Webinar Speaker Contact Information

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Joe Franell, Oregon Broadband Advisory Council Chair
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Useful Broadband Links

BroadbandUSA Federal Funding Guide Fiscal Year 2021

BroadbandUSA Glossary of Terms

Oregon Broadband Office

Oregon Broadband Advisory Council

Oregon Broadband Office Strategic Plan

Oregon Statewide Broadband Assessment and Best Practices Study

2020 Broadband in Oregon Report

[Oregon USDA Rural Development](#)

[Community Broadband University YouTube Series by Corning Optical Communications](#)

[National Digital Inclusion Alliance](#)

[Broadband Breakfast](#)

[Institute for Local Self-Reliance Community Broadband Networks](#)

[American Rescue Plan Act Guidance](#)

[Oregon Economic Development District List](#)

[National Association of Counties Broadband Task Force Report](#) - Recommendations focused on four primary areas of work: (1) Preparing for Broadband, (2) Barriers to Buildout, (3) Digital Divides, Digital Disparities, and (4) Futureproofing and the "Global" Economy.

[TestIT: How Fast is Your Broadband App](#) - "mobile app that leverages a broadband sampling tool designed by Measurement Lab (MLab) to aggregate broadband speeds across the country from app users. The data collected through this app will help identify areas where broadband service is overstated and underfunded by comparing the data to the National Broadband Map."

[White House outline of Bipartisan Infrastructure Framework](#)

Upcoming Broadband Events

September 13-14, 2021   Oregon Infrastructure Summit
Virtual
[More information](#)

October 28-29, 2021   Oregon Connections Telecommunications Conference
Ashland, OR
[More information](#)

Key 2021 Broadband Bills/Initiatives

PASSED BILLS

HB 2345: Rural Economic Development Service Center

HB 2345 makes a one-time General Fund appropriation of $500,000 to Oregon Business Development Department (Business Oregon) to establish the Oregon Rural Capacity Fund. The funds will be available to rural jurisdictions to use for staffing and building capacity necessary for workforce, infrastructure (including broadband), economic, and community development.

HB 2411: ODOT Open Trench Notification

HB 2411 will require notification and a process for allowing interested telecommunications providers to coordinate with the Oregon Department of Transportation to include installation of underground broadband infrastructure (e.g. fiber or conduit) as part of certain projects included in Statewide Transportation Improvement Program. The Oregon Broadband Office will maintain a list of interested telecommunication providers.

HB 2654: Electric Co-op Easement Expansion for Broadband

HB 2654 expands existing electric cooperative easements to allow for the provision of broadband services. If an electric cooperative chooses to leverage this expansion, they must provide notice to property owners. This bill is being brought forth by the rural cooperatives and has been passed in many states around the US.

HB 5006: Broadband Funding in Christmas Tree Bill

HB 5006 is the Christmas tree bill and includes $120 million of ARPA Capital Project funds to Business Oregon's Broadband Fund. Monies in the fund are available to be used to provide grants or loans through the Oregon Broadband Office and for the administrative costs of the office. Eligible uses of the grants and loans include projects for the planning and development of broadband service infrastructure. The bill also allocates ARPA funds for legislator sponsored broadband projects some of which include direct funding to communities and organizations.

HB 5023: Business Oregon Budget

Business Oregon oversees broadband project grants for infrastructure and planning through the Oregon Broadband Office. While the Business Oregon budget is being finalized we are hopeful that there will be extra FTE allocated to the Broadband Office. Currently, the Broadband Office has 1 FTE. Extra positions will help the office carry out their mission.

HB 5032: Public Utility Commission Budget

The Public Utility Commission regulates traditional telecommunication providers and administers the Residential Service Protection Fund (RSPF) and the Oregon Universal Service Fund. The RSPF encompasses the Oregon Telephone Assistance Program (OTAP program). Under HB 5032, there is an adjustment to the RSPF surcharge rate from $0.10 to $0.12. This increase supports for the OTAP program, which will increase the discount from $3.50 to $10.00 for eligible low-income households subscribing to phone or broadband internet access service.

FAILED BILLS

HB 3256 – 1: OTAP and Other Low Income Broadband Program Study

HB 3256-1 would have required the Oregon Public Utilities Commission in consultation with the Broadband Office and the Oregon Broadband Advisory Council to open up an investigation into the Oregon Telephone Assistance Program which provides low-income broadband and telephone subsidies. This investigation would have explored ways in which to expand the OTAP program and identify any other barriers to broadband affordability.

HB 3256 – 2: Connecting Oregon Libraries Fund

Libraries serve as important internet access points for communities and anchor institutions for expansion of broadband. HB 3256-2 would have created the Connecting Oregon Libraries Fund similar to the Connecting Oregon Schools Fund, which was created in 2018. Having a dedicated fund for libraries would help Oregon be more competitive for federal E-rate program dollars.

SB 615: Low Income Broadband Bill Payment Assistance Fund

SB 615 would have established the Low-Income Broadband Bill Payment Assistance Fund. Business Oregon would administer the fund. Rules for the program would have been created by Business Oregon in consultation with OHCS and the Oregon Broadband Advisory Council.

AOC Contact: Mallorie Roberts, mroberts@oregoncounties.org
LOC Contact: Jenna Jones, jjones@orcities.org

List of Small Incumbent Local Exchange Carriers (ILECs) in Oregon

And their approximate service territories

These ILECs are lightly regulated by the Oregon Public Utility Commission and have a statutory obligation to serve Oregonians living in their assigned territories. This list can be used in conjunction with the Exchange Boundary Map to determine which company to contact for broadband service issues.

Beavercreek Cooperative Telephone

Paul Hauer – 503.632.3113

Beavercreek area surrounding Oregon City; rural Clackamas County

DirectLink

Paul Hauer – 503.266.8111

Canby, Mt Angel; rural Clackamas and Marion counties around these communities

Cascade Utilities, Inc. DBA Reliance Connects

Brenda Crosby – 503.630.4202

Ash Valley, Corbett, Elkton, Estacada, Haines, Medical Springs, Scottsburg; rural areas around these communities

Clear Creek Communications

Jay Henke – 503.631.2101

Redland; rural Clackamas County

COLTONTEL

Geri Fraijo – 503.824.3211

Colton; rural areas around Colton

DataVision Cooperative (formerly known as Gervais Telephone Co.)

Renee Willer – 503.792.3611

Gervais; rural Marion county

Eagle Telephone System

Rusti Lattin – 541.893.6111

Richland, Newbridge, Sparta, Conner Creek; rural Baker county

Helix Telephone

DeeDee Kluser – 541.932.4411

Helix, Meacham

Home Telephone

Condon

DeeDee Kluser – 541.932.4411

Molalla Communications

Steve Loutzenhiser – 503.829.1100

Molalla, Mulino; rural Clackamas county

Monitor Cooperative Telephone Company

Geri Fraijo – 503.634.2266

Monitor

Monroe Telephone Company

David Mills – 541.847.5135

Monroe; rural Benton county

Nehalem Telecommunications, Inc.

James Martell – 503.368.5116

Nehalem area

North-State Telephone

DeeDee Kluser – 541.932.4411

Dufur area

Oregon-Idaho Utilities, Inc.

Doug Musgrave – 208.461.7802

Jordan Valley, Adrian, Ridgeview, Arock

Oregon Telephone Corporation

DeeDee Kluser – 541.932.4411

Bates, Dayville, Hereford-Unity, Mt. Vernon, Prairie City, Harper, Juntura

Peoples Telephone Co.

Erik Hoefer; 503.932.3798 (cell)

Lyons, Mehama

Pine Telephone System, Inc.

DeeDee Kluser – 541.932.4411

Halfway, Granite, Three Rivers

Pioneer Connect (formerly known as Pioneer Telephone Cooperative

Jim Rennard – 541.929.3135

Alsea, Bellfountain, Blodgett, Chitwood, Harlan, Horton, Lobster Valley, Philomath, South Beach, Summit, Tidewater, Triangle Lake, Waldport, Yachats

Roome Telecommunications, Inc.

Joyce Nelsen – 541. 369.2211

Halsey

St Paul Cooperative Telephone Association

Nick Schneider – 503.633.2111

St Paul area

Scio Mutual Telephone Association

Tom Barth – 503.394.3366

Scio and surrounding area

Stayton Cooperative Telephone Company

Erik Hoefer; 503.932.3798 (cell)

Stayton, Sublimity and surrounding area

Trans-Cascades Telephone DBA Reliance Connects

Brenda Crosby – 503.630.4202

Antelope, Ashwood and surrounding area

OREGON TELECOMMUNICATIONS ASSOCIATION
TELEPHONE EXCHANGE AREA

PORTLAND LATA AREA CODE 360

PORTLAND LATA AREA CODE 503 & 971

PORTLAND LATA AREA CODE 541

EUGENE LATA AREA CODE 541

BOISE LATA AREA CODE 541

SPOKANE LATA

NEVADA LATA

Exchange / Company Index (letters)
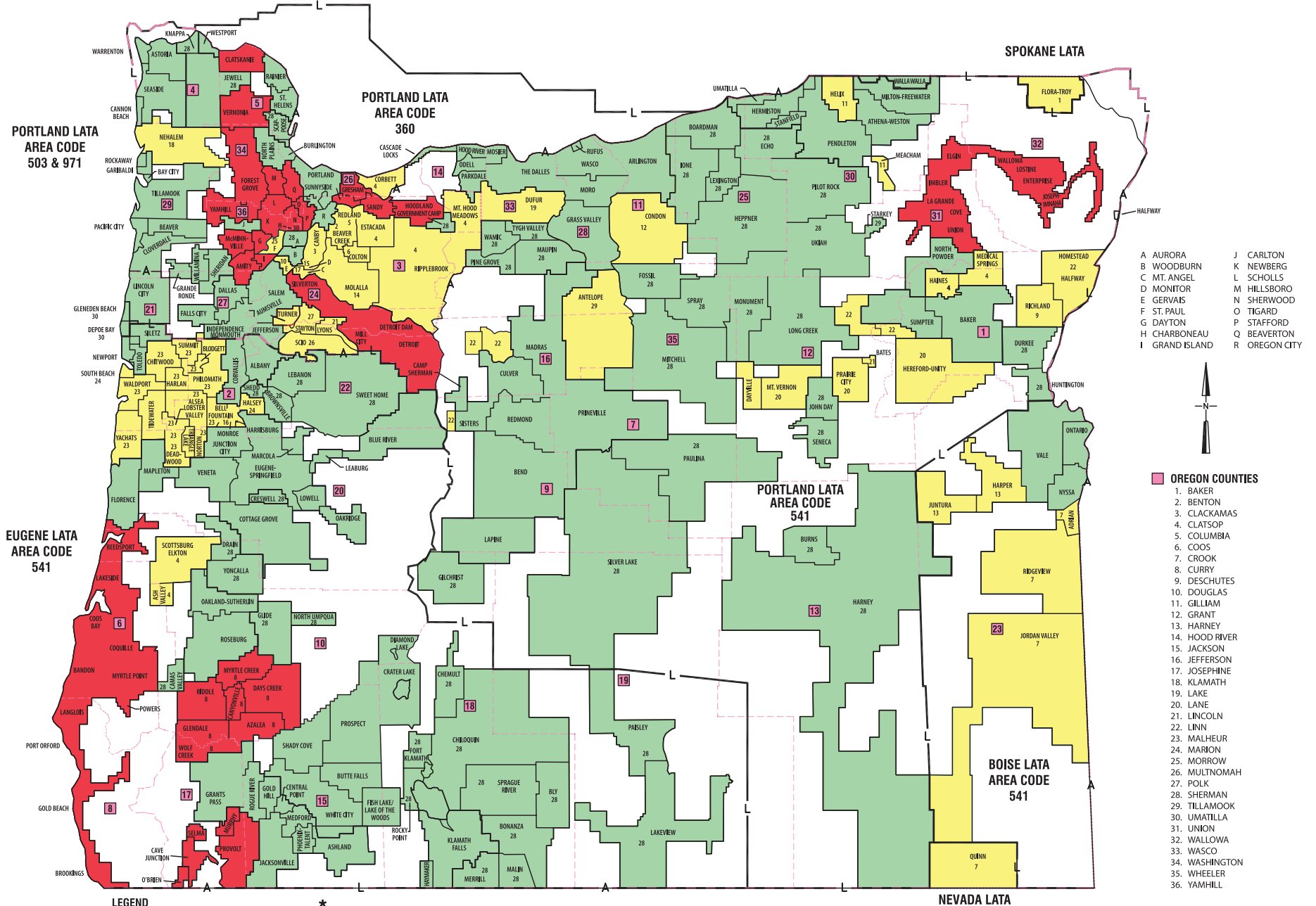
A	AURORA	J	CARLTON
B	WOODBURN	K	NEWBERG
C	MT. ANGEL	L	SCHOLLS
D	MONITOR	M	HILLSBORO
E	GERVAIS	N	SHERWOOD
F	ST. PAUL	O	TIGARD
G	DAYTON	P	STAFFORD
H	CHARBONEAU	Q	BEAVERTON
I	GRAND ISLAND	R	OREGON CITY
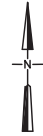
OREGON COUNTIES

1. BAKER
2. BENTON
3. CLACKAMAS
4. CLATSOP
5. COLUMBIA
6. COOS
7. CROOK
8. CURRY
9. DESCHUTES
10. DOUGLAS
11. GILLIAM
12. GRANT
13. HARNEY
14. HOOD RIVER
15. JACKSON
16. JEFFERSON
17. JOSEPHINE
18. KLAMATH
19. LAKE
20. LANE
21. LINCOLN
22. LINN
23. MALHEUR
24. MARION
25. MORROW
26. MULTNOMAH
27. POLK
28. SHERMAN
29. TILLAMOOK
30. UMATILLA
31. UNION
32. WALLOWA
33. WASCO
34. WASHINGTON
35. WHEELER
36. YAMHILL

LEGEND

- ZIPLY FIBER (red)
- LUMEN (green)
- INDEPENDENTS & COOPERATIVES (yellow)
- UNCLAIMED (white)
- COUNTY LINE
- LATA LINE — L
- AREA CODE LINE — A
- LATA & AREA CODE LINE — L A

