Oregon Broadband Advisory Council Meeting

April 23, 2020   Virtual Meeting

Attendance

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

Staff Present: Christopher Tamarin of Business Oregon

Guests: Karen Barnes, Corvallis; Kathleen Cathey, Senator Ron Wyden's Office; Steve Corbató, Link Oregon; Alexandra Corvello, Lane County; Bob Fletcher, Jay Gratchner, Rick Woidyla, Verizon; Colleen DeGeres, Verizon; Rebecca Gibbons, City of Portland; Jenna Jones, League of Oregon Cities; Melissa Leoni, Legislative Policy and Research Office; Rosie Shatkin, Senator Roblan's Office; Danielle Gonzalez, Marion County; Montana Lewellen, Oregon Cable Telecommunications Association; Steve Noel, U.S. Department of Homeland Security; Samuel Pastrick, CUB; Carrie Pipinich, MCEDD; Dan Prince, Multnomah Education Service District; Nate Stice, the Governor's Office; Brandy Sweet, University of Oregon; Mark Thompson, Public Utility Commission of Oregon; Carla Wade, the Oregon Department of Education; Barry Walton, Corning; Tom Watts, Watts Capital.

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

Welcome, Introductions

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

Minutes

Jeremy Pietzold moved that the March 27, 2020 minutes be approved as distributed. Dave Sabala 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.

COVID-19 and Broadband

The news is now all COVID-19, all the time, and that also applies to broadband. The national widespread closure of businesses, schools and public buildings in response to the coronavirus pandemic is demonstrating how important broadband service *at home* has become to millions of Americans.

The pandemic has resulted, "almost overnight," in a major increase in bandwidth demand as people went online for work, school, healthcare and entertainment. The average number of people using the Internet at home during the day has more than doubled in the 14 largest metropolitan

areas in the country since the pandemic began, according to ADTRAN. The number of mobile phone users using their phones to connect to the Internet has increased 87.5%, and the number of people using the Internet for streaming video and other entertainment has increased 50.2%. Much of the increase in overall Internet traffic has been people working from home and the steep "hockey-stick" curve increase in the number of video conferences.

The new dependence and reliance on broadband at home underscores the need and demand for internet access services with robust speed and capacity both downstream and upstream for all America. And with the funding that is already in the pipeline and the funding that is still being proposed, there will be a lot of money coming to respond.

Rural Digital Opportunity Fund
The report and order adopting a two-phase reverse auction framework for the Rural Digital Opportunity Fund was published in the Federal Register on March 10, 2020. The FCC will commit $20.4 billion in high-cost universal service support to bring high-speed broadband service to unserved Americans over a period of ten years.

The FCC has released a preliminary list of areas eligible for the RDOF auction, or Rural Digital Opportunity Fund auction, Phase 1. The auction will award funding to cover some of the costs of bringing broadband to rural areas where service is not currently available. Census blocks on the preliminary list are in areas where the incumbent carrier is one of the nation's price cap carriers and are based on data reported by service providers on FCC Form 477, as of June 2019. Only census blocks shown to totally lack voice and broadband service at speeds of at least 25/3 Mbps are included though the commission also established a limited challenge process for the preliminary list of eligible areas.

Senator Merkley and Senator Wyden have signed a March 10 letter submitted to the FCC complaining about the process and data used to determine eligible service areas for federal broadband funding programs.

USDA ReConnect 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 eligible for the $100 million Congress allocated to the program through the CARES Act Stakeholder Announcement.

Emergency Educational Connections Act of 2020
Just this week, U.S. Rep. Grace Meng (D-NY), a member of the House Appropriations Committee that funds federal programs and agencies, introduced the Emergency Educational Connections Act of 2020 to ensure that students have internet access during the novel coronavirus (COVID-19) pandemic emergency. The Congresswoman's legislation would create a special $2 billion Emergency Connectivity Fund at the Federal Communications Commission (FCC) to disburse funds to schools and libraries, and Tribal schools and libraries, to purchase Wi-Fi hotspots, modems, routers, and internet-connected devices for students and patrons.

Representative Meng noted that "COVID-19 has forced over 55 million students to stay home during this national health crisis and adjust to a new future that requires internet access and a computer to continue their studies." Meng also observed that, "Before this crisis occurred, students without internet access at home were part of the so called 'homework gap' and struggled to keep up with their peers who have internet access at home. Today, with schools across the country having moved learning entirely online, including class meetings, explanations of new content, virtual field trips, homework, and learning exercises, this gap seems more like a chasm. Students without internet service will fall further behind as students with internet service at home can continue advancing in their studies. Whether they live in urban centers, suburbs, or exurbs, or small communities in rural America, all students require internet connectivity to succeed during this pandemic. I urge my colleagues to support my bill and ensure it is included in the next coronavirus relief package."

