

Oregon Broadband Advisory Council Meeting Minutes

July 25, 2019

Salem, OR

Attendance

Members Present: Anne Carloss, Miles Ellenby, Joseph Franell, Wade Holmes, Lonny Macy, Rep. Pam Marsh, Rick Petersen, Jeremy Pietzold, Dave Sabala, David Yamamoto

Staff Present: Christopher Tamarin, Business Oregon

Guests: Heather Buch, Lane County; Austin Ramirez, Lane County Community and Economic Development; Alan Bar, Jay Gratchner, Jay La Valley, Verizon; Pam Berrian, City of Eugene; Cathy Britain, Telehealth Alliance of Oregon; Christopher Carlson, Willamette Internet Exchange (WIX); Steve Corbato, Link Oregon; Jessica Epley, Frontier Communications; Scott France, MYND Wired; Danielle Gonzalez, Marion County; Jim McCauley, League of Oregon Cities; Melissa Murphy, Business Oregon; Sherry Rinehart, Intermountain ESD; Matt Sayre, Technology Association of Oregon; Nick Spiegel, Stuart Taubman, Zayo; Pam Vaughan, City of Corvallis

The meeting was called to order at 9:15 am.

Welcome, Introductions, Minutes Approval, Elections

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

Minutes

Dave Sabala moved that the June 27, 2019, minutes be approved as distributed. David Yamamoto 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.

Federal Communications Commission

- The FCC has adopted a Notice of Proposed Rulemaking (NPRM) on a three-year, \$100 million Connected Care Pilot program that will test the idea of providing telehealth services to veterans and low-income patients. The program would provide an 85% discount on connectivity for broadband-enabled telehealth services. The system would treat a wide array of health issues by connecting users to their doctors. A survey of 800 physician suggests that 22% of doctors have used telehealth and that 61% will use it to see patients by 2022.

Unlike existing FCC healthcare programs, such as the agency's Rural Health Care Program, the proposed pilot would focus on projects that connect patients with healthcare services

directly and outside of a hospital. <https://www.modernhealthcare.com/information-technology/fcc-moves-forward-100-million-connected-care-proposal>

- The FCC also issued a draft of its Notice of Proposed Rulemaking regarding its \$20.4 billion Rural Digital Opportunities Fund (RDOF). This is the next step in the Commission's ongoing process of funding broadband access in unserved and underserved areas, following its completion of the Connect America Fund Phase II auction late last year, which resulted in more than \$225 million awarded to electric cooperative utilities. In summary, the FCC is planning to award funding from RDOF in two phases: Phase I will include areas that are wholly unserved with broadband and there is at least \$16 billion budgeted; Phase II will include areas that are underserved and there is \$4 billion budgeted. The commission plans to conduct the auction in 2020. [Utilities Technology Council Information Bulletin]
- The FCC has established procedures for 5G millimeter wave auction 103, which will be the largest spectrum auction in U.S. history. This will be the third auction of high band millimeter wave spectrum for 5G. It will include the upper 37 GHz, 39 GHz and 47 GHz bands and include as much as 3,400 MHz of spectrum. The bidding in 5G millimeter wave auction 103 will begin on December 10, 2019. "The auction will offer licenses for 100 megahertz blocks of spectrum. The FCC plans to auction off licenses for 100 megahertz blocks of spectrum including a portion of spectrum in the 2.5 GHz band that was set aside in the 1960s for educational purposes. <http://finleyusa.com/fcc-sets-rules-for-5g-mmwave-auction-103-largest-spectrum-auction-in-u-s-history/>
- The FCC has adopted a notice of proposed rulemaking (NPRM) that could result in the commission adopting an overall cap on the Universal Service Fund (USF) program. That program is comprised of four separate sub-programs – high-cost (broadband/voice), Lifeline (low-income), E-Rate (schools and libraries) and rural healthcare. Commissioner Michael O'Rielly has been arguing for an overall cap for the USF for some time, and he has hinted that if the demand on the high-cost program exceeds the budget for that program, the difference might be made up by decreasing funding for other portions of the program. This issue could become a bigger concern moving forward, as the FCC pursues its goal of making broadband available to all Americans at a time when concerns have risen that the commission has underestimated the scope of that task. <https://www.telecompetitor.com/fcc-considering-overall-usf-cap-impacting-rural-broadband-healthcare-schools-low-income-program/>

