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Chairman Blackburn, Ranking Member Doyle, Members of the Subcommittee—thank you for having me here. My name is Joanne Hovis. I am president of CTC Technology & Energy, a communications engineering and planning consultancy serving the public sector.

I am also CEO of the Coalition for Local Internet Choice, a non-profit entity that brings together public and private entities that believe solving our nation's broadband challenges requires a full range of options, including locally-driven efforts to deploy networks and create public-private collaboration.

My work focuses on assisting state, local, and tribal government to build broadband strategy and plans, and on helping them to develop public-private collaborations that improve broadband infrastructure and services, address affordability challenges, and provide digital education to enable members of the community to maximize the benefits of the broadband internet in their lives.

I've encountered NTIA in my state- and local-level broadband work throughout the country for over a decade. My comments today focus on the important and successful role NTIA has played in broadband policy, in expanding broadband service and device availability, and in expanding digital literacy. As you consider this reauthorization, I encourage you to think expansively about NTIA's critical role in expansion of broadband capabilities and infrastructure going forward.

In sum, what I suggest to you today is not only that NTIA has a critically important role to fill in improving the broadband environment nationally, but also that it has unique expertise and experience within the federal government in order to do so. And this role is essential, because our work of expanding broadband access and availability is far from done—large areas of rural

America, as well as significant sections of our urban communities, lack adequate, affordable broadband. Addressing these gaps in access and opportunity requires expansive thinking about funding new infrastructure and capabilities, enabling new educational and inclusion programs, and supporting access to computers and other broadband-enabled devices. For that reason, I commend you on the current reauthorization efforts, as well as on the Access Broadband Act and LIFT America Act, which serve these critical goals.

In the efforts to meet these goals, there is a critical role for federal, state, and local entities, as well as for private sector companies and other stakeholders—and NTIA is uniquely experienced at creating bridges among all these entities.

Indeed, it is critical that NTIA's efforts in this regard continue and that it have sufficient resources to pursue this broad mission.

Let me share with you my observations of NTIA's efforts and capabilities over the past years and why I think its role going forward should be broadly understood.

First, NTIA has developed a substantial body of knowledge and expertise through extensive efforts and experience—and its track record is very sound. In particular, let me note that NTIA's work on the Broadband Technology Opportunities Program (BTOP) was impressive and laudable, and frankly less recognized here in Washington than it deserved. In a short period of time after passage of the American Recovery and Reinvestment Act (Recovery Act), the team at NTIA built a robust and prudent grant program, and then successfully administered it in subsequent years, with remarkably little controversy.

In fact, what may not be understood here in Washington is how well-received the program—and NTIA's administration of it—was in areas throughout the country where the program was welcomed with enormous enthusiasm and appreciation. This enthusiasm resulted in part from the extraordinary hunger for better broadband in significant parts of the country, and in part from the way that NTIA consulted with communities, companies, first responders, educators, and other stakeholders and built a program that was optimized to confer the greatest possible benefit in unserved and underserved areas. At the same time, the program was also thoughtfully and efficiently designed to focus the federal investment on middle mile infrastructure to key anchor institutions such as fire houses, police stations, and remote government facilities, while incenting private sector investment in the last mile to reach homes and businesses.

And that vision has been successfully realized in significant parts of the country. I've visited or observed dozens of the projects NTIA funded through BTOP. Let me share just a few examples of the benefits that have emerged from that program and the continuing dividends that effort is paying for the nation and the communities and companies it impacts.

For example, rural Garrett County, in far western Maryland, is a relatively remote Appalachian community bordered by West Virginia and Pennsylvania. The county, which has been dramatically impacted by the decline in the coal economy, has struggled to get broadband in a number of its remote, mountainous areas. Where broadband is available, it is inadequate DSL service that does not meet the Federal Communications Commission's speed benchmark for broadband service, let alone the requirements for home-based businesses or homeschooling,

which are driving economic needs for this community. As a result, the county has struggled to attract and retain businesses and teleworkers.

