

Oregon Broadband Advisory Council Meeting

May 28, 2020

Virtual Meeting

Attendance

Members Present: Katie Cox, Kurtis Danka, Joseph Franell, Michael Heffner, Lonny Macy, Representative Pam Marsh, Galen McGill, Rick Petersen, Jeremy Pietzold, Cheri Rhinhart, Dave Sabala, Commissioner Mark Thompson and Commissioner David Yamamoto.

Staff Present: Christopher Tamarin of Business Oregon

Guests:

Karine Arendes and William Chapman, OSCIO; Carl Done / Jason Firth / Stuart Gardner / Matthew Lee / Carla Montrose / Jim Satre, T-Mobile; Pam Berrian, City of Eugene; Bob Fletcher / Jay Gratchner / Rick Woidyla, Verizon; Colleen DeGeres, Verizon; Lori Gleichman, Bean Foundation; Rebecca Gibbons, City of Portland; Steven Hayes, Public Utility Commission of Oregon; Amanda Hoey, Oregon Wheat Commission; Jenna Jones, League of Oregon Cities; Melissa Leoni, Legislative Policy and Research Office; Danielle Gonzalez, Marion County; Carrie Pipinich, MCEDD; Stuart Taubman, Zayo; Lucas Turpin, Oregon State University; Pam Vaughn, City of Corvallis; Barry Walton, Corning.

The meeting was called to order at 9:17 am.

Welcome, Introductions

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

Minutes

Dave Sabala moved that the April 23, 2020 minutes be approved as distributed. Jeremy Pietzold seconded the motion. The council approved the motion.

National Broadband Activity Updates

Chris Tamarin reported 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.

Risks of offering free service

Rural broadband providers are taking on additional financial risks when they provide services at no charge during the COVID-19 crisis, according to a new report from CoBank. CoBank, a key lender to rural broadband providers, warns that cash flow and bad debt risks could have the unintended consequence of impacting rural operators' ability to invest in their networks and bridge the digital divide. <https://www.telecompetitor.com/free-covid-19-service-cobank-warns-of-financial-risks-for-rural-broadband-providers/>

Changing patterns of use

Average broadband consumption at the end of the first quarter rose to 402.5 GB, an increase of 47% compared to the first quarter 2019's average of 273.5 GB and a 17 percent rise over the 344 GB in the fourth quarter of last year, according to OpenVault. The firm says that the current pandemic is driving broadband use almost a year ahead of pre-pandemic expectations. Median usage, a leading indicator of usage growth across all subscribers rose 122% during the first quarter of 2020 as compared to an already robust increase of 60% during the first quarter of 2019. Upstream usage rose sharply during March, "as more people work from home and use collaboration tools such as videoconferencing." Increased usage is also leading subscribers to move to faster speed service.

Wireless internet service providers (WISPs) are seeing a 36% increase in average traffic due to the COVID-19 pandemic, according to a WISP member survey conducted by the Wireless Internet Service Providers Association (WISPA). The emergency has enabled 83% of WISPs to add subscribers – a figure that is 33% above normal.

U.S. pay TV providers suffered a net loss of 2,065,000 video subscribers during the quarter, according to the Leichtman Research Group. The coronavirus pandemic has led to a video streaming surge and acceleration of cord cutting that could affect long-lasting change in consumer viewership behavior. 76% of U.S. broadband households now have a streaming service. <https://www.telecompetitor.com/openvault-pandemic-drives-almost-a-years-worth-of-broadband-traffic-growth-in-the-span-of-a-couple-of-weeks/>

Netflix subscribers are streaming about 203 million hours per day and, during the past month, have streamed 6.1 billion hours of content, according to an estimate from website Kill the Cable Bill. Researchers estimate that Netflix subscribers use 288GB per month of content, which means that Netflix subscribers have streamed 527 billion TBs of content per month. It is predicted that people will continue to spend more time at home compared to pre-pandemic days even after quarantines end. He also suggests that Netflix and similar services will continue to reel in cord cutters who will leave traditional cable companies.

A new Pew Research Center survey conducted in early April finds that 53% of U.S. adults say the internet has been essential for them personally during the pandemic and another 34% describe it as "important, but not essential." That is 87% of U.S. adults considering the internet to be essential or important.