Low Earth Orbit Satellite Broadband Networks

- Amazon is seeking government permission to launch 3,236 broadband satellites that would cover nearly all of the United States and much of the rest of the world with a first-phase launch of 578 satellites. Amazon's plan for a nearly global broadband system was previously revealed in filings with the International Telecommunication Union (ITU). Amazon's satellite plan isn't solely for residential and business internet—it's also for mobile access. In its filings, Amazon said its network will be available to mobile operators, raising the possibility that small rural carriers could buy bandwidth from Amazon to boost coverage in areas with poor cellular access. Low-Earth satellites should offer much better latency than current satellite systems, potentially making them a viable substitute for wired broadband networks. While fast wired networks aren't available in many rural parts of America, Amazon told the FCC that it "will help close this digital divide by offering fixed broadband communications services to rural and hard-to-reach areas."

<https://arstechnica.com/information-technology/2019/07/amazon-follows-spacex-into-satellite-broadband-asks-fcc-to-ok-launch-plan/>

- SpaceX launched 60 low-earth orbit (LEO) satellites last May to support its ambitious plans to use thousands of LEO satellites to provide a global low-latency SpaceX satellite broadband service to be known as Starlink. By using LEO satellites, SpaceX Starlink expects to address latency issues associated with broadband service delivered from satellites in higher-altitude geostationary orbits. SpaceX said it plans to deploy a total of 4,425 satellites to support its satellite broadband service.

<https://www.telecompetitor.com/spacex-satellite-broadband-takes-step-forward-with-launch-60-leo-satellites-put-in-orbit/>

Rural Broadband and Agriculture

Forbes Magazine held an agriculture technology summit in June, "The Future of Food." The summit showcased technology, innovation and ideas that will make agriculture more efficient, productive, profitable, and safe. To make these advancements accessible to all Americans, broadband connectivity must reach currently unserved rural areas, speakers said. "We've got gee-whiz technology that is dependent on broadband," said U.S. Secretary of Agriculture Sonny Perdue, the event's keynote speaker. "Rural broadband is a huge issue with transformational capacity to bridge the rural-urban divide." <https://www.morningagclips.com/rural-connectivity-necessary-for-agriculture/>

5G

The hype is working as one-third of Smartphone owners think they have a 5G device, and among those who think they own a 5G capable device, 62% seemed to think they were on a 5G network, citing improved performance for their mobile service while "using a 5G network." Of course, the reality is there are very few 5G capable phones on the market, and 5G coverage is extremely sparse. <https://www.telecompetitor.com/report-5g-hype-is-working-as-1-3-of-smartphone-owners-think-they-have-a-5g-device/>

Cyber Security

- Businesses experienced roughly 2 million cyber incidents last year, costing them \$45 billion, and costs related to ransomware attacks rose 60%, the Internet Society's Online Trust Alliance reports. The number of records exposed dropped 35.9%, and experts caution that nearly all of the attacks could have been prevented with basic security measures. <https://thehill.com/policy/cybersecurity/452182-cybersecurity-incidents-led-to-45-billion-in-losses-in-2018-report>
- IBM Security reports that the average cost of a data breach has risen 12% in the past five years, to \$3.92 million, with businesses of fewer than 500 employees losing more than \$2.5 million on average. The figures include legal costs, fees paid to third-party forensics firms, infrastructure upgrades and government fines. <https://www.zdnet.com/article/your-business-hit-by-a-data-breach-expect-a-bill-of-3-92-million/>
- The US Conference of Mayors unanimously adopted a resolution not to pay any more ransom demands to hackers following ransomware infections. "Paying ransomware attackers encourages continued attacks on other government systems, as perpetrators financially benefit," the adopted resolution reads. "The United States Conference of Mayors has a vested interest in de-incentivizing these attacks to prevent further harm,"

The Conference of Mayors includes more than 1,400 mayors from across the US, representing cities with a population of over 30,000. The organization said that "at least 170 county, city, or state government systems have experienced a ransomware attack since 2013," and "22 of those attacks have occurred in 2019 alone." Many of these ransomware infections have been successful in extracting ransoms. Two Florida cities paid a combined \$1 million to hackers for decryption keys to unlock and recover their data.