*OTHER TELEPHONE COMPANIES

1. TDS TELECOM - ASOTIN TEL. CO. - ASOTIN, WA.
2. BEAVER CREEK COOPERATIVE TELEPHONE COMPANY - BEAVER CREEK
3. CANBY TELEPHONE ASSOCIATION - CANBY
4. CASCADE UTILITIES INC. - ESTACADA
5. CLEAR CREEK COMMUNICATIONS - OREGON CITY
6. COLTONTEL - COLTON
7. OREGON - IDAHO UTILITIES - CALDWELL, ID.
8. ZIPLY FIBER
9. EAGLE TELEPHONE SYSTEM, INC. - RICHLAND
10. GERVAIS TELEPHONE COMPANY - GERVAIS
11. HELIX TELEPHONE COMPANY - HELIX
12. HOME TELEPHONE COMPANY - CONDON
13. OREGON TELEPHONE CORPORATION - MTE - MIDVALE, ID.
14. MOLALLA COMMUNICATIONS - MOLALLA
15. MONITOR COOPERATIVE TELEPHONE COMPANY - WOODBURN
16. MONROE TELEPHONE COMPANY - MONROE
17. MT. ANGEL TELEPHONE COMPANY - MT. ANGEL
18. NEHALEM TELECOMMUNICATIONS, INC.
19. NORTH-STATE TELEPHONE COMPANY - MT. VERNON
20. OREGON TELEPHONE CORPORATION - MT. VERNON
21. PEOPLES TELEPHONE COMPANY - LYONS
22. PINE TELEPHONE SYSTEMS INC. - HALFWAY
23. PIONEER TELEPHONE COOPERATIVE - PHILOMATH
24. ROOME TELECOMMUNICATIONS INC. - HALSEY
25. ST. PAUL COOPERATIVE TELEPHONE ASSOCIATION - ST. PAUL
26. SCIO MUTUAL TELEPHONE ASSOCIATION - SCIO
27. STAYTON COOPERATIVE TELEPHONE COMPANY - STAYTON
28. LUMEN
29. TRANS-CASCADE TELEPHONE COMPANY - ESTACADA

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SCALE IN MILES
0 5 10 15 20 25 30 35

REVISED JUNE 2021

OREGON CABLE
TELECOMMUNICATIONS ASSOCIATION

OCTA Member Service Area by City

Charter
Ashland, Astoria, Baker City, Bandon, Bay City, Brookings, Burns, Cannon Beach, Canyonville, Central Point, Clatskanie, County of Clatsop, Coburg, Coos Bay, Coquille, Cottage Grove, Creswell, County of Curry, Dallas, County of Douglas, Drain, Dunes City, Eagle Point, Echo, Falls City, Florence, Garibaldi, Gearhart, Gold Beach, Gold Hill, Grants Pass, Hermiston, Hines, Hood River, Independence, Island City, County of Jackson, Jacksonville, Jefferson, County of Josephine, County of Klamath, Klamath Falls, La Grande, Lakeside, Lakeview, County of Lane, Lincoln City, Lowell, Manzanita, County of Marion, Medford, Milton-Freewater, Monmouth, Myrtle Creek, Myrtle Point, Nehalem, Newport, North Bend, Oakland, Oakridge, Pendleton, Phoenix, Pilot Rock, County of Polk, Port Orford, Reedsport, Riddle, Rockaway Beach, Rogue River, Roseburg, Seaside, Stanfield, Sutherlin, Talent, The Dalles, Tillamook, Toledo, Union, Veneta, Warrenton, County of Wasco, Westfir, Wheeler, Winston, Yachats, Yoncalla, County of Baker, County of Columbia, County of Coos, County of Harney, County of Hood River, County of Lake, County of Lincoln, County of Tillamook, County of Umatilla, County of Union

Comcast
Adair Village, Albany, Amity, Banks, Beaverton, Carlton, Corvallis, Columbia City, Cornelius, Dayton, Dundee, Durham, Eugene, Forest Grove, Gaston, Gladstone, Gresham, Harrisburg, Hillsboro, Junction City, Keizer, Lafayette, Lake Oswego, Lebanon, McMinnville, Millersburg, Milwaukie, Newberg, North Plains, Oregon City, Portland, Philomath, Rainier, Rivergrove, Salem, Scappoose, Sherwood, Sodaville, St Helens, Sweet Home, Springfield, Tangent, Tigard, Troutdale, Tualatin, Waterloo, Wilsonville, West Linn, Wood Village, Yamhill, Multnomah County, Lane County, Washington County, Marion County, Clackamas County, Benton County

TDS Telecom
Bend, Madras, Sunriver, Black Butte Ranch, Metolius, Terrebonne, Crooked River Ranch, Prineville, Culver, Redmond, La Pine, Sisters

Wave Broadband
Woodburn, Canby, Sandy, Stayton, Molalla, Depoe Bay, Aurora, Hubbard, Scotts Mills, Welches, Oregon City, Wilsonville, Brightwood, Rhododendron, Gervais, Aumsville, Gates, Mill City, Mount Angel, Silverton, Sublimity, Turner, Lyons, South Beach, Siletz, Otter Rock, Otis, South Salem, Portland, Hillboro, Tigard

Hot Spots: More than Mobile

When we think of "Hot Spots," we often think of wireless devices. But they're only a small part of a larger solution for access.
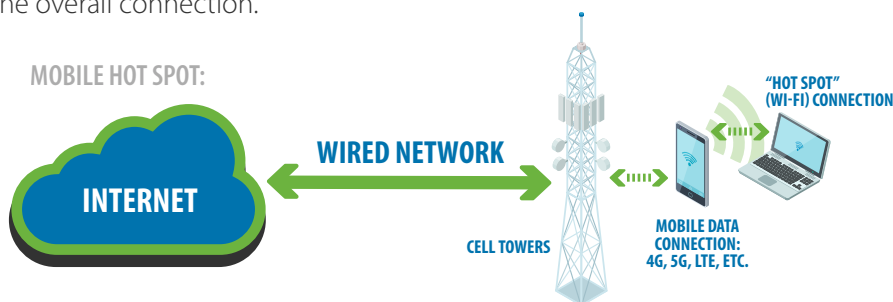
What IS a Hot Spot?

A Hot Spot is a ("Hot") wireless on-ramp to the Internet that covers a small local area ("Spot"). Devices connect to Hot Spots over a wireless network, but each Hot Spot device then connects to the internet via wireline (fixed) or cellular (mobile) technology.

The term "Hot Spot" has been used to refer to an area where Wi-Fi is available for a laptop or other device to connect to the internet. Today, many cell phones have the ability to "become" a hot spot to extend the cellular internet service to other devices. Because of this popular use, many people associate the idea of Hot Spots with cellular networks — but this is an incomplete picture of Hot Spot technology that should not guide policymakers as they consider how to ensure everyone has sufficient broadband connections.

Fixed vs. Mobile

In a **mobile** Hot Spot, the data signal travels: (1) from the device to the phone via the Hot Spot (Wi-Fi); (2) from the phone to a cellular tower via a mobile data connection; and (3) from the tower to the Internet via optical fiber. The wireless components – from the tower to the phone, and from the phone to the laptop – are only a very small part of the overall connection.

Cellular vs. Wi-Fi Traffic

According to a 2017 study, consumers often rely on fixed Wi-Fi networks to avoid expensive cellular data caps. A 2017 USTelecom Study found that this resulted in over three-fourths of all smart phone data use being routed over Wi-Fi networks – not cellular signals.

MOBILE HOT SPOT:

INTERNET — **WIRED NETWORK** — CELL TOWERS — **MOBILE DATA CONNECTION: 4G, 5G, LTE, ETC.** — **"HOT SPOT" (WI-FI) CONNECTION**

In contrast, a **fixed** Hot Spot is created by a Wi-Fi router connected to a fixed connection (rather than a cellular connection). These connections are often optical fiber, copper, coax, or DSL. Wi-Fi networks in homes, coffee shops, offices, and public parks are all examples of fixed Hot Spots.

Because of their direct wired connections and ability to support many connections at once, fixed Hot Spots are powerful – and have been a popular means of providing Internet access during the COVID-19 pandemic, as cities, businesses, schools, and others have unleashed hundreds of public Hot Spots across the country.

FIXED HOT SPOT:

INTERNET — **WIRED NETWORK** — **ROUTER IN A HOME, BUSINESS, OR OTHER FACILITY**

Wireless needs Wires

Wireless networks offload traffic as soon as possible onto wired networks, which carry nearly all traffic we consider "the Internet." These wired networks may be optical fiber, copper, coax, or DSL.

The need for data to promptly get "off" wireless signals and "on" a Fiber network has grown in importance as data usage has increased. This is why having "deep fiber" - a fiber connection as-close-as-possible to the wireless access point – is such a critical network strategy.

Evolution of Wi-Fi

Over time, spectrum and improved modulation technologies have improved Wi-Fi capacity.

802.11 (1997) – Up to 2 Mbps
802.11b (1999) – 11 Mbps
802.11g (2003) – 54 Mbps
802.11n – (2009) Up to 450 Mbps
802.11ac (Wi-Fi 5) Up to 1300 Mbps
802.11ax (Pending) - Maximum of 10 Gbps

What is Wi-Fi?

Both mobile and fixed Hot Spots use Wi-Fi to provide Internet access to the user device. Wi-Fi is a standards-based wireless technology that all cellular and PC manufacturers comply with to speak a universal wireless signal "language." That standardization is why a laptop can connect to Wi-Fi from a smart phone or a wireless router in an international airport or your home: it's all the same language.

Wi-Fi has evolved over time, with improvements to both capacity and distance. Depending on spectrum and environment, today's commonly used standards generally reach up to 300 feet. However, as with any wireless technology, signal strength deteriorates rapidly with distance. In short, Wi-Fi provides you perhaps a few hundred feet of connectivity to the Hot Spot, where you either need to get onto a cellular or fixed network to connect to the internet.

Public Wi-Fi

Public Wi-Fi Hot Spots are generally in places like parks or libraries, free to access, and fed from a fiber-connected router. They have been incredibly useful during the COVID-19 pandemic, allowing for adequate social distancing while also providing critical access for education, healthcare, employment, and other needs.
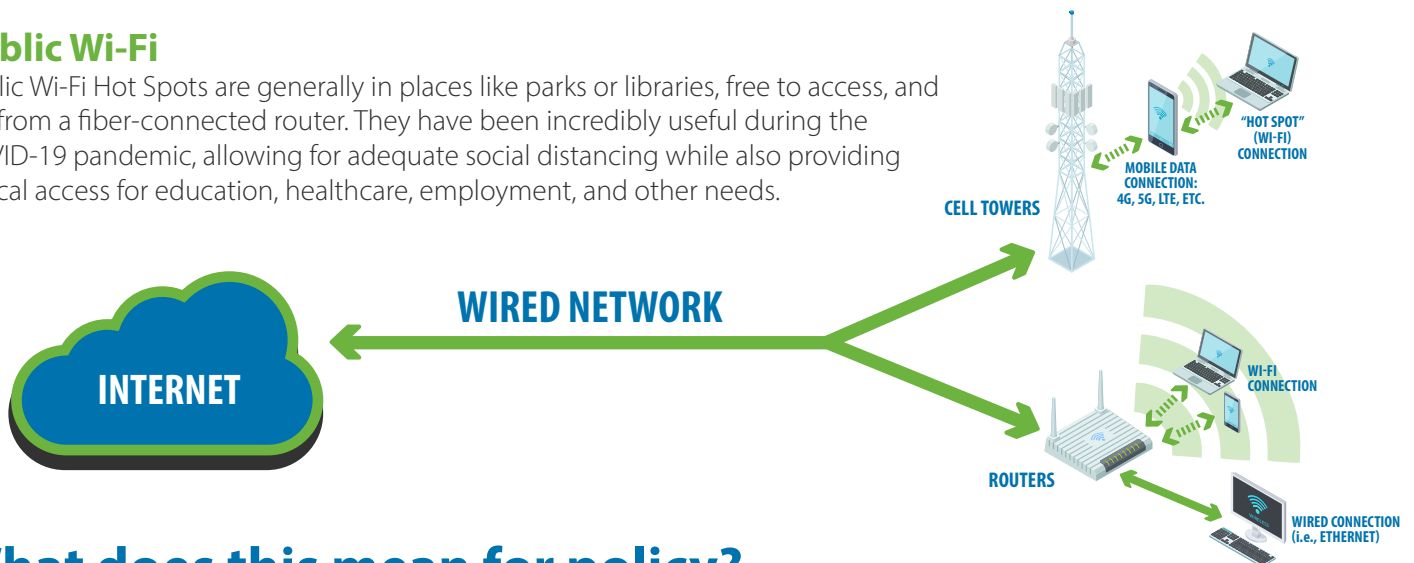
What does this mean for policy?

Because of the association of the term "Hot Spots" with mobile phones, it's easy to think only of cellular networks when setting policy aimed at improving broadband access. In reality, much more traffic goes over fixed Hot Spots than mobile; and in fact, most mobile devices actually rely on fixed Hot Spots to communicate. Hence fixed Hot Spots continue to be a significant tool for providing access to underserved communities.