<https://prodnet.www.neca.org/publicationsdocs/wwpdf/43020pew.pdf>

5G

Samsung Electronics Co., Ltd. announced that it has achieved the industry's 5G speed record in a lab demonstration that combined 800MHz of mmWave spectrum with MU-MIMO (Multi-User, Multiple-Input, Multiple-Output) technology. Using a pair of test mobile devices, the demonstration achieved a peak speed of 8.5 Gbps across both devices. According to Samsung, the wide bandwidth from mmWave spectrum enables mobile operators to provide multi-gigabit speeds. With multi-gigabit speeds, users can experience transformational 5G mobile services.

<http://finleyusa.com/samsung-claims-5g-speed-record/>

Wi-Fi

On April 23rd, the FCC freed up 1200 MHz of spectrum in the 6 GHz band for unlicensed use. The spectrum is expected to be used for Wi-Fi and for fixed wireless broadband most likely to be deployed in rural areas. The latest generation of Wi-Fi known as Wi-Fi 6 has the potential to be more than two and a half times faster than previous generations at gigabit speeds and with low latency, but “to take advantage . . . , we need more mid-band spectrum,” observed FCC Chair Ajit Pai at the [monthly FCC meeting](#), where the report and order freeing up the spectrum was unanimously approved. Edgar Figueroa, president and CEO, Wi-Fi Alliance said that, “By making 6 GHz available for unlicensed use, the FCC has secured the future of Wi-Fi, 6 GHz access is a seminal development for connectivity and provides Wi-Fi more capacity to deliver groundbreaking use cases and to unlock novel new Wi-Fi applications.”

<https://www.telecompetitor.com/fcc-decision-on-6-ghz-unlicensed-spectrum-may-supercharge-the-wi-fi-industry-fixed-wireless/>

Telework

Now that millions of employees have experienced telework, many do not want to go back to the office once coronavirus-related restrictions ease up. Some 60% of U.S. worker respondents told Gallup they would prefer to work from home as much as possible even after the pandemic calms with 40 percent saying they preferred to return to the workplace.

<https://www.nytimes.com/2020/05/05/business/pandemic-work-from-home-coronavirus.html?smid=linkedin>

Silicon Valley and Seattle giants – Facebook, Microsoft, Apple, and Twitter – were the first to send their employees home as the virus spread to the U.S. Now they're among the last to return them to the office. Some of their employees might never go back. The companies are studying what their highly-paid, highly-valued employees want, using their own technology to make remote work easier and looking to hire new workers outside of big city hubs. A Facebook employee survey found that about 20% of workers were "extremely or very interested" in moving to full-time remote work after virus-related restrictions are lifted. Another 20% were "somewhat" interested and the largest group wanted flexibility, with some remote and some in-office work.

<https://www.usatoday.com/story/tech/2020/05/22/coronavirus-remote-work-post-pandemic/5242420002/>

Federal Broadband Funding Programs

The National Telecommunications and Information Administration (NTIA) has updated its BroadbandUSA website. The website contains [database access](#) to programs that go beyond well-known infrastructure efforts at the U.S. Department of Agriculture and the Federal Communications Commission by including information on 57 federal broadband funding programs from 14 federal agencies with funding totals in the billions of dollars.

Federal Broadband Block Grants

OBAC recommended that a portion of federal broadband funding be channeled directly to the states through block grants. There are now at least two illustrations of that approach.

- The FCC created the Governor’s Emergency Education Relief (GEER) Fund making approximately \$3 billion in emergency block grants available to governors to decide how to best meet the needs of students. The application for the funds requests governors include information on the extent that a governor will use GEER funds “to establish, develop,

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improve, or expand the availability, accessibility, capacity, and use of remote learning techniques and technologies," especially for students with disabilities and students from low-income families and the use of funds to support remote learning. The Oregon allocation is up to \$32,507,956.

- The CARES Act allocated \$50 million for the Institute of Museum and Library Services (IMLS) for distribution to the states, territories and tribes to expand internet access, available devices and to provide technical support services. The Oregon State Library is receiving \$381,108.

USDA ReConnect Pilot Program

USDA is reviewing applications to expand rural broadband in the Second Round of ReConnect Pilot Program. USDA has received 172 applications from applicants in 41 states requesting \$1.57 billion from an available fund of \$550 million in the ReConnect Pilot Program. USDA received 11 round one ReConnect Program applications that are now also eligible for the \$100 million Congress allocated to the program through the CARES Act.

https://www.rd.usda.gov/sites/default/files/USDA_RD_SA_ReConnect_Program2nd_RoundApplicationsVolume04222020.pdf

State Broadband Activity Updates

Chris Tamarin reported 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.