<https://www.zdnet.com/article/us-mayors-group-adopts-resolution-not-to-pay-any-more-ransoms-to-hackers/>

Internet Service Provider (ISP) Performance

A new study by *PC Magazine* once again highlights how community-run internet service providers (ISPs) offer better, faster broadband than their private sector counterparts. Using data from 356,925 broadband speed tests conducted over a year, *PC Magazine* recently compiled a list of the fastest ISPs in America. ISPs were then affixed a *PC Magazine* Speed Index score based on a combination of line performance, upload, and download speeds. When all regional ISPs were compared side by side, the fastest ISP in America was independent California ISP Sonic, with a score of 610.6. Sonic has been working with select California communities to leverage their publicly-owned fiber networks. In all, six of the ten fastest ISPs in the States were either directly run by a local community or involved some form of partnership between the public and private sectors. Community-run networks may not be the answer for every community, but in areas where they're deployed, private ISPs like Comcast often are forced to actually compete and upgrade their networks, improving service across the entire region. "You can rapidly see that nonprofit business models have an important role to play in improving Internet access."

https://www.vice.com/en_us/article/7xgne9/locally-run-isps-offer-the-fastest-broadband-in-america

Broadband Mapping

Problems and inaccuracies of the National Broadband Map continue to be recognized. The latest initiative aimed at addressing National Broadband Map problems comes from the U.S. Senate in the form of the Broadband Data Improvement Act.

The proposed legislation would:

- Require broadband providers to report service availability by submitting GIS shape files that indicate actual network coverage, completely updating or replacing the current Form 477 process.
- Establish a three-pronged data validation process that would include using feedback collected from the public using a feedback tool that would be integrated into the online mapping platform, acquiring third-party datasets on broadband availability that would be analyzed and compared against provider-reported data and targeting on-the-ground field validation of services in areas where public feedback and third-party data suggest the map is incorrect
- Require the establishment of an ongoing, efficient, and scheduled process through which the public and broadband service providers could challenge the map, and through which the FCC would resolve challenges
- Require federal agencies to use the National Broadband Map to identify areas that remain unserved and track buildouts

- Provide data submission assistance to minimize the burden on smaller service providers that may not have GIS capabilities

<https://www.telecompetitor.com/senate-bill-targets-national-broadband-map-problems-ustelecom-hopes-to-have-recommendations-by-q3/>

CenturyLink Fiber

CenturyLink announced in July that it would expand its intercity network by 4.7 million miles of fiber in 50 major US cities early 2021. The first phase of the expansion, comprising 3.5 million fiber miles, was completed in June. <https://www.lightreading.com/optical-ip/centurylink-adds-fiber-to-fuel-datacenter-cloud-growth/d/d-id/752937>

Broadband Infrastructure Investment

US Telecom estimates that broadband providers comprising 95% of the U.S. market invested \$75 billion in 2018. That's a significant increase from 2017 broadband capex, which US Telecom estimated at \$72 billion for those providers. Service providers that offer wired and/or wireless services, including cable companies and telecom companies, were included in the US Telecom broadband investment estimate. <https://www.telecompetitor.com/ustelecom-estimates-u-s-broadband-investment-at-75-billion-for-2018-up-from-72-billion-in-2017/>

Changing Usage Patterns

At some time this year, US consumers will begin spending more time using their mobile devices than watching TV, a trend that is likely to continue, according to a smartphone usage forecast from research firm eMarketer. The trend of declining TV viewing and increasing smartphone usage for video watching has been continuing since 2014, when the time spent viewing TV was almost double the time spent with mobile devices. The average US adult will spend 3 hours, 43 minutes daily (referenced as 3:43) on mobile devices in 2019, just above the 3:35 spent on TV, according to the report. <https://cdgportal.com/blog/index.php/2019/06/07/report-smartphone-usage-will-soon-surpass-daily-tv-viewing/>

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.