This bill if passed will be fast moving.
- It gives authority to FCC.
- Not later than 7 days after enactment the FCC shall promulgate regulations on use of the $2 billion.
- Funds can be used for: (1) broadband infrastructure, (2) internet access service
- Funds can be used for: Connections to students/eligible users at locations *other than a school or library.*
- Funds can be used for: (1) Wi-Fi hotspots, (2) Modems, (3) Routers, (4), and (5) Connected devices.
- Prioritizes those who do not currently have access. FCC will develop regulations requiring schools and libraries to prioritize funding to students or patrons who do not have access at their residences. Schools and libraries will need to document or verify such residences in some way.
- The $2 billion is from the Treasury, not USF.

FCC COVID-19 Telehealth Program

The Federal Communications Commission voted to adopt a $200 million telehealth program to support healthcare providers responding to the ongoing coronavirus pandemic. Congress appropriated the funds as part of the CARES Act. Through the COVID-19 Telehealth Program, the FCC will help healthcare providers purchase telecommunications, broadband connectivity, and devices necessary for providing telehealth services. Funding applications from healthcare providers will be processed on a rolling basis. The FCC also adopted final rules to stand up a Connected Care Pilot Program. This separate three-year Pilot Program will provide up to $100 million of support from the Universal Service Fund (USF) to help defray health care providers' costs of providing connected care services and to help assess how the USF can be used in the long-term to support telehealth.

https://docs.fcc.gov/public/attachments/DOC-363498A1.pdf

The immediate reliance on telemedicine has been extraordinary. Oregon Health and Science University went from about one percent of all ambulatory care being delivered through telehealth prior to the COVID-19 crisis to about seventy percent currently. What would normally have taken years of program development, adoption and change management has occurred out of necessity within a period of weeks.

Telehealth Reimbursement

Medicare benefits for telehealth have been increased due to the COVID-19 crisis. The move will enable beneficiaries to get telehealth services in physician's offices, hospitals, nursing homes, rural health clinics *and* their homes. The Centers for Medicare and Medicaid Services expanded its Medicare telehealth coverage during the coronavirus crisis to enable more patients to get virtual care services from their doctors without having to travel to a healthcare facility.

Physicians, nurse practitioners, clinical psychologists and licensed clinical social workers can now offer telehealth to Medicare beneficiaries in any healthcare facility, including a physician's office, hospital, nursing home or rural health clinic, as well as from their homes.

Medicare beneficiaries will be able to receive care, including common office visits, mental health counseling and preventive health screenings via remote technology. This helps ensure they don't travel to clinics and hospitals where they could put themselves or others at risk of COVID-19. Clinicians can bill immediately for dates of service starting March 6, 2020, said CMS officials, with telehealth services paid under the Physician Fee Schedule at the same amount as in-person services. Medicare coinsurance and deductibles still apply.

The Health and Human Services Office of Inspector General is also adding flexibility for healthcare providers to reduce or waive cost-sharing for telehealth visits paid by federal healthcare programs. Before that, Medicare was only allowed to pay clinicians for telehealth services in certain circumstances, such as for patients in remote locations, and generally did not cover home-based virtual consults.

Reliance on Internet Service Providers

Oregon's U.S. Senators Jeff Merkley and Ron Wyden today joined seventeen other Senators in sending a letter to the CEOs of eight major internet service providers (ISPs) calling on them to accommodate the unprecedented reliance America will have on internet-supported services — including telework, online education, telehealth, and remote support services — in the coming days. The Senators wrote, "We ask that you temporarily suspend broadband caps and associated fees or throttling for all communities affected by COVID-19 and work with public school districts, colleges, and universities to provide free, or at-cost, broadband options for students whose schools close due to COVID-19 who don't have access at home." They suggested the providers enable hotspot access for all Lifeline subscribers, ensure all have access to 4G service, and provide no-cost upgrades to existing subscribers using older smartphones provided by the Lifeline provider that lack hotspot functionality.

https://pamplinmedia.com/pt/9-news/456348-372214-working-from-home-oregon-pols-seek-isps-aid-amid-outbreak

Before the COVID-19 crisis hit, the largest broadband providers in the U.S. representing about 96% of the market — saw gains of 2.5 million net additional broadband Internet subscribers in 2019 according to a report from Leichtman Research Group, Inc. (LRG). But all the gains came from cable companies, while wireline telcos lost broadband subscribers. The top wireline phone companies lost about 620,000 broadband subscribers in 2019 — compared to a net loss of about 410,000 subscribers in 2018. Most of those losses can be attributed to legacy DSL subscribers.

