Q&A With Jannine Miller, Senior Advisor for Rural Infrastructure, USDA

USDA Supports Rural Broadband

The Department of Agriculture experiments with new ways to drive rural broadband deployment.

As senior advisor for rural infrastructure to the U.S. Secretary of Agriculture, Jannine Miller's job is to make infrastructure-related policies, programs, regulations and budgets more effective. Her responsibilities include enhancing rural broadband connectivity as well as supporting rural prosperity, developing new infrastructure investment options and evaluating efficient transport of agricultural commodities. Recently, Broadband Communities had the opportunity to interview Miller about USDA's support for rural broadband. Following are highlights of our conversation.


Jannine Miller, USDA

BROADBAND COMMUNITIES: *You came to office with experience mostly in transportation and logistics, but you've become a great advocate for rural broadband. Tell us what convinced you broadband was a critical issue for rural development.*

JANNINE MILLER: It was a natural progression for me, having previously been the governor's advisor for transportation in Georgia and working in economic development for the state. My excitement is about infrastructure that supports economic growth and prosperity. That's exactly why broadband infrastructure is needed in the 21st century.

There are certain similarities in the basics of what transportation and broadband do. Transportation carries physical commerce – it brings freight to production sites and products to market throughout the supply chain – and that's what broadband is doing in the 21st century. It is the digital superhighway for transacting digital or e-commerce and also for interpersonal connections that transportation has also historically provided. In their function and purpose in our world, our economy and our lives, they're very similar. They both require a good deal of expertise and engineering to develop, construct and operate, and they both require rights-of-way and permitting. They each have unique challenges, but they

both require smart approaches to permitting and system design.

Another future synergy is the relationship that transportation has with broadband and e-connectivity. There are already intelligent transportation systems in major cities around the country today – I lived in Atlanta for 25 years, and the Georgia Department of Transportation there can respond to roadway incidents, make sure that traffic signals are timed correctly and analyze volumes of data on travel patterns for future planning. The amount of data required to do all this and more, much of it in real time, requires broadband in cities.

Although it's hard to envision now, we're going to need similar types of data flowing throughout the countryside to trace and manage freight – where is the truck that's carrying the cargo, what is the condition of the cargo in that truck and when is that cargo going to arrive at its destination?

In the future, the more automation that is included in cars and trucks, the more broadband will be required to transmit data to and from those vehicles in every part of the country, not just in metro areas. So all those data flows are going to require broadband throughout rural America's roadways.

BBC: *Are you seeing other types of infrastructure that require broadband communications in that way?*

JM: Absolutely. There's technology in everything now, especially for monitoring, condition testing and simulation, that requires collecting data in the field or on infrastructure and then sending it back to central systems for analysis and decision making. That's what we're seeing now, even with the limited amount of e-connectivity and broadband in rural America. Those innovations are coming from the private sector, and there are business cases for their use.

When we have more ubiquitous, reliable, affordable, high-speed upload and download throughout rural America, when there are no impediments to that data connectivity, farmers and ranchers will be able to experiment more with the technologies they have in their equipment and with sensors in the field, and the potential for the use of high-tech systems like that, for data collection and analysis and better decision making – well, the sky's the limit. We can't yet envision all that will be possible.

> In 1936, no one could imagine that farms would use electricity for refrigeration – and today, we still don't know which broadband applications will most dramatically transform rural life.

Back in 1936, when the Rural Electrification Act was passed, Congress was looking for the best way to light up rural America for quality-of-life reasons. But back then, no one could imagine how important electricity would be, beyond lighting barns without having to use propane lamps. No one could have imagined the impact of refrigeration, which didn't even come into mass adoption in American households until after World War II. We're talking a good decade later before ubiquity of one of the most revolutionary and transformative technologies became part of America's way of living and public health, only because electrification was available everywhere. Imagine if we didn't have rural electrification and refrigerators were available only in cities and not in the countryside! We can't even envision the basic necessities of the future that could be available to urban and suburban households and businesses but not to farms and those who run them unless we connect them with broadband.

