The subcommittee met, pursuant to call, at 10:00 a.m., in Room 2123 Rayburn House Office Building, Hon. Marsha Blackburn presiding.

Members present: Representatives Blackburn, Lance, Shimkus, Latta, Guthrie, Kinzinger, Bilirakis, Johnson, Long, Flores, Brooks, Collins, Walters, Costello, Walden (ex
officio), Doyle, Welch, Clarke, Loebseck, Ruiz, Eshoo, Butterfield, Matsui, McNerney, and Pallone (ex officio).

Also present: Representative Tonko.

Staff present: Jon Adame, Policy Coordinator, Communications & Technology; Jennifer Barblan, Chief Counsel, Oversight & Investigations; Mike Bloomquist, Deputy Staff Director; Karen Christian, General Counsel; Robin Colwell, Chief Counsel, Communications & Technology; Sean Farrell, Professional Staff Member, Communications & Technology; Adam Fromm, Director of Outreach and Coalitions; Elena Hernandez, Press Secretary; Bijan Koohmarai, Counsel, Digital Commerce and Consumer Protection; Tim Kurth, Deputy Chief Counsel, Communications & Technology; Lauren McCarty, Counsel, Communications & Technology; Drew McDowell, Executive Assistant; Austin Stonebraker, Press Assistant; Evan Viau, Legislative Clerk, Communications & Technology; Hamlin Wade, Special Advisor, External Affairs; Everett Winnick, Director of Information Technology; Jeff Carroll, Minority Staff Director; David Goldman, Minority Chief Counsel, Communications and Technology; Jerry Leverich, Minority Counsel; Dan Miller, Minority Policy Analyst; and Tim Robinson, Minority Chief Counsel.
Mrs. Blackburn. Good morning. Come on, guys. Good morning. All right. There we go. There we go.

I want to welcome everyone to the subcommittee hearing this morning. And at this time I recognize myself for five minutes for an opening statement.

And we want to begin by saying welcome to Mr. Redl. We are delighted to see you here and we are excited to provide some oversight of NTIA since you've left us for the administration, and as you well know, several of this committee's top priorities are carried out by the NTIA, not the least of which is efficiently coordinating federal usage of spectrum.

We are focused on making certain that you all are on task, as are we, and because of this, I want to mention at the outset that we are terribly disappointed with the snafu that occurred on the testimony submission and on the one sheet that we received that is an overview of testimony.

You know our process. You know that we respect that process on both sides of the dais, and going forward, we would like to ask for an accommodation of that process as provided by the rules and also the expectations of the committee members.
Around the world, countries are racing to be the first to 5G. To be competitive the United States will need to continually make available spectrum needed to build out these networks.

It seems NTIA is hard at work identifying bands that could be freed up for the commercial use, especially with the recent announcement of 100 megahertz that you've identified as a candidate band.

We fully recognize the challenge of balancing the need for more spectrum with the significant national security and public safety issues associated with clearing these bands.

We are looking forward to hearing from you this morning on your plans of how you will help the United States maintain our status as a global leader in the wireless space.

Of course, spectrum isn't the only priority NTIA has, although we know that it is your favorite. The NTIA is also at the forefront of coordinating Next Generation 911.

Just a few weeks ago, we celebrated the 50th anniversary of the first 911 call that was made in Haleyville, Alabama. Yet, we are still struggling to bring 911 into the 21st century.

It's unfortunate to hear that deployment of Next Gen 911
services are being stymied by states that divert much-needed funding for non-911 purposes.

As NTIA and NHTSA administrator state grants are taking place, we need to ensure that there is adequate funding and it's used efficiently.

And while we are on the topic of funding, let's not lose sight of why we are here. As your oversight authority, it is our duty in Congress to make sure that you have the tools you need to succeed.

It is no doubt that we have loaded up your plate with important priorities. But as we look to the fiscal year 2019 budget we seek to get a better sense of what you need to get the job done.

I am pleased to see that you have indeed hit the ground running. Look forward to hearing more about your priorities in spectrum management identification as you embark on these issues.

And with that, I yield the remainder of my time to Mr. Lance.

Mr. Lance. Thank you very much, Chairman Blackburn, and thank you to Assistant Secretary Redl for appearing before us today.
The agency charged with managing federal spectrum, the National Telecommunications and Information Administration, plays a key role as the United States competes in a global race to 5G.

As the demand for more mobile data and high speeds continues to grow, it is critical that we make sure the federal government is using its spectrum efficiently and free up unused spectrum for commercial use, all while ensuring that agencies are able to fulfil critical missions.

There are tough needs to balance and I applaud Mr. Redl for moving quickly and identifying 100 megahertz of midband spectrum for potential commercial use.

I've recently introduced legislation with Ranking Member Doyle -- the Airwaves Act, which, among other things, also aims to free up more federal spectrum for commercial use.

I look forward to working with Mr. Doyle and with you, Mr. Redl, on these efforts, moving forward.

In addition to spectrum management, you also oversee critical public safety matters related to the Next Generation 911 and FirstNet.

I thank our distinguished witness for appearing before us today. I look forward to discussing these important
Mrs. Blackburn. Gentleman yields back.

Mr. Doyle, you're recognized for five minutes for an opening statement.

Mr. Doyle. Thank you, Madam Chair, for holding this important hearing and I'd like to also thank our witness, Administrator David Redl, for being with us here today.

As it's been noted, Mr. Redl is no stranger to this committee, having served as counsel and chief counsel for Chairman Walden on this subcommittee.

During his time here, Mr. Redl spearheaded the majority's effort on spectrum policy in internet governance and oversaw and directed policy for the full breadth of this subcommittee's jurisdiction.

And now, after what appeared to be a rather drawn out confirmation process, you've finally taken on the leadership of the National Telecommunications and Information Administration, the agency tasked with serving as the principal advisor to President Trump on telecommunications and information policy issues.

David, I want to wish you the best of luck with this
critical and quite challenging task. That being said, I also
understand that you went to Penn State, which is my alma
mater, and that you married a girl from Pittsburgh.

So this shows good judgment on your part, too.

[Laughter.]

Mr. Doyle. But again, welcome back to the committee.

Our world grows more connected and interconnected by the day. The number of connected devices will exceed the number of people on the planet this year and research suggests that the number of connected devices will be more than twice the population of the planet by 2020.

This incredible growth has been fueled by innovation, investment, and access to wireless spectrum. The U.S. government remains the largest spectrum holder in the United States and NTIA is charged with managing federal spectrum, and as you recently announced, figuring out how to transition additional spectrum to commercial use.

It is critical that as your agency moves forward that you balance the needs of licensed and unlicensed industries. Our leadership in wireless broadband, our success in 4G, and our ability to successfully deploy 5G networks will depend entirely on our ability to make available sufficient spectrum.
to meet both communities' needs.

NTIA's recent announcement identifying 100 megahertz of federal spectrum to study for wireless broadband use is good news and it's a good example of the valuable role NTIA can play in coordinating federal spectrum use.

It's also a reminder of how important our federal R&D efforts are in this area. NTIA's research and engineering arm, the Institute for Telecommunication Sciences located in Boulder, is a critical part of this work.

Having objective researchers and engineers who can work with federal stakeholders to identify ways to free up or share spectrum is critical for meeting our nation's wireless needs because navigating the tricky waters of interagency cooperation and coordination is difficult, at best.

I'd like to also mention that the lab is led by a Carnegie Mellon grad, Keith Gremban -- more good judgment on their part.

Beyond spectrum, NTIA plays a key role as an interagency and multi stakeholder convener within the government and with commercial interest in civil society organizations.

NTIA has done good work on cybersecurity, privacy, the Internet of Things, and unmanned aircraft. I believe that it
is critical that this work continues. We need thoughtful fact-based interagency leadership helping agencies navigate these complicated topics.

More work needs to be done in these areas as they go from being nascent innovations to globally-deployed technologies and challenges.

ICANN security is a particular concern to many. Our nation's digital infrastructure is under constant attack by adversaries ranging from superpowers to script kiddies. And as we move towards 5G and future network technologies, we need to consider better how to bake security into these networks, how to harden them against attacks and tampering.

It's my hope that NTIA can play a role in working with industry and government stakeholders as these networks are being designed and deployed.

Among your additional responsibilities in the United States' role in internet governance through ICANN, and while our nation's role is changing, I expect NTIA to continue representing the United States' interest before the global internet community of ICANN.

While ICANN's multi stakeholder process can be cumbersome, I hope that NTIA can continue to work through the
governmental advisory committee to protect our interest and work to maintain a globally unified and connected internet.

I am also interested to see NTIA continue its work on BroadbandUSA, digital literacy, and public safety.

I want to thank you. I look forward to your testimony and, Madam Chair, I will yield back the remaining 13 seconds.

Mrs. Blackburn. We are on a roll this morning.

Mr. Walden.

The Chairman. Good morning, Madam Chair, and before we get started I want to wish your counsel there, Tim Kurth, a happy birthday, I understand. There you go.

[Applause.]

The Chairman. We won't sing to you. That'll be your present from me -- no singing.

And Mr. Redl, good morning. Welcome back, Mr. Assistant Secretary. We have been looking forward to this moment for, oh, a very long time.

[Laughter.]

The Chairman. Energy and Commerce have been leading the way to close the digital divide and for over a year now we have held hearings on broadband deployment and sought ways to incentivize build out and our Telecom Subcommittee, which
you're intimately familiar with, has held legislative hearings on numerous infrastructure proposals this year and, last, they provide plenty of opportunity for the committee and NTIA to work together toward achieving this end and closing the digital divide in the country.

As the Energy and Commerce Committee continues to identify ways to accelerate broadband deployment, we first need to know which areas are truly unserved. Those areas need to be prioritized first.

Mapping efforts have been in the past undertaken by NTIA but responsibility shifted to the FCC in 2014 when funding lapsed.

And while we appreciate the Federal Communications Commission's efforts in this recall to improve the Form 477 data, we need a better funded NTIA to be able to aggregate that information with the data from multiple outlets across the states with other innovative ideas that are popping up to harness deployment coverage that may not get submitted in the carriers' compliance with the FCC process.

In other words, you have the opportunity if you're funded to give us the data we need and that consumers want.

As you all recall, this committee held a hearing on
broadband mapping just last June to discuss how we can better define a map granular broadband coverage and one of the proposals that flowed from that is Congressman Johnson's H.R. 4810 with the support of Congressman Guthrie. That gets things moving again at NTIA. So I am pleased that those efforts have already yielded some progress as the Trump administration is asking our friends at the Appropriations Committee for $50 million for NTIA to get back into this very important work.

The last time policy makers moved ahead without adequate mapping they spent billions of dollars and didn't even have a sense of what we got for it. They spent the money before we had the maps.

This time around, we want to make sure we get the maps first and take care of the people most in need of this assistance to close the digital divide.

And as we move ahead on ways to accelerate broadband build out, we are beginning to see the build out of another important network and that's FirstNet which, obviously, we were very involved in back in the time when we put that legislation together.

With all the states and the territories having now opted
in, FirstNet should be full steam ahead building out the nation's public safety broadband network to make sure our public safety professionals have interoperable mission-critical access to broadband.

As we saw with the 9/11 and have since seen with active shooter scenarios and natural disasters such as wildfires in Oregon and California and elsewhere, interoperability is critical for first responders and the people they serve.

