Oregon Broadband Advisory Council Minutes

May 24, 2018   Salem, OR

Attendance
Members Present: Anne Carloss, Miles Ellenby, Wade Holmes, Lonny Macy, Representative Pam Marsh, Jeremy Pietzold, Dave Sabala, Michael Weidman, David Yamamoto

Staff Present: Christopher Tamarin, Business Oregon

Guests: Ellie Boggs, Oregon Council of Presidents; Carl Erhart, Wyatt Rutherford, Marcus Prouty, Frontier Communications; Jim Gardner, Gardner and Gardner; Kate Hammarback, Occam Advisors; Andrew Kenny, Education SuperHighway; Melissa Leoni, Legislative Policy and Research Office; Carla Montrose, Sprint; Carrie Pipinich, Mid-Columbia Economic Development District; Melody Riley, Office of the State CIO; Robin Smith, Charter Communications; Stuart Taubman, Zayo;, Nate Stice, Governor's Regional Solutions Team; Ross Swartzendruber, Salem Creative Network; Robel Tadesse, Business Oregon; Pam Vaughan, City of Corvallis

Meeting was called to order at 9:18 am.

Welcome, Introductions, Minute Approval
Michael Weidman called the meeting to order and asked for guest introductions.

Minutes
Jeremy Pietzold moved that the April 26, 2018, minutes be approved as distributed. Dave Sabala 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.

Senate Net Neutrality Resolution
Congressional Democrats have been pursuing legislation that would retain the net neutrality rules that were rolled back by the FCC. The first step was passage of a Senate Congressional Review Act resolution disapproving of the Commission's January 2018 Restoring Internet Freedom Order. Net Neutrality rules will be discontinued on June 11, 2018, if the Restoring Internet Freedom Order takes effect.

Virtual Reality
Oculus soon will launch Oculus TV, an application that will allow users to watch non-Virtual Reality applications, including ESPN+ and Showtime Anytime, via the Oculus virtual reality headset. Separately, Google has announced a partnership with NBC to create VR content that will run alongside NBC programming.

Verizon 5G

Last year, S Verizon reported that it 5G mobile wireless system would have a [range of about 1,500 feet](#) and would require a large number of cell sites. The latest tests, however, showed the [5G connection maintaining](#) 1Gbps at 3,000 feet from a radio node with a clear, line-of-sight connection, and 800Mbps at a third of a mile from the node through trees. Verizon also showed a 960Mbps connection through a wall and a window, from a tower a fourth of a mile away. The key is beamforming, which directs connections to the exact spot where a receiver sits. Those speed test results make Verizon's upcoming home service competitive with cable and fiber. Verizon [plans to launch](#) 5G home internet service in four cities this year, and more in 2019. Sacramento and Los Angeles will be the first two cities, the company has said. All four of the major US carriers have 5G plans for 2018 and 2019. AT&T plans to launch a service with a mobile hotspot this year, and Sprint and T-Mobile have said they will be launching with phones in 2019.

T-Mobile—Sprint Merger

If T-Mobile Sprint [merger plans](#) are approved by regulators, the merged company would have the network capacity required to quickly create a "broad and deep" 5G nationwide network in "the critical first years of the 5G innovation cycle," said T-Mobile and Sprint in announcing their merger plans yesterday. T-Mobile Sprint 5G plans call for using Sprint's mid-band (2.5 GHz) spectrum, along with T-Mobile's nationwide low-band (600 MHz) spectrum and "other combined assets." The 5G network that Sprint and T-Mobile propose to build if the merger is approved is projected to deliver 15 times faster speeds, on average, in comparison with T-Mobile's current network by 2024. The merged company's 5G speed is projected to be 255 Mbps by 2024.

T-Mobile executives said that the company's planned merger with Sprint would [position the newly combined company to offer internet services](#) to homes, offices and other locations. This would enable the company to compete with Comcast, Charter, Verizon, and other wireline internet service providers.