BBC: *What do you see as impediments to rural broadband, and what's the role of the Department of Agriculture in removing those impediments?*

JM: USDA has a lot of roles. Of course, we think of USDA's work in the agriculture industry, but within USDA, we also have the Forest Service and of course Rural Development, which is where the Rural Utilities Service is, as well as the Rural Business-Cooperative Service and the Rural Housing Service.

In the Forest Service, in terms of removing impediments, we own and manage a lot of land – around 190 million acres. Generally, people don't live on public forestland, so why do we need to connect them? Well, there are certainly smart forest technologies that can assist in fire prevention and suppression, public safety, first responder communications, timber monitoring and optimal harvesting.

But those lands also might need to be accessed or crossed to connect places on either side of the forest, so we're in the process of reviewing the permitting that's being done. If a telecommunications company wants to lay fiber or put communications towers on Forest Service land, we do a great deal of permitting every year for telecommunications sites because these are public assets – and we aim to be very good stewards of public lands.

What we want to do is make that a more predictable process – not always a faster process, because we still have to do proper due diligence for the environmental review – but if we can be successful in getting our administrative processes even more streamlined and more customer friendly than they are today, that will provide certainty to private sector companies that they can

The 2018 Farm Bill and the ReConnect program expand the areas eligible for USDA funding of telecommunications networks.

then include in their construction schedules. Then they'll know they're taking on less risk in building out broadband connectivity.

This process includes working in conjunction with the Department of the Interior, which similarly manages other federal lands, and we all use the same standard form to collect information. The Department of the Interior has been a tremendous leader in rural broadband deployment. It has done outreach to telecommunications companies with listening sessions, and that was one of the themes that emerged. It also just published a new tool called the Joint Overview-Established Locations, or "JOEL," map that shows internet service providers where colocation opportunities exist on federal lands.

All this work is being done under the leadership of President Trump and his staff through the American Broadband Initiative. USDA, the Department of Commerce's National Telecommunications and Information Administration (NTIA), FCC and other agencies throughout the federal government play important roles in supporting the private sector's rural broadband buildout. More information about these and other projects are in the recently published Milestones Report, found at www.USDA.gov/Broadband, which catalogs all we're doing.

BBC: *What other impediments are you seeing?*

JM: One of the biggest impediments at this point is that private sector companies, whether they're for-profit or not-for-profit, still have to make their financials work at the end of the month, quarter or year. Their business models have to ensure they're cash flowing. This basic premise is important because rural America is so dispersed in its development, often making it costly to connect these far-flung sites, to install the right types of services and operate and maintain them over time. Those impediments make investment decisions very difficult for the private sector.

USDA and other parts of the federal government, with appropriations from Congress, can support that business case and help put in that last piece of the puzzle to finish out the financial plans with grants and low-cost, long-term loans.

Those are major impediments to buildout, so we are excited to be able to partner with the private sector in new ways with the just-announced ReConnect program. Administering grants and loans for rural infrastructure is not new for USDA. It has partnered to build rural electrification and rural telephone connectivity since the 1930s – and still does that today, of course. More recently, we also support water and wastewater utilities for rural towns.

We have decades of experience in rural infrastructure investment and even in broadband. In fact, every year we have $800 million appropriated from Congress to build out telecommunications, including broadband, and partner with the private sector in this way.

Those legacy programs are impactful where they can be used, but the bulk of the dollars can legally go only to communities whose populations are 5,000 or less – very, very small towns and very, very rural areas – and up till now, those were loans only. We've made some customer friendly improvements to our processes for accepting applications and working with applicants to make their projects better.

The 2018 Farm Bill, however, gave us some additional, exciting opportunities for broadband buildout with the infusion of grant funding, expanded availability of loan guarantees, funds that can contribute to middle mile projects, and a gigabit program they made some refinements to, which we hope will be helpful going forward. So we're excited about all this. Congress passed the Farm Bill in December, so we're in the process of writing the rules and regulations for how those dollars will be used.