When developing state and national plans to support broadband access, it's important to note that any wireless technology – including Wi-Fi Hot Spots and even cellular services – will ultimately require a wired network to connect to the internet: Hence the saying **Wireless Needs Wires.** Any wireless network offloads data traffic to a wired network as soon as possible to avoid congesting the spectrum available and to ensure signals can be carried over longer distances. **Investing in the interconnecting network infrastructure – especially fiber optic networks – will not only support more fixed Hot Spots, but also help close the digital divide.**

Association of Oregon Counties (AOC) & League of Oregon Cities (LOC)

LOCAL GOVERNMENT BROADBAND WEBINAR
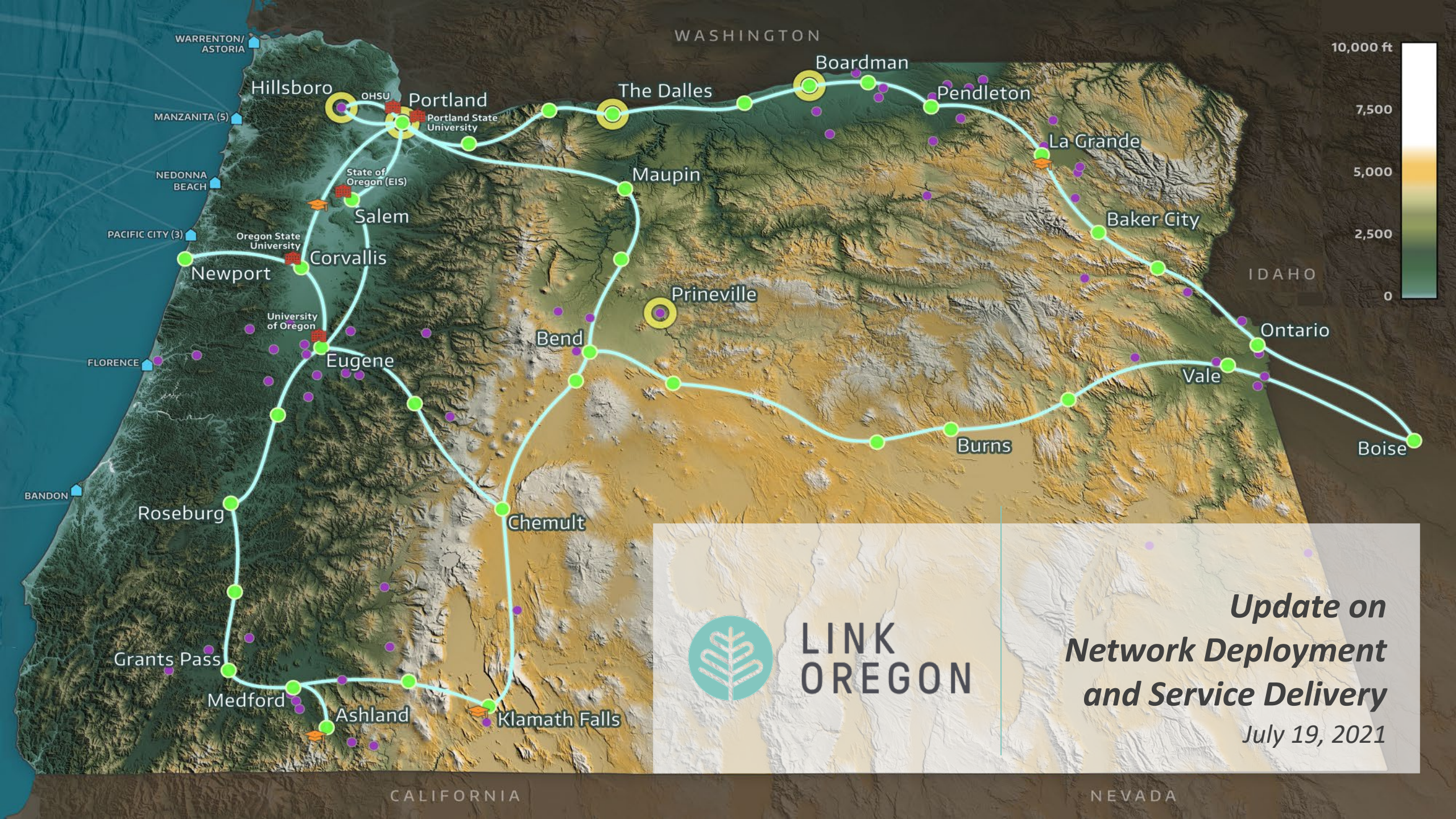
Monday, July 19, 2021

BACKGROUND AND SERVICE INFORMATION PACKET

Information Packet Table of Contents

The following materials are included in this packet:

(1) Background: Update on Network Deployment and Service Delivery

(2) Network Map and Service Location Listing

(3) Link Oregon Support for Oregon Cities and Counties

LINK OREGON

Update on Network Deployment and Service Delivery
July 19, 2021

Link Oregon is an Oregon non-profit consortium founded in 2019 by
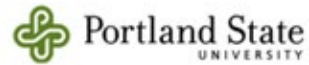
- Member-focused, middle-mile network provider with a strategic Board of Directors
- Uses dark fiber and other network assets to serve the public and non-profit sectors
- Supports K-12, higher education, healthcare, libraries, Tribes, local and state government, and other non-profits
- Provides Ethernet transport and Internet transit as primary services

Board of Directors

Andrea Ballinger Chair / Vice Provost IT & CIO, Oregon State University

Terrence Woods Vice Chair / State CIO, Enterprise Information Services, State of Oregon

Jessie Minton Treasurer / Vice Provost IT & CIO, University of Oregon

Bridget Barnes Vice President IT & CIO, OHSU

Kurtis Danka State CTO, EIS, State of Oregon

Kirk Kelly Past Chair / Vice President IT & CIO, Portland State University

Stuart Long CIO, Cascade Technology Alliance and Northwest Regional ESD

Kristen Sheeran Energy, Climate & Transportation Policy Advisor to the Governor

Peter Tamayo CIO, Oregon Department of Education

Steve Corbató *(Ex officio)* Executive Director, Link Oregon

Molly Thurston *(Ex officio)* Secretary / Executive Specialist, Link Oregon

- Works to improve Oregon's **public broadband capabilities and resiliency** to be on par with our peer networks in the West

- Promotes local **Internet Exchanges** (IXes) and serves as a **public-private partnership** (P3)

- Part of a **diverse broadband ecosystem** engaging education, healthcare, local, state & federal governments, Tribes, counties, communities, commercial telecoms, and technology providers

  - Collaborates closely with **Oregon Broadband Office** in Business Oregon
    - Oregon has over 300 ISPs that serve 4.2 million people dispersed across nearly 100,000 square miles
  - Active member of **Western States Pact Broadband Alliance**
    - Convenes state broadband offices, state libraries, and state networks to share strategies and opportunities
    - Six collaborating states: California, Colorado, Nevada, Oregon, Utah, and Washington
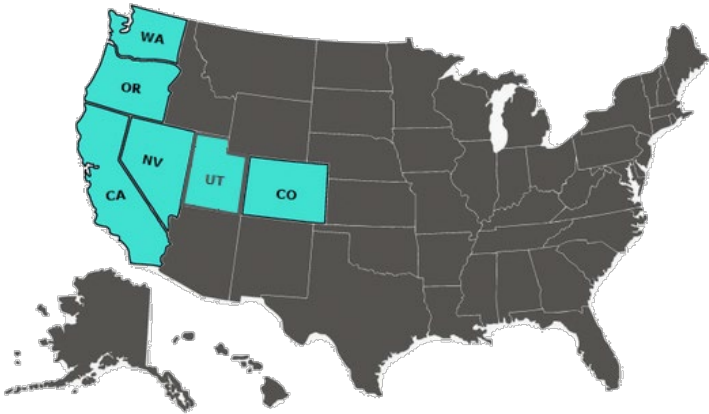
- Oregon Legislature Emergency Board allocated **$8.39 million** via Business Oregon last June

- Enabled accelerated **network backbone expansion** in eastern and southern Oregon

- Utilized nearly **2,000 route miles** of previously acquired, long-haul **dark fiber** assets

- Acquired assets from **5 long-haul telecoms** and **10 metro lateral providers** (telecoms & municipal networks)

- Deployed **Fujitsu** and **Arista** technologies

- **Augmented implementation team** with expert staff loaned from Link Oregon's founding partners

- **Achieved fiber and optical completion** with **50 service locations** statewide in May 2021
    - Pilot sites at Southern Oregon University (Ashland) and InterMountain ESD (Pendleton)

- Outsourcing network operations services to Indiana University **GlobalNOC**

Rings C & D lit with CARES Act funding
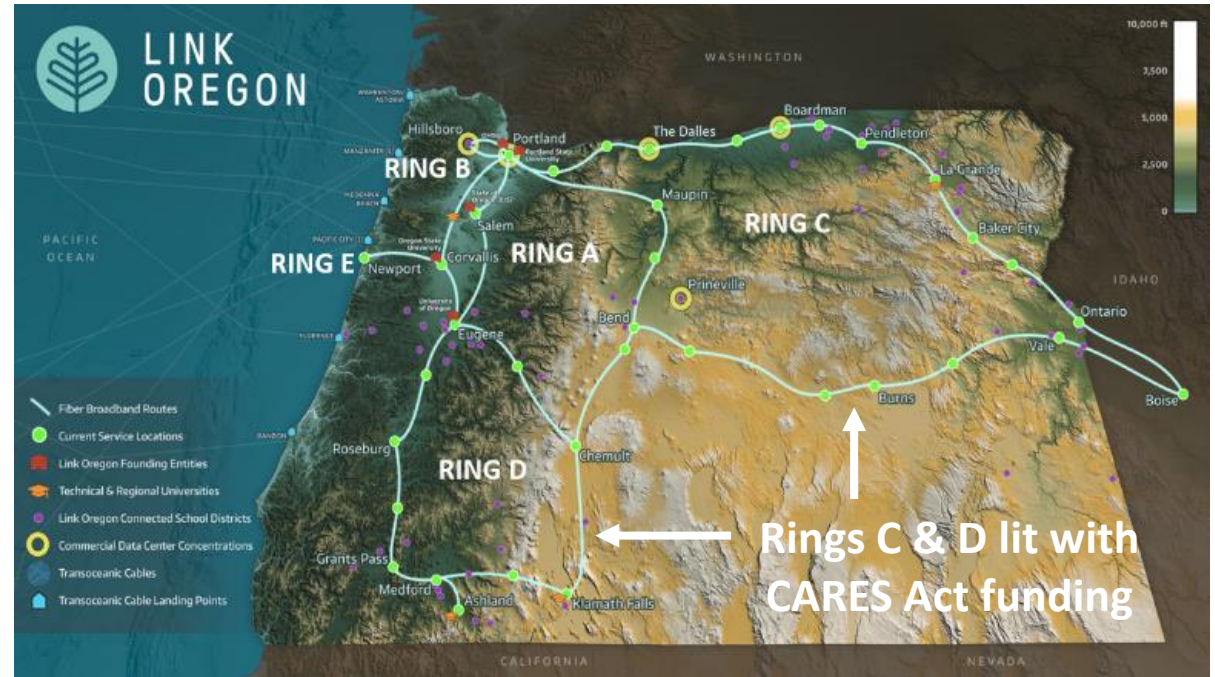
Members

- Clackamas ESD
- Eastern Oregon University
- InterMountain ESD
- OHSU
- Oregon State University
  - Extension & Engagement
  - Hatfield Marine Science Ctr
- Portland State University

- Southern Oregon ESD
- Southern Oregon University
- State of Oregon
  - Enterprise Info. Services
  - HECC, ODE, Broadband Office
- University of Oregon
  - Network Startup Resource Ctr
  - Oregon Hazards Lab (OHAZ)

Public Sector Partners

- City of Portland
- City of Sandy (SandyNet)
- Clackamas County (CBX)
- Indiana University (Global NOC)
- Lane Council of Gov'ts. (WIX)
- NOAA (N-Wave)
- Q-Life (Columbia Gorge)

Non-profit Affiliates

- CENIC (California)
- Internet2
- IRON (Idaho)
- NWAX
- PNWGP (Washington)
- SHLB
- TAO
- The Quilt
- UETN (Utah)

Equipment Manufacturers
- Arista
- Fujitsu Network Communications

Professional Services

- Axiom Recovery
- Black Helterline LLP
- CompuNet
- Fiber Channels
- Legacy Fiber Optics
- Structured
- Univ. of Wash. Oceanography

Lateral Fiber & Colocation Providers

- Blue Mountain Networks
- Douglas FastNet
- Fatbeam
- Flexential
- Pittock Block
- TDS OneNeck
- Windwave
- Ziply Fiber

Long Haul Fiber Providers

- Hunter Communications
- Lumen
- PEAK/Pioneer
- TDS BendBroadband
- Zayo

Financial Support

- Business Oregon

> *"Think big and swing for the fences!"*
> - Rep. Pam Marsh, April 2020

- **Network operationalization**
  - Remote support arrangements, initial service delivery, member and legacy network transition
- **Member engagement and development**
- **Planning for next phase of our network expansion**
  - Oregon Coast (US 101) – Astoria-Brookings
  - Additional communities in eastern Oregon – Lakeview, Prineville, Mitchell, John Day, and Enterprise
  - Collaboration with CENIC – extending connections across southern Oregon and northern California
- **New service development**
  - eduroam wireless network roaming pilot with higher education members, ODE, HECC, and Linn-Benton-Lincoln ESD
  - Last-mile wireless networking working group – exploring alternative solutions such as Low Earth Orbit satellites (LEO)
  - Cybersecurity services under consideration

LINK OREGON

- We are at a **pivotal moment** in our national broadband development
  - Unprecedented federal and state funding in the pipeline to address deficiencies revealed during the pandemic
  - Analogous to rural electrification (1930s) and Interstate Highway System development (1950s)
  - Entities in Oregon's broadband ecosystem need to collaborate and work aggressively to address the challenge

- As a non-profit, middle-mile network, Link Oregon is *not* **a common carrier** and *does not* **provide last-mile service** to residences or businesses

- Link Oregon *does*
  - Serve as an **anchor tenant** through the aggregation of community anchor institutions
  - Partner with **providers making broadband investments** in rural and urban communities
  - Enter into public-private partnerships for the **extension of middle-mile** fiber networks
  - Support the **local exchange** of Internet traffic
  - Provide **resilient connectivity** for eastern and southern Oregon
  - Collaborate with local **broadband action teams** and the **Oregon Broadband Office**
  - Help assess **new technologies** (wireless, Low Earth Orbit satellite) and **use cases**

- Our broadband strategy:

  - Collaborate and partner
  - Help shape state broadband strategy
  - Prepare for middle-mile funding opportunities
  - Track/influence federal programs (NTIA, USDA, NSF, FCC)

- NTIA Community Broadband Infrastructure ($288M; proposals due 8/17/21)

- NTIA Tribal Broadband ($1B; proposals due 9/1/21)

- State broadband funding ($120M for FY22-23)

- State broadband middle mile infrastructure planning group (co-chaired with Stuart Taubman, Zayo)

- Federal infrastructure package (upwards of $65B)