Smartphones as a Primary Internet Access Device

A new [report from the Pew Research Center](#) finds that 20% of Americans exclusively use their smartphones at home for internet access—they don't subscribe to a traditional wireline broadband service. The figure shows a strengthening of this smartphone-only homes trend. According to Pew, only 13% of Americans in 2015 said they were smartphone-only users. Meanwhile, 65% of Americans told Pew that they have traditional broadband service in their homes, similar to the 67% figure reported in 2015.

Pew also reported that people who rely on their smartphones for home internet service tended to have lower incomes than their broadband-subscribing counterparts. Thirty-one percent of Americans with an annual household income of less than $30,000 are smartphone-only internet users, more than three times the share among those living in households earning $75,000 or more per year (9%).

TDS Network Expansion

TDS announced that it intends to overbuild two Wisconsin communities with fiber. Both communities are suburbs of Madison and both are currently served by Frontier and Charter Communications. The overbuild plans are part of a larger TDS fiber expansion in the Madison market, which is home base for TDS. The company will also bring gigabit capable fiber broadband to five additional districts in the city, targeting the business community.

AT&T Legacy DSL

AT&T reports that it now has more than five times fewer legacy DSL customers than it did four years ago, but still saw a net gain of 82,000 broadband subscribers in the first quarter. AT&T is transitioning from DSL to IP broadband, the term the company uses for services delivered over fiber-to-the-premises (FTTP) and fiber-to-the-node (FTTN) infrastructure. The company also uses the term "high-speed broadband" to describe those services. Today, about 800,000 AT&T residential customers are still on "legacy DSL," as compared to about 4.5 million legacy DSL customers just four years ago. AT&T fiber now passes more than 8 million customer locations. In areas where AT&T has marketed fiber for the last two years, it has obtained a nearly 50% penetration rate. AT&T aims to reach 12.5 million locations with FTTP by 2019. AT&T has set a long-term goal of making high-speed broadband available to 50 million locations, likely through a mix of FTTN, FTTP and fixed wireless. Telecom financial analyst firm Moffett Nathanson forecasts cable companies to eventually gain broadband market share in the range of 80% where the cable cos compete against legacy DSL. When competing against IP DSLAM-based broadband or FTTN, Moffett expects cable cos to see market shares of 60% and 55%, respectively. But when competing against FTTP, the researchers forecast cable cos to have market share of 40%.

Comcast Service Bundling

Comcast Xfinity mobile's pricing strategy is stealing customers from all major carriers, according to a new study from Market Strategies International, which also declares the Comcast quad play "firmly rooted," thanks to Xfinity mobile. The new report finds that almost 60% of current Xfinity mobile customers said they switched because of the better deal, while an additional 27% cited the better deal and dissatisfaction with their previous provider as the reasons for switching. Comcast Xfinity's "quad play" bundles broadband internet access, cable TV, telephone and mobile wireless services.

Educational Broadband Service Band

The FCC is planning to re-allocate as much as 194 MHz of unused spectrum in the educational broadband service (EBS) band, primarily in rural areas. The EBS spectrum is in the 2.5 GHz band and potentially could support fixed wireless broadband service. A notice of proposed rulemaking proposes using a competitive bidding process to award licenses for areas where the EBS spectrum is not in use.

Over-the-top DIRECTV

AT&T Communications announced that the company will [launch a broadband-delivered over-the-top DIRECTV service](#) by the end of 2018. The service will differ from its DIRECTV Now offering and instead mirror the company's traditional pay-tv satellite service. In addition to its satellite TV offering DirecTV, its wireline IPTV offering U-verse TV and DirecTV Now, AT&T also has announced plans to launch a sports-free skinny TV offering—AT&T Watch—that would be priced at about $15 per month for non-AT&T wireless customers and free for AT&T wireless subscribers with unlimited data plans.

