

Oregon Broadband Advisory Committee Meeting

June 27, 2019

Portland, OR

Attendance

Members Present: Miles Ellenby, Joseph Franell, Wade Holmes, Lonny Macy, Rick Petersen, and Dave Sabala

Staff Present: Christopher Tamarin, Business Oregon

Guests: Maureen Bock, Oregon Department of Transportation; Barry Bushue, John Huffman, U.S. Department of Agriculture; Jody Christensen, Governor's Office; Steve Corbato, Link Oregon; Dave Dillon, Oregon Farm Bureau; Jay Gratchner, Bob Fletcher, Verizon; Danielle Gonzalez, Marion County; Phil Hamm, Lucas Turpin, Oregon State University; Shawn Irvine, City of Independence; David Lane, Gary Neuschwander, Oregon Department of Agriculture; Charlie Manger, Sophia Haccou, Rural 3.0; Alex Paraskevas, SEDCOR; Jim Pfarrer, Oregon Employment Department; Jean Rice, National Telecommunications and Information Administration; Stuart Taubman, Zayo; Rodney Wood, PEAK Internet

Meeting was called to order at 9:18 am.

Welcome, Introductions, Minute Approval

Chair Joe Franell called the meeting to order and asked for guest introductions.

Minutes

Dave Sabala moved that the May 23, 2019, minutes be approved as distributed. Miles Ellenby seconded the motion. The council approved the motion.

National Broadband Activity Updates

Chris Tamarin provided references on the following national broadband activity regarding infrastructure deployment, technology, market trends, public policy, and illustrations of the value of broadband adoption and utilization since the council's last meeting.

Chris noted that this council in its' 2018 report to the Legislature and the Governor on *Broadband in Oregon* identified agriculture as an application that has prospects to become a key driver for broadband infrastructure deployment in rural areas of the state. The council selected smart/precision agriculture as area for study in 2019 for public policy recommendations.

Since that report was submitted last November 1st, there have been several developments that have reinforced the council's analysis and that indicate that agriculture is an important industry to include in any discussion of broadband challenges and solutions in rural Oregon. And that failure to ensure the network connectivity needed to support the use of precision agriculture applications by Oregon's producers could negatively impact the industry and the state's economy.

U.S. Department of Agriculture Report

In April of this year, the USDA issued a report on Rural Broadband. The report looks at the intersection of broadband Internet infrastructure and the digital Next Generation Precision Agriculture technologies that will be dependent on and enabled by broadband network connectivity. USDA's analysis estimates that connected technologies are poised to transform agricultural production and can create a potential \$47 to \$65 billion in annual gross benefits for the United States. If broadband Internet infrastructure, digital technologies, and on-farm capabilities become available at a level that meet estimated producer demand, the U.S. agriculture industry would realize benefits of nearly 18 percent of total production, based on 2017 levels.

Also, under the USDA's new ReConnect Program, underway this year, grant and loan award selection criteria included providing services to agricultural producers.

A Case for Rural Broadband: Insights on Rural Broadband Infrastructure and Next Generation Precision Agriculture Technologies, by United States Department of Agriculture, April 2019.

<https://www.usda.gov/sites/default/files/documents/case-for-rural-broadband.pdf>

FCC Task Force

This month, the FCC announced that it is creating a Task Force for Reviewing Connectivity and Technology Needs of Precision Agriculture in the United States. Membership will include public and private stakeholders in the agricultural and technology fields and will act in consultation with the Secretary of Agriculture for a period of two years.

The Task Force has six mandates

- Identify and measure current gaps in the availability of broadband Internet access service on agricultural land;
- Develop policy recommendations to promote the rapid, expanded deployment of broadband Internet access service on unserved agricultural land, with a goal of achieving reliable capabilities on 95 percent of agricultural land in the United States by 2025;
- Promote effective policy and regulatory solutions that encourage the adoption of broadband Internet access service on farms and ranches and promote precision agriculture;
- Recommend specific new rules or amendments to existing FCC rules that the Commission should issue to achieve the goals and purposes of the policy recommendations;
- Recommend specific steps that the Commission should take to obtain reliable and standardized data measurements of the availability of broadband Internet access service as may be necessary to target funding support, from future programs of the Commission dedicated to the deployment of broadband Internet access service, to unserved agricultural land in need of broadband Internet access service; and
- Recommend specific steps that the FCC should consider to ensure that the expertise of the Secretary and available farm data are reflected in future programs of the Commission dedicated to the infrastructure deployment of broadband Internet access service and to direct available funding to unserved agricultural land where needed.