As NTIA continues its oversight of FirstNet, I look forward to seeing the implementation of the FirstNet plan.

Finally, this agency plays an important role in assessing policy challenges across a gamut of issues. From spectrum allocation to public safety, NTIA has a full plate and we are glad you're there.

As we continue our oversight of the agency, we should consider how its role should evolve given its prominence in communications and information policy.

Given the role NTIA plays in driving the American economy forward, it's vital that the agency has the tools it needs to establish an environment that fosters competition and innovation, and I know you want to lead the agency in that positive direction, going forward. We want to be your...
We thank you for being here today, and unless anybody else wants the remaining minute of my time, I am more than happy to yield it back and begin our process.

With that, I'll yield back.

Mrs. Blackburn. Gentleman yields back.

Mr. Pallone, you're recognized for five minutes.

Mr. Pallone. Thank you, Madam Chairman.

The National Telecommunications and Information Administration, or NTIA, has not always received the same attention as the FCC. But that doesn't mean it's any less important.

The agency has quietly driven many of our nation's communications policies from behind the scenes, and that's a good thing in the Trump Administration where most agencies have a hard time staying out of the headlines.

Case in point, the FCC has thrust itself into the national spotlight by dramatically walking away from its statutory obligations to serve the American people.

It's more than just their assault on net neutrality. It's privacy, cybersecurity, public safety -- the list goes on and on, and the Trump FCC is simply refusing to do its
And so I look forward to hearing from the new leadership at NTIA about what they can do to fill the tremendous void left by the FCC.

I know that Administrator Redl has a deep understanding of these issues and I hope he also understands that his agency must now step up to improve and secure our communications networks for the future.

And I am particularly interested in hearing how NTIA will handle cybersecurity as we move to more robust Next Generation wireless networks and the Internet of Things.

The administration itself has pointed out how vulnerable our wireless networks will be if the government does not do more to protect them and NTIA has an important role in figuring out how to make sure that they are secure.

But NTIA needs to do more than just defend our networks from attacks. The agency must also find better ways to protect our privacy.

During previous administrations, NTIA worked actively to protect our private information through a multi stakeholder approach and now that congressional Republicans ripped away our online privacy we need to know whether Administrator Redl
plans to increase the NTIA's efforts to oversee our private information online.

But NTIA's responsibilities do not end with privacy and security. The agency must also take an active role in encouraging broadband deployment and improving our nation's broadband maps.

Democratic members of this committee have introduced the LIFT America Act, which directs NTIA to distribute $40 billion to extend our broadband networks to Americans in every corner in the country.

Ensuring that NTIA is the agency that's distributing funds -- these funds is critical. The FCC already manages the Universal Service Fund, which operates independently for many appropriations, and changing that now by co-mingling USF with appropriated funds would be a mistake and would risk its long-term sustainability.

That's why the LIFT America Act would direct NTIA to handle broadband infrastructure funding and I would like to hear how Administrator Redl would handle this responsibility.

And finally, I am interested to learn how Administrator Redl plans to deal with internet governance and our international commitments.
Senator Cruz has been pushing for the U.S. to walk away from our agreements regarding ICANN and I strongly believe that Senator Cruz is playing right into Russia's hands in their efforts to shake global confidence in our government.

Ultimately, these efforts could undermine the integrity of the internet. I was even more disappointed to see that Senator Cruz tried to use the confirmation process to force Administrator Redl to commit to undermining our country's good will overseas.

These commitments are counterproductive and I would therefore like to hear from the administrator whether he has promised a predetermined outcome to his proceedings relating to America's oversight of ICANN.

So I don't know if anyone on my side wants the time that remains. If not, Madam Chair, I would yield the rest of my time.

Mrs. Blackburn. The gentleman yields back.

Assistant Secretary Redl, we are delighted that you are here this morning.

We appreciate your taking the time to come and we appreciate your testimony, and at this time I yield you five minutes for -- I recognize you for five minutes for an
This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee’s website as soon as it is available.

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opening statement.
Mr. Redl. Thank you.

Chairman Blackburn, Ranking Member Doyle, members of the
subsection, it's a pleasure to be back before the Energy
and Commerce Committee.

At the outset, I wanted to take this opportunity to
congratulate the committee on advancing RAY BAUM'S Act. As
many of you know, I spent seven years working here on the
majority staff alongside Ray Baum, and it's more than a
little bittersweet to be back in 2123 without him here.

But I am pleased to be here on the day that RAY BAUM'S
Act will get its moment on the floor. Ray spent his life
working in public service and his -- the RAY BAUM Act is a
beautiful tribute to a wonderful and it's all the more
fitting that it's being done by this committee through
consensus.

Consensus is similarly at the heart of what we do at
NTIA. For example, given our dual mandate from Congress to
protect government incumbent operations and to make more spectrum available for commercial use, getting to yes requires quite a bit of consensus building.

Thanks to the hard work of our Interdepartmental Radio Advisory Committee, NTIA was recently pleased to announce the selection of 3450 megahertz to 3550 megahertz as a candidate for reallocation to commercial services.

While we still have a lot of work to do to determine how to protect government incumbents that are in this band, the spectrum is immediately adjacent to the FCC's Citizens Broadband Radio Service spectrum and could help fuel our nation's leadership in 5G.

Just next door is the 3.5 gigahertz spectrum, and NTIA's Institute for Telecommunications Sciences, which is located in Boulder, Colorado, is working to bring CBRS to life. The heart of this innovative spectrum band are two systems -- Spectrum Access System and the Environmental Sensing Capability -- that will allow commercial uses to coexist with Navy radar systems. ITS is working with all interested stakeholders to certify these systems that are necessary to bring the band to market.
Combined with the FCC's recent announcement on C-band spectrum, our efforts could make as much as 750 megahertz of contiguous midband spectrum available meet our nation's 5G needs.

In addition to our spectrum work at NTIA, we work extensively to represent U.S. interests before consensus-based organizations like ICANN and the International Telecommunication Union.

The ITU's Plenipotentiary Conference is coming up at the end of this year and we are working with our colleagues at the Department of State to finalize U.S. positions and develop strategies to advance U.S. interests.

Additionally, we are actively working to promote the U.S. candidate to lead the ITU's development sector, Doreen Bogdan-Martin. Doreen's a former NTIA employee who spent many years working at the ITU Secretariat in Geneva to advance telecommunications policy around the globe. She's incredibly qualified and I am proud to support her candidacy.

Importantly, if she's elected, Doreen would be the first woman to hold any of the ITU's five leadership elected positions in the union's 153-year history.

Finally, I'd like to highlight the good work the
Department of Commerce had been doing to improve our nation's cybersecurity.

President Trump has made it clear that securing our communications networks is a national security priority and the Department of Commerce plays a critical role in this national effort.

Whether it's NIST's work on the cybersecurity framework or NTIA's work on multi stakeholder processes, under Secretary Wilbur Ross' leadership, the department is the commercial internet's voice within the executive branch.

In January, the Departments of Commerce and Homeland Security issued a draft report on actions that can be taken to address the threat of botnets.

The report outlines a positive vision for the future with goals and tasks that would improve the resiliency of the internet ecosystem.

We know that these automated distributed threats are a global problem and that no single sector can fix the problem in isolation. But we also know there are effective tools that can help mitigate these threats but are not consistently used.

The challenge of distributed threats is exacerbated by
the volume of devices as we move to the Internet of Things
and I believe the greatest challenge for realizing the full
potential of IOT will be cybersecurity.

Many do not think of their thermostats, light bulbs,
cars, or appliances as digital devices that may carry
cybersecurity risks. But in the age of IOT, they can.

If we want to promote innovation and growth, we must
ensure that America can trust the IOT devices in their lives.

Late last year, one of NTIA's open multi stakeholder
processes produced agreement on documents focused on IOT
security and patching and we continue to engage with the IOT
and security communities to promote the security of the
devices on which we are increasingly reliant.

Throughout all of this work, NTIA has consistently
looked to create as many avenues for engagement with the
private sector as possible. That will continue under my
watch.

The communications and information sectors are the
backbone of the economy and they are too important not to get
right. The United States must continue to lead as new
technologies including 5G emerge and we must continue to
harness this growth for American businesses and American
workers.

It will take hard work and a lot of listening to maintain America's leadership in the communications world. That will be my focus as NTIA's administrator.

Thank you again for inviting me. I am really happy to be here testifying and I look forward to your questions.

[The prepared statement of Mr. Redl follows:]

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Mrs. Blackburn. We thank the gentleman for the testimony. Thank you so much, and keeping on time today. This is a good thing. Off to a good start.

I want to yield myself five minutes for questions and use this time -- I've just got two questions I want you to go a little bit further on in your explanation.

As we are continuing this transition to Next Gen 911 and looking at the PSAPs across the country that are responsible for their service areas with oversight from their state, I want you to talk a little bit more about how NTIA is going to help facilitate a successful nationwide transition to the Next Gen 911 and then also, as looking at the money, how you are going to make certain that these federal dollars are pointed and explicitly used, and then I am going to come to you for a second question on IANA.

So short responses welcome.

Mr. Redl. Thank you, Chairman.

On Next Generation 911, as you're aware, this is a shared responsibility that NTIA has through our coordination that we work together with our colleagues at the National Highway Traffic Safety Administration.

NHTSA and NTIA have been working over the last year to
put together a grant program that was envisioned by the Middle Class Tax Relief and Job Creation Act of 2012.

We are in the final stages of coordinating that process through the executive branch and are optimistic that we will be able to have those grants out to companies and groups that are working on 911 policy by the end of this calendar year.

So we are real excited about getting -- moving forward on this. There is -- I believe it's $115 million that was allocated for this purpose in the -- in middle class tax relief and we are getting ready to do the grant program that Congress asked us to do.

Mrs. Blackburn. Excellent. We appreciate that, and I will tell you we have heard from several of our local governments wanting -- as they are looking at revamps or where they may have voids in their system and especially as you look at public safety, school safety, things of that nature, they are curious as to what that process and that time line is going to be. So good communication on that is going to be helpful.

You touched on the IANA transition. So if you will elaborate a little bit more about that transition and how you see it going and what you think next steps are going to be.
Mr. Redl. Sure.

The IANA transition is complete. It was completed and at this point the U.S. government's role in IANA is limited to our function as the U.S. representative on ICANN's Government Advisory Committee.

I know a lot has been made about what commitments were made and what my personal opinions are on the IANA transition. So I appreciate the opportunity to sort of clear the air.

I made my personal opinion known in my confirmation hearing, which I think it would be very difficult to put the genie back in the bottle on ICANN.

ICANN is out there engaging in doing the IANA functions as envisioned through the transition. But my personal opinion certainly shouldn't carry the day as the opinion of an entire federal agency.

So in the confirmation process in my conversations with Senator Cruz and Senator Lee, I committed to a process to looking at these things as agencies are supposed to, to ask questions and seek expert input and formulate an opinion of the administration based on feedback from experts in their fields.
I continue to be working with Secretary Ross' office in trying to find a way to get more feedback on this. But in the meantime, we are, at NTIA, continuing to serve in the role that we are supposed to as ICANN -- as our representative to ICANN.

Mrs. Blackburn. And as you look at recouping spectrum, the 100 megahertz, you want to say just a little bit about what you think the potential is there?

Mr. Redl. I am sorry. What spectrum?

Mrs. Blackburn. Spectrum.

Mr. Redl. Just spectrum in general?

