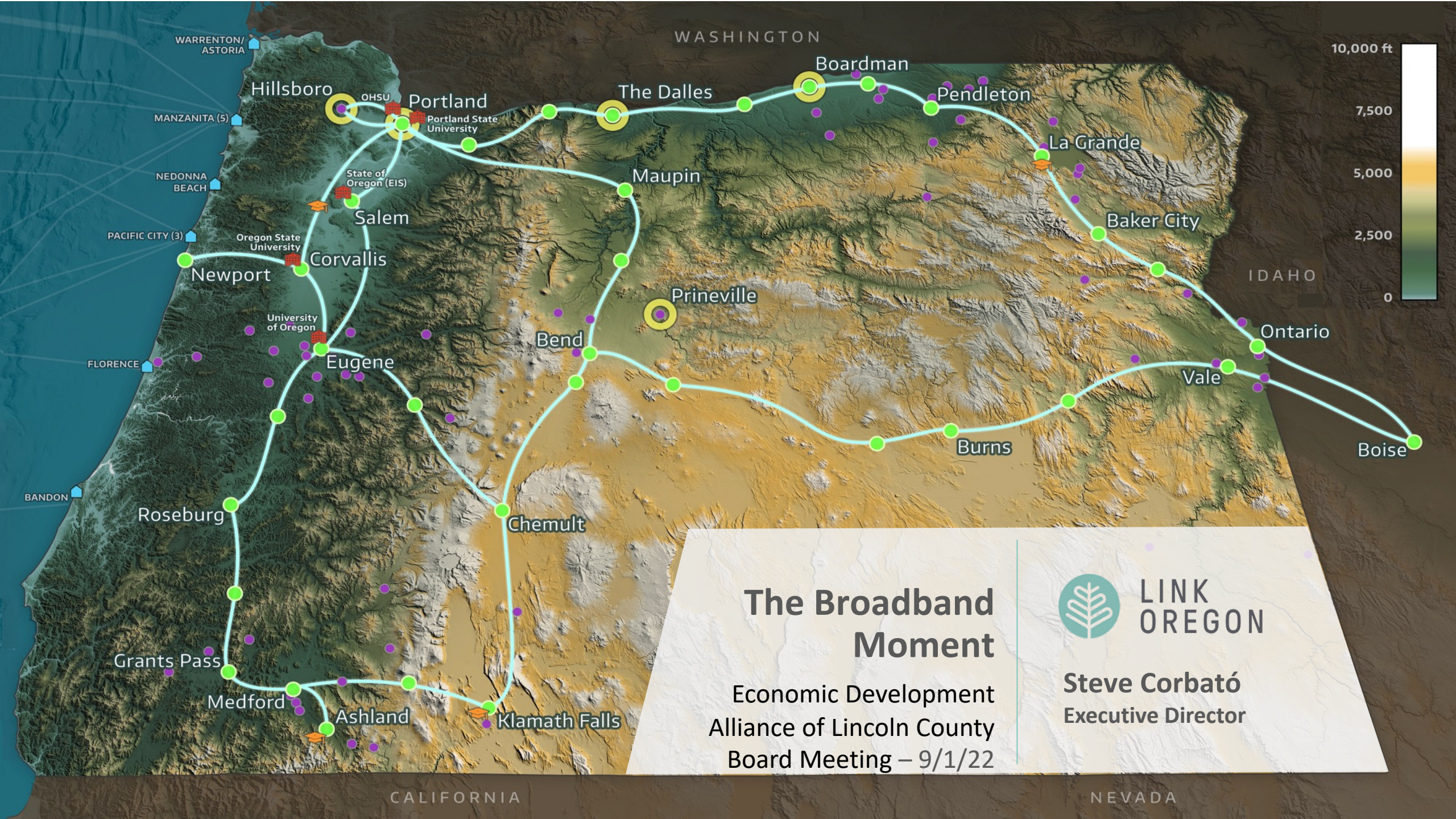


# The Broadband Moment

Economic Development Alliance of Lincoln County Board Meeting – 9/1/22

LINK OREGON

**Steve Corbató**
Executive Director

# Who We Are & What We Do

- Link Oregon is an Oregon non-profit consortium founded in 2019 by:

Oregon State University · Portland State University · OHSU · University of Oregon · Enterprise Information Services