With that history as a backdrop, Garrett County's current success in attracting a private partner to deploy last-mile residential broadband service in the most remote and inaccessible parts of the county is testimony to NTIA's efforts. Under BTOP, NTIA granted funding to the One Maryland Broadband Network, a state-led middle-mile network that touched every county in Maryland and reached many of the most remote schools, libraries, and public safety facilities in rural Maryland. County leaders then further invested in additional fiber, both to reach all remote schools in the county but also to serve as a platform for last mile deployment by the private sector.

In 2015, the county selected a private partner to leverage some of that fiber and additional public funding to support the deployment of a fixed-wireless broadband network, currently under construction and already serving hundreds of customers, that will serve up to 3,000 currently unserved homes in the most remote parts of the county. The private partner, Declaration Networks Group (DNG), also put its own capital toward the construction of the network, and has applied its technical and operational capabilities to managing the network.

The county's outlay of funds is $750,000, matched by a grant from the Appalachian Regional Commission (ARC) and DNG's commitment of both capital and operating funds. That relatively modest county contribution made the economics of this opportunity very attractive to DNG, and secured a broadband build-out for an area that would otherwise not be attractive for private sector broadband investment.

From an economic development perspective, the effort has been enormously successful for the county, enabling residents in 3,000 remote mountain homes to buy cost-effective broadband service that facilitates telework, home-based businesses, and homeschooling. This investment will also close the homework gap for many students in the county schools who do not currently have broadband in their homes—an increasingly critical lack of service.

As the network is completed, the county will reduce to nearly zero the number of homes in the county that do not have access to some kind of broadband communications option. This option may be modest—not the robust speeds available in metro markets—but it is significantly better than nothing, and a huge economic development achievement from the county's and the state of Maryland's standpoints. For this reason, the program has been entirely bipartisan and supported by successive governors of different political parties, as well as universally supported by local leaders.

In a second example, the University of Illinois and the cities of Urbana and Champaign, Illinois, have worked together over many years to expand their broadband infrastructure and connectivity. Those efforts included the development of the Urbana-Champaign Big Broadband (UC2B) network, which is now owned and operated by a not-for-profit corporation. Through a range of different strategies and using local private capital, state funds, and a modest federal grant, UC2B built fiber rings specifically engineered to enable fiber-to-the-premises deployment in the most cost-effective manner.

NTIA-administered BTOP funding was the key to UC2B's success. With ubiquitous FTTP as the ultimate goal, city leaders applied for and received BTOP funding to build first in neighborhoods with the lowest broadband adoption rates, which were the lowest income areas

of the community, on the theory that those would be the last places that the private sector would deploy. NTIA recognized UC2B's vision—that modest initial funding for the residential neighborhoods most likely to be passed over by for-profit service providers could catalyze a community-wide business case for broadband deployment.

The NTIA funding strategy worked. UC2B's existing $22.5 million investment and willingness to share future risk attracted a private partner in 2013. The two partners entered into an agreement that gave the partner access to UC2B fiber on a lease basis at no cost in return for meeting the community's goals of deploying additional broadband to homes and businesses with binding requirements to enable gigabit speeds, competition, and non-discriminatory build-out. The model means the community can focus on driving demand and adoption, while relying on an experienced private partner to handle customer service, marketing, and operations.

Second, let me share how NTIA's convening expertise has had a significant impact. Over the past decade or so, NTIA has played a singular role in creating opportunities for shared learning and shared experience among some of the most highly motivated broadband stakeholders across the country in state, local, and tribal government, as well as across a wide range of companies such as manufacturers, internet service providers (ISP), and infrastructure builders.