"The top broadband providers added 28.4 million net broadband subscribers over the past decade, with cable companies accounting for 97% of the net broadband additions in the 2010s," said Bruce Leichtman, president and principal analyst for Leichtman Research Group, Inc., in a prepared statement about the U.S. broadband subscriber gains. Other report findings included:

- The top cable companies added about 3,145,000 subscribers in 2019 – compared to about 2,925,000 net adds in 2018
- Comcast had more net adds in 2019 than in any year since 2007
- Telephone companies had more net losses in 2019 than in any prior year
- At the end of 2019, cable had a 67% market share vs. 33% for telcos
- Broadband providers are doing better on the broadband side than they are on the pay-tv side, as LRG researchers also found that the top pay-tv providers lost 5 million subscribers in 2019.

https://www.telecompetitor.com/largest-u-s-providers-see-2-5-million-broadband-subscriber-gains-but-telcos-lose/

Mobile Wireless Traffic

The FCC has reported that U.S. communications networks are generally "holding up quite well" to increased demand during the day and in more suburban areas as many Americans stay at home during the ongoing coronavirus crisis following a call with service providers, including AT&T, Sprint, T-Mobile, U.S. Cellular, and Verizon. Cellular networks specifically saw traffic rise between 10-20% in recent weeks, service providers across the country reported that traffic on fixed wireless networks increased 20-35%.

T-Mobile Spring Merger is Complete

The T-Mobile Sprint merger has now been completed. The merged company, which will continue to use the T-Mobile name, is poised to be a strong player in 5G, as it now had low-band, mid-band and high-band spectrum to support broad 5G coverage, as well as high speeds. The new company will have 14 times more network capacity in six years than T-Mobile alone has today. In addition, the company will become a competitor to cable and telco broadband, having promised to broadly deploy fixed wireless service at speeds of at least 100 Mbps.

The FCC and Department of Justice imposed a range of conditions on the merger involving rural, 5G and more in order to give it their approval. Promises made to gain FCC approval include:

- Offering average 5G speeds up to eight times faster than current LTE in just a few years and 15 times faster over the next six years. The FCC also requires an interim milestone to cover 97% of the U.S. population within three years.
- Offering 5G to 99% of the U.S. population and average 5G speeds in excess of 100 Mbps to 90% of the U.S. population within six years. (The FCC requires a minimum speed of at least 50 Mbps to the 99%.)
- Covering 90% of rural Americans with average 5G speeds of 50 Mbps – a requirement the FCC said would also have to be met within six years. The FCC also said two thirds of the rural population would need to have access to 100 Mbps service within that timeframe
- The DOJ conditions require the sale of Sprint's prepaid wireless businesses and its spectrum holdings in the 800 MHz band to DISH Network. DISH has committed to deploying a 5G network covering 70% of the U.S. population by 2023.
- Other commitments made by T-Mobile referenced involve 5G and rural, including:

- Offering fixed wireless at speeds of at least 100 Mbps to 90% of the population within six years
- Offering the company's lowest-priced plan ever – a $15 monthly offering known as T-Mobile Connect launched last week
- Offering a Connecting Heroes Initiative that includes free unlimited talk, text and smartphone data to all first responders, public and nonprofit state and local fire, police and EMS agencies
- Offering Project 10Million, delivering free internet access and hardware to 10 million households over the next five years

In COVID-19 related news, T-Mobile average 4G speeds have more than doubled since the carrier began using spectrum borrowed temporarily from other carriers as an emergency measure during the COVID-19 crisis, according to a new report from OpenSignal, a company focused on mobile network measurement. Researchers found that T-Mobile began using the additional spectrum within three days of gaining permission from the FCC to do so.

Carriers that loaned spectrum they weren't using to T-Mobile include Dish, Comcast, Grain Management and others. The spectrum loaned was in the 600 MHz band in which T-Mobile already had deployed service. Accordingly, the company was able to turn service up remotely.

Within five days of the authorization, T-Mobile turned up additional spectrum in 76 of the CMAs in which the company has deployed 4G in the 600 MHz band. Since then, the company turned up 32 additional CMAs and now uses an average of 26.6 MHz of the band for 4G in 89 markets of the top 100 CMAs.

As a result, T-Mobile average speeds went from 9.9 Mbps to 20.2 Mbps on the company's 4G network.
https://www.telecompetitor.com/t-mobile-sprint-merger-completed-promises-made-on-5g-rural-more/

5G
AT&T has now deployed 5G in 100 markets, after the company's expansion this spring into 20 new markets including Portland, Salem and Clatsop County, Oregon. AT&T has also announced that its 5G+ service is available in parts of 35 cities. This millimeter wave technology is faster than the carrier's 5G service – it can reach download speeds of more than 2 Gbps — but has limited coverage. It so far is aimed at businesses, universities, hospitals and sports venues.
https://about.att.com/newsroom/2020/5g_announcements.html
https://www.telecompetitor.com/att-5g-expansion-100-markets-now-served/

The performance of 5G networks varies between carriers due to different spectrum frequency bands employed according to a new 5G performance report from RootMetrics. Testing confirmed that carriers using lower-frequency, also known as low-band, spectrum including T-Mobile and AT&T offer larger service area coverage but can't hit the top speeds of mid-band spectrum carriers Sprint or Verizon, which use millimeter wave spectrum and have the fastest speeds.