T-Mobile Video

T-Mobile has acquired start-up pay-tv company Layer3 TV, and is looking to deliver video services this year. T-Mobile expects its offering to be disruptive given its goal of finding a new model for how cable companies to business with their customers. [FierceCable, May 15, 2018]

Comcast Internet Essentials Program

Comcast has announced a comprehensive campaign between Internet Essentials, the nation's largest and most successful high-speed Internet adoption initiative for low-income households, and members of the Conference of Western Attorneys General to address some of the most serious challenges seniors, parents, and children face online. As of August 2017, the Internet Essentials program has connected more than four million low-income Americans in one million households to the Internet at home, most for the first time.

The Federal Trade Commission estimates scammers extracted nearly $1 billion from Americans last year alone. More than $240 million of that total occurred either online or via email. With the support of a grant from Comcast, the nonprofit Connectsafely.org will develop a multimedia internet safety toolkit for use by Attorneys General across the country. The materials will contain up-to-date materials to meet the specific needs and concerns of seniors, parents with school-aged children, and students. Comcast also will print and distribute copies of these materials and share them on its [Internet Essentials Learning Portal](#). In addition, Comcast announced it was providing support to several national nonprofits that specialize in Internet safety education and research. [Businesswire news](#)

Rural Economic Development Best Practices

The U.S. Department of Agriculture's Rural Development Innovation Center has introduced an [interactive web page](#) designed to help identify best practices for building rural prosperity. The web offers [strategies that have proven effective](#) for creating jobs, building infrastructure, strengthening partnerships, and promoting economic growth across the country.

"Fiber-in-the-Air" Technology

[Qualcomm announced that it will work with Facebook](#) to support Facebook Terragraph technology, a high-speed wireless offering designed for urban areas that Facebook has likened to "fiber in the air." Qualcomm said it will integrate Terragraph technology in its pre-802.11 ay Wi-Fi chipsets. Terragraph technology is designed to operate in an unlicensed portion of the millimeter wave band at 60 GHz. It uses multi-point multi-hop wireless technology based on client and distribution nodes designed for installation on what Facebook calls "street furniture" such as lamp posts and streetlights. Developers envision providing gigabit connectivity to single- or multi-family dwellings and 10 Gbps connectivity to apartment buildings and businesses. Facebook and Qualcomm said they expect to begin trials of the integrated solution in mid-2019.

Smart Agriculture

The number of US farmers using the internet of things is now estimated at 250,000, with a potential future market size of $4 billion, according to researchers at Alpha Brown. The IoT is pioneering tools for farmers, including smart sensors, applications, and systems that save time, money, and energy. For example, IoT can combine with drones to conserve as much as 90% of irrigation water and reduce chemical use by 30 to 50%, according to Ipsos Business Consulting. The use of modern telecommunications in agriculture paints an optimistic picture of the industry's future, all thanks to broadband providers who have created a platform for innovation and connectivity.

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.

New SETDA Report

The State Educational Technology Directors Association (SETDA), the principal membership association of the U.S. state and territorial digital learning leaders, today announced the release of a new report: State Education Leadership for Interoperability: Leveraging Data for Academic Excellence. This report examines the current data interoperability efforts in nine states: Delaware, Georgia, Michigan, Nebraska, North Carolina, Oregon, Utah, Wisconsin, and Wyoming. Throughout the report, states explore the successes and challenges in making interoperable solutions where data is seamlessly connected and readily available for use by decision makers, teachers, parents, and students. This report includes a set of use cases demonstrating how interoperability helps states and districts achieve student learning goals, as well as recommendations for states as they continue their work in this area.

The report notes that the Oregon Department of Education (ODE) is committed to taking steps in furthering its ability to use data to inform decision-making and increase opportunities for student success. As part of its 2017-19 Agency Strategic Plan, ODE is currently assessing ways in which it can more effectively simplify and streamline data collection and state reporting processes, as well as improve transparency and facilitate data use by all education stakeholders. Through this work, ODE, in conjunction with many statewide technology leaders, is promoting Project Unicorn, as an effort to improve data interoperability in K-12 education.