<https://www.telecompetitor.com/fcc-to-create-precision-ag-connectivity-task-force/>

Essential Infrastructure

According to a new Report by Finley Engineering, broadband is essential infrastructure and is now seen as equally important to electricity and water for a community's long-term viability. Communities, regardless of size, are evaluating their technology future and robust broadband as the center of that future. It's a smart move. Finley Engineering's latest whitepaper, *Beyond Fast Internet and Netflix: The True Value of Broadband*, outlines and discusses why broadband is so much more than high-speed Internet and streaming video, detailing how it's helping lay the technology foundation for any community's long-term future.

Broadband is now the lifeblood of economic development. Companies and industry need it to conduct their business and empower their employees. If robust broadband is not available, companies will migrate to where it is available. As companies leave, jobs disappear. As jobs disappear, people choose to relocate, the tax base erodes and communities struggle to meet the bare necessities, much less recruit new companies for economic development.

This reality is leading communities all across the globe to demand robust communications networks within their borders. Whether partnering with network operators, or building it themselves, communities must work to ensure they don't get left behind.

https://telecompetitor.com/clients/finley/broadband_value/Beyond_Fast_Internet_the_True_Value_of_BB_2019.pdf

State Broadband Activity Updates

Chris Tamarin provided references on the following state broadband activity regarding infrastructure deployment, technology, market trends, public policy, and illustrations of the value of broadband adoption and utilization since the council's last meeting.

Frontier Communications

Frontier Communications, Oregon's second largest telephone company, has agreed to sell its business in Oregon, Washington, Idaho and Montana for \$1.352 billion to Wave Division Capital and Searchlight Capital Partners.

The assets in the four states include a fixed network covering around 1.7 million premises, including 500,000 with FTTP. At the end of March, Frontier served around 150,000 fiber broadband, 150,000 copper broadband and 35,000 TV customers in these states, and the activities generated \$619 million in revenue for the year to date in March.

The transaction is subject to regulatory approvals by the Federal Communications Commission, the U.S. Department of Justice, the Committee on Foreign Investment in the United States (CFIUS), applicable state regulatory agencies, and certain local video franchise authorities. Closing is anticipated to occur within one year.

Frontier will continue to operate the business and serve customers with existing products and services until the transaction closes. WDC and Searchlight have formed a new company to operate the business and honor existing customer commitments and contracts. Frontier has also agreed to provide certain transition services to the new owners following the closing.

<https://www.telecompaper.com/news/frontier-to-sell-northwest-business-to-wave-broadband-founder-searchlight--1294807>

Agriculture Broadband Summit

Chair Joe Franell welcomed attendees to the summit. Joe noted that Agriculture contributes more than \$8.25 billion to Oregon's economy each year, is emerging as an important driver and application for broadband infrastructure in rural areas of the state. Some of the state's largest data capacity customers in rural areas are in agriculture. The agriculture sector is a huge consumer of technology with increasing needs for bandwidth and access in rural agricultural areas.

OBAC believes that agriculture will become the largest driver for broadband infrastructure deployment in rural areas of the state. Precision agriculture requires reliable broadband connectivity to producers on agricultural lands in all areas of the state to be effective.

Presentations

Lucas Turpin and Philip Hamm

Lucas Turpin, Director of Information Technology at the Oregon State University College of Agricultural Sciences, and Philip Hamm, Director of the Hermiston Agricultural Experiment Station, (300 acres) provided an overview of smart/precision agriculture.

Precision agriculture (PA) is an approach to farm management that uses information technology (IT) to ensure that the crops and soil receive exactly what they need for optimum health and productivity. The goal of PA is to ensure profitability, sustainability and protection of the environment. PA relies on reliable high-speed network connections to function. We can't turn every farm into a data center to gather and process their information to make decisions. The costs would be prohibitive. Instead we rely on cloud systems to perform computation and sourcing of data to feed into locally based decision support systems. Shortened and real-time analysis improves the quality of decision making.