Low- and mid-band frequencies travel further and can be more effective reaching indoors, while higher frequencies are faster. The fastest speed measured on low-band spectrum was the AT&T's 175.2 Mbps in Indianapolis. The fastest mid-band speed was Sprint's 249.9 Mbps in Chicago and the fastest speed overall – on Verizon's Washington, D.C. network – was 845.7 Mbps. Consumers in

areas with multiple 5G offerings should pay close attention to what each offers. Unlike older and more established mobile wireless technologies, 5G is not a commodity in which the services being offered are largely similar and decisions are best based on price and other ancillary issues. What constitutes 5G from the major carriers still is much differentiated and can vary significantly. .http://finleyusa.com/5g-performance-report-verizons-d-c-5g-network-is-fastest/

FCC Chairman Pai proposed to add 1,200 MHz of unlicensed spectrum in the 6 GHz band that could empower a variety of wireless applications, including dramatically increasing unlicensed fixed wireless service deployed by Wireless Internet Providers (WISPs). Included in the proposed order is allocating 850 MHz of standard power use subject to automated frequency coordination (AFC). According to the Wireless Internet Providers Association (WISPA), using AFC in a point-to-multipoint model will enable small rural WISPs to bring "fixed 5G" wireless services to more rural Americans, potentially enabling speeds of 100/20 Mbps. AFC decreases interference issues with other devices using the unlicensed 6 GHz spectrum band. The draft rules will be voted on by the Commission at the FCC's Open Meeting on April 23.
https://www.telecompetitor.com/wisp-industry-promises-rural-fixed-5g-wireless-thanks-to-fcc-proposal-for-unlicensed-6-ghz-spectrum/

Airband TV White Space
Microsoft Airband now is in 25 states and one territory and is staging pilot programs in two additional states reaching a total of 633,000 previously unserved people, up from 24,000 people in 2018.
https://www.telecompetitor.com/microsoft-airband-exec-expects-caf-ii-winners-to-use-tv-white-spaces-to-deliver-rural-broadband/

Optic fiber
Nokia Bell researchers (Nokia Bell is the former Bell Laboratories) have set the world record for the highest single carrier bit rate fiber transmission at 1.52 Terabits per second (Tbps) over 80 km of standard single mode fiber, according to the company. That speed is the equivalent of simultaneously streaming 1.5 million YouTube videos. "It has been fifty years since the inventions of the low-loss fiber and the associated optics. From the original 45 Megabit-per-second systems to more than 1 Terabit-per-second systems of today – a more than 20,000-fold increase in 40 years – to create the fundamental underpinning of the internet and the digital societies as we know it," said Marcus Weldon, Nokia CTO and President of Nokia Bell Labs, in a prepared statement."
Other milestones recently reached by Nokia Bell Labs, according to a press release, include capacity gains of 23% for submarine cable systems that operate under electrical supply power constraints.
https://www.telecompetitor.com/nokia-bell-labs-achieves-1-52-tbps-fiber-transmission/
In a separate report by Vertical Systems Group, there are more than one million commercial buildings and data centers across the U.S. that have on-net access to fiber-based network services.

Broadband Mapping
President Trump signed the Broadband DATA Act on March 24, 2020, which requires the FCC to collect and disseminate granular broadband service availability data from wired, fixed-wireless, satellite and mobile broadband providers. FCC Chair Pai issued a statement on the Broadband DATA Act bill.

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.

Frontier Communications
Frontier Communications, Oregon's second largest telephone company declared Chapter 11 Bankruptcy. Fortunately for us, Frontier recently sold its local exchange business in Oregon to a company that is willing and committed to investing over $100 million in the next several years so that 80% of its customers eventually have access to high-speed fiber-optic networks. Ziply Fiber will become Oregon's second largest telephone company on May 1st.

Ziply emerged from an investment firm created by executives from a small telecom company in the Seattle area, Wave Broadband. Ziply's new CEO, Harold Zeitz, said his new company plans to spend $100 million over several years so that 80% of its customers eventually have access to high-speed fiber-optic networks. Ziply hopes to overcome the decline in the local telephone exchange business by converting established customers to more advanced services and by winning customers away from its rivals.

Ziply hasn't announced pricing yet but the company said it will honor Frontier customers' existing service plans. Zeitz said the company aims to reverse Frontier's decline by investing in new technologies. Ziply Fiber will offer residential triple play services, as well as business and wholesale connectivity.
https://www.oregonlive.com/silicon-forest/2020/03/frontiers-buyer-will-name-its-oregon-telecom-business-ziply-fiber.html

ZAYO
Zayo Group Holdings is now privately held having completed its $14.3 billion acquisition by Digital Colony Partners and the EQT Infrastructure IV fund.

Coos-Curry Electric Cooperative
There was an article in the Curry Coastal Pilot newspaper that the company has spent the past couple of years exploring the feasibility of a fiber-to-the-premises broadband network project to serve Coos and Curry Counties. They have held town hall meetings in Gold Beach, Port Orford and Coquille in recent weeks.