- Advanced networking funding: *The Minds We Need* white paper

- ALERTWildfire/ShakeAlert® collaboration

- To join our **broadband policy mailing list**, email us at info@linkoregon.org

Updated 7/16/21

LINK OREGON

HIGH-SPEED FIBER BROADBAND
for OREGON'S PUBLIC & NON-PROFIT SECTORS

Link Oregon is the member-based, non-profit, middle-mile fiber broadband provider for Oregon's public and non-profit sectors serving education, healthcare, libraries, Tribes, State government offices, and other public and non-profit organizations.
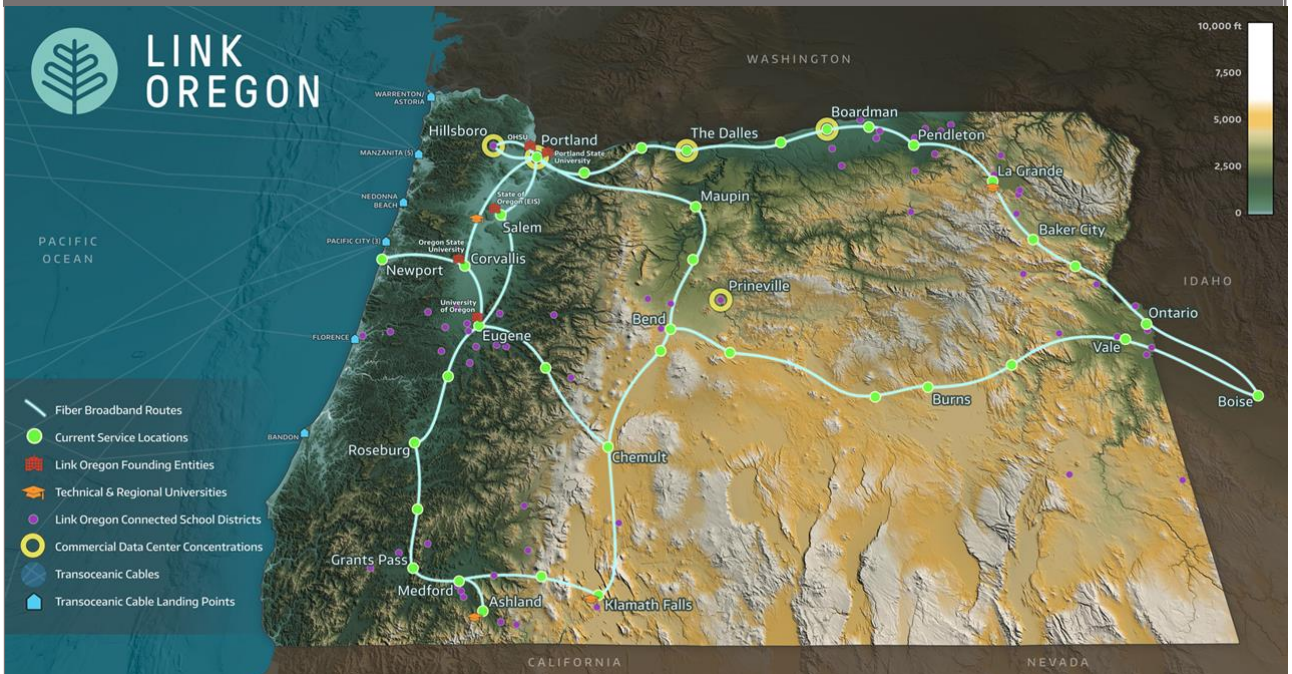
See reverse for locations of the 50+ access points along the current Link Oregon Network backbone →

About Link Oregon

Link Oregon, the service name for the Oregon Fiber Partnership, was established in 2019 as a federally tax-exempt, Oregon non-profit corporation. Its mission is to develop and operate a high-speed, facilities-based, optical network across Oregon and through peer networks in neighboring states for interconnectivity and collaboration.

Link Oregon has a broad ecosystem spanning education, healthcare, libraries, Tribal communities, state and federal government agencies, and technology and service providers. It operates as a public private partnership, working closely with the Oregon State Broadband Office and representing Oregon as part of the Western States Pact broadband network alliance with similar organizations in California, Colorado, Nevada, Utah, and Washington.

Link Oregon *is not* a common carrier or telco and does not provide services to residences or businesses. It is member-based organization that partners with forward-looking telecom and broadband providers that actively invest in their communities to advance broadband across the state to create greater inclusion, resilience, and economic sustainability.

Link Oregon achieved fiber and optical completion of its network backbone in May of 2021 with the implementation of 50 service locations statewide along the 2,000 route-mile network route. The project was fast-tracked thanks to the infusion of $8.4M in CARES Act funding. Dark fiber was acquired from five long-haul telecoms and ten metro lateral providers (telecoms & municipals), and Fujitsu and Arista technologies were deployed.

Link Oregon Founding Members

Oregon State University   Portland State UNIVERSITY   OHSU   O | UNIVERSITY OF OREGON   ENTERPRISE information services

LINK OREGON

HIGH-SPEED FIBER BROADBAND for OREGON'S PUBLIC & NON-PROFIT SECTORS

Site Name	Site Address	Site Type	Latitude	Longitude
Arlington	Cedar Springs Ln & Hwy 19, Arlington OR 97812	Optical Only	45.63272	-120.16503
Ashland	1250 Siskiyou Blvd, Ashland OR 97520	Internet/MPLS/Optical	42.18596	-122.69448
Baker City	2120 3rd St, Baker City OR 97814	Internet/MPLS/Optical	44.77885	-117.83295
Bend (ODOT)	63055 North Hwy 97, Bend OR 93077	MPLS/Ethernet Satellite	44.08993	-121.30656
Bend (Vault)	20845 Sockeye Place, Bend OR 97701	Internet/MPLS/Optical	44.08622	-121.28284
Boardman	71202 Wilson Ln, Boardman OR 97818	Optical Only	45.82746	-119.66923
Boise (Idaho)	434 W McGregor Dr, Boise ID 83705	Peering only	43.56704	-116.18451
Burns	64 W B St, Burns OR 97720-1550	Internet/MPLS/Optical	43.59095	-119.05516
Central Point	800 Enterprise Dr, Central Point OR 97502	Optical Only	42.38669	-122.87029
Chemult	109110 Hwy 97 N, Chemult OR 97731	Optical Only	43.21330	-121.78239
Clackamas	13455 SE 97th Ave., Clackamas OR 97015-8662	Optical Only	45.42696	-122.56359
Corvallis (OSU Kerr)	1500 SW Jefferson Way B306, Corvallis OR 97331	Internet/MPLS/Optical	44.56408	-123.27474
Corvallis (OSU PASC)	3531 SW Campus Way, Corvallis OR 97330	Internet/MPLS/Optical	44.56696	-123.28969
Drain	701 Division St, Drain OR 97435	Optical Only	43.65995	-123.32357
Drewsey	US Hwy 20 & Mile Post 174, Drewsey OR 97904	Optical Only	43.78320	-118.34184
Durkee	29094 Old Hwy 30, Durkee OR 97905	Optical Only	44.58177	-117.46398
Eugene (UO Oregon Hall)	1585 East 13th Ave, Eugene OR 97403	Internet/MPLS/Optical	44.04617	-123.07044
Eugene (WIX)	859 Willamette Street, Eugene OR 97401	Internet/MPLS/Optical	44.05052	-123.09248
Fish Lake	Hwy 140, Eagle Point OR 97524	Optical Only	42.38987	-122.34436
Glendale	Windy Creek Road, Glendale OR 97442	Optical Only	42.78269	-123.36169
Grants Pass	624 SE J St. Grants Pass OR 97526	Internet/MPLS/Optical	42.43503	-123.32029
Hermiston	290 West Punkin Center Road, Hermiston OR 97838	Internet/MPLS/Optical	45.86526	-119.29406
Hillsboro	5737 NE Huffman St, Hillsboro OR 97124	Internet/MPLS/Optical	45.55800	-122.91700
Klamath Falls	1320 Klamath Avenue, Klamath Falls OR 97601	Internet/MPLS/Optical	42.22770	-121.77635
La Grande (EOU)	1410 L Ave, La Grande OR 97850	MPLS/Ethernet Satellite	45.32186	-118.09125
La Grande (Lumen)	58902 Foothill Rd, La Grande OR 97850	Optical Only	45.26278	-118.04612
Madras	91 SW Dover Ln, Madras OR 97741-8899	Optical Only	44.59228	-121.13025
Maupin	50500 US-HWY 197, Maupin OR 97037	Optical Only	45.04657	-120.99836
Medford (Lumen)	502 North Central Ave, Medford OR 97501	MPLS/Ethernet Satellite	42.33073	-122.87578
Medford (SOESD)	101 North Grape Street, Medford OR 97501	MPLS/Ethernet Satellite	42.32625	-122.87634
Millican	29880 Highway 20, Bend OR 97701	Optical Only	43.87105	-120.83524
Modoc Point	16001 Algoma Rd, Klamath Falls OR 97601	Optical Only	42.37062	-121.80250
Newport	2030 SE Marine Science Drive, Newport OR 97365	Internet/MPLS/Optical	44.62149	-124.04401
Oakridge	76228 Fish Hatchery Rd, Oakridge OR 97463-9691	Optical Only	43.74204	-122.44383
Ontario (Lumen CO)	225 SW 2nd St, Ontario OR 97194	MPLS/Ethernet Satellite	44.02527	-116.96631
Ontario (Lumen ILA)	SE 2nd St & E Island Rd, Ontario OR 97194	Optical Only	44.02500	-116.96635
Parkdale	5450 Lost Lake Rd, Hood River OR 97031	Optical Only	45.57165	-121.64834
Pendleton (IMESD)	2001 SW Nye, Pendleton OR 97801	Internet/MPLS/Optical	45.65375	-118.80313
Pendleton (Lumen CO)	237 SW 1st St, Pendleton OR 97801	MPLS/Ethernet Satellite	45.65390	-118.80314
Portland (Northrup)	1335 NW 14th Ave, Portland OR 97209	Optical Only	45.53257	-122.68567
Portland (Pittock)	921 SW Washington, Portland OR 97205	Internet/MPLS/Optical	45.52156	-122.68076
Portland (PSU FAB)	1900 SW 4th Ave, Portland OR 97201	Internet/MPLS/Optical	45.50927	-122.68092
Riley	Milepost 100 US Hwy 20, Burns OR 97720	Optical Only	43.54027	-119.58926
Roseburg	2350 NW Aviation, Roseburg OR 97470	Optical Only	43.23792	-123.35971
Salem (Revenue Building)	955 Center Street NE, Salem OR 97301-2555	Internet/MPLS/Optical	44.94168	-123.02773
Salem (State Data Center)	530 Airport Rd SE, Salem OR 97301-5068	Internet/MPLS/Optical	44.92626	-123.00201
Sandy	39250 Pioneer Blvd, Sandy OR 97055	Optical Only	45.39639	-122.25887
Seattle (Westin Bldg/SIX)	2001 Sixth Ave, Seattle WA 98121	Peering only	47.61436	-122.33886
Sunriver	17990 South Century Drive, Bend OR 97707	Optical Only	43.86370	-121.43891
The Dalles (City Hall)	313 Court St, The Dalles OR 97058	MPLS/Ethernet Satellite	45.60171	-121.18381
The Dalles (Zayo ILA)	3112 W 2nd St, The Dalles OR 97058	Optical Only	45.62090	-121.21146
Vale	3651 Lytle Blvd, Vale OR 97918-5638	Optical Only	43.96254	-117.23145

For more info on Link Oregon, visit www.linkoregon.org

Link Oregon Support for Oregon Cities and Counties

Link Oregon is a non-profit, middle-mile network organization providing services to our members in the public and non-profit sectors in Oregon.

We support our members with access to our high-speed statewide fiber backbone delivering reliable, cost-effective capacity.

We are very interested in working with communities statewide in multiple ways…

1) Membership is open to all public entities. Members can leverage our core network services of enhanced Internet transit and Ethernet transport.

2) Link Oregon is committed to collaborating with all interested Oregon cities, counties, and regional consortia as well as the Oregon Broadband Office and OBAC on developing competitive, comprehensive broadband proposals.

3) We encourage municipalities involved in the design of middle-mile networks for the upcoming waves of state and federal broadband funding opportunities **to reserve at least four fiber strands for Link Oregon** to *facilitate the eventual expansion of our network into your communities* to support community anchor institutions. Please contact us to discuss.

For more information, please contact *info@linkoregon.org*

Welcome to the Local Government Broadband Webinar

AOC
Association of Oregon Counties

LOC
League of Oregon Cities

Federal Update

ARPA State and Local Fiscal Recovery Funds

- Projects should establish or improve "broadband service to unserved or underserved populations to reach an adequate level to permit a household to work or attend school, and that are unlikely to be met with private sources of funds." Unserved and underserved are defined as those places that lack access to a reliable **wireline connection** capable of at least 25/3 Mbps.

- Eligible projects must also provide symmetrical 100 Mbps service unless that their geography, topography, or excessive costs issues then 100/20 Mbps service must be provided with the possibility to scale to 100/100 in the future.

- The rule also encourages broadband infrastructure projects to:

  - Prioritize investments in fiber infrastructure;
  - Avoid investing in locations with existing agreements to build reliable wireline service;
  - Focus on projects that achieve last-mile connections;
  - Consider ways to integrate affordability options into program design; and
  - Prioritize support for broadband networks owned, operated by, or affiliated with local governments, non-profits, and co-operatives – providers with less pressure to turn profits and with a commitment to serving entire communities.

- Digital inclusion is not thoroughly discussed in the Treasury guidance of ARPA funds, the interim rule notes that "assistance to households facing negative economic impacts due to COVID-19 is also an eligible use, including internet access or digital literacy assistance.

ARPA Capital Projects Fund

- Separate $10 billion fund from State and Local Fiscal Recovery Funds

- Provides funding to states, territories, and Tribal governments to carry out critical capital projects directly enabling work, education, and health monitoring, including remote options, in response to the public health emergency

- The focus of the Capital Projects Fund on the continuing need for connectivity in response to the COVID-19 pandemic complements the broader range of uses State and Local Fiscal Recovery Funds

Other Federal Funds

Emergency Broadband Benefit

- Program for Individuals and Families

- Provides a discount of up to $50 per month towards broadband service for eligible households

- Provides a one-time discount of up to $100 to purchase a laptop, desktop computer, or tablet from participating providers if they contribute more than $10 and less than $50 toward the purchase price.