Northwest Open Access Network (NoaNet)

A Washington-based nonprofit broadband provider is planning to extend a fiber-optic line through Astoria and Warrenton. NoaNet has easement applications with the Department of State Lands and the National Park Service to run fiber-optic cable along existing communications lines crossing under the Old Youngs Bay Bridge and over the Lewis and Clark River. The broadband provider leases cable in Clatsop County from CenturyLink but is looking to expand its fiber-optic network into Oregon and increase reliability, said Chris Walker, the telecommunications director. NoaNet's new cables would mostly utilize PacifiCorp utility poles and an underwater conduit along the Old Youngs Bay Bridge.

Grant County Digital Network Coalition
John Day City Manager Nick Green announced that the Grant County Digital Network Coalition is establishing a public-private partnership with Oregon Telephone Corporation, and a plan for phased expansion of broadband internet service south from John Day to Burns. The goal is to have the Grant County Digital Network Coalition own and operate the fiber backbone and have Ortelco be the internet provider to the end user, Green told the council. He wanted the coalition to be in the wholesale business, not the retail market. Much of the plan rests on the coalition being awarded a U.S. Department of Agriculture Community Connect grant worth up to $3 million and requiring a 15 percent match.

Telemedicine Benefits
Regence BlueCross BlueShield of Oregon released new data this month showing consumers, on average, save $100 per visit when using telehealth rather than in-person office, urgent care or emergency room visits. Data are based on services provided through national telehealth vendors in Idaho, Oregon, Utah, and Washington State, and reflect cost savings associated with medical claims, mileage, and wait times in traffic and in the waiting room. Regence estimated telehealth consumers can avoid expenditures in mileage and time spent traveling and waiting for care at about $25 per telehealth visit for median-income earners and upwards of $40 for higher wage-earners. Regence serves more than 2.4 million members in Oregon, Washington, Idaho, and Utah.

Hillsboro Municipal Broadband
Hillsboro announced plans to extend an existing, city-owned fiber-optic network to serve residents and businesses. The city says it can offer superfast internet connections for about $50 a month—or as little as $10 a month for low-income residents. Hillsboro expects service will be available in some areas as soon as next spring. Pending City Council approval at the end of the month, Hillsboro would allocate $4 million next year, and another $4 million in each of the subsequent five years, to begin a fiber buildout. City officials say a citywide system could take a decade to complete.

BendBroadband increases service speeds
A new BendBroadband 600 Mbps broadband service was announced by parent company TDS. Like the previous TDS cable network upgrades, this BendBroadband 600 Mbps tier is powered by DOCSIS 3.0 technology. BendBroadband Ultra 600 provides customers up to 600 Megabits per second (Mbps) download and up to 20 Mbps upload speed.

Presentations

Melody Riley
Melody Riley, of the Office of the State Chief Information Officer (OSCIO), provided an update on HB 4023 activities. Melody reported that the OSCIO is currently evaluating proposals to establish a new Broadband Master Price Agreement for state government to improve bandwidth to state government locations across Oregon. It will include services for middle mile and last mile connectivity. Authorized purchasers on the contract will include the state of Oregon and Oregon Cooperative Procurement Program (ORCPP) members. Melody hopes that the new agreement will be in place by the end of summer. Current contracts remain in place into 2020.