CCEC's service territory is 2,475 square miles. A full build-out of a fiber-to-the-home system would make service available to nearly 15,000 households and businesses. "We expect the CCEC Board of Directors will have the information they need to decide on the next steps by the end of mid-year 2020," Bischoff said. "Assuming the Board decides to move forward with the project, there will be a period of design and construction preparation." The fiber optic infrastructure is expected to cost about $40.2 million and the associated lasers and electronics are expected to cost about $4.6 million. The project would be built in phases over about two years.

"Electric cooperatives were founded in the 1930s and '40s on the principle that power was a necessity to sustain the lives and lifestyles of people in rural America," CEO Brent Bischoff said.

"CCEC is convinced that the same is true today regarding internet connectivity. Just like nearly 100 years ago – if a local cooperative won't fulfill that need, then it is unlikely someone else will.

"We are uniquely qualified to meet this need due to our reputation and relationship with our members, access to low-cost capital, and we are extremely familiar with building and operating a utility infrastructure in this rugged coastal environment."

https://www.currypilot.com/news_paid/high-speed-internet-may-be-in-south-coast-s-future/article_1d725544-6003-11ea-b2f0-97f351902638.html

Hunter Communications

WASHINGTON and MEDFORD, Ore., April 16, 2020 /PRNewswire/ -- Grain Management, LLC ("Grain"), a leading Washington, D.C.-based investment firm focused on the global communications sector, announced today that it has completed the acquisition of a majority interest in Hunter Communications, Inc. ("Hunter" or "the Company"), a leading regional bandwidth infrastructure provider.

Hunter owns and operates one of the largest private fiber optic networks in Oregon, with over 2,000 route miles of high-quality fiber. The Company provides high bandwidth data and voice services to businesses and homes throughout southern Oregon and parts of northern California.

Recognizing the vital role that broadband providers play in ensuring communities remain connected during the coronavirus crisis, Hunter has donated its services over the last few weeks to support crucial community needs.

The Company has:
- Upgraded services at Asante and Providence Health, two leading health systems in southern Oregon, to increase network capacity
- Connected service in less than 24 hours to set up a new emergency health clinic in Medford
- Set up COVID-19 call centers for the Medford School District, the City of Veneta, and the regional 911 system in Jackson County; and
- Upgraded links for StarTech to ensure continued uninterrupted service to remote areas of Northern California

https://www.prnewswire.com/news-releases/grain-management-completes-acquisition-of-oregon-based-hunter-communications-301041636.html

Eastern Oregon Telecom

There was a nice article on Eastern Oregon Telecom in Telecompetitor. When rural telecom and broadband provider Eastern Oregon Telecom (EOT) received a request to provide voice and Wi-Fi connectivity for a new incident response center to serve three counties in the state, it was a request that normally would have required 30 to 45 days to fulfill.

Considering how critical the center would be to coordinating response efforts during the COVID-19 pandemic, however, EOT devoted virtually its entire staff to the project and managed to get the job done in just three days, and did the work at no charge. The concept of the incident response center initially was triggered by lessons learned from 9/11. The goal is to gain closer coordination between police, fire, emergency medical technicians and other emergency personnel, rather than having them operate independently of one another. The emergency response center that Eastern Oregon Telecom helped set up was able to connect to a middle-mile statewide fiber network. Eastern

Oregon Telecom's responsibility was to install Wi-Fi and program and install a phone system with 50 telephones.

Since the COVID-19 pandemic started, the company completed a fiber-to-the-home deployment in the city of Weston, and has two more under construction in Athena and Adams. EOT has also opened all public WiFi hotspots to include the Umatilla County Fairgrounds for citizen use.
EOT is covering 100% of the costs for all installations of new service during the crisis. EOT is not disconnecting customers who have stopped paying us during the crisis, and EOT is waiving late fees during the crisis.

Joe Franell was quoted as saying, "Broadband is the singular greatest tool to help us through this safely and prepare us to recover as rapidly as possible."
https://www.telecompetitor.com/broadband-operator-profile-eot-answers-the-call-to-equip-incident-response-center-amid-covid-19/

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

CENIC, Link Oregon, and Pacific Northwest Giga-pop (PNWGP) offer their ultra-broadband research and education telecommunications networks and services to:
- Support continuity of our 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.

"Link Oregon and its founding members are proud to work collaboratively and nimbly with our long-time partners in the neighboring states to the north and south along the West Coast," said Link Oregon Executive Director Steve Corbató. "At the forefront, our joint networking activities support the medical community's collective clinical response to COVID-19 as well as rapidly formed, high-intensity research collaborations to address this pandemic and the dramatically transformed online learning environment within both K-12 and higher education."

Link Oregon is the non-profit consortium of Oregon's four research universities—OHSU, Oregon State University, Portland State University and the University of Oregon—and the State of Oregon through its office of Enterprise Information Services. Link Oregon provides high-speed, reliable, cost-effective fiber broadband connectivity to K-12 and higher education public education institutions, public health facilities, libraries, Tribes, and state government offices statewide.