Emergency Connectivity Fund

- Program for Libraries and Schools eligible for support under the FCC's E-Rate program

- $7.17 billion program funded by ARPA

- Eligible uses for funds include laptops and tablets, computers, wi-Fi hotspots, modems (including air cards), routers, commercially available broadband internet service that provides a fixed or mobile broadband connection for off-campus use by students, school staff, or library patrons.

- Application filing window opened on June 29, 2021 and will close on August 13, 2021.

Bipartisan Infrastructure Framework

$65 Billion in broadband investments

- Broadband as infrastructure

- State and local investments

- Vote scheduled in Senate on Weds

- Final passage within months

"Connect every American to reliable high-speed internet, just as the federal government made a historic effort to provide electricity to every American nearly one hundred years ago.

The Framework will also drive down prices for internet service and close the digital divide."

Resources

- Association of Oregon Counties

- League of Oregon Cities

- Broadband Action Teams

- Economic Development Districts

- Business Oregon/State Broadband Office

- USDA

- Local Providers

- Link Oregon

- Other Jurisdictions

A resource packet will be provided following the webinar.

Broadband Office Update

Daniel Holbrook, Broadband Manager

July 19, 2021

business **oregon**.

Strategic Foundation

Policy
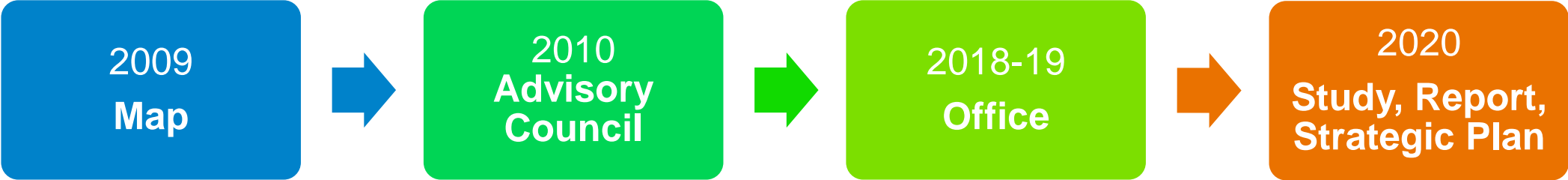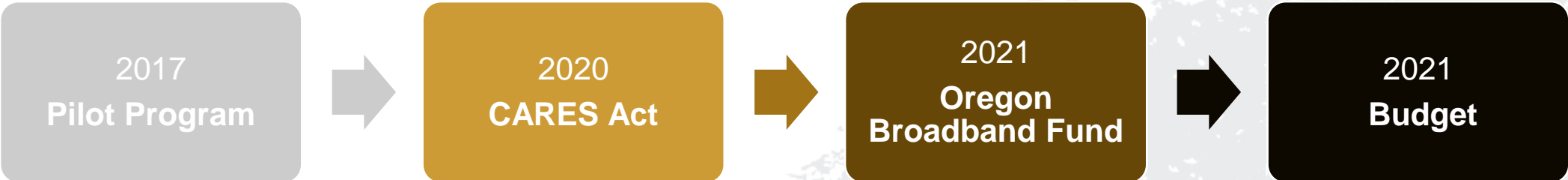
| 2009 **Map** | → | 2010 **Advisory Council** | → | 2018-19 **Office** | → | 2020 **Study, Report, Strategic Plan** |

Funding

| 2017 **Pilot Program** | → | 2020 **CARES Act** | → | 2021 **Oregon Broadband Fund** | → | 2021 **Budget** |
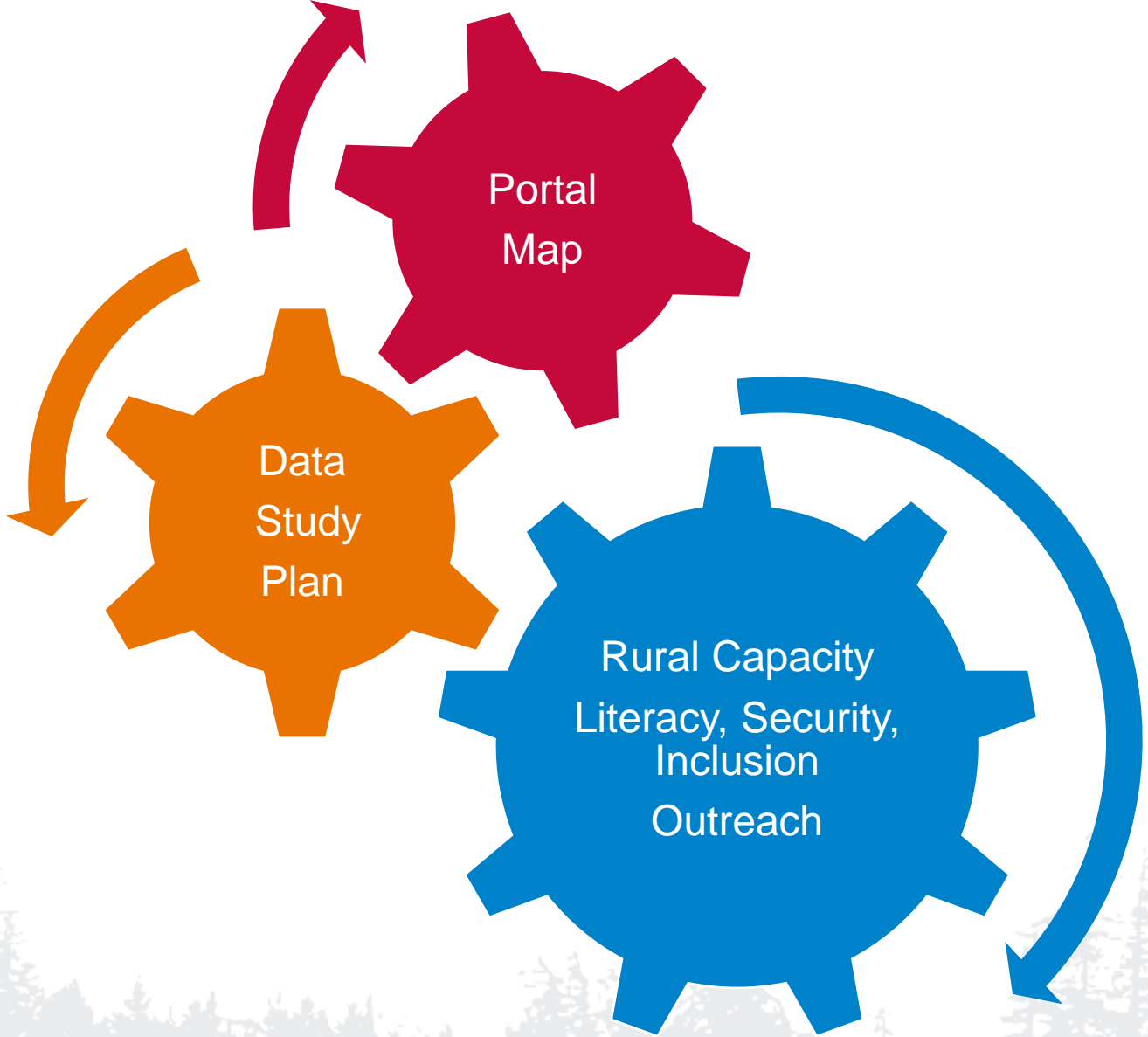
FCC Form 477 Terrestrial Speeds

Jan-Jun 2020

2,000
Max Advertised Download Speed (Mbps)

2,000
Max Advertised Upload Speed (Mbps)

30
Median Advertised Download Speed (Mbps)

5
Median Advertised Upload Speed (Mbps)

86
Broadband Providers

11
Transmission Technologies

Ookla Speed Test Results

Jan-Jun 2020

63
Median Download Speed (Mbps)

11
Median Upload Speed (Mbps)

123,511
Number of Devices

Internet Cost

$64.93
Average Minimum Monthly

AMERICAN COMMUNITY SURVEY KEY FACTS

4,129,803
Total Population

$62,818
Median Household Income

39
Median Age

HOUSEHOLD INTERNET CONNECTION

1,611,984
Total Households

86%
With Broadband of Any Type

11%
No Internet Access

3%
Internet Access w/o Subscription

0%
Dial-up w/No Other Subscription

HOUSEHOLD DEVICES

93%
Have a Computer

83%
Have a Desktop or Laptop

7%
No Computer

81%
Have a Smartphone

61%
Have a Tablet

3%
Have an Other Computer

Median Download Speed (Mbps)

Legend: FCC, Ookla

(X-axis: Dec 2016, Jun 2017, Dec 2017, Jun 2018, Dec 2018, Jun 2019, Dec 2019, Jun 2020)

Median Upload Speed (Mbps)

Legend: FCC, Ookla

(X-axis: Dec 2016, Jun 2017, Dec 2017, Jun 2018, Dec 2018, Jun 2019, Dec 2019, Jun 2020)
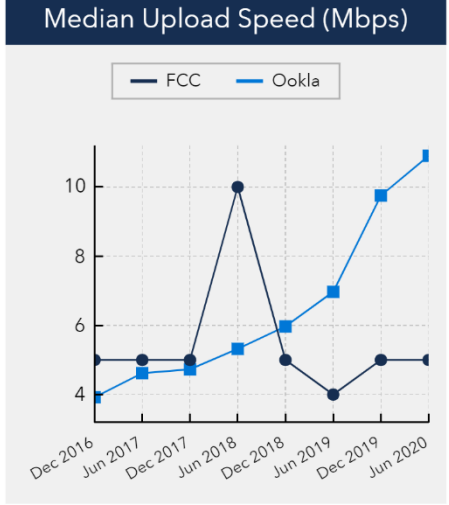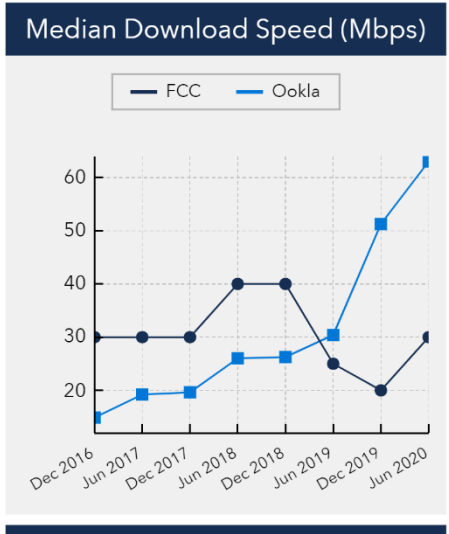
Speed data from FCC Form 477 and Ookla Speedtests compare fixed broadband speeds only.