Zipty Fiber

On May 1st, Zipty Fiber became Oregon's second largest telephone company.

The new company acquired 350,000 residential business customers in Oregon, Washington, Idaho and Montana. In Oregon, Zipty will take over Frontier's advanced, fiber-optic network in Portland's eastern and western suburbs. It will also take over the copper-based phone networks that serve thousands of customers in rural parts of the state.

According to the [company](#), 31% of its homes passed are fiber capable and Zipty aims to get that number to 80% over the next few years by investing \$100 million towards network upgrades.

Four towns in Oregon will be the first to see new fiber connectivity coming to their area as part of Zipty Fiber projects that will start over the next two to three weeks. The initial four projects will be in the cities of Coquille, Coos Bay, North Bend, and La Grande.

<https://www.telecompaper.com/news/zipty-fiber-buys-wholesail-networks-starts-fibre-projects-in-13-areas--1339338>

Eastern Oregon Telecom

Hermiston-based Eastern Oregon Telecom has expanded its reach through a merger with Gorge Networks of Hood River. Joe Franell, CEO of Eastern Oregon Telecom, is now president of the newly formed Blue Mountain Networks, but for now EOT and GorgeNet will continue to do business under those names.

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Eastern Oregon Telecom covers Umatilla and Morrow counties in Oregon and Benton County, Washington, while Gorge Networks covers communities in Hood River, Wasco and Sherman counties in Oregon and Klickitat and Skamania counties in Washington.

EOT also recently extended fiber internet to Athena, Weston and Adams and is working on the communities of Fossil, Spray and Mitchell, all without government funding.

https://www.hermistonherald.com/news/business/eastern-oregon-telecom-merges-with-gorge-networks/article_6dd6410c-996b-11ea-a61c-b30ebb76a4b9.html

Wave Broadband

Wave Broadband, a leading provider of fiber and broadband services on the West Coast, announced a partnership with the City of Waldport to provide the city and surrounding rural Oregon coastal areas access to gigabit speed internet for the first time. Under the agreement, Wave's gigabit internet tier and other offerings will soon be available to both consumers and small businesses, bringing the fastest connectivity speeds to the Waldport area. Wave is building out its fiber network to accommodate the services, which are planned to be available locally during the third quarter of 2020.

According to Waldport Mayor Dann Cutter, "Our agreement with Wave to deliver gigabit-speed internet access will further Waldport's status as a great place to live and to do business. Our residents and business owners have been clear in stating that they want access to true high-speed internet, and we look forward to working with Wave to make this a reality."

For more information about the residential service, visit <http://gowave.com> or call 1-866-928-3123.

Wave Business customers can find more information at <http://wavebusiness.com>.

<https://newportnewstimes.com/article/wave-broadband-waldport-partner-to-build-new-offerings-for-residents>

CenturyLink

CenturyLink is building out its fiber network that serves its residential and business customers. In 2019, CenturyLink expanded its fiber network to reach an estimated 300,000 additional homes and small businesses with its gigabit service. CenturyLink's consumer fiber-to-the-home (FTTH) projects provide symmetrical speeds of up to 940 Mbps. The faster speeds were enabled in parts of Boulder, Colo., Spokane, Wash., and Tucson, Ariz.

This year, CenturyLink will build out its fiber network to an additional 400,000 homes and small businesses including in Denver, Omaha, Neb., Phoenix, Portland, Ore., Salt Lake City, Spokane, Wash., and Springfield, Mo.

In its first quarter 2020 earnings report, CenturyLink saw a net loss of 11,000 total broadband subscribers. For speeds of 100 Mbps and above, it added 60,000 subscribers. Thanks to its fiber first strategy, CenturyLink has transformed itself from a traditional, legacy telco into a company that is more focused on fiber-based enterprise services and applications.

Last year, CenturyLink connected an estimated 18,000 additional buildings to its global fiber network. All told, CenturyLink has about 450,000 global route miles of fiber across its network, and it plans to add more this year.