Mrs. Blackburn. Yes.

Mr. Redl. We are spending -- you know, a good half of the people at NTIA spend all day working on spectrum issues and as this subcommittee is painfully aware, it's an issue I care a lot about. I spent a lot of time here as a staffer working on those issues.

We were incredibly pleased to be able to make the announcement about 3450 to 3550 as a candidate for additional study and we also continue to make progress on the recommendations and the requirements that are required under the Spectrum Pipeline Act.
It's by no means the only band we are looking at and certainly we are continuing to look across the entire electromagnetic spectrum at ways to make sure we are both meeting the mandate to make commercial services spectrum available but protecting government incumbent operations and their critical missions.

Mrs. Blackburn. The gentleman yields back.

And Mr. Doyle, you're recognized for five minutes.

Mr. Doyle. Thank you, Madam Chair.

I am concerned about the FCC. It seems they have so drastically walked away from their role of protecting American public's communication networks from cyberattack. I think the FCC's failure in this area is part of the reason we saw that bizarre 5G nationalization memo come out of the National Security Council.

Administrator, putting aside the prescription put forth by that memo, can you agree with the diagnosis that the government must be doing more to secure our networks and the supply chain for 5G technology, particularly in light of the recent revelations about vulnerabilities to currently deployed LTE networks?

Mr. Redl. Ranking Member Doyle, I thank you for the
627 question.

628 Yes, I can agree with that and I think the president has
629 made clear that he also would agree that we need to do more.

630 The president's national security strategy listed 5G
631 security as a national security threat and so across the
632 federal government we are all trying to coordinate defined
633 ways to push security to the forefront to continue to make
634 security of our communications networks a priority.

635 Mr. Doyle. I know during your confirmation that you
636 made a commitment to Senator Cruz to start a process of
637 reevaluating the ICANN transition, as you stated early. I
638 just want to be certain you did not agree to any specific
639 outcome of the process, just that you would start a process?

640 Mr. Redl. That's correct.

641 Mr. Doyle. And can you also just commit to the
642 bipartisan leadership of this committee that you'll just keep
643 us apprised of any process NTIA might be running on revising
644 ICANN transition?

645 Mr. Redl. Of course we will be responsive to the
646 committee.

647 Mr. Doyle. Thank you.

648 At the beginning of this Congress, every Democratic
member of this committee introduced the LIFT America Act to help promote secure and resilient infrastructure for the American people.

Title I of the LIFT America Act would allocate $40 billion to NTIA to build out broadband to 98 percent of the country. One thing that is not explicitly included in the LIFT America Act is grant making authority for the NTIA.

In your view, should we include grant making authority for the NTIA and the broadband deployment program in the LIFT America Act.

Mr. Redl. At NTIA, we have been looking as part of the administration's process of coming up with a plan for infrastructure at all the ways that we can help to bring broadband infrastructure to every corner of this country.

You know, certainly, I would never say that we should not have every tool available in the toolkit and grant making authority is one of those tools.

If Congress were to give us that authority then certainly we would make the best use of it.

Mr. Doyle. So NTIA's Institute for Telecommunication Sciences is instrumental to your mission of coordinating federal spectrum use and working with federal stakeholders on
clearing bands and sharing them.

Do you believe that ITS has sufficient funding for that mission considering the drive for more sharing in federal bands as the case is with CBRS band?

Mr. Redl. You know, Mr. Doyle, I am particularly proud of the work that ITS does. I think they are a really unsung part of the federal government.

The hard work they do on basic R&D, on spectrum interference, and on the electromagnetic interference is a critical part of what we do.

They work tirelessly and are a critical part of making sure that as we look to repurpose more spectrum that we have accurate and actionable data on how federal and nonfederal systems will work together.

I certainly would welcome support for what they do.

It's a critical part of our hard work and thank you for your recognition of that.

Mr. Doyle. Thanks.

As I mentioned in my statement, I think NTIA has done good work in bringing stakeholders together from inside and outside of government to address these complex and emerging topics.
Do you plan to continue that work and, if so, what are the topics that you plan to address?

Mr. Redl. So we are in the process of figuring out how best to engage on all of these topics with the private sector. But as I mentioned in my opening statement, we think that engagement with the private sector is what NTIA really brings to the table as a value add.

We have had a lot of success in bringing stakeholders together and finding ways to get to yes. Under my tenure, I plan to continue finding as many ways as possible to get the private sector on board with government priorities and have them be done in a way that drives consensus.

Mr. Doyle. Thank you. I wish you well.

Mr. Redl. Thank you, sir.

Mr. Doyle. Madam Chair, I yield back.

Mrs. Blackburn. Gentleman yields back.

Mr. Walden, you're recognized for five minutes.

The Chairman. Thank you very much, Madam Chair.

It its fiscal year 2019 budget request, NTIA asked the congressional or for congressional authorization to negotiate leases with private entities to expand their access to federal spectrum. It's a novel idea.
Can you elaborate on how NTIA leases would differ from traditional licenses and should a leaseholder have an expectation of automatic renewal of a lease?

Mr. Redl. Thank you, Mr. Chairman.

The leasing option is a particularly interesting tool that we are trying to bring to bear on this challenge. We all know, in this subcommittee, that clearing is still the gold standard and the law is clear that NTIA needs to focus on clearing as its first option.

But there are some bands that federal users are in where clearing just won't be an option -- where those systems are either specific to that frequency band or the costs to relocate and improve those systems would exceed any potential revenue, which would fail this test under the Commercial Spectrum Enhancement Act.

But our mission is to try and find ways to use the spectrum as efficiently as possible and so the request for leasing authority is a way to add an additional tool to our toolkit.

In those areas where we can't clear, there are other efficiencies that could be gained through leasing. I certainly don't want to prejudge what those leases or what
the terms could look like.

That would have to be part of our consultation not only with folks in the industry but also with the Congress as part of the -- of the process.

But we are really excited about the prospect of having more tools to bring to make spectrum available for commercial use.

The Chairman. And I want to commend you again on your work to identify government spectrum that can be potentially cleared and made available for auction. It's a ongoing quest we share -- a goal to achieve. And so I want to commend you on that.

There is been debate in Congress for several years about Spectrum Relocation Fund, specifically, proposals to allow the Office of Management and Budget to borrow money from the Treasury for relocation purposes prior to auction proceeds being deposited into the fund from an auction.

How important is this ability to borrow funds for relocation purposes?

Mr. Redl. The SRF -- the Spectrum Relocation Fund -- has been probably the most critical tool that we have had to provide incentives to agencies to find ways to be more
efficient.

The changes that were originated in this committee in 2012 and again in 2015 have made real improvements to our ability to make that money available to agencies so that the individual agencies don't bear the risk up front of the potential for relocation.

We are continuing to look at ways to improve the SRF. The SRF is why we were able to make the announcement on 3450 to 3550 and so many of the other projects we are working on to bring spectrum to market. So anything Congress can do to bolster the SRF is certainly welcome.

The Chairman. And speaking of auctions, as you know, in the RAY BAUM'S Act, we fix the issue regarding deposit of proceeds. How important is that fix to allowing auctions to go forward?

Mr. Redl. Well, that's an issue for the FCC chairman. I mean, that is -- Section 309(j) of the Communications Act is their venue and not mine.

That being said, anything that would stand in the way of bringing more spectrum to market I think is a challenge that is worthy of tackling.

The Chairman. Okay.
Given the costs CBO believes comes with the -- back to SRF now -- policy, does it make sense to amend the SRF and grant greater flexibility in the same bill in which we authorize an additional spectrum auction? Do you need more flexibility there?

Mr. Redl. More -- I mean, no federal employee has every said, no, I would like less flexibility in how I do my job, and I am certainly not going to be the first.

So more flexibility is always welcomed. You know, as to which bill you would put that in, sir, I think that's a question for you all to answer, not for me.

The Chairman. I appreciate your candor on both points.

[Laughter.]

The Chairman. And we look forward to working with you, going forward. With that, Madam Chairman, I'll yield back.

Mrs. Blackburn. Gentleman yields. Mr. --

The Chairman. Before I do that, could we recognize the assistant secretary's wife who is here -- Amy Redl, right there in the front row. Delighted.

Mr. Redl. She'll be very embarrassed. Thank you, sir.

[Laughter.]

The Chairman. Yes, I'm in trouble now.
[Applause.]

Mrs. Blackburn. We are glad that she is here to witness this because we know that she will critique him.

[Laughter.]
The Chairman. As she should.

Mr. Doyle. I think she's good for him.

Mrs. Blackburn. Yes, and she's from Pittsburgh.

Mr. Doyle. And those Pittsburgh girls are tough.

Mrs. Blackburn. That's right. Making Mr. Doyle's day.

Okay.

Mr. Pallone is not here so let's go on down. Ms. Clarke, you're recognized.

Ms. Clarke. Thank you very much, Madam Chair, and I thank our ranking member as well, and let me add my voice to those who said you made a very smooth transition into this position and I commend you for the work that you're doing.

Assistant Secretary Redl, as you're aware, I introduced the Spectrum Pipeline Act in 2015, which later was incorporated into the bipartisan budget bill of 2015.

And because my bill became law, the federal government and the NTIA gained access to new research and development funding to help free up federal spectrum used by the American
NTIA recently announced that it will study how to make 100 megahertz of spectrum available for use in 5G networks. Can you explain how the availability of research and development funding stemming from my Spectrum Pipeline Act is helping to aid this effort?

Mr. Redl. Absolutely. And Ms. Clarke, I'd like to start off by also saying it was a pleasure to work with you and your staff on that Spectrum Pipeline Act in 2015. The availability of that funding is what's making it possible for us to continue driving forward. Making the research money available to figure out whether or not agencies will be able to make spectrum available has been a gating criteria to getting to yes, and Congress rightly heard the concerns from the agencies that that funding being provided after the work had been done was a real impediment to their budgeting processes.

So it is part of the reason that we were able to make 3450 to 3550 announcement as a candidate band and thank you for that help.

Ms. Clarke. Very well.

This month, Congressman Issa and I plan to launch the
Congressional Caucus on Smart Cities to bring American communities into the 21st century through innovation and technological change.

We believe that embracing smart technology will make our communities more sustainable, resilient, efficient, livable, and competitive in a world in which technology is constantly advancing.

For its part I applaud the work that NTIA's BroadbandUSA office to promote smart cities. This work spans both Democratic and Republican administrations and includes initiatives like providing toolkits to help communities use partnerships to build smart cities and hosting webcasts to help communities better understand why broadband is necessary for making this government smarter -- their government smarter.

Assistant Secretary Redl, in your view, why is it important that cities use technological advances in serving their constituencies?

Mr. Redl. I mean, I have spent my entire career trying to advance communications and technology. So it's a bit self-serving.

But I feel like this is an area where we have been able
to produce a lot of gains for folks, whether they are in smart cities or rural areas, whether they are low income or wealthy, and I continue to believe that that's the case.

I thank you for recognizing the hard work that the Department of Commerce is doing on these issues. I think it's important to note that in addition to the hard work that the BroadbandUSA team is doing our sister agency NIST is also doing a lot of work on smart city and really developing some of the standards and some of the frameworks that are going to be critical to this work, going forward.

Ms. Clarke. And can you commit that promoting the growth of secure and resilient smart cities across our nation will be a priority of yours during your time leading the NTIA?