- Member-focused, middle-mile network backbone provider
- Uses dark fiber and other network assets to serve public and non-profit sectors
- Supports K-12&higher ed, healthcare, libraries, Tribes, state gov't, and other non-profits
- Provides Ethernet transport and Internet transit as primary services
- Connects to Internet2, CENIC, commodity Internet, and peering IXes


LINK OREGON
WASHINGTON
IDAHO
CALIFORNIA
NEVADA
PACIFIC OCEAN
10,000 ft
7,500
5,000
2,500
0
WARRENTON/ ASTORIA
MANZANITA (5)
NEDONNA BEACH
PACIFIC CITY (3)
FLORENCE
BANDON
Hillsboro
OHSU
Portland
Portland State University
State of Oregon (EIS)
Salem
Oregon State University
Corvallis
Newport
University of Oregon
Eugene
Roseburg
Grants Pass
Medford
Ashland
Klamath Falls
Chemult
Bend
Prineville
Maupin
The Dalles
Boardman
Pendleton
La Grande
Baker City
Ontario
Vale
Burns
Boise
Fiber Broadband Routes
Current Service Locations
Link Oregon Founding Entities
Technical & Regional Universities
Link Oregon Connected School Districts
Commercial Data Center Concentrations
Transoceanic Cables
Transoceanic Cable Landing Points

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# Board of Directors

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**Stuart Long** - CIO, Cascade Technology Alliance and Northwest Regional ESD

**Abhijit Pandit** - CIO, University of Oregon

**(vacant)** – Governor's Office

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

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

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# Network Partners

## 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 (EIS)
  - HECC, ODE, ODOT
  - Broadband Office
- University of Oregon
  - Network Startup Resource Center (NSRC)
  - Oregon Hazards Lab (OHAZ)

## Public Sector Partners

- Central Lincoln PUD
- 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)
- COIX (Bend)
- Internet2
- IRON (Idaho)
- NDIA
- NWAX
- PNWGP (Washington)
- SHLB
- Tech. Assoc. of Oregon (TAO)
- The Quilt
- UETN (Utah)

## Equipment manufacturers

- Arista
- Fujitsu Network Communications

## Professional Services

- Axiom Recovery
- Black Helterline LLP
- CompuNet, Inc.
- Fiber Channels, Inc.
- 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

**Phase 2 financial support through Business Oregon**

*"Think big and swing for the fences!"*
Rep. Pam Marsh, April 20, 2020

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# Have we seen this movie before?

USDA RD

USDA RD

BPA

# BEAD program will provide ~$42.45B for infrastructure planning and implementation

**Funding pool**
$42.45B

A program to get all Americans online by funding partnerships between states or territories, communities, and stakeholders to build infrastructure where we need it to and increase adoption of high-speed internet.

## PROGRAM HIGHLIGHTS

**Entities eligible to apply for this program include:**

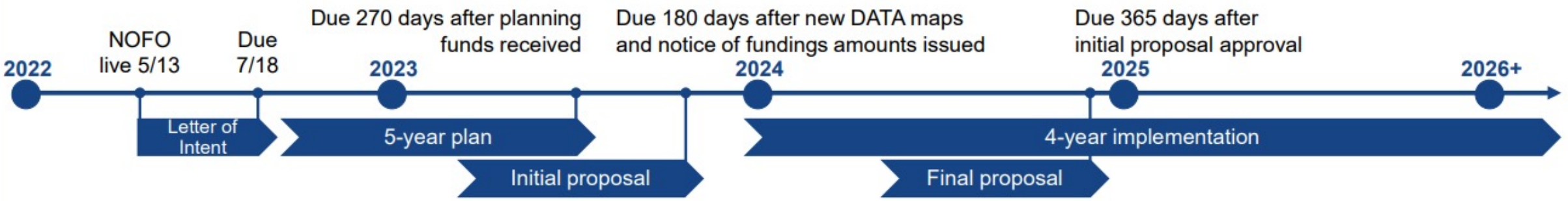
- All 50 States
- The District of Columbia and Puerto Rico
- Other Territories: U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands

**Example eligible uses of funds include:**

- Planning for deployment of Internet
- Deploying or upgrading Internet
- Installing Internet in multi-tenant buildings
- Implementing adoption and digital equity programs
- Workforce and job training

## ESTIMATED TIMELINE

Timeline approximate unless exact date specified



# Digital Equity Act created three programs to promote digital equity and inclusion

**Funding pool**
$2.75B

Three programs that provide funding to promote digital inclusion and advance equity for all. They aim to ensure that all communities can access and use affordable, reliable, high-speed internet to meet their needs and improve their lives.