Digital Divide
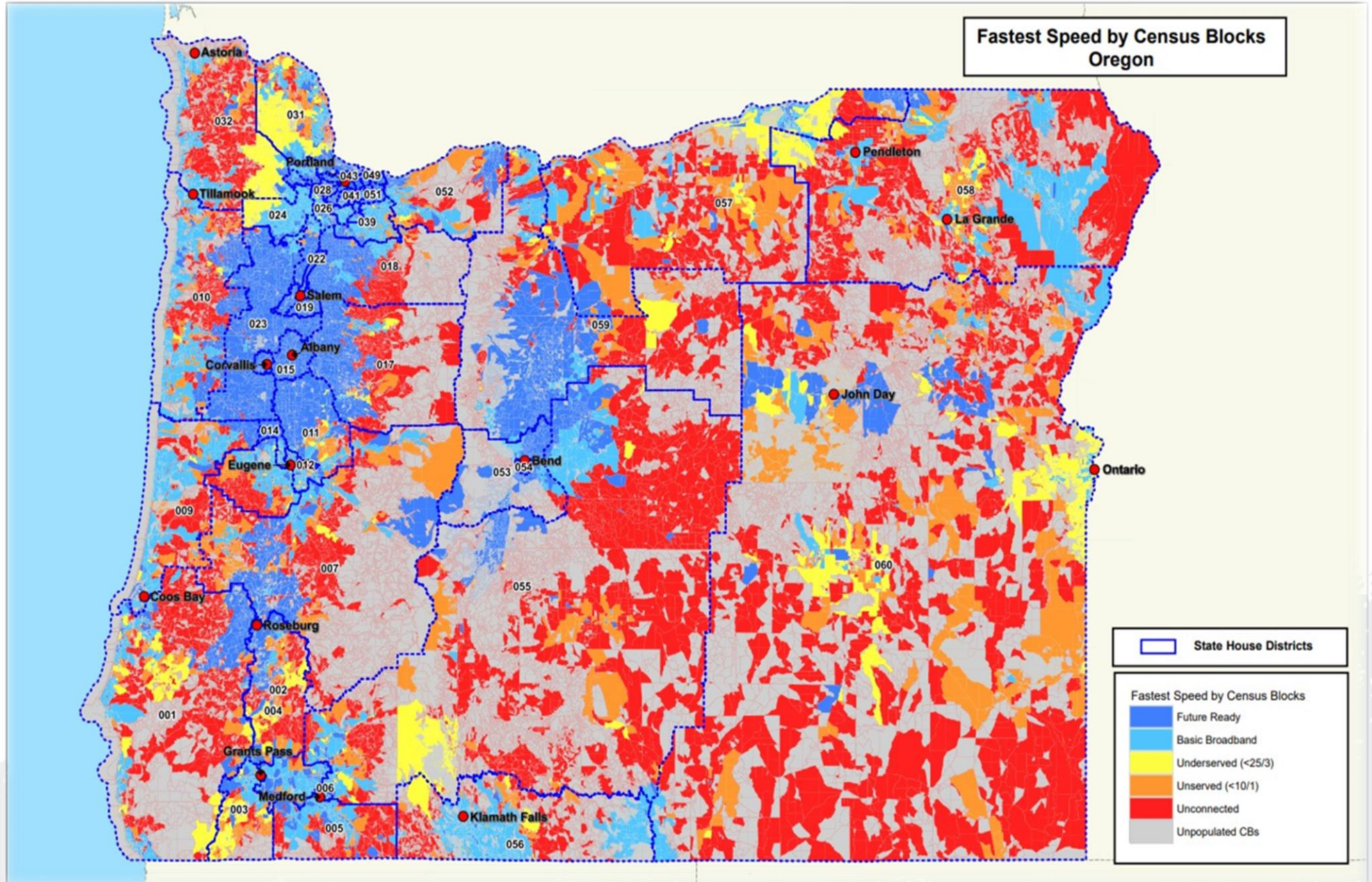
Rural Broadband Grants – 2020 CARES Act
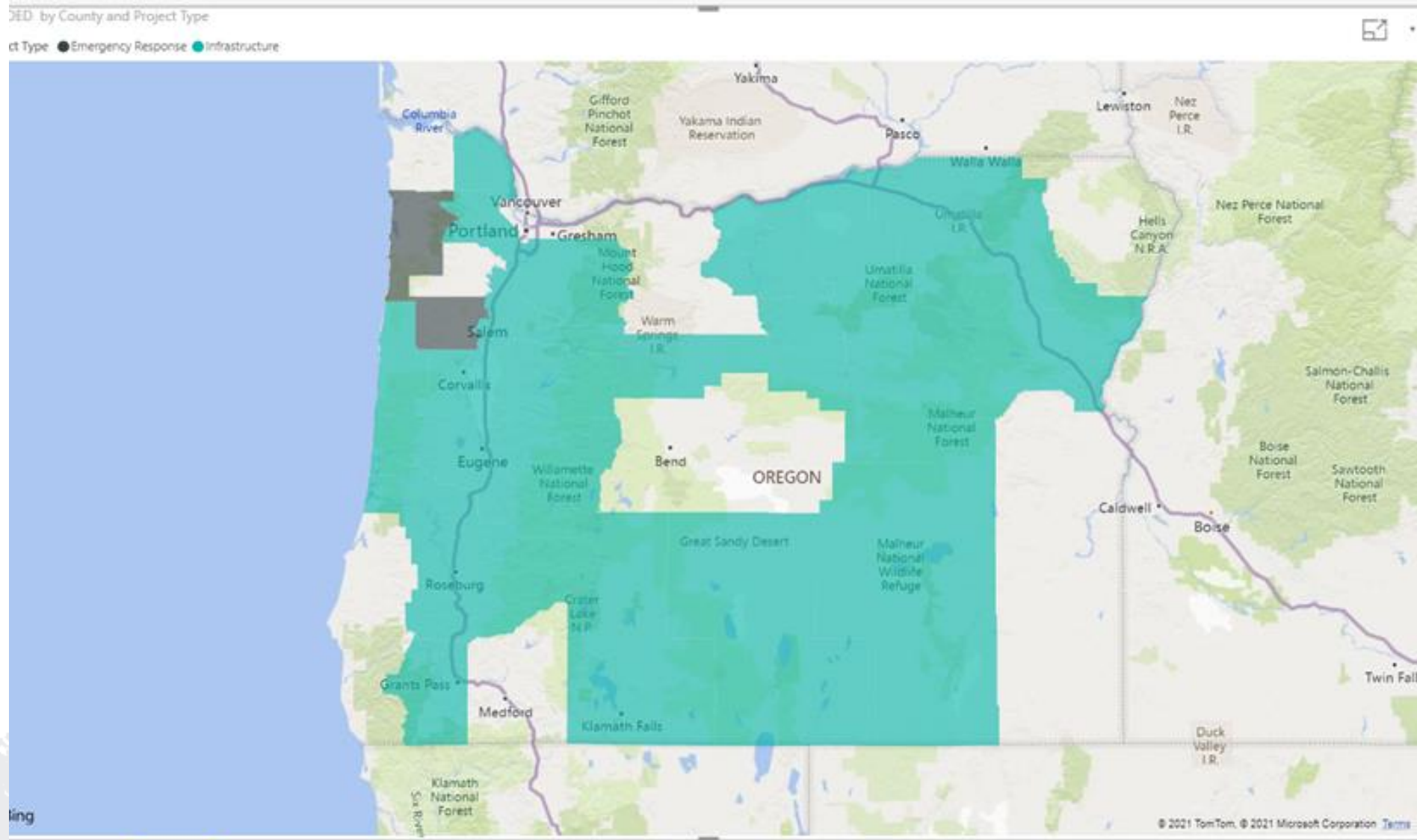
2021
Request for Information

- **Total Projects: 78**

- **Total Cost: $501M**

- **Total Grants Needed: $345M**

- **Technical Assistance Requested: 32**

NTIA Partners: 4
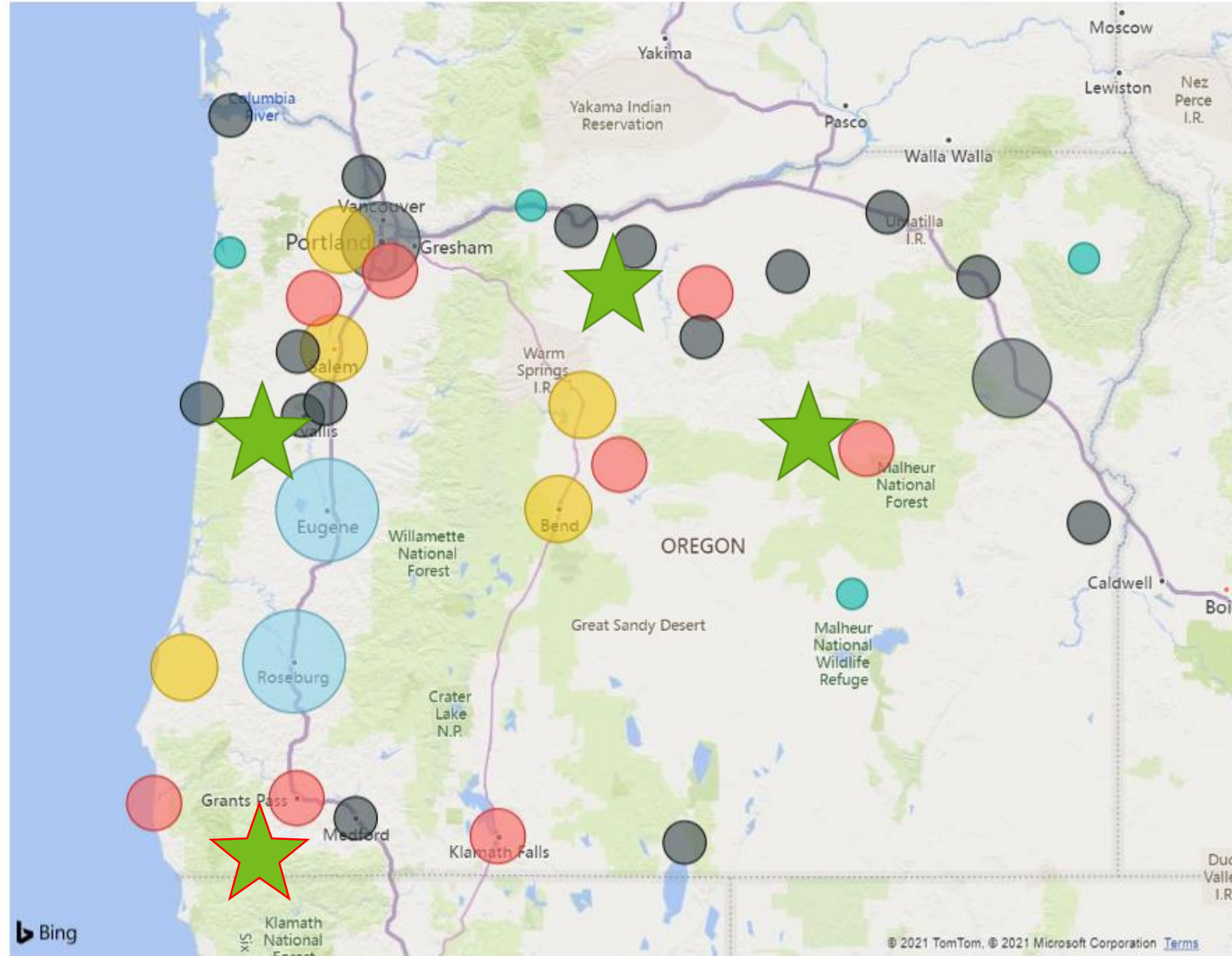
Federal Funding

- Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act
  - *NTIA Broadband Programs
  - *CDBG-COVID-19 Impact Assistance Program
  - USDA Broadband Programs
  - FCC Broadband Programs
  - U.S. Department of Education
  - Capital Projects Fund

- American Rescue Plan Act (ARPA)
  - Emergency Connectivity Fund
  - Coronavirus

- Infrastructure Plan ($65B, TBD)

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2021 Legislative Session

2021 Legislative Session in review and next steps discussion at the Oregon Broadband Advisory Council - July 22, 2021

[Click here to join the meeting](#)

Topics:

- Bill review
- Funding
- Next steps

business **oregon.**

Events

Oregon Infrastructure Summit
Smart. Resilient. Sustainable.

September 13-14, 2021
Virtual Event
theOregonSummit.com

Oregon Connections
Telecommunications Conference
October 28-29, 2021 in Ashand

25 YEARS ANNIVERSARY

Oregonconnections.info

business oregon.

Contact Info:

Daniel.L.Holbrook@Oregon.gov

503-877-7006

www.Broadband.Oregon.gov

USDA Rural Development
U.S. DEPARTMENT OF AGRICULTURE

Introduction to the USDA & Overview of Rural Utilities Service Programs

AOC/LOC Broadband Webinar

Virtual

19 July 21

Presented by:

John Holman, GFR OR/WA

Tim Oconnell, Western Regional Coordinator

Rural Development's (RD) Mission

USDA Rural Development
Committed to helping improve the economy and quality of life in rural America.

- Provide **loans, grants, and loan guarantees** that support essential services, such as:
    - Housing
    - Economic Development
    - Health Care
    - First Responder Services and Equipment
    - Water, Electric, and **Telecommunications Infrastructure**
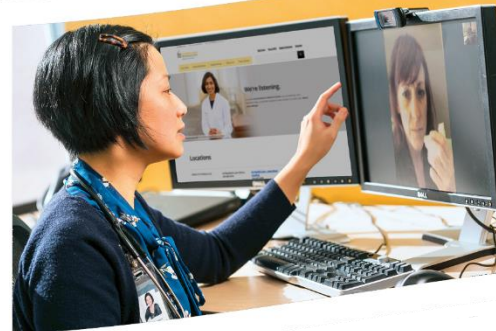
Rural Development Background

Rural Development includes 3 agencies with unique programs and objectives:

- **Rural Utilities Service (RUS)**

- Rural Housing Service (RHS)

- Rural Business-Cooperative Service (RBS)

- Across the three agencies, Rural Development administers over 40 programs.

  - RUS Electric & **Telecommunications** programs are administered by National Office

  - RHS and RBS programs are administered by State & National Offices

RUS Telecommunications Program History

From electricity to broadband...

1935	Rural Electrification Administration (REA) created and began providing financing to promote rural electrification
1949	REA received authority to finance telephone service in rural communities
1995	Evolving from the REA, the Rural Utilities Service (RUS) required all financed telecommunications networks have the capacity to deliver broadband
2010 to present	RUS has approved over **$8 billion** in loans and grants to build out broadband infrastructure and expand distance learning and telemedicine services in rural areas

Funding for Rural Broadband

- Telecommunications Infrastructure Loan Program

- Rural Broadband Program

- Community Connect Grant Program

- ReConnect Program

Telecommunications Infrastructure Loan Program

Standard Loan Terms include:

- 2 Year Principal Deferral
- Interest Rate at the Cost-Of-Money
- Loan Maturity - Life of the Facilities Financed Plus 3 Years

Staff can assist and review loan applications before submission

Distance Learning & Telemedicine Grant Program

Distance Learning means the **real-time, interactive** delivery of **curriculum via telecommunications** and promotes the connection of students and teachers at remote sites.

- Provide educational programs, instruction, or information originating in one area, whether rural or not, to students and teachers who are located in rural areas; or

- Connect teachers and students, located in one rural area with teachers and students who are located in a different rural area.

Telemedicine is a **real-time, interactive, telecommunications** link to an end user from medical professionals at separate sites in order to exchange health care information for the purpose of providing improved health care services to residents of rural areas.

- Benefits rural residents both in reduced travel and improved access to service

Telecommunications Programs –Oregon Investments

Since 2010, RUS has approved over $74 million in projects serving OR Rural residents:

Program	Funds Approved
Telecommunications Infrastructure Program	$44.0 Million
ReConnect Program	$6.0 Million
Distance Learning and Telemedicine Program	$3.6 Million
Community Connect Grant Program	
Broadband Initiatives Program	$20.0 Million
Grand Total	**$74.0 Million**

Telecommunications Programs – All State Investments

Since FY2010, RUS has approved over $8 billion in funding for broadband and distance learning and telemedicine projects that serve rural residents.

Program	Projects Approved	Funds Approved
Telecommunications Infrastructure Program	195	$3.2 Billion
ReConnect Program	165	$1.3 Billion
Rural Broadband Access Program	10	$273.4 Million
Distance Learning and Telemedicine Program	1,155	$409.0 Million
Community Connect Grant Program	111	$185.0 Million
Broadband Initiatives Program	258	$2.9 Billion
Grand Total	**1,894**	**$8.3 Billion**

*Table shows award data **at time of obligation** for all programs except ReConnect and BIP, which show present award data.

Updated: 3/2/2021

Telecommunications Programs – Tribal Investments – All States

In FY 2018 and 2019, RUS approved approximately $20.3 million in telecommunications projects serving Tribal Lands, Tribal Organizations, American Indians, and Alaska Natives.