Mr. Redl. We are working on it now and we plan to continue working on it.

Ms. Clarke. Awesome. And would the BroadbandUSA office be able to do more projects like those I described if Congress budgeted additional resources for the program?

Mr. Redl. You know, certainly if there are more resources available BroadbandUSA would continue doing more work in their field.
You know, we are -- we are doing as much as we can within our budget and we will continue to make the most we can to do more with less in that budget.

Ms. Clarke. Very well. And as a co-sponsor of the AIRWAVES Act, I am so pleased to see bipartisan support for progress on spectrum. I am curious if there are -- there are changes you would make to that bill and are we missing any bands that you would like to include.

Mr. Redl. So the Trump administration doesn't have an official position on the AIRWAVES Act but it's sort of a threshold matter, I would say.

I think we are looking at NTIA across all of the federal assets -- all of the federal spectrum holdings -- to see where there are opportunities to move forward, where there are opportunities to be more efficient, to consolidate operations, and we would love to continue working with your office and with other members as you look at different bands that are going forward.

Ms. Clarke. Very well. And does NTIA have any plans to initiate new multi stakeholder processes to address some of the issues surrounding internet policy today? If so, what are the topics to be examined?
Mr. Redl. So we are continuing to flesh out how we are going to approach these issues and as we work our way through the interagency process because most internet issues, while NTIA has a very strong role in them, involve coordination across the federal government.

We will certainly keep the committee apprised as we drive forward on them.

Ms. Clarke. Very well. Much continued success to you.

Mr. Redl. Thank you, ma'am.

Ms. Clarke. Thank you, and I yield back, Madam Chair.

Mrs. Blackburn. Gentledady yields back.

Mr. Lance, you're recognized for five minutes.

Mr. Lance. Thank you, Chairman.

I am pleased that we were able to include Mobile Now in the FCC reauthorization we are considering on the floor later today.

As we look to the next chapter in spectrum legislation, I certainly believe that the bipartisan bicameral AIRWAVES Act that I recently introduced with Ranking Member Doyle is a fitting candidate.

It has received wide support from both licensed and unlicensed industries, public interest groups, and several
I know that in the executive branch you do not take official positions on these pieces of legislation. But Mr. Redl, what are your impressions of the bill and do you think that it's possible at the appropriate time that the administration will be able to support it, at least in concept?

Mr. Redl. Well, Mr. Lance, thank you for giving me the recognition. But I can't take a position on it. The administration doesn't have a formal position on the bill. That being said, I really applaud all the work that's being done in Congress and the attention that's being paid to spectrum at this point.

Spectrum has always been one of those topics that have been incredibly important to our communications ecosystem and, frankly, most Americans don't pay much attention to it because it just works.

We are very happy to be working with your office and with other offices on this committee to make sure that as we go forward we are looking across the entire electromagnetic spectrum at opportunities.

If you look just a few years ago, we weren't considering commissioners at the FCC.
looking at high band spectrum. It was considered spectrum was no good for these kinds of purposes. And yet, now here we are on the cusp of 5G.

You have companies like Starry that are out there using special temporary authority to provide broadband -- fixed broadband over those frequencies at gigabit speeds. It's really an exciting time to be in spectrum policy and we look forward to working with you on your bill.

Mr. Lance. Thank you. I want to continue to work with you on this issue and I hope that we are able to bring this matter to fruition.

I certainly applaud your action in identifying 100 megahertz of mid-band spectrum for potential commercial use in the 3 gigahertz band.

As you are aware, AIRWAVES has provisions dealing with related bands -- the CBRS band and the C-band. At the same time, the FCC is reviewing the CBRS rules and the FCC is considering a notice of inquiry partly related to the C-band.

It is my understanding that these are all important bands for 5G deployment. What are the opportunities in considering these adjacent bands for commercial use and what are some of the challenges?
Mr. Redl. Well, I am really excited that Chairman Pai and his colleagues at the FCC are considering looking at 3-7 to 4-2 of the C-band spectrum you've talked about.

Certainly, NTIA will be taking a look at what federal equities we have there and making sure that our federal users that have, you know, positions on that band will be heard at the FCC. But it's a real opportunity for us because mid-band spectrum is so good for both coverage and capacity.

And so the idea that we could make a broad swath of spectrum contiguously available for our nation's 5G needs is a real opportunity to continue our global leadership on these fronts.

The challenges are what they always are. These bands have incumbent users and the FCC has a tough challenge ahead of it trying to find ways to balance the rights of those incumbent users with the opportunities, moving forward.

Mr. Lance. Thank you, and congratulations again to you and your entire family and we will continue to work with you as we have in the past.

Thank you, Madam Chairman. I yield back the balance of my time.

Mrs. Blackburn. The gentleman yields back.
Ms. Matsui, you're recognized for five minutes.

Ms. Matsui. Thank you very much, Madam Chairman, and welcome. It's good to see you back here in another role.

I also want to talk about the spectrum. As you know, Representative Guthrie and I have been focused on initiatives for federal entities to share or relocate their spectrum-dependent systems allowed for commercial use.

Increasing the probability of sharing or relocating federal spectrum is often a multi-phase multifaceted strategy from research and development to planning to accommodate sharing our new spectrum assignments.

I commend your work with DOD at identifying 100 megahertz of spectrum for potential repurposing for wireless. Do you have any thoughts on what incentives might be most beneficial for federal entities, whether a uniform approach across all federal entities is possible?

Mr. Redl. Well, thank you, Ms. Matsui.

Thank you for the commendation on the work. I would be remiss if I didn't note that getting to yes on that 100 megahertz required the hard work of a ton of folks across the federal agencies.

And that's what's interesting about doing federal
spectrum work is that it is rare that there is a band where we don't have multiple uses across multiple geographies and multiple places within the time domain.

And so every band is a unique challenge. To that end, providing incentives is not a one-size-fits-all approach. So to the extent that Congress can continue to provide us with tools to address each one of these users individually and address their concerns with making sure their systems are not impacted by any potential move, we would welcome that conversation.

Ms. Matsui. Okay. So there is not one approach at all so there might be targeted solutions over every individual agency?

Mr. Redl. Yes.


Making more spectrum available for commercial use and new technologies will be critical to ensuring we remain the global leader in 5G deployment.

As you work to identify new bands that support new generation broadband networks, it is also important that we consider opportunities to use commercial bands more efficiently.
I am mindful of the ongoing work towards technical solutions to terrestrial services in the L-band. What are your thoughts on how we could push forward on spectrum proceedings such as the L-band that protects incumbents from interference and accommodate new spectrum use cases?

Mr. Redl. So that's at the heart of what we do and the L-band, perhaps the most well known example of trying to do L-band sharing, is trying to find ways for the proposal before the FCC for Ligado to use spectrum without adversely impacting the global positioning system.

NTIA spends a lot of time working across the federal agencies to try to find ways to get to yes. But getting to yes is going to mean finding ways to protect GPS without having to make drastic changes.

We are waist deep in that, to put it bluntly, and we are going to continue driving forward on it. We think there is a lot of work that's been done to figure out the technical characteristics and there is a lot of work yet to be done to get everybody at the table to yes. But it's something that we are committed to.

Ms. Matsui. Okay. Thank you.

I applaud the FAA's interagency Spectrum Efficient
National Surveillance Radar, better known as SENSR feasibility study. The research and development for this initiative provided under the Spectrum Pipeline Act is focused on consolidating existing surveillance radar used to track aircraft and weather.

As you know, this initiative would make a minimum of 30 megahertz of spectrum in the 1300 to 1350 megahertz band available. How could we be helpful in evaluating possible solutions that will make the spectrum available?

Mr. Redl. Well, we are currently in the process of going through that. We are acutely aware of the deadlines in the Spectrum Pipeline Act and are working actively across the federal government on the SENSR system to try and find ways to get to yes.

What can Congress do? Continue to support us in this work. You know, we have a lot of work to do. Those are systems that are critically important to national security. And so your continued support in trying to help keep everybody at the table and driving towards consensus is much appreciated.

Ms. Matsui. So it's continued effort, particularly, encouraging other federal entities to look at their spectrum
systems to evaluate where they could be consolidated,
modernized, or otherwise allowed for sharing.

So it's just continued work to try to find that special
little nugget that will move us forward then?

Mr. Redl. Yes. Figuring out the puzzle pieces of
making spectrum work is what, you know, like I said, a good
half of NTIA's employees do every day, working to figure out
how to make all those authorizations work collectively
together in a way that gets our national mission done but
also makes spectrum available for commercial services.

We appreciate the support. We appreciate the ongoing
dialogue with this committee that has been so engaged on
spectrum. So thank you so much.

Ms. Matsui. Well, thank you very much for your dialogue
and I appreciate -- and I do appreciate working with you.

Thank you.

I yield back.

Mrs. Blackburn. Gentlelady yields back.

Mr. Latta, you're recognized for five minutes.

Mr. Latta. Thank you, Madam Chair, and Mr. Assistant
Secretary -- David, welcome back. Good to see you.

In my role as the chair of the Digital Commerce and
Consumer Protection Subcommittee, we have done great work on clearing the regulatory path to self-driving vehicles.

We also made a clearer path for increased access to spectrum. It's going to be the new wireless 5G tech networks that drives some technology solutions supporting self-driving cars.

Would you tell me how much more spectrum 5G networks we will need and do you have any time frame within which we need to make available a certain amount of spectrum to ensure the advancement of self-driving cars become a reality?

Mr. Redl. Mr. Latta, I wish it was a question that lent itself to a simple answer but it doesn't. We are constantly reevaluating how much spectrum is needed both for government operations and for commercial operations and that's the heart of our spectrum mandate.

Self-driving cars are a unique mission but they are another mission, and so as we look at all the things that we are asked to accommodate we are working across the federal government with our colleagues at the Department of Transportation and certainly with our FCC colleagues to try and figure out ways to make this a reality.

Most of the self-driving car systems that have been
considered to date are a hodgepodge of different systems. We don't anticipate that changing.

The spectrum at 5.9 that has been allocated to the National Highway Traffic Safety Administration is part of that puzzle and we certainly look forward to continuing to engage with them to try and help self-driving cars become a reality.

Mr. Latta. Okay. Well, thank you.

Also, with tax season upon us and fraudulent filings on the rise, I've been concerned with an issue faced by a lot of the certified public accountants out there in how the Internet Committee for Assigned Names and Numbers manages the award of generic top-level domains.

I've highlighted one particular example that is -- that is one of my concerns which involves how the CPA organizations were not awarded the dot cpa domain.

Would you share any thoughts or insights about how ICANN manages the domain name process and if you are able to rise your general specific concerns or observations with them directly?

Mr. Redl. Sure, and thank you, Mr. Latta. I am very familiar with the dot cpa issue both from my time here and
now my time at NTIA.

Certified public accountants had applied through -- excuse me, through ICANN's process for the generic top-level domain dot cpa and that has been an ongoing process for quite some time.

My staff is engaging actively with the CPAs to try and find a resolution. As our role on the ICANN Governmental Advisory Committee, we will stand up for U.S. interests and in this case this is one of those interests.

ICANN is holding one of its meetings next week in Puerto Rico. I plan to be in attendance and I have a scheduled meeting with the CPAs to try to see if we can figure out a way to get this resolved through the ICANN process as expeditiously as possible.

Mr. Latta. That would be great. Thank you.