In the meantime, while we're getting those Farm Bill rules and regs set up, we are able to get the ReConnect pilot program started. It's a nice bridge between the legacy programs that can offer only loans and the big, exciting innovations in the Farm Bill that will be forthcoming. ReConnect is funded by $600 million that Congress appropriated in March 2018 plus another $550 million added to the pot this fiscal year, and these funds may be used in communities with populations up to 20,000. We've been working hard to set up that brand-new program, and we released the rules around those pilot program dollars in December. All those rules can be found at reconnect.usda.gov.

BBC: *What do you hope to learn from the ReConnect pilot program, and how will those lessons be applied in the future?*

JM: Secretary Perdue thinks of ReConnect as a proof of concept. Congress did a really neat thing by providing a framework for how to use the dollars rather than giving a detailed prescription. The law says certain things, such as that ReConnect funds can't be used unless 90 percent of households can't currently get 10 Mbps/1 Mbps service. So they made 10/1 the eligibility threshold, but the

innovation they're letting us test is: What is the buildout speed? We can say, come and apply if your area doesn't have 10/1 service, but we're going to require that the ReConnect funds be used to build 25 Mbps/3 Mbps speeds at a minimum.

We're also eager to see how many applications come in for 100 Mbps symmetrical service. The scoring criteria give extra points to projects that connect at 100 Mbps. Some people say that because there aren't a whole lot of people in rural America, there are not a lot of data needs. But we know many types of internet uses – such as telemedicine video conferencing with doctors and web-based learning – require a lot of data download and upload. So I'm really looking forward to seeing how many applications come in for buildout at 100 Mbps upload and download.

We're going to also experiment and see *where* those applications come in – what types of settings are more conducive to that kind of buildout and type of broadband technologies. That's never been tried before at USDA.

Another new thing we're excited about is getting different types of applicants. We're particularly interested to see electric cooperatives getting into the game, not necessarily by themselves, although some rural places do have electric cooperatives that are doing broadband all by themselves or setting up their own subsidiaries.

We also have electric cooperatives that could partner with local, regional or national telecommunications providers, and the applicant to ReConnect would be that partnership. The electric cooperative would provide the infrastructure, and the telecommunications company would provide the operations, expertise, customer service and interface with the FCC. So that is another exciting innovation we're testing out here: What types of partnership arrangements will come forward? How much will electric cooperatives be interested and able to get in the game to serve their members with 21st-century infrastructure? And in some cases, that may depend on state laws.

One more innovation we're looking forward to is state government involvement. Of the 150 points a project can score, 20 will relate to state governments' work to support their rural areas' broadband needs. We want to see that a state government has a broadband plan, that a governor's office is committed to expediting the permits for rights-of-way for these projects if necessary and that state governments allow utilities to provide broadband. Some states don't explicitly allow it yet, though we're proud of states like Mississippi, which just passed legislation for this important new tool, allowing electric cooperatives to provide rural broadband. So that's another experiment we're getting to do, to see how many states are really interested in helping their rural areas.

BBC: *Can you tell us about the thinking that went into dividing the ReConnect funding equally into three categories (grants, loans, grants/loans)? Do you have the flexibility to adjust these amounts if categories are undersubscribed or oversubscribed?*

JM: We do. In the Federal Register notice, we published that $200 million is allocated to each program, but we can't predict which program the applications are going to come in for. We will have the ability to move the dollars within the different ReConnect programs if needed and add more funds to the most popular program with the new appropriation USDA just received. I'm more certain that we'll fill out the $200 million in the grant requests than I am the $200 million in the loan space. It's just the way government funding tends to be viewed – folks would generally prefer to receive grants – but we have some different rules around these grants. For instance, we've set up the grant so that *all* the households must be unserved, not just the minimum 90 percent required by law.