Beginning in the early stages of the Recovery Act roll-out, for example, NTIA convened interested stakeholders at events across the country designed to stimulate partnering among public and private entities and to enable sharing of experience on topics such as best practices for building public-private partnerships. NTIA also convened state-level planners and decision-makers in all 50 states and the territories to enable these critical stakeholders to learn from each

other and to share ideas and realize efficiencies in supporting broadband deployment at the local level and with a full range of companies.

I saw tremendous benefits from these thoughtfully designed convenings. For example, I saw private ISPs and states make connections that led to important new broadband efforts, such as on the Eastern Shore of Virginia, where a consortium of localities built connections with several small wireless ISPs that were interested in serving commercial and residential customers. I further observed as NTIA efforts enabled the state of New Mexico to share with its peers from other states broadband educational materials designed to optimize broadband literacy education in rural libraries, in both English and Spanish. The Spanish-language resources, in particular, were unique and, thanks to NTIA's convenings, were spread to other states and used more extensively, a huge benefit that would not have happened had each of the states worked in a silo without the opportunities for cross-learning and cross-pollination.

Third, NTIA has played an important role as a technical adviser to states, localities, non-profits, and other entities, including smaller companies throughout the country. In my observation, over the past few years, NTIA made use of the developed expertise and extensive experience of its broadband planning team and put that expertise to work advising local communities and providing technical assistance and guidance to them as they seek to develop broadband planning strategies. The capabilities NTIA brings to bear in this capacity range from educational materials about best practices in development of public-private partnerships to guidance for how to aggregate and expand demand so as to attract private broadband investment in particularly underserved rural areas.

Communities and states around the country have observed the singular role the NTIA team plays in the federal government in providing this particular kind of information, based on experience in a full range of communities and significant time in the field far outside the Washington Beltway. In the same vein, the team has also on occasion played an incredibly important role as an effective ombudsman for local and state entities seeking to expand broadband opportunity by assisting with navigation of the federal government.

Fourth, NTIA holds singular knowledge of vulnerable communities and how broadband networks, broadband literacy programs, and access to computing centers or devices can benefit those communities. As a result of nearly two decades of experience, the NTIA team has a remarkable knowledge of the two other critical parts of the broadband puzzle beyond infrastructure and service availability: that is, digital literacy and access to devices. Going back several presidential administrations, NTIA has had a leadership role in developing programs and policy to provide literacy programs that are essential to the meaningful use of broadband by Americans who have never benefited from the service previously. For example, NTIA funded a range of highly successful broadband adoption programs under the Technology Opportunities Program (TOP) and BTOP of the past couple of decades that were designed to provide internet education to those who did not know how to use the internet. These programs ranged from those focused on older adults without internet experience to those in very low income urban and rural communities where computer use and ownership is still not extensive. And as an important complement to these literacy programs, NTIA also developed experience and expertise in

programs to support device ownership and use, including through public computing centers in critical areas were members of the community would be likely to go to receive services.

To NTIA's credit, it recognized libraries and schools were likely locations for provision of public computing capabilities for those who cannot afford their own devices, but also that, depending on the community and with wide variation, public computing centers might be best located in facilities such as firehouses (as was very successfully undertaken in parts of West Virginia), or in church basements (as was undertaken in some rural communities in Illinois). Thanks to NTIA's efforts, many tens of thousands of Americans who did not previously have access to computers or did not have knowledge of how to use the internet have been served for the past many years through digital literacy and public computing center programs.

Frankly, these capabilities are particularly critical given the ongoing weakening of the Lifeline program at the FCC and the adverse impact on low-income Americans, including in very rural and tribal areas, who have lost access to the subsidy for Lifeline broadband and phone services.

Members of the Subcommittee, let me thank for you for the opportunity to testify before you today and let me encourage you to include in NTIA's reauthorization the full range of efforts that are so critical to our national broadband future and that are so well served by NTIA's expertise and experience. My thanks for your consideration of my comments and for your commitment to reauthorizing a robust NTIA – and to funding new broadband opportunities for our most underserved rural and urban communities -- in the best interests of a robust broadband future throughout the nation.