In terms of the next steps in broadband mapping, what do you propose can be done about identifying locations unserved by broadband service?

You know there has been a lot of work done by this subcommittee and also with the working group concerned about broadband out there, especially in our rural areas.

Have you identified other government agencies' processes
or public utilities that can help you geolocate in those
target specific unserved addresses or locations to better
understand the demand in those more remote parts of our
country?

Mr. Redl. Sure. So the president's request for
additional funding for NTIA for mapping is not just to
produce a map but also to produce an assessment of broadband
capabilities and provide a tool for policy makers both here
on the Hill and across the executive branch to better target
the funds that are allocated to broadband.

Our approach, should we have the additional funding,
would be to not only look at the existing data sets but go to
try and find additional data sets. By overlaying that data
across different commercial products, you're able to take a
look and see where there are discrepancies and typically that
is the way you figure out where you need to do validation.

We have had a lot of experience doing validation of data
and we have an extensive set of relationships through our
State Broadband Leaders Network with folks at the state and
local level who have continued the mapping work at the state
level throughout the last couple of years.

Minnesota is a great example of that. They've continued
doing this mapping work, and incorporating that data -- that
boots-on-the-ground validated data -- would be part of what
we would like to do if we are, again, put into the job of
doing mapping.

Mr. Latta. Well, thank you. And, again, it's really
important as you go forward to always remember that, looking
at the unserved versus the underserved, because there is a
lot of our areas in our districts that are totally unserved
right now. So I appreciate that.

Madam Chair, my time has expired and I yield back.

Mrs. Blackburn. Gentleman yields back.

Ms. Eshoo, you're recognized for five minutes.

Ms. Eshoo. Thank you, Madam Chairwoman.

Welcome, Mr. Administrator. It was David. Now it's Mr.
Administrator.

[Laughter.]

Ms. Eshoo. It's great to see you here. Congratulations
to you, and it's wonderful that your wife is here as well. I
can see the pride in her smile.

You know that the years that you've been with us on the
committee that I have pressed and pressed and pressed on
unlicensed spectrum because that really is the innovation --
the platform for innovation.

So in my view, it's important to have unlicensed spectrum and low, mid, and high bands the same way we do for licensed in low, mid, and high bands because they have different use cases, and this is the case with Wi-Fi operations.

Is NTIA studying any bands below 6 gigahertz that are promising for unlicensed, giving more valuable bands below 6 gigahertz away for commercial use?

I mean, I think that we need to know what your thinking is on that. And are you willing to commit to that some of this sub 6 gigahertz bands will be designated for unlicensed?

Mr. Redl. So, I mean, I'd love to be able to make that assurance but NTIA doesn't make those calls. So I think it's important to note that --

Ms. Eshoo. Who does? Who does?

Mr. Redl. -- that the decision of whether licensed or unlicensed allocations are made is an FCC determination. What we are doing at NTIA is looking at all of the federal frequencies and trying to find ones for which we can make commercial use available and to nonfederal use available. We are agnostic about this.
Ms. Eshoo. Is there any -- is there any consultative role that you play with the FCC on this?

Mr. Redl. Of course, and as the --

Ms. Eshoo. And so what would your conversation sound like?

Mr. Redl. So we haven't taken a firm position. But I think you know personally that I have said before that we believe in a balance of license and unlicensed and that's the way that NTIA has looked at things in the past.

Going forward, the up side to the fact that we are now looking at a broader swath of spectrum than we were in the past is that one of the biggest challenges we had to do we make it licensed or do we make it unlicensed was scarcity.

As we look at high band spectrum, we have so much more available that it becomes easier to find ways to make some available for both uses and I certainly think there is a role for both, as we go forward, and we will continue to consult with the FCC and make sure that we are pushing that forward.

Ms. Eshoo. Well, it sounds somewhat promising.

Somewhat.

[Laughter.]

Ms. Eshoo. I have made it a point in my district to
meet with the PSAPs throughout the -- you know, each community and I did that I think a week or 10 days ago in a smaller community in my congressional district but nonetheless the importance of that -- of that center.

It was very interesting to me when I asked them if they have had any communication from the federal government on anything. And you know what? They haven't. They simply -- they said there isn't any outreach. There isn't anything. And I think that we need to be in communication with them. I know it's been six years since the Middle Class Tax Relief Job Creation Act was signed into law. There hasn't been a single grant that has been put out there.

But they need these resources. They need these resources. They need a partner. They need a federal partner.

Now, I know that someone else asked about it and that you went through when you anticipate the grants being granted or -- the grants being granted?

Mr. Redl. Yes, ma'am. So I've been on this job for a little over three months and I know how much work you personally put into those provisions in the Middle Class Tax Relief and Job Creation Act and we have made it a priority to
get that moving.

Ms. Eshoo. Now, OMB has to -- it's over at OMB now?

Mr. Redl. So it is -- yes, it is in the clearance process. We had -- so it's not exclusively within our purview, as you know. It's a shared responsibility between the Department of Commerce and the Department of Transportation.

So Commerce and Transportation have been working to clear both of their respective processes and then the document has to be cleared by OMB.

We are in the process of making that happen and we are hopeful we will get it out the door very soon.

Ms. Eshoo. So what's the next step after very soon?

Mr. Redl. The next step after that is that will establish rules for a grant program and we will be then taking applications for grants from interested parties to improve Next Generation 911 services.

Ms. Eshoo. Are you going to go out there and kind of wave the flag and say, we have $115 million, which is not a lot of money when you divide it by 50 states and all the PSAPs. We have, what, 6,000, approximately, PSAPs --

Mr. Redl. Yes.
Ms. Eshoo. —-- in the country? I think that we -- I think we need to really be aggressive about this. But you know what?

If they don't hear from us they need to be prepared to put in for whatever they are thinking they need to put in for and I think that you need to take a lead on that.

It's -- I didn't -- I left this PSAP encouraged because of all the things that they are doing. They are working so hard and working very smart. But that they don't know that anything exists 3,000 miles away is not very good.

So I think that you have -- there is some work to be done on that. And I think that today -- if I might say this -- that this afternoon we are going to be taking up the RAY BAUM'S Act -- you know, how life goes on.

He's passed on. He would be very proud that you're here today in your new role and I'll just end on that note.

Thank you.

Mrs. Blackburn. Gentlelady yields back.

Mr. Guthrie, you're recognized.

Mr. Guthrie. Thank you, Madam Chairman, and that is a great tribute to ray in the RAY BAUM'S Act and then an acronym to come up with the RAY BAUM'S Act that is just --
it's important and I know he would be so proud as just to finish what my friend from California would say. Speaking of another friend from California, Ms. Matsui, so Doris and I -- Ms. Matsui and I have worked on the Federal Spectrum Incentives Act to provide financial incentive to government agencies to relocate or share their spectrum licenses, which are very familiar -- you're very familiar with, and given that one of the incentives included in the bill which would allow agencies to use funds to offset sequestration, and now that we have a two-year budget agreement, are there ways to consider updating the bill and whether in terms of how auctions proceeds could be used or otherwise -- for proceeds to be used. And what about allowing agencies to use funds to purchase equipment or other things? How would you just touch on updating that act?

Mr. Redl. Mr. Guthrie, you know, I think -- as I said earlier, having as many tools as possible and reducing the friction as much as possible for federal agencies that are being asked to relocate their systems while maintaining their existing mission profile is something that we should always be considering.
The challenge with relocating these systems is it's not like you can simply shut them off and stop doing the job. These agencies have to maintain mission readiness throughout the entire process. It's a long process and it's a long and costly process.

So anything we can do to make sure that we are not burdening our agencies unduly is welcomed.

Mr. Guthrie. All right. Thank you.

And one other issue that we have discussed today is the National Broadband Map. I know you talked some of that with Mr. Latta.

First, I am glad to see a budget request that includes mapping as I believe NTIA is the best place to house it. In my district, census blocks are too big to perform 477 data to be useful because in the rural areas, even a few miles of my city of Bowling Green, which is the home of Connected Nation, who's represented here as well, which is a growing southern -- like one of the new South growth cities -- but if you could just -- fastest growing city in the state -- if you just get out -- right outside of our city limits there is access to broadband.

Some development and being able to move forward is kind
of limited to broadband. That's a big county issue with our County Fiscal Quarter Counting Commission, as most people call it. And so it's a big concern not just in rural rural Kentucky but just outside of growth Kentucky.

So there is a lot of information we need. Census maps -- census tracks just aren't enough. I know you talked with Mr. Latta, but have you talked about getting granular service availability data from providers?

Mr. Redl. So in addition to what we would like to do if we were given the new appropriation with additional data sets, NTIA recently filed comments at the FCC expressing the administration's position on how to improve the FCC's 477 data and these are the issues we looked at.

And, essentially, our comments broke down to say there are two things you need to improve. You need to improve accuracy and you need to improve granularity. But also, we need to balance the need for increased accuracy and granularity with the burden that we are placing on filers. And I don't envy the FCC in striking that balance but we need more accurate and more granular data.

Mr. Guthrie. All right. Thank you.

And finally, regarding high band spectrum, are NTIA and
the administration generally on board with Chairman Pai's recent announcement that the commission will move forward with auctions in the 24 to 28 gigahertz bands?

Mr. Redl. We are excited about more spectrum being made available to bring to bear on our broadband challenges. I mean, the president has made it very clear that getting broadband out to rural America is a priority and we think that the high band spectrum is one way for us to do that. The potential for fixed wireless in those bands could be a real game changer in rural America.

Mr. Guthrie. All right. Thank you, and I'll yield back my time.

Mrs. Blackburn. Gentleman yields back.

Mr. Kinzinger, you're recognized for five minutes.

Mr. Kinzinger. Well, thank you, Madam Chair, for yielding.

I want to congratulate you on your job. It's great. It's good to have you here. I enjoyed meeting with you in your new capacity back in February and I appreciate that you've been making the rounds with members of this committee to discuss priorities.

I am also going to try to get through a number of
questions with my time. So if you can keep your answers as brief as possible, that would be great.

I'd like to discuss the February 26th announcement that NTIA and the Pentagon have identified a 100 megahertz band of spectrum. It's a 3450 to 3550 band that could be potentially repurposed to spur commercial wireless innovation including advanced wireless services.

I am all for opening up spectrum for commercial use. But as a military guy myself, I tend to look at things through a national security lens.

So I would want assurances from the Pentagon that introducing commercial operations to this band of spectrum would have no negative effects on defense.

First, will you reaffirm your commitment to ensure that the military communications operating in this band must be a priority?

Mr. Redl. Absolutely.

Mr. Kinzinger. And now in the event that the engineering study shows that this is feasible and there will be no degradation of military operations, I'd like you to briefly describe what sorts of commercial ventures we might see in this band.
You know, might we, for instance, see spectrum sharing technologies that essentially allow for dual use while prioritizing government ops?

Mr. Redl. So that's the phase we are in now -- figuring out what the options will be once we figure out through the engineering studies what the profile of existing DOD systems will look like in a post-transition.

We would be working with the FCC to figure out how this fits into the larger spectrum picture. You know, this spectrum is immediately adjacent to the 3.5 gigahertz band, which we are in the process at NTIA of certifying the systems to make the sharing in that band possible.

We will work with the FCC, going forward, to figure out what the right play is to make that available in the best way possible.

Mr. Kinzinger. The extensive federal and nonfederal use of this band makes it an ideal candidate for spectrum sharing.