Program	Funds Approved
Telecommunications Infrastructure Program	$9.8 Million
Distance Learning and Telemedicine Program	$7.1 Million
Community Connect Grant Program	$3.4 Million
Grand Total	**$20.3 Million**

Updated: 03/13/2020

USDA Rural Development
U.S. DEPARTMENT OF AGRICULTURE

John Holman
General Field Representative
john.holman2@usda.gov
Office: 503-310-7692

Tim Oconnell
Western Regional Coordinator
tim.oconnell@usda.gov
202-768-0587

Rural Development | Rural Utilities Service
Telecommunications Program
U.S. Department of Agriculture
1400 Independence Ave., S.W.
Washington, D.C. 20250
www.rd.usda.gov

Grant County Digital Network Coalition

Organization Overview

July 2021

History

- Local stakeholders lobbied for state funding in 2017 to improve broadband access

- City of John Day received $1,836,000 from the Department of Administrative Services awarded through 2017 House Bill 5006

- Grant was to expand fiber optic internet access within Grant County, specifically to extend a fiber optic line along US 395 from US 20 (Burns to John Day)

- Grant funds received December 20, 2017

GRANT COUNTY DIGITAL

Why this was needed

50 Years of "net zero" population growth in Grant County

GRANT COUNTY DIGITAL

3
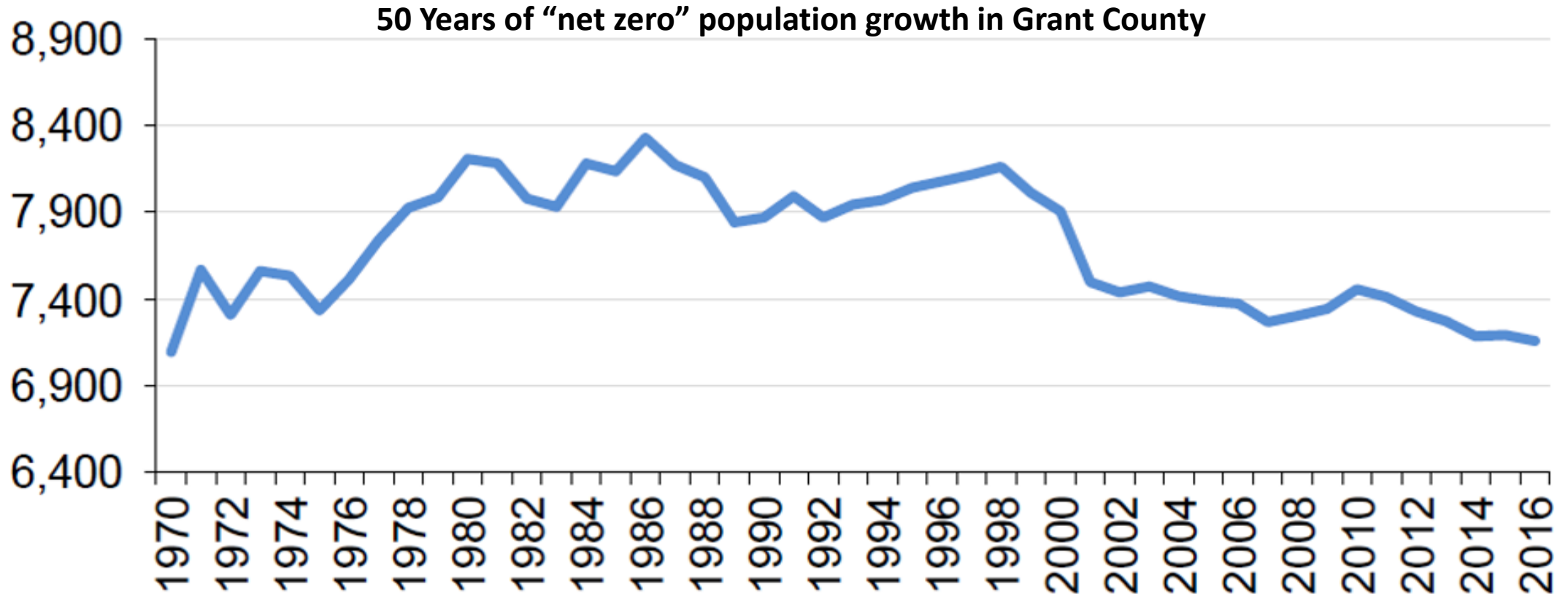
Organization

- Grant County Digital is an **Intergovernmental Agency** organized under Oregon Revised Statute 190.010

- Founded April 10, 2018 by Grant County Court, John Day and Seneca

- Oregon Secretary of State certified on May 16, 2018

- Operated by a five-member board of directors:
  - Josh Walker – Chair (Seneca – standing member)
  - Dan Becker – Co-chair (Grant County – standing member)
  - Elliot Sky – Board member (John Day – standing member)
  - Denise Porter – Board member (at-large – appointed member)
  - Harsh Patel – Board member (at-large – appointed member)

- Nick Green appointed as Executive Director on August 21, 2018

GRANT COUNTY DIGITAL

Mission: To bring affordable, reliable, high-quality broadband access to the citizens of Grant County

- Grant County had the **second highest DDI rank in Oregon** (68.27) behind Wheeler County (90.17) which **ranked tenth in the nation for poorest internet connectivity**

- Grant, Wheeler, Harney and Sherman counties ranked in the **bottom tenth percentile** in Oregon on the DDI Index
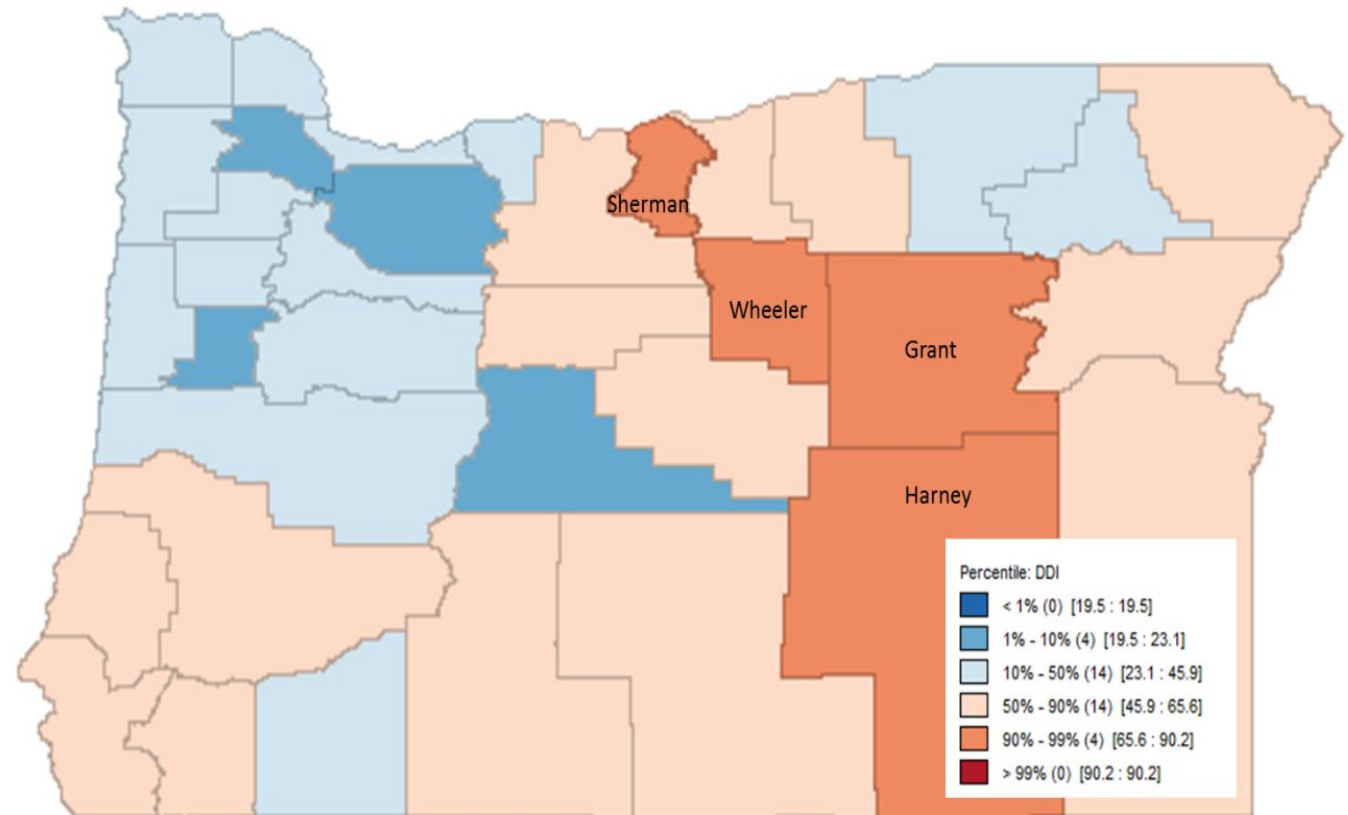
Figure 2. Percentile ranking of Oregon counties by DDI score

Early Work (2018-2019)

- **Organizing the Grant County Digital Network Coalition** ("Grant County Digital") with bylaws approved November 19, 2019;
- Creating **professional services agreements** with consulting firms to help plan the broadband expansion;
- Establishing **partnerships and joint-use license agreements** with local utility service providers to facilitate the network expansion (allows access to OTEC and CenturyLink poles for co-location)
- Identifying federal funding opportunities to assist with the design and construction of the network; **secured $6M in federal funding for middle mile fiber** to Seneca, Long Creek, Monument, Kimberly and Spray;
- **Beginning construction** of the John Day point of presence (PoP)/co-location facility and outside plant to facilitate local fiber optic distribution for use by Grant County Digital

GRANT COUNTY DIGITAL

Consulting Team

- **Commstructure Consulting**, a technical consulting services company based in Oregon City, Oregon, specializing in communications outside plant (OSP) infrastructure design and project management;

- **CTC Technology & Energy**, a woman-owned consulting firm based in Kensington, Maryland, that provides network strategic planning, broadband financial analysis, grant writing and business planning;

- **Fiber Channels Inc.**, a Colorado corporation specializing in fiber optic pricing and acquisitions;

- **Cohen Law Group**, a law firm based in Pittsburg, Pennsylvania that specializes in cable, telecom and wireless industries.

GRANT COUNTY DIGITAL

Partnerships & Non-disclosure Agreements

- Executed **non-disclosure agreements** ("NDAs") with CenturyLink and Oregon Telephone Corporation (OTC) on February 1, 2018
- Allows Grant County Digital to negotiate with these internet service providers to secure joint use agreements and/or license agreements to jointly invest in new broadband infrastructure
- **Memorandum of Understanding ("MOU")** with OTC to jointly invest in infrastructure and services; **partnered with OTC** on three federal grant applications
- Signed a **license agreement with the Oregon Trail Electric Consumers Cooperative (OTEC)** on August 30, 2018 to allow Grant County Digital to use OTEC's power poles needed to complete the network

GRANT COUNTY DIGITAL

Current Work (2020 – 2021)

- **Co-location facilities** created in John Day and Seneca
- Local fiber optic networks **connecting critical community facilities (CCFs)**
  - John Day City Hall / Police Department
  - John Day Fire Department / 9-1-1 Center (PSAP)
  - Grant Union Jr./Sr. High School
  - ESD Building / Grant School District 3 Building
  - Humbolt Elementary
  - Seneca City Hall to Seneca Elementary
- Planned **network expansions** to other CCFs in 2021
  - Grant County Courthouse / Sheriff's Office
  - Grant County Regional Airport / Industrial Park
  - Grant County Fairground
  - John Day/Canyon City Regional Wastewater Treatment Plant

GRANT COUNTY DIGITAL

PROJECT LOCATION

T.13-14 S, R.31-32 E., W.M.

SCALE IN FEET

2400   0   2400

JOHN DAY

U.S. HWY. 395/26

CITY OF JOHN DAY
URBAN GROWTH
BOUNDARY

CITY LIMITS

CANYON CITY

U.S. HWY. 395

CITY OF CANYON CITY
URBAN GROWTH
BOUNDARY

To Burns

PROJECT LOCATION

VICINITY MAP

anderson perry & associates, inc.
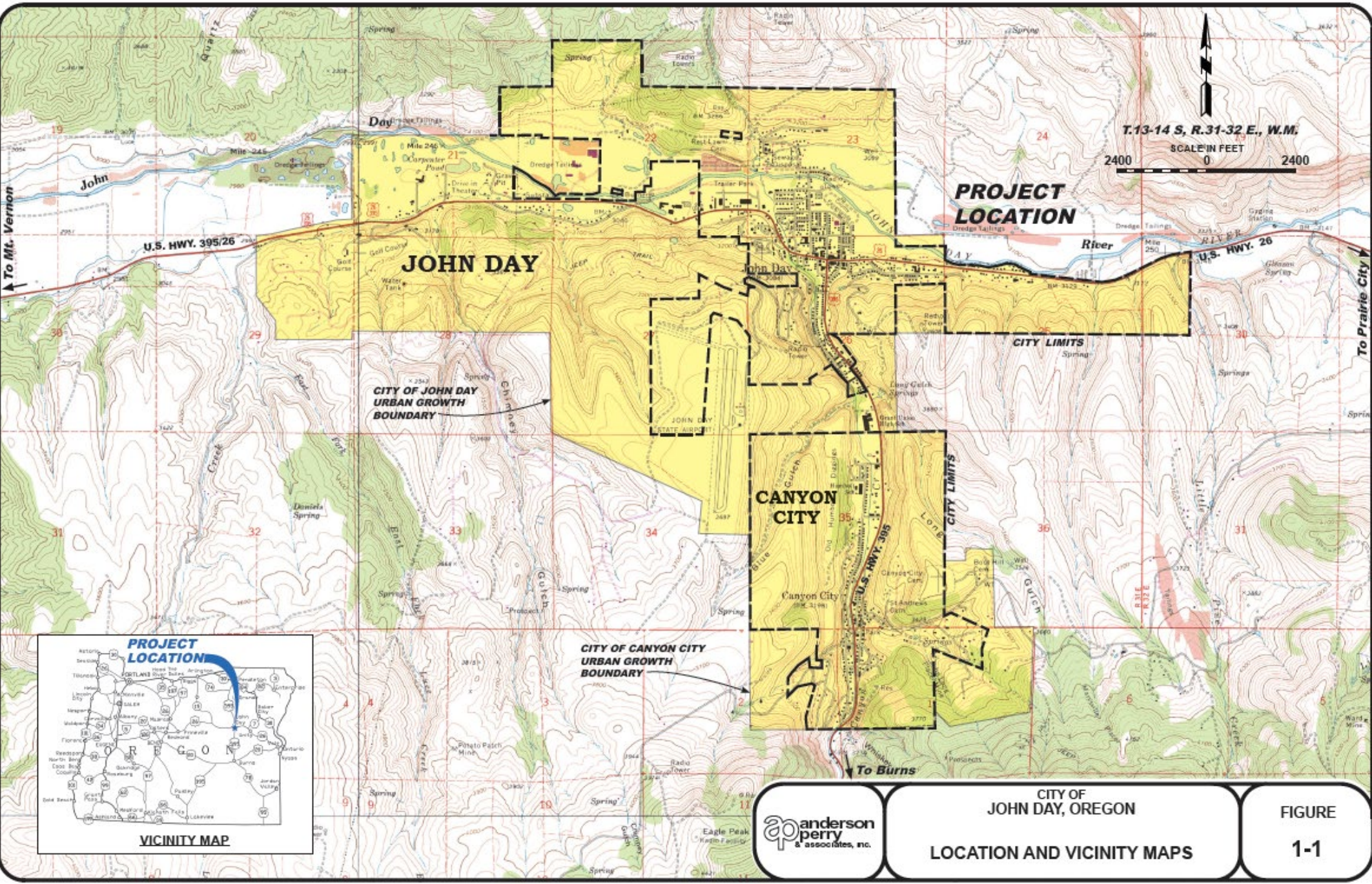
CITY OF
JOHN DAY, OREGON