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

Presentations

Bob Fletcher

Bob Fletcher of Verizon Wireless provided a briefing on the impact of the COVID-19 crisis on mobile wireless. Bob reported that 130,000 Verizon employees are working from home. Bob reported that the infrastructure is "doing great" despite increased levels of voice and data traffic, and this has been true for the most part for all carriers. During this crisis,

- 3 to 4 billion text messages per day is now 9 billion
- Average number of call increased to 800 million per day (double that of a Mothers' Day)
- Call duration is up 33%
- Wireless hand-offs between cell towers are down 50% reflecting that people are sheltering in place
- 60 to 70% of Verizon's retail stores were closed with workers redeployed
- Capital Expenditures for 2020 have been increased from $17.5 billion to $18.5 billion
- Verizon and other carriers have been sharing spectrum to improve network capacity during the crisis
- Verizon has purchased BlueJeans, a video conferencing company https://www.bluejeans.com/ as part of its effort to increase the number of services available to customers
- Verizon has signed the FCC's Keep America Connected pledge
- Every customer has been given 15 extra Gigabytes of data at no extra charge
- Lifeline customers will have billing waived for sixty days
- Free international calling
- Waived activation fees on new lines and upgrade fees on exiting service
- Providing free unlimited data plans for teachers and nurses
- Partnering with the New York Times to offer free digital content to 14 million high school students and teachers
- Partnering with selected school districts in Los Angeles to provide "jet-packs" for internet access in student homes
- Partnering with the State of California on a program to expand internet access for students statewide assisted by the California TeleConnect Fund
- Sponsoring "pay it forward" live performances on Tuesday and Thursday nights
- Facilitating the purchase of gift cards from small businesses
- Providing $10,000 grants for small businesses
- Donating equipment for K-12 students
- Deployed a COLT to the Oregon Department of Safety Standards Building to support a temporary call center
- Coordinating with the State of Oregon emergency response effort also offering emergency small cell deployment where needed to increase network capacity
- Providing expedited service deployments in the State of Washington where the number of COVID-19 infections spiked

Bob recognized that there has been impressive COVID-19 crisis response efforts by most all the telecommunications carriers. At the same time the crisis has shown the remarkable stability, resilience and capacity of the networks. It was also noted, though, that there is significant current strain on the supply chain for equipment to turn up new customers or expand network coverage that is a challenge. All users and carriers are facing extended delivery dates for equipment that is not on the shelf.

Commissioner Yamamoto shared that in Tillamook County, there are differences between the capabilities of different school districts to support distance education. One is well covered where others are facing 30% to 60% of the students not having broadband at home, and that they are searching for short and long term solutions. The Commissioner expressed concern about the coming school year, and a future where distance education will play and expanding role in education.

Representative Marsh noted that before this crisis we had schools with inadequate broadband access, and now the challenge has been compounded by the need of all students to move to a distance e-learning model. OBAC needs to continue to advocate for these needs that are drawing a lot of attention due to the crisis.

Carla Wade
Carla Wade of the Oregon Department of Education provided a briefing on impacts to Oregon's K-12 schools. She noted that the level of cooperation and collaboration that has happened in the last six weeks in response to the crisis has been phenomenal. The crisis has served to illuminate OBAC's identified challenges for the state and the value of its recommendations. Is unfortunate that it takes a pandemic to get people's attention, but we have it now.

The mandated distance learning model for K-12 schools is a major challenge for students, parents, teachers and staff as many need to quickly learn new skills and use new tools to function in this new environment, let alone those students that do not have access because it is not available or because they cannot afford it. There is a big difference between traditional in-person education, a blended program of in-person and distance learning methods, and a full distance learning program.

Carla shared the Oregon Department of Education's resources on its website to help support this move to distance learning for all transition within a matter of weeks. Resources for educators and families are provided https://www.oregon.gov/ode/students-and-family/healthsafety/Pages/COVID19.aspx. In particular, Carla showcased the technology framework for implementing distance learning that provides guiding principles for the school districts to serve a wide range of student from those who are well-equipped to those who are not, and those who have other special needs https://www.oregon.gov/ode/educator-resources/standards/Pages/Distance-Learning-for-All.aspx .

Carla noted that the future is uncertain. We do not know what the situation will be next September. We may be faced with continued closure. There may be a rolling closure where the number of students attending school in person will be reduced with alternating day for in-school or at-home study. Whatever the outcome, it will likely be different than it was before COVID-19.

Carla noted that Oregon is a #GoOpen State. Several years ago, Oregon was one of the first states to join the #GoOpen initiative through the U.S. Department of Education that supports States, districts and educators using open licensed educational materials to transform teaching and learning https://tech.ed.gov/open/. Oregon has just launched its Oregon Open Learning website as the place to find and share open educational resources (OER) that are curated and created for and by Oregon educators and vetted by ODE.

For the most current updates and guidance from ODE, visit ODE's COVID-19 Resource page.