Will NTIA and the DOD focus on dynamic spectrum sharing as a way to maximize its use? You basically kind of answered that.

As you know, this 100 megahertz band is immediately
adjacent to the Citizens Broadband Radio Service and the FCC's rules for CBRS are almost finalized now. If the NTIA and DOD move forward to open this band it would save time and money to simply extend the CBRS rules to the adjacent band rather than go through a potentially long rulemaking process.

In order to accelerate its commercial use, will NTIA and DOD consider applying the same rules under the FCC's Part 96 of the CBRS to this 100 megahertz band?

Mr. Redl. So, ultimately, the decision of how the nonfederal use would be done will be done through notice and comment at the FCC. But we will participate in that process.

Mr. Kinzinger. I know at least one company that's worked closely with the DOD on this band tier structure and I think it's safe to say that with the industry assistance this process can be much less painful.

Do you agree that industry can help accelerate and ease the transition process for NTIA and the DOD to enable shared use of this band?

Mr. Redl. Absolutely. We have got two advisory committees at NTIA that are on both sides of this equation to help us out -- the Commercial Spectrum Management Advisory
Committee for looking at the commercial side of the equation, the Interdepartmental Radio Advisory Committee on the government side -- and those two advisory committees give us at NTIA a more complete picture of both what the government users need and what spectrum users on the commercial side are looking for.

Mr. Kinzinger. Okay. And I'd like to briefly discuss the future of spectrum both in terms of what we can do with the spectrum that's currently being utilized as well as ultra-high and super-high frequencies that are not yet widely utilized in commercial ventures.

In your opinion, what's the most efficient way to deploy the spectrum that's already more accessible today? Would it be sharing, clearing, or some other means?

Mr. Redl. So when it comes to reallocating federal assets to nonfederal, Congress has been very clear that we need to prioritize clearing over sharing.

But that doesn't mean that we don't look at all potential tools that we have in our toolkit, and sharing and the request we made for leasing authority are part of those potential tools that we could bring to bear.

Mr. Kinzinger. And how can we make the process -- the
Mr. Redl. Yes. I think the work that Congress is doing to continue to press the issue and make more spectrum available is particularly helpful. But I think what we are really going to have to do as a country to see this move forward is continue pressing the private sector on standards. Standards, at the end of the day, are where these fights are won and lost and we, as a country, have been a leader in 4G standards. We need to continue pressing forward to be a leader in 5G standards.

Mr. Kinzinger. And do you believe that we will be -- still be fighting over the same spectrum bands in 20 years or do you think the technology will allow us to either share better or unlock higher and lower frequencies to spread things around?

Mr. Redl. I think it's yes to both. I think we will still be fighting over these spectrum bands in 20 years but I think we will also have new technologies to bring to bear. I mean, just in the last couple of years we have moved up into the spectrum frontiers in Horizon's portion of the FCC's work and, you know, five or 10 years ago that was unthinkable.
So at NTIA we continue to constantly reevaluate and figure out what technology has done to change our underlying assumptions.

Mr. Kinzinger. And very last question -- does the NTIA have the authorities necessary to operate in the current environment or in these future scenarios so that it can quickly deploy the use of spectrum?

Mr. Redl. The only thing is the request that we made in the president's fiscal 2019 budget with respect to leasing authority.

Mr. Kinzinger. All right. You did a great job. Thank you for getting through so many questions. I yield back.

[Laughter.]

Mrs. Blackburn. Mr. McNerney, you're recognized for five minutes.

Mr. McNerney. Well, I thank the chair and I thank the witness. I am sorry I missed some of your testimony. I had to step out.

But I am concerned about the FCC's reluctance to embrace cybersecurity as an issue. I think we have serious problems with cybersecurity and then when a significant portion of government experts are told to stand down I think we are...
asking for trouble.

Can you commit that in your role as head of NTIA you will help protect our nation's networks?

Mr. Redl. Absolutely, and we are -- we are continuing to do that now. The president, as you know, last year issued an executive order asking Commerce and Homeland Security to look at distributed threats like botnets and we are actively working to -- with our sister agency NIST and with Homeland to put together a report to the president on that issue.

Mr. McNerney. You have the resources that you need?

Mr. Redl. I mean, everyone always would like more resources. But yes, we are -- we are doing very well with the resources we have and certainly we are looking forward and hope that the president's fiscal 2019 budget will give us the money that we need.

Mr. McNerney. Okay. Well, following the rise in the disruptive IOT cybersecurity attacks, I introduced the Securing IOT Act.

NTIA has been active on this issue and I understand that in recent meetings of NTIA's multi stakeholders working group on IOT security upgradeability and patching that was held back in November. Can you update us on the progress of this
multi stakeholder working group?

Mr. Redl. Sure. That working group produced documents that were consensus documents from the stakeholders to address some of the concerns related around patchability and conveying that information to consumers.

We are really proud of that work. We think it's a real good start in terms of bringing security to bear on IOT, and I know that IOT security is a priority for Secretary Ross across the entire department.

Mr. McNerney. Well, what meaningful advances in IOT security can we expect?

Mr. Redl. Stay tuned. We are in the process of working that out. You know, part of the interesting aspect of the multi stakeholder process is you don't always know what will come next. The stakeholders have a way of asserting themselves.

Mr. McNerney. Well, I know that NTIA has also published a draft report on how to protect against botnets. You mentioned that a little earlier.

How can -- how do you expect that the findings and recommendations from this report will be used in practice by government and industry?
Mr. Redl. We will have to see. We are in the process now of incorporating comments to the draft report.

Our draft report was put out in January and both NTIA and NIST have been seeking comment from stakeholders to improve the draft in anticipation of deliver to the president in May.

What happens to the document and the recommendations therein will be up to the president and we are hoping to continue working on it.

Mr. McNerney. It would be nice to have some mechanism to ensure that federal agencies and government contractors follow these recommendations.

Mr. Redl. Sure would.

Mr. McNerney. I want to change direction a little bit. I want to make sure that my constituents have access to broadband and that that access is affordable.

How can NTIA's BroadbandUSA program help?

Mr. Redl. So BroadbandUSA has been continuing to do outreach and maintain relationships with the states and with local governments through the State Broadband Leaders Network and we have been trying to help produce best practices for communities to get investment from private sector entities.
because the economics of broadband are typically the biggest challenge to deployment.

We continue maintain that capability and work with our state colleagues and the president's request for an additional $50 million to provide and assessment and map of broadband availability I think would certainly aid policy makers both within the executive branch and certainly up here on Capitol Hill in trying to define what the unserved parts of our country really look like.

Mr. McNerney. I am going to change directions again. Does the NTIA have jurisdiction over drones?

Mr. Redl. So NTIA has jurisdiction over some of the issues related to federal counter UAS activities and that has played out certainly on Capitol Hill over the last couple of years.

But with respect to drones, I think the majority of that work is done interagency with our colleagues at the FAA.

Mr. McNerney. Okay. Is there a broad outline of drone regulations at NTIA? Is there some sort of regulatory structure that can help guide where we are going to be going with this technology?

Mr. Redl. I don't have one prepared for you today but
I'd certainly be happy to work with your office, going forward, to figure out what the right steps are, going forward, for us on drone security.

Mr. McNerney. I mean, you can see drone security is a huge potential issue for us. I mean, they could fly a drone over the Capitol and blow us up any time they want. So we need to move forward aggressively on that, in my opinion.

Mr. Redl. Yes, sir.

Mr. McNerney. Thank you. I yield back.

Mrs. Blackburn. Gentleman yields back.

Mr. Johnson, you're recognized for five minutes.

Mr. Johnson. Thank you, Madam Chair, and welcome, Mr. Assistant Secretary. That has a nice ring to it. Just kind of rolls of there. So welcome.

Last week, the FCC released a map showing areas across the country eligible to receive support for 4G LTE service over the next 10 years as part of phase two of the Mobility Fund.

The map almost immediately came under attack for inaccurately portraying areas as covered, including parts of my district, that were not. This continues to raise questions as to whether the FCC should be in charge of
broadband mapping, wireless or otherwise.

My bill, MAPPING NOW Act, would move federal broadband mapping away from the FCC back to NTIA. So, Mr. Assistant Secretary, what will the NTIA do to ensure broadband maps are accurate?

Mr. Redl. Mr. Johnson, as a threshold matter, I want to applaud the FCC for what it's been doing on mapping. Certainly, any effort to bring more accurate data to the way we deploy our resources as a federal government should be welcomed and I also thank you for your leadership in making mapping a priority for discussion here in Congress.

At NTIA, we spent a lot of time working on ways to define the need for broadband, where those problem areas are, and we are happy that the president had asked for an additional $50 million for us to move forward with that.

That $50 million, if it is brought to bear on our mapping challenges, will be used not only to produce a map but to do an assessment of the data in that map.

And bringing together multiple data sets and figuring out why they don't 100 percent line up should give us a better idea of the real need we have in rural America. Anyone who's spent any time in rural America knows we have a
real need for broadband infrastructure in rural America.

Mr. Johnson. Sure, and I want to echo what you said. I certainly applaud the work that's been done up until this point. But we got to take it to a new level. I mean, we have got -- the urban-rural divide is a very real phenomenon.

We have got lots of intellectual capital that is not being recognized because young people can't get access to the internet for their school work.

Businesses can't come in to rural areas because they can't set up operations because they can't communicate with their customers, their suppliers, et cetera.

So I applaud that work as well and I agree with you. But it's time to take this to the next level. So what strengths -- you had talked about some of the things you would do but what strengths does NTIA bring to the mapping efforts over what's currently being done at the FCC?

Mr. Redl. I think a real strength we bring to the table is our existing relationships with the state and local governments.

The BroadbandUSA group at NTIA has spent the last few years continuing to cultivate our State Broadband Leaders Network and these are officials within state and local and
county governments who spend their time thinking about how to improve the broadband situation and it's yielded real results for us in terms of states that have been willing to take on the difficult challenge of maintaining these maps and getting good data.

As I mentioned earlier, Minnesota is a great example of a state that has continued to push forward and use state resources to produce good actionable data. I think it's those relationships and our ongoing work with them -- we had our state broadband leaders here in town just a few weeks ago to explore ways to continue working together between the different state and federal entities that are engaged here. It's a real asset for us.

Mr. Johnson. Great. Great.

Shifting gears just a little bit, a lot of discussion has focused on high band spectrum and how NTIA can help accelerate the U.S. in deploying 5G.

But my constituents are still struggling to get 4G or even to sustain a phone call driving down the highway. So Mr. Assistant Secretary, is NTIA is looking at lower bands that could be freed up for commercial use?

Mr. Redl. So the announcement of 3450 to 3550 I think
is a primate candidate for the kind of thing you're talking about. It's mid-band spectrum that provides a good mix of coverage versus capacity availability and, hopefully, we will be able to drive forward and get those studies completed so that we can bring that to market as soon as possible.

But that's the kind of work we are doing to bring spectrum to market to meet actual real-world demands.

Mr. Johnson. Okay. And one final questions in the last 30 seconds -- a multi-agency groups that includes NTIA is exploring the possibility of making changes to the FAA's long-range radars operating in that band and relocating them to another band.

What's the status of that effort to free up the 1300 to 1350 megahertz band? Is that process moving in a -- in a reasonable time frame?