Digital Inclusion

Ten cities have been recognized this year as Digital Inclusion Trailblazers by Broadband Now. These cities are leading the way in bringing improved levels of broadband access and awareness to their residents. **Portland, Oregon**, is one of those trailblazers. 98 percent of Portland residents have access to multiple broadband internet connections and 79 percent have access to fiber. In 2014, the city's community established the Digital Inclusion Network, a coalition aimed at "raising awareness about digital equity barriers and developing solutions to bridging the digital divide." In 2018, Mayor **Ted Wheeler** instituted a city-wide Digital Inclusion Week. <http://broadbandbreakfast.com/2019/07/broadbandnow-publishes-list-of-top-10-trailblazers-for-digital-inclusion/>

Broadband Planning Workshops

The U.S. Department of Agriculture, the National Telecommunications and Information Administration, and Business Oregon are sponsoring two one-day workshops designed to inform and engage civic leaders, businesses, and community champions. The workshops will feature local experts and provide a discussion of broadband applications that will reshape our communities and help drive rural prosperity, an overview of relevant USDA Rural Development grant and loan programs, and an interactive session to support local teams as they evaluate and develop local broadband projects. Community broadband champions and those interested in improving rural broadband infrastructure, including education, library, healthcare, telecom, and internet representatives, will gain valuable information from these workshops. These are free events and open to the public. The workshops will be held in Independence on August 28, and in Madras on August 29.

State Educational Technology Directors Association (SETDA)

SETDA, the principal association representing state K-12 education technology leaders, announced its Board of Directors for 2019-2020. Carla Wade of the Oregon Department of Education was named as a Director and the organization's Treasurer. The Board of Directors also includes members from the states of Washington and Idaho www.setda.org.

Eastern Oregon Fiber Builds

Joe shared that Eastern Oregon Telecom is building fiber to the home networks in three additional communities; city of Weston first, then city of Athena, and then the city of Adams. Additionally, EOT will be conducting a Digital Transformation Program in these three communities to conduct a full residential and commercial assessment of user needs and wants to design and provide training and education to end users.

Presentations

Matt Sayre/Austin Ramirez/Heather Buch

Matt Sayre of the Technology Association of Oregon, Austin Ramirez, and Commissioner Heather Buch of Lane County provided a briefing on their Speed Up America project <https://speedupamerica.com/>. Speed Up America is a project, not a company, focused on providing accurate information about Internet access in a map showing real Internet speeds received, actual prices paid, and level of service experienced via a new speed test tool. The first step toward finding a broadband internet access solution is having accurate data and has resulted from the critical nature of broadband infrastructure and the frustration of having broadband service inaccurately represented in Lane County on broadband maps. This inaccurate data and mapping has made Lane County ineligible for federal funding programs, when in fact it should be eligible.

Speed Up America uses open source software and the [M-Lab test platform](#) to collect internet speed data and create a dynamic map of broadband access. Users can compare their speeds to service levels in other regions, and industry and government groups can pinpoint where further network investment is needed. Currently the tool provides comparative data on Internet speeds in Oregon. Data will be added from the state of Washington next, with other states soon to follow. The tool combines crowdsourced internet speed test results with a map of the entire United States that is filterable by state, zip code, census tract, census block, and other statistical boundaries. Speed Up America is asking people to participate in Speed Up America and test their broadband connectivity.

A video on the project may be viewed at https://www.youtube.com/watch?v=RICE4_8dSro.

To participate, visit <https://speedupamerica.com/> and click the “Take the Test” button. The test does not collect personally identifiable data but asks the user’s general location so that test data can be compared across ZIP codes, census tracts and other relational data.