LOCATION AND VICINITY MAPS

FIGURE

1-1

Regional Project
Summary Diagram

Legend:
- OTC Connections Extension
- Grant County Digital
- Existing Broadband Network
- Project Areas
- John Day City Boundary
- Contours (20' Interval)

Map labels:
- Ironwood Estates
- Innovation Gateway Industrial Site
- Innovation Gateway
- Davis Cr
- John Day River
- Blue Mountain Hospital
- Canyon Cr
- Grant County Regional Airport
- Humboldt Elementary School
- Grant County Court & Sheriff's Office

10-Step Design-Build Process

1. Preliminary route planning
2. Opinion of probable cost
3. Field surveying
4. Permit applications (OTECC, ODOT, Federal Agencies)
5. Construction drawing set
6. Request for proposals (RFP) or Request for quotes (RFQ)
7. Bid evaluation and award
8. Construction
9. Verification and acceptance
10. Operations and maintenance

Current Funding

- $400,000 spent on current assets (including design, funding applications, permits, network construction and facility acquisition)
- $1 million match committed for the USDA ReConnect project
  - $6 million in grant funding awarded by USDA to OTC
  - Builds 80+ miles of fiber from Mt. Vernon to Long Creek, Monument, Spray and from John Day to Seneca
- $200,000 committed for the EDA FY20 CARES Act
  - $2 million in grant funding submitted to EDA, $1.8M in pre-award (Letter of Further Consideration)
  - Builds fiber to remaining CCFs
  - Expands OTC existing network to remaining homes and businesses in John Day
  - Upgrades 9-1-1 Center radios/consoles and recording software
  - Creates CyberMill facility in John Day for public broadband access
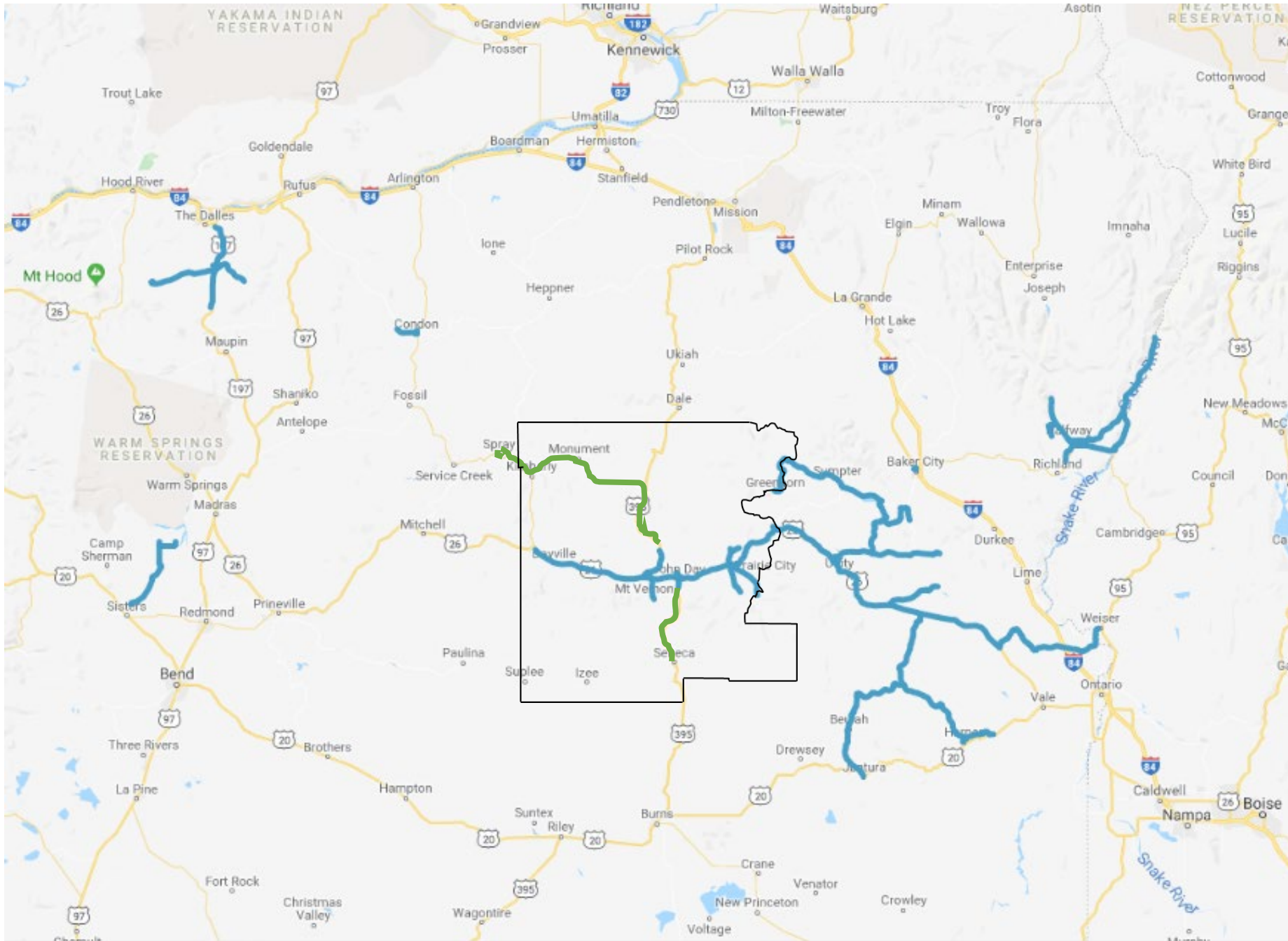- $250,000 remaining for ongoing operations & maintenance / future grant applications

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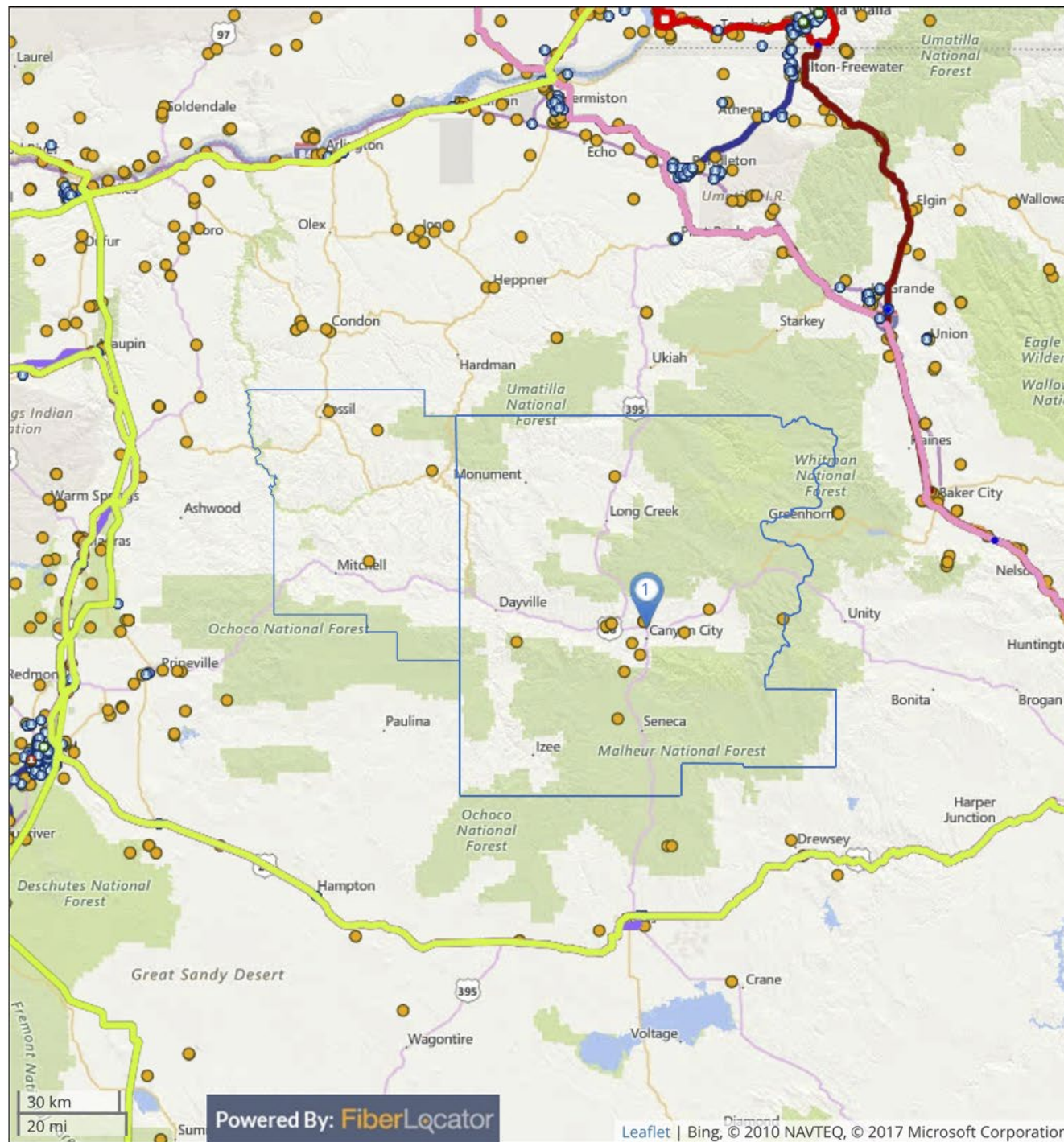
Existing OTC network

Planned OTC network (USDA ReConnect)

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Ongoing Challenges

- **Middle mile and last mile infrastructure:** Underdeveloped in Grant County and eastern Oregon; distance from dark fiber providers adds significantly to the cost for local networks

- **Funding challenges:** Grants are highly competitive, take a long time to award (12+ months of due diligence) and are expensive to prepare; program rules are a landmine

- **Geography matters**: Rocky terrain, lots of elevation gain and drop, crossing national forest and BLM land in three locations, all add complexity and cost to the build

- **Small addressable market:** Public Private Partnerships require a willing private sector partner (or partners), but we have a small pie. The more times you slice it, the less appealing it is to providers. Finding the right balance that incentivizes competition without reducing it is not easy. Negotiating agreements is not easy, but it can be done.

- **Communicating with the public:** People want to know how much its going to cost them (today and tomorrow). They want to know if they will have access to the network (and at what price). They think we're competing with the private sector. It's difficult to understand a technically complex subject like broadband.

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Benefits

- Creates a **secure, reliable, backbone** between critical community facilities
- **Managed services** provided by Grant ESD create **"one network"** for local agency use (secure data backup, facility security, cyber security, webmail and data servers, etc.)
- **Expands existing privately-owned network access** for residents / businesses
- Enables **access to grant funding** for local agencies that couldn't otherwise compete to win
- **Syndicates investment risk** and **reduces operating risk** through public private partnerships
- **Achieves mission** to bring affordable, reliable, high speed internet to all county residents
- **Creates economic opportunity** for wireless network expansion for County Road Dept., public safety agencies and cellular providers through **open access public private partnerships**

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Local Government
BROADBAND WEBINAR
July 19, 2021

Joseph Franell
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OPTIONS for Broadband Deployment

- Status Quo
- Open Access Network
- Publicly Owned and Operated Network
- Public/Private Partnership

OPTION – Status Quo

- Wait for Private Sector to build FTTH - (Adams, Athens, and Weston Model)

- **Pros** – no needed additional action or investment from the County or Municipalities.

- **Cons** – Timing may be slower than desired.

OPTIONS – Open Access

- **Pros** – Attracts competition. Drives lower prices. County and Municipalities wouldn't have to be responsible for the premise equipment, billing, or customer service.

- **Cons**
  - No property tax on the network.
  - County and Municipalities would be responsible for maintaining the network and all electronics.
  - Too much competition in a small market results in poor customer service, a race to the bottom, as no one "owns" the customer.
  - Network structure results in finger pointing.

OPTIONS – Publicly Owned and Operated Network

- **Pros** – Complete control.
- **Cons** –
  - No property tax revenue.
  - County and Municipalities would be responsible for everything

OPTIONS – Public Private Partnership

- County and Municipalities provide middle-mile. Private sector builds, owns, and operates last mile. (Q-Life Model)

- County and Municipalities contribute to reduce cost of last mile build. Private sector builds, owns, and operates last mile. (Sherman County Model)

- County and Municipalities fund build of and owns last mile. Private sector builds and operates last mile. (Wheeler County Model)

CHALLENGES

- Labor Shortage
  - Very difficult to hire new employees
  - Very difficult to find contractors for design, engineering, and construction with available resources.

- Supply Chain is very distressed
  - Shortages of most materials
  - Lead times in some cases are already approaching six to seven months

QUESTIONS?

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