Mr. Redl. The process is moving in a reasonable time frame. Our Interdepartmental Radio Advisory Committee, which is the group that works across the U.S. government to make sure that federal equities are respected and that our missions are maintained, are spending a lot of time trying to figure out how to make that system work in a smaller footprint or in a different band.
I am pleased with the progress. We are going to continue to push forward. It's a real priority for us.

Mr. Johnson. Great.

Madam Chairman, I yield back.

Mrs. Blackburn. Yields back.

Mr. Long, you're recognized for five minutes.

Mr. Long. Thank you, Madam Chair.

Last week, FCC announced that it plans to vote on an item streamlining the process of small cell deployment at its March meeting.

Is the administration supportive of this effort and what is NTIA doing to work with federal agencies to streamline the process for facilities, deployment on buildings, and land administered by -- and managed by the federal government?

Mr. Redl. Mr. Long, I appreciate your asking. It's an area we have started working really hard on in the last couple of weeks.

The president has tasked the broadband interagency working group, which NTIA co-chairs with our colleagues at the Rural Utility Service with looking at three specific work streams that could bring federal assets to bear on the challenge, that could streamline for broadband projects, and
ways to look across the entire federal government at
different funding programs and ensure that they are working
together and complementing each other as we try to bring
broadband to every corner of the country.

Mr. Long. What are some of the lessons learned from
previous efforts to clear federal users from the spectrum band?

Mr. Redl. So the interesting thing is that this is an area that I think is a great case study in how we have taken lessons learned and Congress had incorporated them into legislation.

The information we learned on AWS-1 in 2007 was then incorporated into changes to the Spectrum Relocation Fund in 2012.

After 2012, we learned that there were some challenges with making funding available to agencies and Congress made another change in 2015 to make that funding available in a more streamlined process.

It's an iterative process and it gets better every time. So we thank you for all of the support in trying to make this as easy as possible.

Mr. Long. Well, you're talking about Congress making
changes. What should we, this committee -- as a committee, what should we be doing to assist in this effort?

Mr. Redl. I mean, I think you're doing it, which is raising the profile of the issue and --

Mr. Long. Could you repeat that?

Mr. Redl. Yes.

[Laughter.]

Mr. Redl. And continue to engage with us in ways that make sure that we can meet the dual mandate. That's our daily challenge is we know that Congress wants us to make more spectrum available for commercial users.

But we also know, because we spend so much time with our federal government users that we have to protect the critical mission that they are doing as well.

So anything that Congress does to support us in making sure our federal users have what they need, whether it be what they have now or what they will have tomorrow, while also supporting us and making sure we have the resources to bring commercial spectrum to market, is always helpful.

Mr. Long. Okay.

As you're aware, many on this committee have consistently supported common sense policy of auctioning
1675, 1680 megahertz for shared government-commercial use for the past several years and we are very pleased that the administration-proposed budgets for both of them reflect a priority in seeing this policy through.

Does the FCC have everything it needs from your team at NTIA to move this policy forward with a notice of proposed rulemaking and, if so, do you support the FCC's issuing notice of proposed rulemaking in the coming weeks to keep the process moving forward?

Mr. Redl. It will surprise you not at all, sir, that we spend a lot of time working with the FCC on every spectrum band that could be reallocated from federal use.

And so it's an ongoing process and we continue to make sure that whatever the FCC needs that we can provide.

Mr. Long. Okay. So you do keep the process moving forward?

Mr. Redl. Yes. I mean, I think the question of whether or not the FCC has what it needs is probably a question for the FCC. But we stand ready to provide them with whatever they need.

Mr. Long. Okay. Thank you. And I think this is a world record, but I yield back a minute 30.
Mrs. Blackburn. I cannot believe Billy Long is giving me back time. That is a first.

Mr. Costello, you're recognized for five minutes.

Mr. Costello. Thank you very much. I also want to thank -- congratulate Mr. Redl but also thank him for the time that he spent with me in my office just yesterday.

I wanted to focus on FirstNet. As you're beginning your build out, what are you doing to make sure that we get the National Public Safety Broadband Network up and running as quickly as possible?

And the other piece of this, just in terms of getting it up and running, is do you foresee any roadblocks, particularly regarding interoperability?

Mr. Redl. So in terms of getting things rolling, I know that FirstNet is currently working hard to get Task Order 4 out to AT&T, and Task Order 4 is what will start the process whereby AT&T begins to build out the state plans that were provided to each governor as part of the opt in and opt out process.

We were pleased to see that AT&T as part of this immediately made their network available to public safety users on a priority and preemptive basis, and as we get
forward with build out we are going to continue pushing them to make sure they meet the milestones in the contract and that they are building out in a way that is -- that comports with all the state plans they handed out.

Mr. Costello. The State and Local Implementation Grant Program 2.0, which allocates, I think, a little under $44 million to help FirstNet build out, the Pennsylvania -- the state police have a $425,000 grant, and I want to ask you how NTIA is working with state and local officials on the grant program and how your efforts might differ state to state depending on relative risk to different types of disasters or public safety threats.

Mr. Redl. Sure. You know, we have -- SLIGP, as it is lovingly known -- SLIGP 2.0 grants are in process now and all of the states have reached out to try to find ways to use that funding to further integration of state assets into FirstNet since all 56 states and territories have opted into FirstNet's RAN build.

We are working with our colleagues at FirstNet to make sure that we engage with the states on a day to day basis. You know, FirstNet spent a lot of time throughout this process doing outreach to state points of contact on these
issues and engaging with the public safety community and we are lucky that both NTIA and FirstNet have a great relationship with state governments and with public safety users.

So we are going to continue working collectively to make sure that those folks in each state who know the needs of their communities are heard.

Mr. Costello. I appreciate your testimony and your answers to my questions.

I yield back the balance of my time.

Mrs. Blackburn. Gentleman yields back.

Mr. Shimkus, you're recognized for five minutes.

Mr. Shimkus. Thank you very much, Madam Chairman. How do we pronounce your name? Is it Reedle, Ridell?

[Laughter.]

Mr. Shimkus. It's great to have you here. Thank you for being here.

The -- as you know, I am the founder -- the co-chair of the Next Generation 911 Caucus. In this role, I've seen firsthand how outdated many of our 911 centers are how Next Generation 911 -- where it's deployed has been a force multiplier for public safety.
It is more reliable and resilient and faster than legacy systems and improves emergency responses and protection of the public and first responders.

As 911 enters its fiftieth year -- and I haven't been here for all those years -- the urgency of the deployment of Next Generation is greater than ever.

I know that -- and you know in 2012 Congressman Eshoo and I, along with your help, introduced Next Generation 911 Advancement Act, enacted as part of the Middle Class Tax Relief -- you mentioned that in your opening statement -- and Job Creation Act of 2012.

It provides for a $115 million match grant program to fund some of the implementation of Next Generation 911 services. And I know the chairman -- chairwoman mentioned that about updating in her question.

What I wanted to follow up on was additionally effective development of critical 911 infrastructure dictates that scarce funding resources must be dedicated to their stated purpose of enhancing first responder capabilities.

However, despite states -- and this is where we have the challenges -- quote, unquote, "self-identifying" as non-diverters, the FCC Public Safety and Homeland Security Bureau
Mr. Redl. Well, you know, I want to thank you and Congressman Eshoo for your leadership on these issues.

You know, it's interesting to watch. We have consumers who are dialing 911, have smart phones with advanced capability. Now that FirstNet is being stood up and in addition the other providers who are providing, first responders with capabilities have advanced smart phone style capabilities on their devices.

But the 911 call centers in the middle that are connecting the two in their most dire times haven't been able to keep pace.

And so looking at ways to bring that forward is something that we are painfully aware of and are trying to get that grant program out the door as quickly as possible to bear on the problem.

As far as diverters go, I think you've aware the FCC produces a report every year that looks at which states have been diverting funds -- I believe it was under the Net 911
Act -- that will identify states that have been diverting funds away from their 911 programs for other purposes. This will help inform our grant making, as we go forward, as is consistent with the law.

Mr. Shimkus. And you know the concern is that the states could fully fund -- they could put money in and then once the time for reporting occurs then they take the money back out, and it's something we have argued about.

So in your process as you're reviewing this, if there is a better way for us to be more specific and, you know, you can ask us to help refine this because it's just -- again, as I've said, criminal neglect to charge someone for a purpose and then not use that money for the purpose it was intended to go to.

Mr. Redl. If we find that there are states that are gaming the system that aren't being identified because of foibles of the law, we'd be happy to work with you to try and --

Mr. Shimkus. And if we can point some out to you, you would be happy to receive that information?

Mr. Redl. Of course. Always.

Mr. Shimkus. Great. Thanks.
The next thing I want to briefly talk about is the 5G cell siting and, as you know, last week FCC announced that it plans to vote on an item streamlining process for small cell deployment at its March meeting.

This approach is similar to the bill I introduced called the SPEED Act, which reduces the regulatory overhang for the siting of small cells. These efforts are incredibly important in winning the international race to 5G. Of course, you mentioned that also in your opening statement.

Is the administration supportive of these efforts to modernize the siting process for small cells and what is NTIA doing to work with federal agencies to streamline the process for facilities deployment on buildings and land administered and managed by the federal government?

Mr. Redl. Mr. Shimkus, the president has made it clear that getting broadband out to the parts of rural America that don't have it now is a priority for this administration and, certainly, the work that we are doing in our Broadband Internet Working Group will help to bear upon that.

The Broadband Internet Working Group has been established. It's co-chaired by NTIA and the Rural Utility Service and this is one of the issues we are currently
looking at.

How do we streamline federal permitting processes in
order to make it easier to build out? How do we bring
federal assets to bear on this challenge?

How do we make sure that different funding programs
across the U.S. government are coordinated in a way that gets
us the best outcome. We are dedicated to this challenge and
we are really excited about getting to yes on some of these
issues.

Mr. Shimkus. Thank you very much.

Madam, my time has expired.

Mrs. Blackburn. Gentleman yields back.

Mr. Bilirakis, you're recognized for five minutes.

Mr. Bilirakis. Thank you, Madam Chair, and thank you,
Mr. Secretary, for your testimony. I appreciate it so very
much.

On the opening day of this subcommittee's infrastructure
push, I introduced House Resolution 687 to coordinate
regulations and permitting processes between the federal,
state, and local governments. We regularly acknowledged the
need to remain a leader in technology innovation.

However, the unintended complexity of our broadband
infrastructure rules is causing us to fall behind and lose investment.

Our competitors, such as China, Japan, and Europe, are already racing to deploy 5G for commercial use. What can we do today to ensure that the U.S. stays in the lead of this innovation and speed our new spectrum bands to market as quickly as our competition?

Mr. Redl. Well, sir, at the Department of Commerce, Secretary Ross has made it clear that 5G leadership should be a priority and we are driving full steam ahead to engage on every front with Congress, across the administration, and, perhaps most importantly, with our private sector colleagues to make sure that we are able to drive standards, that we are able to make as much spectrum available as possible, and that we are able to replicate in 5G the kind of success the United States had in 4G?

Mr. Bilirakis. Very good.

Representing the great state of Florida, although I do have Pittsburgh, blood by the way -- you know that my dad's from Pittsburgh and I root for the Pirates and the Steelers and the Rays, of course, and the Bucks -- but in any case, representing the great state of Florida in the Tampa Bay
area, Florida is a payer state, as you know, into the Universal Service Fund.

