the local, that both NTIA and FCC have been putting together.

As part of our Community Connectivity Initiative, we've been looking at ways to provide this best at a local level, and it seems a little bit daunting when you look at it. And I just want to really have a quick take-home here that you, too, can get cooking with data, and it's not as hard as it looks if you're not starting at a massive scale.

I've had the pleasure of working with these folks, working with their data sets, using the kinds of tools that they're talking about, and many of those tools are freely available and can probably be driven or used really effectively — if not by you, then by somebody near you in your community.

In some sense, you know, there's a recipe here for bread that's just flour, water, yeast and salt. Putting it in the right order and then do some menu planning; and data is about the same way.

We need the raw data like these FCC downloads. We need the base maps or the charts. You need some geographical boundaries, and those come for free from the Census. And then you start adding your own judgment, and you start telling the stories you need to tell with the data. Because after all, it's really not about the data; it's about the stories behind it.

We've talked about a lot of sources, and I'm short on time, but I want you to know that we're in this day and age when many, many people are learning to code.

Computer Science for All is a Federal program through the National Science Foundation and started by the previous administration. Community anchor institutions give lots of courses. There are Meetups, which is a way for a group interested in almost anything to collect in a local geographic region, and there are actually Meetups for programmers all over America.

Maker Spaces are places where people are learning to program – people of all ages, races, ethnicities and, of course, your high schools and colleges and junior colleges.

And so, what I'm saying is, you might be looking at this thing — I could really use this data; I don't know how to manipulate it. Ask around.

Because there's a community out there, all across America, that are building digital skills, and they might be just the resource you want. They're looking for interesting projects. You're looking for a little help with your own data,

whether we call it broadband or high speed Internet or what. And they're a real resource for you.

There are other tools out there. You start with Excel; you start with Access; but they don't scale to these large data sets. There are statistical languages like R. And that's the name of it; just R. There's a geographical database that is free called PostGIS. There are Web libraries for displaying maps. And all of these are really at your fingertips.

In addition, the base maps are at your fingertips from Google or Stamen or OpenStreetMap. And then, if you really want to get into and have the wherewithal, there are a lot of commercially-supported services.

So, we're looking at a lot of data sets for the Connectivity Initiative, but I'm going to skip through this quickly and talk about the data itself. How do you present it?

Well, sometimes, as we pointed out, a table is enough. This is just a table drawn from the FCC deployment data. It's the number of providers in Washington County, Maine. That's the example for today.

Speed down, up, and any speed at 4/1 and 25/3 — and this is the kind of data you see in our tool, if you were looking at it for your locality. And here a simple table is enough to present it.

Sometimes a map is best. So, here is Washington County, Maine. This is just a political map. The base map comes from Google Maps, which has a fairly non-restrictive license if you're not making money from it. So, for your own locality, it's probably a good place to start.

And the Census, besides providing all sorts of economic and health and population data, provides the geographical information for all of the United States. And these files, which have those geometry shapes in them that (Steve) was talking about earlier, are freely available for download. And tools like PostGIS know how to simply go out and import them.

So, here all we've done is we've taken a Google street map and overlaid it with some boundaries. It's a two-step procedure, two ingredients on that one.

Here we combined, on the next slide, with some work from home data that comes out of the Census — those people that declared that they're working from home. We took the same map as we had before, but we overlaid each tract in this case — which is what we're showing in the map — with the percent of people who declared that they're working from home.

Now how do I get that? I said there's this Census API call that sounds really scary, and I promised (Karen) that's as detailed as I will go in the next minute. A Census API call is nothing more than kind of a fancy phone number.

You have to sit at it, look at it, or find one of your friend that likes to code. But what's on the screen — what's highlighted in yellow — is the real data. It's (developed) population data — that's that P00 number — from State 23 — that's Maine — County 29 — that's Washington County. Fill those in, paste them into any browser, and start getting population data back. You can look at it then.

So, these things, while they sound complicated from the outside, are really not. They're set up to make it easy for somebody to write a program, or write a script, or just go get the data, and you could actually download this and probably paste it back into something like Excel very easily.

A similar map — this time subscription data that we were talking about. (Steve) was talking about it before. This one is on the county level again. Same base map. Same geographical area. Different data applied to it. And I'm going to skip the next couple things, because what I'm saying is this is acceptable for everyone on this call. It's acceptable, and there are ways to find folks around you who can help you out.

And it's not hard if you start small. There are lots of examples on the Web about how to build a map. You'll learn some as you go, which is fine. It keeps you going on.

Find your friends at schools, or Maker Spaces, or Meetups, or wherever you find someone who wants to take on a little bit of technical work in their spare time perhaps — and again, high school students, college students, junior college students, folks who are looking for these kinds of projects. And there's a world of adventure out there, so get started at it.

So, what we're doing is we're taking some basic pieces: flour, water, yeast and salt; data, geographies, some maps, some more data — and combining those in very standard ways to give you the information you're looking for. And so that being said, I'm going to ring off now, and we'll take another couple questions.

(Karen Archer Perry): (Jill), can you open up the line for questions?

Coordinator: Once again, if you would like to ask a question, please press Star-1 and record your name, at this time.

(Karen Archer Perry): I'm trying to figure out how to make myself a presenter again so that — (Bob), can you hand it back to me and see if that will work?

(Robert Ballance): Yes. Let's see if we can get that.