Speed Up America also has a Facebook Page at <https://www.facebook.com/pages/category/Community-Service/Speed-Up-America-416927695803950/>

Jessica Epley

Jessica Epley of Frontier Communications provided information about the announced sale of Frontier’s Oregon, Washington, Idaho, and Montana local telephone company exchange business to WaveDivision Capital, LLC (WDC) in partnership with Searchlight Capital Partners, LLC.

Frontier’s operations in these states have more than 1,000 employees and serve more than 350,000 residential and commercial customers as of March 31, 2019, and account for \$619 million of revenue, \$46 million of net income, and \$272 million of Adjusted EBITDA for the twelve months ending March 31, 2019. The transaction is subject to regulatory approvals and other customary closing conditions, with closing anticipated to occur within one year around June 2020.

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 after the transaction closes. Under the terms of the transaction, Frontier will receive \$1.352 billion in cash at closing subject to certain adjustments, including working capital as compared to an agreed target, and certain pension and retiree medical liabilities. Frontier has also agreed to provide certain transition services to the new ownership group following the closing. 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. Initial filings have been made.

Jessica also provided an update on Frontier’s Oregon CAF II milestones. Frontier accepted \$3,897,357 million in annual funding from the Connect America Fund to deploy 10/1 mbps broadband service to 8,542 households in designated eligible census blocks in Oregon. By December 31, 2019, 80% of locations are to be enabled, and by December 31, 2020 100% of locations are to be enabled. Frontier achieved 67.34% (5,752 Households) enabled CAF locations in Oregon as of 4/30/19. Frontier has also improved connectivity for 6,989 adjacent non-CAF households at 10/1 mbps through strategic buildout associated with the CAF program.

Work Session

Respectful Workplace Policy

Brenda Bateman, of Business Oregon, expressed the importance of the state of Oregon’s Respectful Workplace Policy. She is meeting with all nine of the commissions, boards, and councils located with Business Oregon to reinforce the agency’s commitment to have a respectful workplace. All members of the state’s commissions, boards and councils have a duty and responsibility to realizing this goal and being trained.

"It is the policy of Oregon state government that mutual respect between and among managers, employees, temporary employees and volunteers is integral to the efficient conduct of business. All individuals work together to create and maintain a work environment that is respectful, professional and free from inappropriate workplace behavior." [ORS 240.145 and ORS 240.250]

2019 Legislative Session

Chris Tamarin reported on the results of the 2019 Legislative Session. The following bills were passed.

HB 2022

Changes name of Oregon Virtual School District to Oregon Online. Expands purposes of Oregon Online to require provision of professional development related to online learning. Status: Governor signed into law 6-17-19.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB2022/Enrolled>

HB 2173

Creates Oregon Broadband Office within Oregon Business Development Department. Repeals sunset on Oregon Broadband Advisory Council. Adds member to council. Broadens duties of council to include recommending public policy and solutions to address state's broadband needs and goals. Directs council to champion statewide access to broadband services. Pre-session filed at the request of House Interim Committee on Economic Development and Trade. Status: Speaker signed 7-2-19, President signed 7-3-19, pending signature by the Governor.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB2173/Enrolled>

HB 2395

Requires person that manufactures, sells or offers to sell connected device to equip connected device with reasonable security features that protect information that connected device collects, contains, stores or transmits from access, destruction, modification, use or disclosure that consumer does not authorize. Pre-session filed (at the request of Attorney General Ellen Rosenblum). Status: Governor signed into law 5-30-19.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB2395/Enrolled>

HB 2449

Increases rate of tax for emergency communications. Increases amount of distribution from Emergency Communications Account to counties with population under 40,000. Sponsored by Representatives FINDLEY, LIVELY, MARSH. Status: Speaker signed 7-2-19, President signed 7-3-19, pending signature by the Governor.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB2449/Enrolled>

HB 2684

Repeals exemption for property of company that builds, maintains and operates project constituting certain communication services infrastructure. Takes effect on 91st day following adjournment sine die. Status: Governor signed into law 5-28-19.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB2684/Enrolled>