There have been -- long been questions about the accuracy of the broadband data collection and the use of resources. While I truly believe that everyone should have access to internet services, I want to ensure that constituent money is going to the locations that need it most, of course.

The FCC has made a number of data improvements in the last year. The NTIA recently provided suggestions to the FCC on updating its data collection practices specifically regarding the Form 477 data program, as you know.

Expanding on Mr. Guthrie’s questioning, can you discuss the importance of Form 477 to NTIA decision making and how the recommendations NTIA provided to the FCC will improve broadband data accuracy to help payer states such as this great state of Florida?

Mr. Redl. Sure, Mr. Bilirakis.

You know, the Form 477 data is a critical tool that we all have as part of looking at where broadband is available.

The FCC has long maintained this data, and while, you know, we can all quibble over whether it’s accurate enough or
granular enough -- and I think NTIA has been very clear we
think it needs to be more accurate and more granular -- it
still represents a critical data set.

And as we look at what the president asks us to do if we
get the additional appropriations to do an assessment and a
map, 477 data would form the basis of one of those data sets.
Having as many data sets as possible and as many of them
validated as possible will lead us to the best possible
outcomes.

And, you know, I think we want to get good data in your
hands. We want to get good data in the rest of the executive
branch's hands. Doing so will require us to look not just at
Form 477 but at a lot more information than that.

Mr. Bilirakis. Very good. Thank you.
I yield back, Madam Chair. Appreciate it.
Mrs. Blackburn. Gentleman yields back.
Mrs. Brooks, you're recognized for five minutes.
Mrs. Brooks. Thank you, Madam Chairwoman, and
congratulations. It's good to have you here.
I have been focused for quite some time on FirstNet and
want to ask whether or not -- how is FirstNet doing, in your
opinion, with respect to their commitment to specify the 15
percent geographic requirement to partner with rural telecom?

How is that going?

Mr. Redl. So, Mrs. Brooks, we are -- we are at the threshold of seeing FirstNet start to deploy its own network through AT&T.

As I mentioned earlier, they -- FirstNet is working with AT&T now on Task Order 4. Task Order 4 will be the order that has AT&T go out and begin building the state-based plans for the Radio Access Network.

We are aware that it is our job at NTIA and at FirstNet to make sure that AT&T is living up to the terms of the contract it signed with the U.S. government.

We are joined at the hip for the next 25 years on making sure that AT&T lives up to that contract and that public safety first responders get the tools that Congress intended in the law. And so we are going to continue pushing forward to make sure that's the case.

Mrs. Brooks. Thank you.

I am also curious, following on to Representative Shimkus' question, about the diversion of fees -- the 911 fees of states.

How does -- how does your agency follow up when states
have to certify they've not diverted the 911 fees? What does certifying mean and what is your agency's role in ensuring that the states -- rather than us maybe providing you information we might hear about, do you know what kind of mechanism is in place to ensure that 911 fees aren't -- when a state certifies they haven't diverted fees?

Mr. Redl. So that report is produced and the methodology behind it is done by the FCC. That would be a question for the FCC but I am certainly happy to follow up with them and with your office if you would like.

Mrs. Brooks. Okay. I think the -- people are probably most curious -- the spectrum -- in the last auction the auctions have produced significant revenue for the federal government, far more than everyone expected and, of course, when it comes to our federal budgeting process we need as much revenue as possible.

Do you have any opinion as to which bands might raise the most money for the Treasury as we continue to contemplate the spectrum auctions?

Mr. Redl. So I think -- you know, the traditional wisdom has been that low band spectrum would produce the best revenue outcome.
But it's much more complicated than that when we are looking at which bands are going to be the most lucrative. There are a number of different factors that go into that. Relative scarcity is one of them. International harmonization is another. The availability of equipment in a timely manner is one. How fast it can be brought to market and cleared of incumbents is another.

So it's a complicated equation to figure out what those revenues might look like and it does seem to be evolving quite rapidly. You know, high band spectrum as I mentioned earlier, was not considered particularly valuable just a few years ago and yet now here we stand looking at high band as having the potential to really drive 5G leadership.

So I don't envy those that have to do the estimates of what spectrum will bring in in terms of revenue. But it is a moving target on its best day.

Mrs. Brooks. Thank you.

And Congresswoman Debbie Dingell and I formed the 5G Caucus and in talking about that you mentioned -- and I am curious what your agency's role is.

In response to Representative Kinzinger's questions, you
mentioned pressing the private sector on standards. And talk
to me about what your role is, what's the timing, because I
hear that quite a bit from the private sector.

What -- talk to us a little bit more about that
statement that you made and how do we accomplish that and
what's your role in accomplishing that?

Mr. Redl. Sure.

So, you know, NTIA plays a role in its engagement with
the private sector as the president's principal advisor on
telecommunications and, certainly, as the agency to which the
secretary's communications and information functions were
delegated.

It would be worth noting that this is a shared
obligation when it comes to standards as our colleagues at
NIST are also very engaged in working in these standards
bodies.

You know, the scientists at NIST are fantastic and we
certainly work hand in glove with our sister agency to make
sure that we are producing good outcomes for the United
States.

For our part, we are going to continue pressing the
industry. Industry participation is the backbone of getting
private sector-led standards adopted.

So from our pulpit, we will continue to push them to make sure that they are engaged at every phase.

Mrs. Brooks. Thank you.

I certainly believe, because I understand at the Mobile World Congress recently 5G was all anybody talked about. So we better get this right and everybody better speed it up.

Thank you, and I yield back.

Mrs. Blackburn. Gentlelady yields back, and by unanimous consent Mr. Tonko has joined us and you are recognized for five minutes.

Mr. Tonko. Thank you, Madam Chair.

Assistant Secretary Redl, welcome, and thank you for being here today.

Broadband internet access is often the difference between success or failure for many Americans whether they are students doing homework, job seekers training for a new career, doctors reading a medical scan or entrepreneurs starting a small business.

To date, our government has done a poor job, I believe, of tracking broadband deployment, especially with public investments that are made with too little accountability and
oversight on behalf of the taxpayer.

I hope this is an issue that we can address together.

As you know, I have been working with my colleague and friend, Representative Lance, on a bill called Access Broadband that would begin to address this issue.

Our bill would establish a coordinating office for federal broadband resources at NTIA. It would track federal broadband dollars, streamline management of federal broadband resources across multiple agencies and, most notably, it would simplify the process for small business and local economic developers to access them.

It would also help notify communities that these resources exist to help them expand their own local broadband access. The bill already has strong bipartisan support.

My thanks to the 10 members of this committee who have co-sponsored it to date. I would ask everyone here to help us advance this effort.

So, Secretary, to your knowledge, does NTIA or any federal agency currently track the construction and use of broadband infrastructure resources across all federal agencies that provide broadband funding and support?

Mr. Redl. Well, Mr. Tonko, this is an issue that NTIA
The president tasked the broadband interagency working group, which NTIA co-chairs with the Rural Utility Service, with looking at this issue specifically -- how to look across all the programs in the federal government that are providing funding for broadband and make sure that they are coordinated with each other and are complementary to each other.

Mr. Tonko. Does NTIA or any federal agency coordinate broadband funding so it can be distributed in an efficient manner, in a financial sustainable manner, and with the goal of serving the largest number of persons in the United States while promoting the most job and economic growth for all residents in our country?

Mr. Redl. Well, I am sure that every one of the programs looks at that individually. The across government aspect of that is what we are currently looking into right now.

Mr. Tonko. Okay. And just the coordinating activity amongst agencies, because I know in our research before we drafted the bill there was this plethora of agencies that are involved and perhaps not communicating well enough with each other.
Mr. Redl. Absolutely, and this subcommittee certainly has a rich history of looking into those issues and trying to ensure that we don't have duplicative funding in multiple -- from multiple agencies.

Mr. Tonko. And have you encountered any barriers to working across offices or agencies?

Mr. Redl. You know, the Broadband Internet Working Group that we have been -- we have been tasked with chairing has been around for a couple of years and I think it's proven to be a real dynamic way for the agencies to get together that all have equities in internet work and find ways to work despite the fact that we are all from different agencies and that we have different missions.

It's been a -- it's been an eye-opening experience to see how well these agencies are capable of working when they are given a direct task and asked to go do it across boundaries.

Mr. Tonko. Thank you. And could tracking this funding better ensure that the money is not duplicative or wasteful?

Mr. Redl. I certainly hope so. I mean, the last thing we want to do as a federal government is to spend more money than we have to achieve our goals.
That's what we are looking at doing if we were to get additional funding for mapping. It's what we are looking at in the broadband interagency working group.

We'd like to find ways to reach that last part of America that does not have broadband in a way that's as fiscally responsible as possible.

Mr. Tonko. And is NTIA in the best position to track broadband funding across federal agencies?

Mr. Redl. Well, we are working in a group right now that is NTIA and Rural Utility Service from Ag along with others. But at the moment, it's a team effort across the entire federal government and we are happy to be working with our colleagues.

Mr. Tonko. Would there be another agency that were perhaps better suited to track this funding?

Mr. Redl. Not that I am aware of. I mean, we are certainly trying to figure that out right now. Part of the challenge is that broadband is one of those issues that crosses so many jurisdictional boundaries.

It provides service in so many different vertical and other aspects of government service that we are trying to bring all those stakeholders together in a way that addresses
everybody's needs.

We are at the early stages. You know, I don't want to sort of over promise here. But we are at the early stages and we are really looking forward to getting down and getting our hands dirty and getting this work done.

Mr. Tonko. And NTIA engages in outreach to communities that need greater access. So what community outreach have you conducted in the past year and have you seen indications that these outreach efforts and workshops are valuable to our communities?

Mr. Redl. We absolutely have. You know, our State Broadband Leaders Network has extensive relationships with folks at the state, county, and local level and we continue to bring them together on a fairly routine basis to exchange best practice, to share success stories, frankly, to share failure stories as well for failure to, you know, get the economic investment that they were looking for.

We are excited to be doing a workshop in Nashville, Tennessee in the coming months. And so this is an ongoing process for us to continue to reach out to state and local leaders and say, what have you learned and how can we disseminate that information across the entire country.
Mr. Tonko. Thank you very much.

And with that, Madam Chair, I yield back.

Mrs. Blackburn. The gentleman yields back, and there

are no further members wanting to ask questions.

Mr. Doyle. Madam Chair.

Mrs. Blackburn. You're recognized, Mr. Doyle.

Mr. Doyle. Thank you.

I ask unanimous consent to submit for the record a

letter to the subcommittee from the Electronic Privacy

Information Center.

Mrs. Blackburn. Without objection, so ordered.

[The information follows:]

**********INSERT 2**********
Mr. Doyle. Thank you.

Mrs. Blackburn. And I also have a UC request for a letter from the Utilities Technology Counsel. Without objection, so ordered.

[The information follows:]

**********INSERT 3**********
Well, you’ve gotten the first one under your belt, Mr. Redl, and I think you see that there is agreement from both sides up here that we have efficient use of the funds that are there for NG 911. We are all concerned about mapping and broadband rollout, making certain that we utilize spectrum well.

So we thank you for the insight you’ve provided.

Pursuant to committee rules, I remind members that they have 10 business days to submit additional questions for the record and I ask that you will submit these written answers within 10 business days.

Seeing no further business, to come before the subcommittee today, committee is adjourned.

[Whereupon, at 11:54 a.m., the committee was adjourned.]