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<https://www.fiercetelecom.com/telecom/centurylink-continues-its-fiber-builds-for-consumer-and-business-customers>

Though, at the same time, CenturyLink recently petitioned the FCC to allow them to be late in implementing the CAF II upgrades where the FCC provided subsidies to upgrade rural broadband speeds to 10/1 Mbps. The ostensible reason for the delay is the COVID-19 pandemic, but the company was already behind and notified the FCC earlier this year that it hadn't completed its 2019 CAF II installations in 23 out of 33 states.

<https://potsandpansbyccg.com/2020/05/18/enough-is-enough/>

COVID-19 Western States Pact

Statewide research and education networks in California, Oregon, and Washington have joined to support the shared approach announced by their states' respective Governors to move toward a reopening of economic activity while safeguarding health outcomes.

CENIC, Link Oregon, and Pacific Northwest Gigapop (PNWGP) offer their ultra-broadband research and education telecommunications networks and services to:

- Support continuity of K-12 schools, community college, and university education and educational services online;
- Support COVID-19 research activities among our universities, supercomputing facilities, and other research sites in our three states, across the US and abroad;
- Support online components of clinical care of COVID-19 patients among our university medical centers and their partners; and
- Assist ISPs and carriers in rural and underserved areas who need additional temporary network capacity and/or network strategies for medical, educational, and other community anchor institutions.

The collaborative pact has been expanded to include the western states of Colorado and Nevada.

https://www.daily-journal.com/business/california-oregon-and-washington-research-education-networks-announce-collaborative-support-for-covid-19-western-states/article_16d76ae7-6ee2-54e3-b77d-836a286a9b6d.html

T-Mobile

In last month's meeting broadband update, we recognized the completion of the T-Mobile / Sprint merger. Today we are fortunate to have the New T-Mobile here to tell about the new company and its plans for Oregon.

Presentations

Carl Done / Jason Firth / Stuart Gardner / Matthew Lee / Carla Montrose / Jim Satre of T-Mobile Jim Satre and Carla Montrose

The New T-Mobile team provided a briefing on the New T-Mobile following the merger of T-Mobile with Sprint this year. T-Mobile is America's fastest growing wireless company with 86 million customers and \$45 billion in annual revenue. The T-Mobile has seen 44% business growth since 2018, not including Sprint, and enjoys a record low churn rate of 0.86%. For the third year in a row, T-Mobile received the J.D. Power award for highest overall satisfaction.

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Earlier this year T-Mobile concluded its merger with Sprint and is accelerating its 5G network deployment nationwide. T-Mobile is committed to be number one in 5G.

- Over the next 6 years our capacity will increase 14 times over what we have today.
- Our network will be 8 times faster than current LTE in just a few years, and 15 times faster in the next 6 years with about 450 Mbps nationwide average download speeds, compared to around just 30–40 Mbps today.
- More low band spectrum + integrated network infrastructure + Unlicensed Spectrum Usage = Industry Best Coverage
- We already have the largest 5G network, and within 6 years, we'll provide 5G to 99% of Americans.

T-Mobile is working to close the Digital Divide and will be delivering free internet access and hardware to 10 Million Households over the next five years. Eligible families will receive up to 100 GB of free internet access each year including devices. T-Mobile believes that wireless is a shorter faster path to success to delivering broadband connectivity.

T-Mobile is also offering a new service program for the nation's first responders. T-Mobile is making a 10-year commitment to provide every public and non-profit state and local law enforcement, fire and EMS first responder agency across the country the ability to get free unlimited talk, text and smartphone data.

In response to the COVID-19 Crisis, T-Mobile is providing:

- 1,300,000+ FREE Hotspots to K12 including Launched Hotspot Programs with over 20 Oregon School Districts
- Unlimited LTE Data Plan – Specific to K12 (\$20)
- Direct Assistance to K-12 and Cities and Hospitals in accessing Federal Funding & Relief Program
- Uplifted 2GB Data Plans to 20GB of LTE Data (Education)
- Changed Consumer Data Plans that had x GB of Data Limits to Unlimited
- Added 20GB of LTE Data Tethering/Hotspots to Consumer Plans
- "Borrowed" 600MHz Spectrum from 7 spectrum holders (including DISH) to augment T-Mobile 600Mhz coverage

T-Mobile's 5G rollout is differentiated by the use of Low Band spectrum (600 MHz and 700 MHz) To provide the best geographic coverage. \$30 billion has already been invested in the T-Mobile network and another \$40 billion is committed. T-Mobile is the only mobile wireless carrier using low and mid band spectrum for 5G.