Carla also noted resources that are available through SETDA including the Coalition for eLearning to ensure students can continue learning away from brick and mortar schools and provide a forum for collaboration and sharing https://www.setda.org/.

Other notable responses to the crisis
- Springfield School District has deployed twelve school buses equipped with WiFi hotspots that are dispatched out to locations throughout the district for student internet access
- ODE and several ESDs are hosting virtual sessions on care and connection to support school districts and to provide professional development for teachers and staff.
- Intermountain ESD is providing an on-line help desk from 7:00 am to 7:00 pm for assistance to schools and schools are providing parking lot WiFi.

Carla noted that we need to focus short term on what can be done during the remainder of this school year, mid-term on what we should be doing during the summer, and long-term on what we should be doing for the next school year and beyond that is sustainable.

Joe Franell noted that this has been a Herculean effort to transition from in-school to virtual distance education for all students within a period of weeks, and that in many ways the technology challenges are the easiest to address. The challenge of managing the impacts on teachers, staff, students, and parents is tremendous, and hopefully the summer months will provide an opportunity to catch-up. Currently, we are building an airplane while it is in flight.

Jeremy Pietzold observed that the crisis has driven new partnerships and engagement by officials at all levels in supporting distance learning systems and strategies.

We need virtual education skill development, we need end-user devices, and we need available and affordable broadband internet access for this to be successful.

Steve Noel
Steve Noel of the Cybersecurity and Infrastructure Security Agency (CISA), U.S. Department of Homeland Security provided a briefing on CISA. Steve was a frequent attendee and speaker at OBAC meeting in the past as the Statewide Interoperability Coordinator for the State of Oregon. He then he joined the First Responder Network Authority at NTIA, and now he is West Sector Chief at of the Cybersecurity and Infrastructure Security Agency (CISA), U.S. Department of Homeland Security.

The CISA which was created last year leads the national effort to understand and manage cyber and physical risk to our critical infrastructure. Steve works in the area of emergency

communications which are the means and methods for exchanging the information necessary for successful incident management. That includes 911 PSAP centers, first responded land mobile radio systems and the developing broadband wireless public safety networks. CISA ECD works with Federal, State, Local, Tribal, and Territorial stakeholders across 56 States and Territories to enhance emergency communications interoperability. CISA ECD administers a performance management program to measure the Nation's interoperability progress at the federal, state/territorial/tribal, and local levels. The State Interoperability Executive Council (SIEC) is a big stakeholder in this work. William Chapman, as the new Statewide Interoperability Coordinator (SWIC) is the key state of Oregon contact.

During the COVID-19 Crisis, efforts have been focused on the status of the essential infrastructure workforce needed to maintain the services and functions Americans depend on daily and that need to be able to operate resiliently during the crisis. Functioning critical infrastructure is imperative during the response to the COVID-19 emergency for both public health and safety as well as community well-being.

Steve provided and overview of the CISA Guidance on the Essential Critical Infrastructure Workforce: Ensuring Community and National Resilience in COVID-19 Response. A Guidance publication is posted along with these minutes on the OBAC website.

Essential critical infrastructure workers include:
- Healthcare and public health
- Law enforcement, and public safety
- Food and agriculture
- Energy
- Water and wastewater
- Transportation and logistics
- Public works and infrastructure support
- Communications and information technology
- Critical manufacturing
- Hazardous materials
- Financial services
- Chemical
- Defense industrial base
- Commercial facilities (supply chain)
- Residential/shelter facilities and services
- Hygiene products and services

Steve supports FEMA Regions 8, 9 and 10 which includes Oregon working to ensure that people can communicate when they need to through radio communications systems, broadband and data systems, and alerts and warning systems. In addition CISA provides support in the areas of governance, training and cybersecurity.

A key area of support is priority telecommunications services
- Government Emergency Telecommunications Service (GETS) - Focused on local and long-distance segments of the landline networks

- Wireless Priority Service (WPS) - Focused on nationwide and several regional cellular networks
- Telecommunications Service Priority (TSP) - Focused on telecommunications network restoration in the event of a disaster
- Next Generation Networks Priority Services (NGN—PS) - Focused on priority user systems for voice, data, and video communications

Work Session

OBAC COVID-19 Letter to the Governor

The Council reviewed and discussed the draft letter of recommendations to be submitted the Governor and the Speaker of the State House of Representatives and the President of the State Senate. The Council's recommendations are short term and long term.

Short Term Recommendations

Any immediate relief for the increased demand for broadband services and capability for the most part must rely on infrastructure that is currently in place and in service. New broadband infrastructure deployment is a long term solution due to constraints on capital, labor and constraints on equipment availability due to a stressed supply-chain.