The potential is illustrated by a study commissioned by the city of Hermiston which showed that if every acre in Northern Umatilla and Morrow County, 1000 vertical feet from the Columbia River, that never had water, had water at one time (well but turned off), or doesn't have full season water, received water from the Columbia River through a managed system, the annual economic benefit would be \$1.5 billion.

It is critical that we improve the efficiency and productivity of agriculture. We rely on this industry to feed the world in the face of an ongoing reduction in agricultural lands worldwide and disruptive changes in climate. Farmers need to be able to make decisions and able to make changes in response to the many natural, political and economic factors that impact them. To do that, they need information, ideally in real time.

Twenty-five to forty percent of agricultural production is lost to spoilage through the distribution chain. Reducing food spoilage and loss is the equivalent of increasing production. Another challenge is food safety which can be addressed by the ability to identify and track production from the field to the table. This information is also increasingly being demanded by consumers.

The ability to collect data is rapidly increasing with new technologies including satellites, drones, and sensors placed on farm equipment, in the soil and on crops. Farms in Eastern Oregon can be as large as 60,000 irrigated acres. The amount of data generated can be overwhelming and to be

accessed and acted on, the data must be communicated. The ability to collect, access, analyze and act on the data enables farmers to manage their crops with precision.

Technology is being deployed in farm equipment. Current generations of farm equipment use artificial intelligence and automation and require network connectivity to support real time applications. See John Deere's video, [John Deere Farm Forward 2.0—Revolutionizing agriculture, one plant at a time](#).

To date, broadband connectivity to Oregon's agricultural lands has been random and not due to any strategic or organized effort. It needs to be. Agriculture is no different than any other business regarding its need for high speed broadband connectivity.

Jean Rice

Jean Rice of the National Telecommunications and Information Administration (NTIA) provided information about smart agriculture and the Rural Broadband SuperCluster project. NTIA is part of the U.S. Department of Commerce and is working with the National Institute of Standards and Technology and the U.S. Department of Homeland Security on a "Global Cities Team Challenge" to share knowledge and best practices in a variety of areas including smart agriculture. Many of today's smart city/community development efforts are isolated and customized projects. The Global City Teams Challenge (GCTC) was created to encourage collaboration and the development of standards. GCTC's long-term goal is "to establish and demonstrate replicable, scalable, and sustainable models for incubation and deployment of interoperable, standard-based solutions. Other "super clusters" include transportation, public safety, cybersecurity, and healthcare.

Objectives of the Rural Broadband SuperCluster program include helping farmers and ranchers improve water efficiency, produce higher quality crops and raise healthier livestock, while making it easier to meet federal and state reporting requirements. The program has a particular focus on projects that bridge the digital divide and close the homework gap, improve healthcare and the ability to age in place, improve economic development and spur innovation with the hope that best practices may be replicated in other communities. Another aspect of the program is to develop collaboration in "smart regions" to elevate smart cities and communities' conversations to the regional level and build collaboration and peer to peer networking. Examples were discussed including "farm to fork" projects in Independence. Oregon is positioned to be a leader in smart agriculture development and utilization.

A [Global Cities Team Challenge Exposition](#) is being held in July to bring together municipal governments and technology innovators from around the world to discuss technologies and applications including smart agriculture.

Jean commended OBAC in its attention to agriculture, which she believes will be a key driver for broadband infrastructure in rural areas of the country.

Roundtable Discussion

An ongoing problem issue with developing effective solutions to rural deployment is having accurate and detailed maps of currently available facilities. This is a nationally recognized issue.

We need to explore opportunities for state and federal government to work together to coordinate programs and help realize projects. Having states contribute matching funds and technical assistance to applicants for federal grant and loan programs presents an opportunity to do that.

The American broadband Initiative for federal agencies is working on identifying and reducing barriers to broadband deployment by streamlining Federal permitting processes to speed broadband deployment, leveraging Federal assets to lower the cost of broadband buildouts, and maximizing the impact of Federal funding. The result of this initiative and recommendations may be found in a February 2019 report at the following URL:

https://www.ntia.doc.gov/files/ntia/publications/american_broadband_initiative_milestones_report.pdf

The search for solutions should be technology neutral. Fiber is not the only answer. We need to be open to hybrid technology solutions.

We should seek to aggregate demand to help build business cases for investment and to aggregate solutions through the development of partnerships.

