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Breakout IIIC– Building the Rural Infrastructure

This breakout session was moderated by Senator Bill Hansell (OR), who introduced the presenters. Leif Magnusson, President of Claas America; and Don Williams, Senior Specialist, NTIA.

The Problem with Infrastructure

Leif Magnusson spoke first. He noted that the biggest question before us is how to move people, goods and data - not just for today, but the future as well. Today's U.S. infrastructure system was built for a different time, when we had less population, less movement of goods, and less productivity. Back then, the U.S. spent more on infrastructure than almost every other nation in the world (around 3% of our GDP in the early '70s) Today our spending is half of that – a meager 1.5%, which leaves us #12 in the world. We are not even covering the expense of maintaining an aging infrastructure, let alone building a modern system that is necessary if we want to keep the U.S competitive over the next thirty years.

Magnusson's company, Claas, is a manufacturer of professional agriculture equipment, serving farmers and ranchers in 135 countries. As a manufacturer, they are acutely aware of the importance of rural infrastructure. Twenty percent of all manufacturing operations are located in rural America. In fact, manufacturing, according to the USDA, provides a higher share of total jobs and total earnings in rural America than any other sector, including agriculture. For manufacturing to be cost effective and sustainable, we also need a modern and sound infrastructure system.

The last seven years, Magnusson has also had the honor to serve on the Board of Directors of the Association of Equipment Manufacturers – AEM – which represents off-road equipment makers (agricultural, construction, mining, utility equipment). In 2017, he also served as the chairman for AEM's Infrastructure 2050 Initiative, which produced a report that is called [The U.S. Infrastructure Advantage](#). Much of what he is talking about today will be found in the report.

What became clear to the team is that we will need political courage and solutions for funding; but they also believe a properly planned infrastructure investment should pay for itself.

Political Courage is Needed

As far as the political courage goes, he is leaving that up to the legislators in the audience. But he is confident that we will find solutions for funding. Business interests are supportive of things like user fee systems, gas tax increases (both at the state and federal levels), as well as supporting Public-Private Partnerships. These are utilized a lot in Canada and Europe. The federal government does not even have an office of PPPs. Most states don't, and only a few cities do. There are a lot of benefits. Virginia is one of the leaders in PPPs in infrastructure projects. For broadband, the way a PPP works can be to allocate risk, allocate revenue, allocate costs, allocate operation, allocate insurance, allocate everything involved in a business. For Rural America, the benefit is that it allows communities to bring to the table things that will defray the costs of expanding or deploying a broadband system.

It's pretty new for broadband. There have been some projects – one in Westminster, Maryland. One in Holly Springs N.C. The entire state of Kentucky is engaged in a massive PPP broadband

arrangement. It is complicated to do these projects because it all comes down to a contract. These get pretty contentious pretty quickly. However, the benefit is communities can get their stakeholders together and bring things to the table so that someone with broadband assets in the area or has broadband assets and wants to bring them to your area, their costs are reduced. Banks can get credits going forward for community services, and they can buy stock in broadband efforts at a community level.

All tools in the funding toolbox are needed. However, we also need to remember what is lacking in general – the knowledge connecting agricultural sustainability with infrastructure systems. In the summers of 2016 and 2017, AEM conducted a public opinion poll ([AEM National Infrastructure Poll](#)). What they learned from the poll is that 59% of the public believes that an infrastructure investment is going to benefit the U.S. economy. But the same poll said that only 13% believed that agriculture could benefit from an infrastructure investment. Magnusson's call to action for all the attendees is to enhance that education of the public.

Today's Agricultural Transportation Infrastructure

As equipment manufacturers, they rely on a strong farm economy and infrastructure to keep moving products to the market. How do we move these products today? Waterways, locks and dams, ports, roads, highways, rails. And we forget another piece is connectivity. Farm equipment functionality and the daily operation of the farm will be more and more dependent on a wireless broadband connectivity.

He then looked at some of the aspects of infrastructure that impact the ag economy.

- Insufficiently funding for road and highway repair on the state level.
- Locks and dams are critical to the sector, but today they far exceed the 50-year design life.

What can be done to reclaim our U.S. infrastructure advantage? In the report, there are five different areas:

1. Promote policies that emphasize network and systems;
2. Maximize the use of smart technology;
3. A wireless broadband plan is critical;
4. Need predictable project delivery;
5. Need adequate and reliable resources

Summary

We need to continue to educate the public on the link between infrastructure and agriculture. We need to remind our state and local officials that only 13% of the public believe that infrastructure impacts agriculture. Very few Representatives, whether in the Senate or the Congress, are actually representing rural areas.