OSCIO has also become a member of the **OregonFiber** partnership formed through an Intergovernmental bilateral agreement between OSCIO and Oregon State University. Other partners with OSU include Oregon Health Sciences University, University of Oregon, and Portland State University for the purpose of implementing an open-access core, high-speed, research backbone network connecting research universities at high-speed (100 Gbps) to each other, the state of Oregon, and Washington, California, and Idaho. Government sites on the network will connect at 10 Gbps. The dark fiber was procured from providers through long term indefeasible rights of use leases. Network deployment is expected to take three to five years.
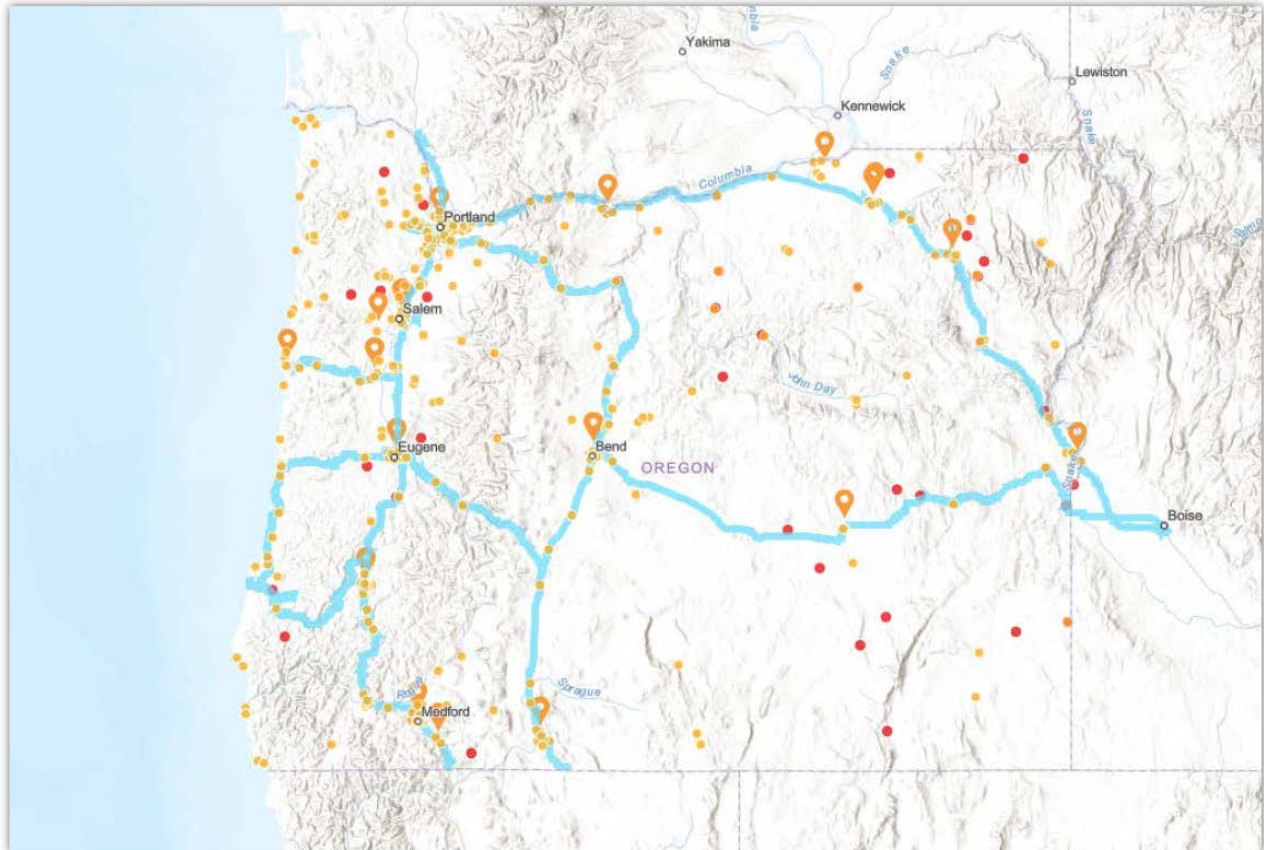
OregonFiber Project Map

Legend

Cicuits

Fiber Routes Broadband

POPs

ODE_Schools_Broadband

HB 4023 (2018)