T-Mobile has just under 700 cell towers in service in Oregon and 150 additional sites are planned. It also provides special services in venues like the MODA Center in Portland and hospitals. 97% of Oregon's population is covered and has a 28% market share with T-Mobile and Sprint combined. 92% of points of presence are covered by Low Band 5G. T-Mobile is carrying 260 TB of data daily for Oregon customers and demonstrating 35 Mbps Ookla reported transmission speeds.

T-Mobile has made three and six year commitments for network buildout.

Nationwide Commitment (3 year / 6 year)

- Low-Band 5G Coverage –97%/99% of Population
- Mid-Band 5G Coverage 75%/88% of Population
- 75%/99% of Population @ 50Mbps DL
- 63%/90% of Population @ 100Mbps DL

Rural Commitment (3 year / 6 year)

- Low-Band 5G Coverage –85%/90% of Population
- Mid-Band 5G Coverage 55%/67% of Population
- 67%/90% of Population @ 50Mbps DL
- 55%/67% of Population @ 100Mbps DL

T-Mobile plans to exceed these commitments and will also be expanding its HOME Broadband services including fixed wireless broadband services including content.

Lucas Turpin

Lucas Turpin, Director of Information Technologies at Oregon State University, Division of Outreach and Engagement & College of Agricultural Sciences provided a briefing on broadband and agriculture in Oregon.

Oregon's 2019 GDP was \$42.87 Billion. Agriculture, Forestry, Fishing, and Hunting represented 4.75 percent of the GDP. Oregon agriculture directly and indirectly contributes 686,518 jobs, \$29.71 billion in wages, \$12.12 billion in taxes, and \$2.85 billion in exports to the state. There are 37,200 farms in the state and the economic impact and contribution of agriculture has the greatest impact in the rural counties and rural communities.

Precision Agriculture is the use of technology and data to make decision and automate processes. Precision agriculture applications:

- Reduce inputs such as labor, chemicals, fertilizers
- Increase outputs such as quality and quantity of food/products
- Reduce environmental impacts of agricultural practices
- Need network connectivity.

In 2019, the U.S. Department of Agriculture released a report on rural broadband and precision agriculture. Two key notes from this report were that (1) Broadband is essential to improve agricultural production, and (2) Broadband deployment into rural America will only happen with government support, just like rural electrification. If we can bridge the connectivity gap, we will see the adoption of technology by farmers, ranchers and agricultural producers skyrocket, and with it likely the beginning of the agriculture technology renaissance with further development of sensors and most importantly, the integration of data into cohesive systems that will benefit us all. Rural broadband is the key to kick this off.

If you look at broadband access and precision agriculture from an equity lens, we've seen a decrease in small to medium sized farms over time. Large farm operations have additional resources to bring in broadband to support the adoption of precision agricultural practices. This makes them more profitable and makes it harder for smaller operations to compete on the market.

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Ubiquitous broadband can be the great equalizer. If small to medium sized agricultural producers' have broadband access, they can implement the same technologies to improve their practices and we should see a strengthening of the market and our rural communities. If rural communities aren't successful, who will grow our food and other agricultural products that we need? Equitable broadband access will require disproportionate investment in rural areas to achieve sustainable communities who will ensure reasonably priced food and products can be made within the United States.

The Statewide Public Service Programs – OSU Extension Service, Oregon Agricultural Experiment Station, and the Oregon Forest Research Laboratory, face the same challenges as rural agricultural producers. We have offices in communities all around the state. We're struggling to upgrade our offices with high speed bandwidth so we can do the research that will inform and enhance precision agricultural practices and so that we can provide information and expertise to help meet local challenges. OSU Extension Service is partnering with Link Oregon who is establishing a high-speed statewide backbone that will initially serve education and state offices.

“When we are able to deploy broadband ubiquitously, think of all the things we will be able to design, harvest, and develop ... Broadband in rural America will be as transformative in the 21st century as rural electrification was in the last century.”

- U.S. Secretary of Agriculture Sonny Perdue

Work Session

Broadband in Oregon 2020 report

The report of the Oregon Broadband Advisory Council (OBAC) to the Legislative Assembly on the affordability and accessibility of broadband technology in all areas of the state, and on broadband technology use in healthcare, energy management, education and government, and on the role of broadband in local, regional and state economies, economic development, public policy issues, and key broadband related challenges and opportunities and facing the state is due on November 1, 2020.