- Provide clear messaging to broadband service providers and the customers they serve that broadband is essential service for the COVID-19 response.
- Recognize and encourage the voluntary support that service providers are giving, and manage the expectations of customers, reinforcing the responsibilities of customers to preclude a cash-flow crisis for providers and customers in sixty to ninety days.
- Establish a "Broadband COVID-19 Task Force" under the Emergency Coordination Center COVID-19 Infrastructure Branch to monitor developments and be available to help mitigate any broadband network related problem issues.
- Ask service providers to share information on network performance and advise the Emergency Coordination Center COVID-19 Infrastructure Branch if there is service affecting congestion on their networks.
- Plan for demand-side load management actions working through carriers, content providers and end users to manage traffic loads *in the event* that service affecting traffic congestion develops on broadband networks.
- Recommend that on-line classes and meetings stagger their start times so as not to schedule everything to start at the top of the hour (this is a form of demand-side load management).
- Encourage Internet Service Providers (ISPs) to consider establishing mutual-support agreements with other ISPs to have in place in the event that network performance problems develop.
- Encourage the connection of more of the state's healthcare systems to the Northwest Access Exchange (NWAX).
- Encourage the connection of more of the state's largest employers such as Intel and Nike to NWAX.
- Coordinate the supply of refurbished end-user devices that can be distributed to communities in need for free or at low-cost.
- Promote the addition of new public WiFi internet access hotspots.

- Repurpose WiFi networks in schools, libraries, fairgrounds and other public locations as public hotspots by allowing public access, increasing hours, and reconfiguring networks to serve areas like parking lots outside of public buildings.
- Include broadband state-level funding on the agenda for a COVID-19 Response Special Session of the Oregon Legislative Assembly.
- Regarding the next federal stimulus Bill, request that the Oregon Congressional Delegation provide that some broadband funding be directed to the states in the form of block grants for distribution. The challenge with the federal government funding programs is that they are not easily or quickly accessed. For the federal broadband programs that have recently been funded, we are likely to see a repeat of the American Recovery and Reinvestment Act of 2009 experience where stimulus dollars took years to be distributed.

Long Term Recommendations

Though the COVID-19 crisis has brought urgent attention to the state's needs relative to the digital divide, the situation and trends that make it an important public policy issue are not new. OBAC's long term recommendations have been presented before and are well documented. To address these challenges, OBAC offers the following recommendations.

- Provide state funding for new grant, loan and loan guarantee programs for broadband infrastructure in unserved and underserved areas, and for matching funds to leverage federal funding programs.
- Repurpose and redesign the Oregon Universal Service Fund to be sustainable and to improve and subsidize *broadband* infrastructure in unserved and underserved areas.
- Provide support to low adoption populations and community anchor institutions in accessing the FCC's E-rate Program, Healthcare Connect Fund and Lifeline programs.
- Promote and support broadband infrastructure deployment.
- Require that broadband infrastructure components such as conduit and fiber be included for all state funded infrastructure programs including roads, bridges, water, and wastewater projects.
- Remain technology and provider neutral.
- Establish a *Rural Broadband Capacity Improvement Program* to support broadband planning, engineering, and/or infrastructure deployment projects targeting unserved and underserved rural areas.
- Establish a *Digital Literacy, Security and Inclusion Program* to provide grants and forgivable loans to projects to improve digital literacy, cybersecurity, and the digital inclusion of unserved and underserved populations so that the benefits of broadband connectivity may be realized.
- Establish a *Broadband Outreach Program* to engage stakeholders; elected officials, government officials, healthcare providers, educators, businesses, agriculture and other community leaders, and broadband service providers to facilitate communications, recruit local champions and aggregate the demand of the different segments of the community to help to make a business case for broadband investment and to match projects with funding sources.

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.

A working outline for the 2020 report was reviewed.
- Broadband in Oregon
- Infrastructure Trends and Technologies
- Industry Structure
- Broadband Infrastructure Projects
- Public Policy

Broadband Accessibility in Oregon

Broadband Affordability in Oregon
- Broadband Service Providers in Oregon
- Broadband Performance

Broadband Technology Adoption and Utilization in Oregon
- Broadband Adoption
- Business
- Health Care
- Energy Management
- Education
- Government

Broadband Technology: Role in Local, State and Regional Economies and Economic Development

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

Concluding Remarks

Appendices
- Oregon Broadband Advisory Council Members 2020
- Oregon Broadband Advisory Council Summary of Activities 2010-2020

References

Acknowledgments

Public Questions / Comments

Nate Stice supported the structure of the OBAC letter to the Governor in addressing the COVID-19 crisis in phases, and he observed that we are still in the response phase (short term), and that this is the best way to organize communications with officials and stakeholders and to structure and organize work.

Steve Corbató offered that Oregon needs to coordinate its efforts in applying for and pursuing the existing and newly introduced federal broadband funding programs, particularly with the compressed timelines that we are seeing now. Grant writing technical support is a key need.

Meeting Schedule

The April 23, 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 May 28, 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   May 28, 2020

Joseph Franell, Chair   Date
Oregon Broadband Advisory Council

Signature on file   May 28, 2020

Christopher Tamarin   Date
Business Oregon