We need to be able combine broadband infrastructure projects with other types of infrastructure projects such as water, waste water, and roads. We need to adapt and modify funding program rules to enable and promote the “stacking” of projects.

Engage economic development organizations should be engaged in broadband strategic efforts.

We need to develop strategic goals for the state, develop public-private partnerships, and adapt procurement rules to enable multiple provider proposals.

We have a continuing divide between urban areas with knowledge-based economies that are thriving and rural areas with natural resource-based economies that are distressed.

We need to bring together technology, knowledge and capital.

We need to engage the vendor community in solution and business case development.

A related issue to include in the development of all solutions is cybersecurity in agricultural information technology systems to maintain food security.

We need to accelerate the pace and increase the scale of projects.

Varying terrains of agricultural lands create different challenges for delivering service. Oregon is a diverse state with different topologies and service challenges and there is no “silver bullet” solution. Joe Franell noted that for Eastern Oregon Telecom alone there are multiple wireless and landline technologies deployed in its network.

There does not appear to be good communication between producers across the state regarding precision agriculture applications and solutions. What do 60,000-acre farms in Eastern Oregon have in common with much smaller farms in the Willamette Valley? The crops, scale of operations, and challenges are different. Sometimes the small producer needs to be more flexible and creative and ends up being the innovator. We need to improve communications within Oregon's agriculture community regarding precision agriculture. Technology development is ahead of practical deployment.

Key resources to draw on include the Oregon Department of Agricultural Sciences, Oregon Farm Bureau, Oregon State University College of Agriculture and Extension Service, the state's community colleges, high schools, 4H, producer associations, and individual producers.

The city of Independence is working with Oregon State University to organize a "reverse pitch" meeting this year in which producers can identify their greatest operational problems to technologists to look for how technology may be used to provide solutions and determine what it is going to cost and what it is going to save.

Technology deployment is driven by resource limitations. When all the needed resources are abundant, there is a lower need for technological solutions to be efficient. As resources become limited, producers look for solutions to be more efficient. Water is a good illustration of that today. Water has been a limited resource in Eastern Oregon generating technological solutions to improve irrigation method. Historically, water has not been a limited resource in the Willamette Valley but that is changing. The current level of adoption of precision agriculture technologies varies with the resource levels of agricultural lands.

It is important to engage those with the problems in the development of solutions. Agricultural producers are time and resource challenged. It is difficult to get many of them engaged because of the demanding nature of their business. They are not focused on new technology they are focused on survival.

Precision agriculture, the application of information technology and establishing connectivity to agricultural lands may also have an impact on succession planning. According to the U.S. Labor Department, the average age of farmers and ranchers is 58 years, and the next generation of farm families is pursuing a wide range of vocations and life styles that are increasingly technology based. Precision agriculture may have a side effect of retaining the next generation in farmers.

Conclusions

Precision agriculture can encompass a broad scope of activities from irrigation and crop monitoring, to managing equipment and systems, to the distribution of crops to food processors, distributors, retailers and consumers, "farm to fork."

Smart agriculture is important for Oregon.

The status of smart agriculture adoption and utilization is mixed across the state.

Oregon's current broadband telecommunications infrastructure is a barrier to smart precision agriculture due to limited coverage and availability. Broadband connectivity to Oregon's agricultural lands has been random and not due to any strategic or organized effort.

We need to raise the level of awareness of the importance of precision agriculture to the IT and telecommunications service providers and agricultural producers, to both the demand side and supply side of the equation.

The most critical areas of need should be identified and made a priority.

Smart agriculture is a public policy issue that should be addressed at the state level.

Rural broadband should be considered as an economic development issue and be addressed by economic development organizations.

Rural communities in Oregon present an opportunity to show what is possible.

Agriculture can be a driver for rural broadband infrastructure and for rural economic and community development.

Public Questions/Comments

No additional comments.

Meeting Schedule

The June 27, 2019, meeting of the Oregon Broadband Advisory Council was held at the Food Innovation Center, 1207 NW Naito Parkway, Portland, Oregon. The next meeting of the council will be held on July 25, 2019, in Salem. Meeting information will be posted on the [council website](#).

Meeting adjourned at 12:15 pm.

Approved by:

Signature on file

Joseph Franell, Chair
Oregon Broadband Advisory Council

July 25, 2019

Date

Signature on file

Christopher Tamarin
Business Oregon

July 25, 2019

Date