HB 3061

Allows political subdivision to convey real property to nonprofit, municipal or private corporation for purpose of providing broadband service. Requires instrument conveying real property to authorize reversion of property to political subdivision if property is not used to provide broadband service. Allows political subdivision to relinquish reversionary interest in real property after less than 20 years to further public interest. Declares emergency, effective on passage. Sponsored by Representative RESCHKE; Representatives BARRETO, BOSHART DAVIS, CLEM, MARSH, NEARMAN, NOBLE, ZIKA, Senators BOQUIST, HANSELL, LINTHICUM, THATCHER. Status: Governor signed into law 5-13-19.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB3061/Enrolled>

HB 3065

Directs Public Utility Commission to establish public process for investigating continuing relevance of telecommunications carrier of last resort obligations. Requires commission to submit report on investigation, which may include recommendations for legislation, to interim committees of Legislative Assembly related to economic development and business and general government no later than September 15, 2020. Sunsets January 2, 2021. Status: Governor signed into law 5-22-19.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB3065/Enrolled>

SB 68

Increases annual fee imposed on public utilities and telecommunications providers for purpose of defraying costs of Public Utility Commission. Declares emergency, effective on passage. Pre-session filed at the request of Governor Kate Brown for Public Utility Commission.

Status: Governor signed into law 5-24-19.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/SB68/Enrolled>

SB 69

Expands purposes of plan of assistance established by Public Utility Commission under Oregon Telephone Assistance Program to include supporting broadband internet access service. By order of the President of the Senate in conformance with pre-session filing rules, indicating neither advocacy nor opposition on the part of the President (at the request of Governor Kate Brown for Public Utility Commission). Status: Signed by the Governor 5-7-19. Effective date

1-1-20. <https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/SB69/Enrolled>

SB 129

Allows licensed optometrist to engage in practice of telemedicine. Defines "telemedicine." Declares emergency, effective on passage. By order of the President of the Senate in conformance with pre-session filing rules, indicating neither advocacy nor opposition on the part of the President at the request of Senate Interim Committee on Health Care. Status: Governor signed into law 6-4-19.

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/SB129/Enrolled>

Chair Franell thanked everyone for their participation and support in the 2019 legislative session.

Oregon Broadband Office

The Broadband Office, created by the Governor's Executive Order in December 2018, is now codified in statute.

Rural Broadband Capacity Pilot Program

Chris Tamarin reported that six of seven projects funded by the program have been completed. The seventh project, currently under construction, is a city of Baker City fiber build to a city owned industrial park that should be completed by the end of October 2019.

Public Questions/Comments

League of Oregon Cities

Attending his first OBAC meeting, Jim McCauley, the new Legislative Director of the League of Oregon Cities introduced himself to the Council. Joe Franell welcomed Jim to his new role and to the Council meeting.

Telehealth

Cathy Britain noted that FCC is moving forward with its \$100 million Connected Care Program and that the Notice of Proposed Rule Making is issued. A key change from previous programs is that the proposed pilot will focus on projects that connect patients with healthcare services directly and outside of a hospital. Cathy also reported that there are two national telehealth related conferences that will be coming to Oregon in 2020; National Association for Rural Mental Health Conference and the Northwest Center for Telehealth Resource Center Conference.

Eduroam

Jeremy Pietzold recommended that Eduroam be a future topic for discussion
<https://www.eduroam.us/>.

Oregon Connections Telecommunications Conference

The 2019 conference has been announced, the website is live, and this year's theme will be Smart Communities. The conference presenters and attendees will be exploring **Smart Communities**: strategies, applications, enabling technologies, and Oregon initiatives. More information may be found at www.oregonconnections.info.

Meeting Schedule

The July 25, 2019, meeting of the Oregon Broadband Advisory Council was held at the Local Government Center, 1201 Court Street NE, Salem, Oregon. The next meeting of the council will be held on September 26, 2019, in Salem. Meeting information will be posted on the [council website](#).

Meeting adjourned at 12:01 pm.

Approved by:

Signature on file

Joseph Franell, Chair
Oregon Broadband Advisory Council

September 26, 2019

Date

Signature on file

Christopher Tamarin
Business Oregon

September 26, 2019

Date