## PROGRAMS HIGHLIGHTS

**The Digital Equity Act created three programs:**

**State Planning**
- $60M formula funding program to develop digital equity plans

**State Capacity**
- $1.44B formula funding program to implement plans & promote digital inclusion

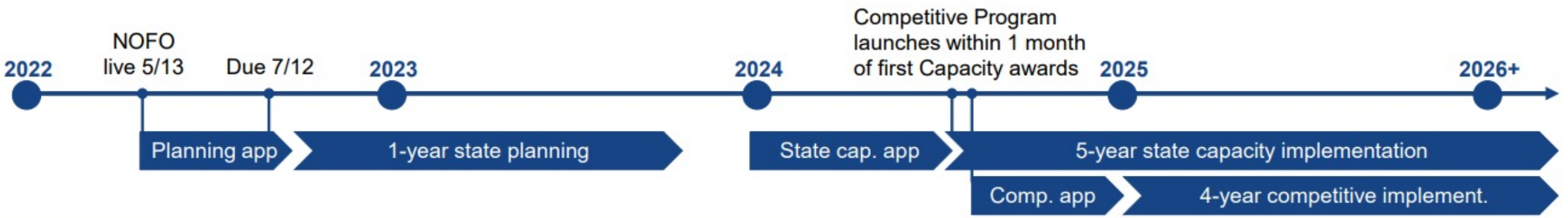
**Competitive**
- $1.25B to implement digital equity and inclusion activities

**Example eligible uses of funds include:**

- Developing digital equity plans; states must develop a plan to be eligible for state capacity grants
- Making awards to other entities to help make digital equity plans
- Improving accessibility and inclusivity of public resources
- Implementing digital equity plans and related activities
- Providing digital literacy and digital skills education
- Facilitating the adoption of high-speed Internet

## ESTIMATED TIMELINE

Timeline approximate unless exact date specified



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# Oregon Broadband Funding Sources

- Near term
  - $500,000 – EDA Grant for Broadband Mapping **SECURED (Federal)**
  - $1.5 million – Oregon Broadband Fund (Universal Service) **SECURED (State)**
- In progress
  - $1 billion (nationally), IIJA Middle Mile, **NOFO OPEN** (due 9/30)
  - $157 million (Oregon), ARPA Capital Projects Fund **(Federal->State distribution)**
- Longer term
  - $100 million + Formula, IIJA Broadband Equity, Access & Deployment (BEAD) **(Federal->State distribution**
  - $782,000 + Formula, IIJA Digital Equity Act (DEA) **(Federal->State distribution)**

**ARPA** – American Rescue Plan Act (March 2021)
**IIJA** – Infrastructure Investment and Jobs Act (November 2021)

*Source: Daniel Holbrook, Oregon Broadband Office*

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# Preparing for the New Broadband Investment Era

## Set ambitious targets statewide

- Establish progressive broadband thresholds
- Ensure availability & adoption
- Integrate sustainability & accountability
- Develop long-term broadband mapping capability
- Require open access for predominantly publicly funded network assets
- Collaborate extensively – Western States Broadband Alliance