(Karen Archer Perry): We do have a couple of questions in the Question-and-Answer. (Emy), can you see them now, or not?

So, we will stay on the line a few more minutes. I know many of you do have to leave, and we wanted to thank you very much for participating. If you can stay another couple of minutes, we would be more than happy to take your questions. And – (Emy) are you there?

Coordinator: I'm sorry. This is (Jill), the Operator.

(Karen Archer Perry): Do you have a question?

Coordinator: Yes. We have one from (Drew Clark). He has re-queued up. Sir, your line is reopened.

(Karen Archer Perry): Okay. (Drew)?

(Drew Clark): Okay. Thank you. No, I don't want to take an opportunity from anyone else. I just thought I'd chime in again, and particularly, since you're going along, and thank you for letting me know, (Karen), that there was another presentation. I kind of missed that or spaced on that.

And that was a great last presentation, so I'm glad I heard that.

(Karen Archer Perry): Thank you, (Drew).

(Drew Clark): I think, (Steve), you kind of answered most of my questions about the data, unless you have any final thoughts on this issue of the centralization or, really, I mean — particularly in light of the last presentation, I mean, where is the open space? Right? Where are the things that the FCC, the NTIA, the States need that they're not getting right now, because it's being centralized at the FCC in terms of this data collection?

(Karen Archer Perry): I will chime in before (Steve) does, because I am a true believer in both and, and so — and let me also point out one of the other questions that was in the Chat box was about whether or not we would be updating the National Broadband Map that was managed jointly by NTIA with the FCC.

And my understanding is that that funding – the stimulus funding that supported that project – has ended. And that there's no plan to update that specific vintage of the map, but that the maps that (Steve) showed you are maps that can be produced with the data that is currently being collected on an ongoing basis as a result of the regulation that creates the 477 Form filings. So, it's something that can be done within budget and statute.

When I say that I am a big fan of both/and, there are some States that do do some additional mapping work. California's got a great program where they validate the data, and they use a slightly different set of guidelines for how they do that data validation from the FCC guidelines.

And they create a custom instance that is more appropriate for them. And I think there is still that opportunity. So, if States do want to look at the provider data, and also, if localities want to look at the provider data, it might not be the end of the story, but it's a really great place to start when it comes

to conversations with providers and community-level conversations. And that's what we wanted to share here.

The other thing I — I think that's it. (Steve) and anybody else — did anybody else have any comments in response to (Drew)'s question?

(Steven Rosenberg): I agree with what you said. States have other needs. You know, there's always room for different questions, and so there's different data needs. They might need to do collections on their own.

You know, we look for help where we can get it, but the fact is that we only regulate the providers, and so hard for us, necessarily, to rely on others in our data collection. But if there's additional information that people need and collect, I think that would be helpful for everyone.

(Karen Archer Perry): One of the other questions was somebody looked at the data that you showed and saw some discrepancies in their area. They don't think that the data is accurately reflecting. And they wanted to know who they should talk with at the FCC about that.

(Steven Rosenberg): Is this on the Chat question?

(Karen Archer Perry): It's in the Q&A, yes.

(Steven Rosenberg): So, I think that may be a different data collection to the service area, but they can follow up with me, and we'll figure it out. Service areas are different. We have a specific service area boundary collection that may be referring to. But we can figure that out.

(Karen Archer Perry): The other thing — I know that we've mentioned the BroadbandUSA Connectivity Initiative Project. One of the things we do in that tool is we provide the national data and encourage that you include that data as a foundation of conversations with service providers that serve your area.

So, ask the service providers to validate the data. If something looks wrong, ask them why it was submitted in that way and, you know, what their perception is. Ask them about their deployment plans going forward.

But that is the data that is generally provided. There are probably some errors, but in general, that is the submission that was made by the service providers in your area. So, FCC is reflecting that back. There's also an opportunity to have a conversation with the providers to better understand what they were representing there.

Are there other questions teed up?

Coordinator: We have no other questions on the phone.

(Karen Archer Perry): The other question that I see in the Chat is people asked about whether or not this Webinar would be recorded. It will be recorded – it was recorded. The slides will also be available. They will be posted in a couple of weeks.

And (Amy Meacham) from our team noted that we've updated our BroadbandUSA Web site to include a glossary of terms, including a glossary of the term, broadband, as well as a few others.

A number of people asked about signing up for the emails from Data Central, and I have put that information on this closing slide, as well as in the Chat box.

And I think that that is all of the questions. Let me give you one more minute and see if there's any additional questions.

Just wanted to mention we have two upcoming Webinars in – the Practical Conversations Webinar Series hosted by BroadbandUSA is the monthly program. Our next Webinar on March 15th will be a review of the Federal Funding Sources that support broadband projects. And it will be presented by our BroadbandUSA team, (Scott Woods), (Don Williams) and (Sandeep Taxali).

The month after that in April, we're working to put together a Webinar on Digital Inclusion in Rural Communities. And (Emy Tseng) will be leading that one. She was kind of at the ready with many questions for today, but I think you guys covered it with your questions.

Thank you so much for all of your attendees, as well as speakers, for doing a deep dive on data today. Please do give us a call or send an email if you have further questions. We'd be more than happy to talk with you. Thank you very much. Thank you, Operator.

Coordinator: You are very welcome. That does conclude today's conference call. We thank you all for your participation. You may now disconnect. And have a great rest of your day.

END