Melody noted that this bill, now statute, authorizes OSCIO to provide services to selected other non-state agency public bodies and tribes and directs the appointment of a Broadband Services Advisory Committee, including an OBAC seat, to assist in drafting the rules for the administration of this authority. OBAC is represented by Jeremy Pietzold. Other members of the committee represent industry, the Association of Oregon Counties, the League of Oregon Cities, public education, public universities, libraries, the State Interoperability Executive Council, the public, a

nonprofit entity with an interest in broadband service availability, and tribes. A first draft of the rules is targeted for June, a second draft in July, a proposed draft in August for presentation to the Joint Legislative Committee on Information Management and Technology in September. The rules are targeted to be approved and to take effect in December 2018—January 2019. Melody believes that this authority and process that will stimulate communication and collaboration will help Oregon aggregate demand and better meet needs throughout the state.

Initial turn-up of a pilot seventy mile segment of the **OregonFiber** network is planned for the end of the year in Newport to serve the OSU Hatfield Marine Science Center.

Carl Erhart
Carl Erhart of Frontier Communications provided a briefing to the council on Frontier's Connect America Fund Phase II (CAF Phase II) infrastructure projects and related plans.

CAF Phase II is the FCC's support for broadband deployment to identified high-cost households in areas without "unsubsidized" competitors. It is a six year program (2015-2020) with total funding of about $1.8 billion annually over six years starting in 2015 and completing by December 31, 2020.

Frontier accepted CAF II support across its service territory totaling $330 million annually for 6 years with 774,000 households and businesses in eligible census blocks across twenty-nine states. In Oregon, Frontier accepted $3.9 million in annual funding to deploy 10/1 Mbps service with 8,542 households in eligible census blocks to be served. Frontier achieved 49% enabled CAF II households/service locations in Oregon, and exceeded the required 40% completion in all twenty-nine states at the end of 2017. Targets are for 60% completion in 2018, 80% completion in 2019, and 100% completion by the end of 2020.
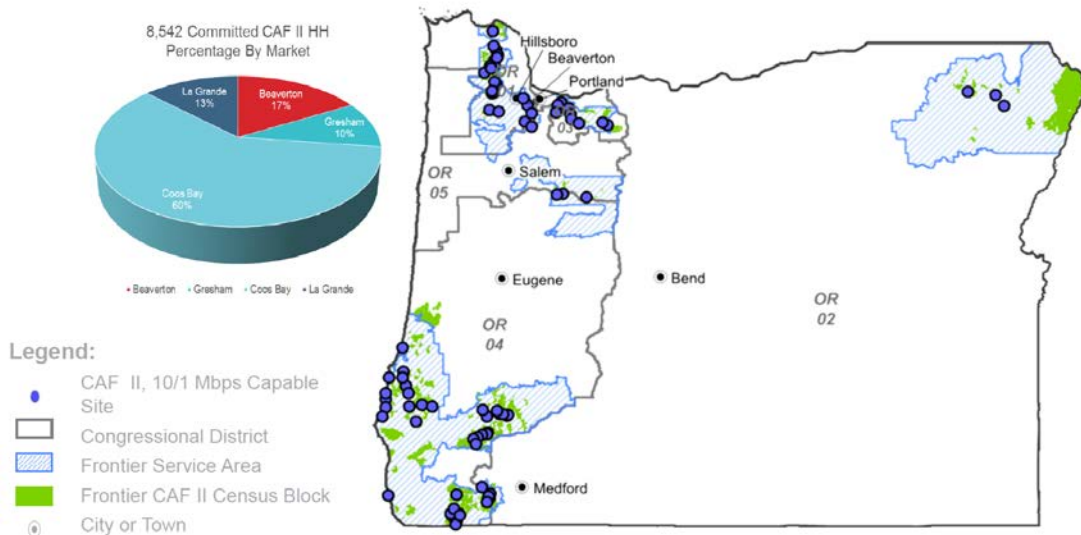
CAF II-served locations must have broadband service available with at least 10 Mbps/1 Mbps, have voice service, have comparable pricing to urban markets, have latency below 100 milliseconds, and any usage allowance no less than 100 Gigabytes (GB). Frontier does not have usage caps.