The working outline for the 2020 report was reviewed. Chris Tamarin said that he believes that this year's report will receive the most attention of any the OBAC reports submitted to date due to the COVID-19 pandemic. As previously noted, the pandemic has served to accelerate the adoption and utilization of broadband telecommunications technologies for telework, telehealth, distance education, e-commerce, e-government, and amazingly even entertainment. It has served to educate the public and local, state, and national elected officials and policy makers on the essential nature of broadband infrastructure giving OBAC its biggest soap box since the Council was created. 2020 will be another pivotal year for public policy now receiving the most attention since 1996.

There have been many developments over the past two years to report. Recent infrastructure trends and emerging technologies include 5G and Low Earth Orbit satellites, along with the growing capacity and performance of other technologies and the proven ability of the industries networks to stand up under the traffic loads and changing usage patterns created by the pandemic.

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There have been changes in industry structure. In Oregon, we have the significant developments of the T-Mobile / Sprint merger and the sale of the second largest telco local exchange business, Frontier Communications to Northwest Fiber d.b.a. Ziplly Fiber, and a growing number of electric coops, counties and municipalities considering broadband options and solutions.

There is a growing number of broadband infrastructure projects underway. 5G, as 4G did before it, is driving fiber deployment to the edge of the network. Current projects to modernize Oregon's extensive irrigation systems also provide an opportunity to deploy fiber in rural areas.

Broadband accessibility, affordability, adoption and utilization are now high profile issues. 2020 has seen the years of adoption and utilization growth take place in weeks in business, health care, energy management, education and government.

It is increasingly recognized that broadband connectivity will play a key role in local, state and regional economies and in the quality of life and community development.

We have a long list of broadband Related Challenges and Opportunities. The stage is set for Oregon at the state and local level to address the issues of

- Digital Inclusion
- Cyber Security
- Education - K-12 Schools, Higher Education
- Public Safety / FirstNet / 911 Centers
- Agriculture
- Local Community Broadband Planning
- Leveraging Federal Funding Programs
- Network Interconnection

The pandemic has presented OBAC with an unprecedented opportunity to carry out its mission set in statute to

- Champion statewide access to broadband services
- Encourage coordination between existing organizations and economic sectors
- Encourage state agencies to promote and facilitate broadband deployment
- Encourage the development and support of digital inclusion and education programs including workforce development to teach digital skills
- Encourage broadband adoption
- Encourage schools, education service districts and local education agencies in unserved areas to promote broadband access for surrounding communities
- Encourage public and private entities to seek opportunities for partnership
- Encourage the use of broadband technologies for telehealth and telemedicine

Whatever your issue, interest, need, goal, economic sector, or location, broadband connectivity is the common denominator.

Representative Marsh suggested that OBAC consider reporting to and communicating directly with Oregon's Congressional Delegation in addition to the Legislative Assembly and the Governor.

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Public Questions / Comments

Danielle Gonzales noted that city and county budgets are taking a huge hit during the CORONA-19 Crisis and broadband is going to be a tool for response and recovery, but there will be limited resources. Budgets and revenues may be faced with 50% and greater cuts making it difficult to proceed with even currently planned projects.

Carrie Pipinich thanked Representative Marsh for her efforts. Economic Development Districts have been given an opportunity to apply for non-competitive planning resources to use over the next two years, \$400,000 per district, for economic recovery. Hopefully some of these resources may be leveraged to support broadband planning.

Stephen Hayes noted that the Oregon Public Utility Commission is conducting a survey and is seeking input from residential telecommunications customers throughout the state. The survey provides an opportunity for customers to tell the PUC about their experience with telecommunications providers and needs. Please generate awareness of the survey.

Meeting Schedule

The May 28, 2020 meeting of the Oregon Broadband Advisory Council was held as a virtual on-line web-conference. The next meeting of the council will be held on June 25, 2020 as a virtual on-line web-conference. Meeting information will be posted on the [council website](#).

Meeting adjourned at 11:50 am.

Approved by:

Signature on file

Jeremy Pietzold, Vice-Chair
Oregon Broadband Advisory Council

June 25, 2020

Date

Signature on file

Christopher Tamarin
Business Oregon

June 25, 2020

Date