BBC: *Are there enough areas that are completely unserved?*

JM: I would think there are, based on everything we've seen and heard. But what's also required in the grant is a 25 percent cash match up front. This means the awardee has to be a partner with the federal government; it's not just a giveaway. We're going to make sure that an entity using federal dollars has got its own dollars in the project so it actually performs for the rural community it's proposing to serve.

So there's $200 million for the grant funds, $200 million for a combination of loan/grant funds and $200 million for awards of 100 percent loans. We believe that that might be actually really attractive to some entities. First of all, there's not a competition for the loan-only dollars. It will function as first come, first served. And there's a $50 million cap on loans, rather than the $25 million cap in the grant program. So we may get a lot of applications for the loans, with some really good projects coming in first, and we might get some of those dollars approved for projects more quickly.

The loans are at 2 percent, which was the rate we were doing for early rural electrification last century. We think that's a very attractive loan term, coupled with the ability to make long-term loans. We're able to go out 20-ish years, depending on the project, which is generally better terms than applicants can get in the private sector. So we'll see if there's a strong demand for this type of financing. But if we're getting fewer applications in any of these funding categories, we have an ability to put it toward the program that has more demonstrated demand.

BBC: *Given that many unserved areas today are patchy and scattered areas outside towns, will it really be possible for a new player, such as an electric co-op, to make a business case without overbuilding rural towns?*

JM: I think that's why Congress did give us the leeway to say 90 percent *or more* unserved. We're requiring 100 percent unserved territories for grant applications because we figured that if 100 percent are without internet, the area probably needs the most financial support, but we may see some grant-loan combinations come in for those very unserved areas, too.

In terms of making the investment where there's not already service, what we are required to do by Congress – and we espouse this as well – is to not use government funds to overbuild or duplicate service that's currently provided through other investment by the private sector, which is operating on an established business model and already providing rural internet in that area. If we insert government funds into areas that are already connected, we would undermine the private sector, but we want to make sure we *help* the private sector.

Second, and probably more important, so many areas are not yet connected to high-speed internet, and we have too little money to connect them all. We simply have to find ways to prioritize these dollars to the places that don't have service now. This is a great feature of the experimentation and the demonstration that we're able to do, and the pilot innovations we're testing. Does the ReConnect policy that prohibits data caps work? Do these priorities and evaluation criteria connect enough rural premises? If not, what adjustments do we need to make? Congress has given us the ability to do that in a nimble but conscientious fashion through this pilot.

BBC: *Nearly everyone agrees the national broadband maps understate the deficiencies of rural broadband. How will you allow ReConnect applicants to show that coverage is worse than what's shown on the maps? Is there a process for them to do that?*

JM: Mapping for broadband is clearly a massive challenge. Our partners at the Department of Commerce NTIA are working hard on that; they've been given the mantle, the mandate to do that work, and they're kicking off some exciting things. It's such a big project, and it's so important to get it right, so they're being deliberate.

For this early stage in ReConnect, we won't be able to reference a broadband service map that shows 10 Mbps/1 Mbps at the household level. So USDA has established a public notice filing process that provides an opportunity for applicants to tell us where they believe broadband service is not already available. Then we will offer existing service providers an opportunity to notify us if they are already providing broadband service in the area where USDA funding is being requested. We will take that information and utilize all available resources – including state maps of broadband service and information from the FCC and NTIA – and independently validate service at the household level.

BBC: *Is there anything else you'd like to highlight?*

JM: I'd just like to thank everyone for their interest in rural broadband expansion and their work throughout the public and private sectors to get this right for our country. It's so important for our global competitiveness. It cannot be understated that if we don't act to connect all of America to the internet, we will absolutely be left behind while other countries do that for their citizens, their businesses, their farms, their schools and their health care facilities. Other countries are definitely doing so, and we need to get ahead of the pack. And that mission is far greater than what the federal government can do alone. It requires local communities, private sector businesses and even state governments all to get in the game and connect their rural citizens.

BBC: *That's a very inspiring call to action. Thank you.* ❖