We need to support policies that enhance wireless connectivity.

We need to maintain an open mind for funding options.

We need to remember that this is about a global competitiveness.

TELECOMMUNICATIONS

Don Williams was the next presenter. He participated in the Broadband Technologies Opportunity Program (BTOP), which was a \$4 billion federal grant program that funded 80% of the capital costs of over 130,000 miles of fiber plant throughout the U.S., as well as a number of computer centers and adoption programs in some of the urban and rural areas.

He pointed out some [toolkits](#) that he distributed that are useful. There are several, and they are all online. The National Telecommunications and Information Association (NTIA) is the advisor to the President on domestic communication and telecommunication policies. There are a number of major projects that are ongoing, one of which is reallocation, redistribution and rethinking about the use of federal managed spectrum, making more of that spectrum available to businesses and citizens across the country.

They are also interested in expanding broadband. One of the goals is to make certain that broadband continues to be an engine of economic growth and opportunity for all Americans.

Building Out the Broadband Infrastructure

The goal of the new program – [Broadband USA](#) – which replaces the BTOP program (currently there are no funds to distribute to build systems) is doing other things. They are convening a group in every region of the country where people come together from local governments, ISPs, cable companies, and they try to figure out in a group session what can be done to expand broadband deployment in areas where it's weak.

NTIA is technology neutral. In many areas wireless technology is going to be on the agenda. If that is as a transition technology remains to be seen. Changes in wireless technology develop quickly, both cellular coverage and other forms of fixed wireless and micromesh wireless. What NTIA is not neutral on is they think everybody in America ought to be connected.

Being connected is one part. That is called 'access to broadband'.

Adoption

Equally important is adoption. In a lot of areas (both rural and urban) people have access to broadband, but they chose not to take it. NTIA also tries to educate and work with communities on why it is important to get people to take broadband when they have the opportunity to do so. Mr. Williams assists communities across the country with technical assistance, including private sector groups as well. There must be a relationship between public sector and private sector to take advantage of the assets available.

They first want to make sure that when they talk about broadband in economic development terms. It is not discussed as an entertainment source. Academic research is proving numerically that broadband is a great economic development tool. It attracts new firms, retaining businesses, growing small businesses, increases annual sales, and a major tool in workforce development.

Workforce Development

For rural communities, if you get high-speed broadband in your community, that won't be a magic bullet for development. You need to also have good workforce development. If you don't have high-speed broadband, most of your economic development planning is not going to be as effective as it could be.

Agriculture and Broadband Access

The importance of access to high speed broadband is particularly true in agriculture. People are trying to track every seed these days. The amount of data that farmers are producing is astronomical. The problem is sometimes there is no connectivity. Going forward, we need to upgrade connectivity, and that includes rural America.

Some statistics are:

- 10% of all Americans lack access to 25 x 3.
- In Rural America, we're at 39% lacking.
- Only 4% of urban Americans lack 25 x 3.
- Survey results show that 1 in 5 rural adults say they never go online.
- Urban Americas who never go on line is 3%
- 71% of all the farms surveyed are connected to the internet, for an increase of 15% over the last four years.
- 85% of farms who have sales of over \$250,000 a year are connected.

If you're making a lot of money, you can pay to get good connectivity. When we look at what kind of connectivity Rural America has, the most common type (29% of Rural America) is DSL lines. This is outdated and insufficient. Another 21% of Rural America is connected by satellite. This has improved a lot, and it is going to improve more. But nonetheless it's hard to get 25 x 3 from a satellite at the moment.

Similarly 15% by cable modem. The vast majority of rural modems are not 3.1. They're older. Cable providers in Rural America have a tough time making a profit because there's not enough density. Things that drive telecommunications providers is density and the take rate.

New Program

The National Institute of Standards and Technology has just come out with a [Global Cities Team Challenge](#). There will be a kickoff with supercluster agriculture and rural supercluster. The goals of the supercluster are to develop projects and best practices, blueprints, to assist farmers to manage their farms and make their lands and animals more productive and healthier, while making it easier to meet state and federal reporting requirements.

One of the projects in technology is scalability, which is going to be an important goal for Rural America going forward, because we are going to have the internet of things. The supercluster will focus on bridging the digital divide, closing the home work gap, and telehealth medicine.

Mr. Williams offered the services of his organization to the constituents of the representatives and senators in attendance.