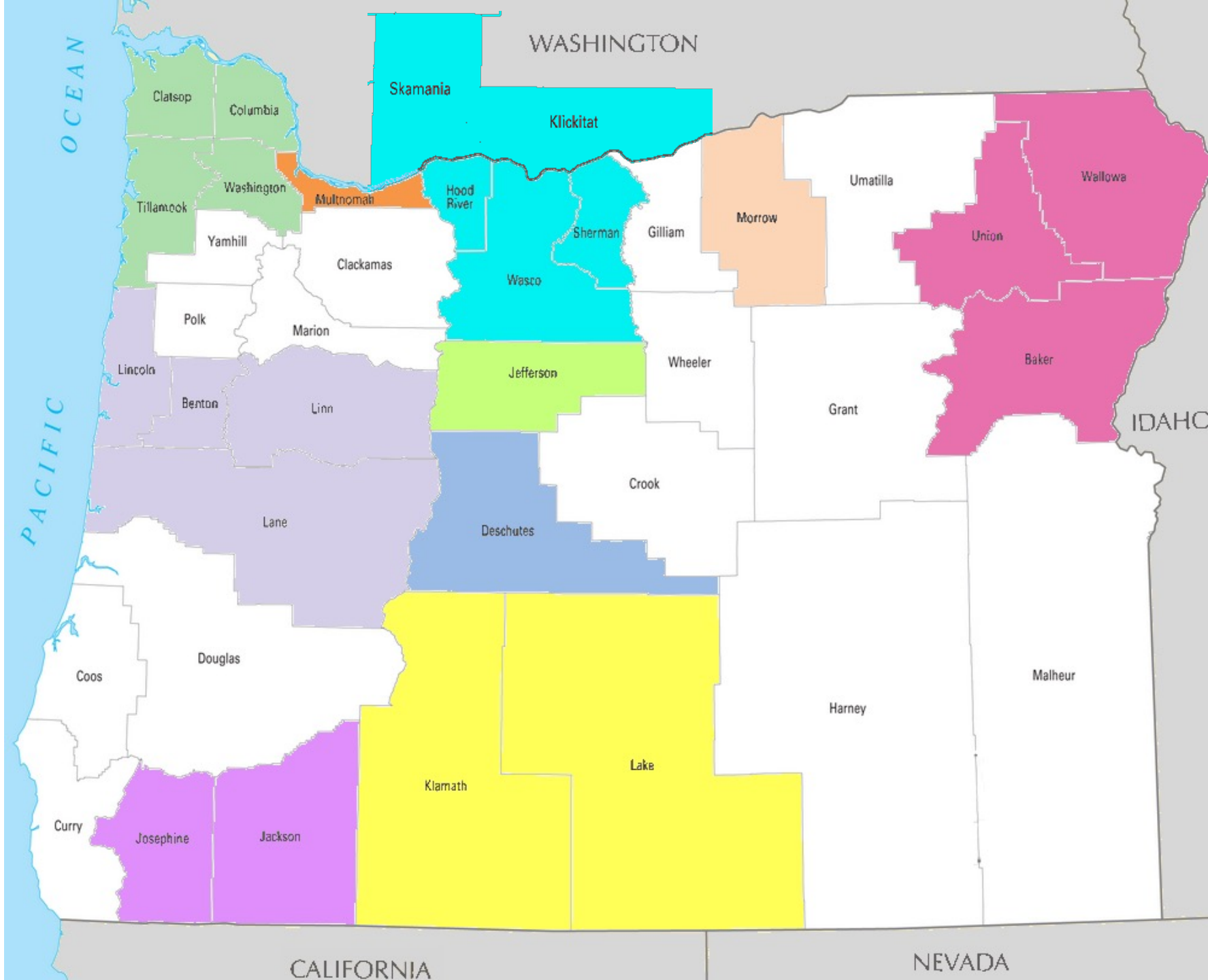
## Develop strategic regional approaches

- Leverage Broadband Action Teams (BATs)
- Utilize rich, accurate mapping data
- “Fiber first” designs as the most future-proof investment, but not “fiber only”
- Develop public private partnerships (P3s)
- “Location, location, location” – Internet exchanges (hardened locations, fiber interconnection)
- Identify middle-mile fiber gaps and resiliency risks

# Oregon Regional Broadband Action Teams (BATs)

*(PRELIMINARY)*

| Broadband Action Team (BAT) | Counties served: |
|---|---|
| **Central Oregon Intergovernmental Council - Deschutes County BAT** | Deschutes |
| **Columbia Pacific Economic Development District BAT** | Clatsop, Columbia, Tillamook, Washington (western part) |
| **Jefferson County BAT** | Jefferson |
| **Mid-Coast BAT** | Benton, Lane, Lincoln, Linn |
| **Mid-Columbia Economic Development District BAT** | OR: Hood River, Sherman, Wasco<br>WA: Klickitat, Skamania |
| **Morrow County BAT** | Morrow |
| **Multnomah County Community Connectivity Regional Partners / Portland Digital Inclusion Network BAT** | Multnomah |
| **Northeast Oregon Economic Development District BAT** | Baker, Union, Wallowa |
| **South Central Oregon Economic Development District BAT** | Klamath, Lake |
| **Southern Oregon Regional Economic Development, Inc. BAT** | Jackson, Josephine |