Oregon engineering and project managers Wyatt Rutherford and Marcus Prouty added that Frontier seeks to provide service speeds greater than 10 Mbps/1 Mbps where it has the capability. The areas in blue on the map above indicate completed CAF II projects as of the end of the first Quarter of 2018.

Frontier's Oregon market territories consist of Beaverton, Tigard, Gresham, Coos Bay, and La Grande, which include 68 Wire Centers and more than 400,000 households. Since 2015 Frontier has completed transport upgrades throughout Oregon and its core network with 10 Gigabit and 100 Gigabit connections, increased redundancy, increased peering with other carriers, and migrating to IP in support of current and projected Oregon network growth.

Nationally related to broadband deployment in rural areas. Frontier has tested and is deploying fixed wireless point to point and point to multi-point configurations in CAF markets. Fixed wireless is not currently deployed in Oregon, but will be in the future. Line of site is a deployment factor. Frontier also utilizes fiber-to-the-premises, fiber-to-the-node, very high speed DSL (VDSL), pair bonding, G.FAST, and other technologies in delivering broadband services.

Work Session
2018 Broadband in Oregon report
The council discussed the 2018 report to the legislative assembly and the Governor, which is due on November 1, 2018.

A Working outline for the report with sections and the section leads has been established. Council members are contributing to their areas of interest and expertise.
- Telehealth—Miles Ellenby, Lead
- Energy Management—Dave Sabala and Commissioner Bloom, Leads
- Education—Anne Carloss, Lead
- e-Government—Will call on the OSCIO for help Lead (Melody Riley)
- Chris T will be the lead on and will be asking for assistance
- Infrastructure/Industry Structure/Technologies update—Chris Tamarin, Lead
- Accessibility and Affordability update—Chris Tamarin, Lead
- Economic Development—Chris Tamarin, Lead
- Challenges and Opportunities—Chris Tamarin, Lead
  - Digital Inclusion
  - Cyber Security (www.cyberoregon.com)
  - Public Safety/FirstNet/911 Centers
  - Local Community Broadband Planning (AOC and LOC)
  - Federal Funding Programs (USDA, NTIA, FCC) Broadband USA
  - Network Interconnection

Broadband Champions Program Report
A working outline and draft of the council's report identifying options for a local broadband champion program to foster and support local broadband champions is underway.

- Profile of Oregon local broadband champions
- Survey of similar and related programs from across the nation and around the world
- Develop recommendations for an Oregon Local Broadband Champion Program to foster and support broadband champions.

OBAC will combine lessons from the Oregon experience with findings from the related programs of others to develop its recommendations.

Representative Marsh shared comments she heard from John Huffman of USDA that Oregon has 149 communities with less than 1,000 residents and 104 communities with less than 500. These may be the communities to target for developing local broadband champions.

STEM Education Events Update
Joe Franell was not present to provide an update. Chris Tamarin recounted that an event in Eastern Oregon will be held at Blue Mountain Community College, date to be determined, and that a second event will be held in Southern Oregon, date and place to be determined.

HB 4023
Representative Pam Marsh reported that there are plans to allocate funds to the Connecting Oregon Schools Fund created under HB 4023 to enable school projects in the next year.

Public Questions/Comments
No additional public comment.

Meeting Schedule
The May 24, 2018, 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 June 28, 2018, in Salem. Meeting information will be posted on the council website.

Meeting adjourned at 11:30 am.

Approved by:

Signature on file _____   _June 28, 2018_ _____
Joseph Franell, Chair   Date
Oregon Broadband Advisory Council

Signature on file _____   _June 28, 2018_ _____
Christopher Tamarin   Date
Business Oregon