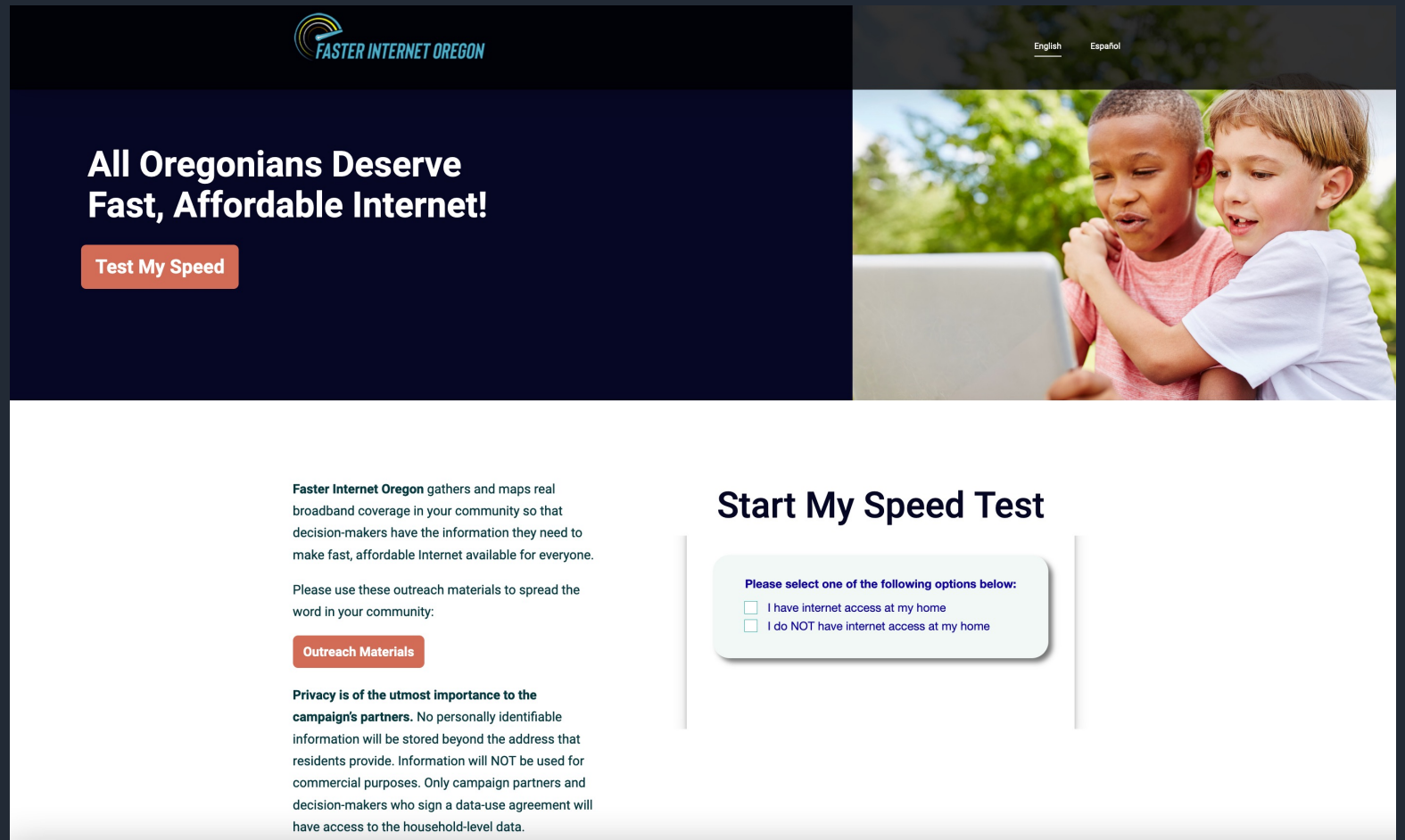


# Faster Internet Oregon (FIO) Background

- The pandemic highlighted persistent disparities in broadband deployment and adoption across the state
  - Now potentially as much as $800M in Federal broadband funding is coming to Oregon (ARPA & IIJA programs)
- Many Oregon communities lack insight at the community planning level into their residents' actual home Internet experiences, especially for un- and underserved households.
- FIO is a statewide coalition of public & non-profit stakeholders
  - 10 Broadband Action Teams (22/36 counties), SpeedUpAmerica, Onward Eugene, Economic Development Districts, & Link Oregon
- FIO is based on successful models using the same GEO Map™ Software deployed in 20 states
  - Including our Western peers of Washington, Idaho, Nevada, & Utah

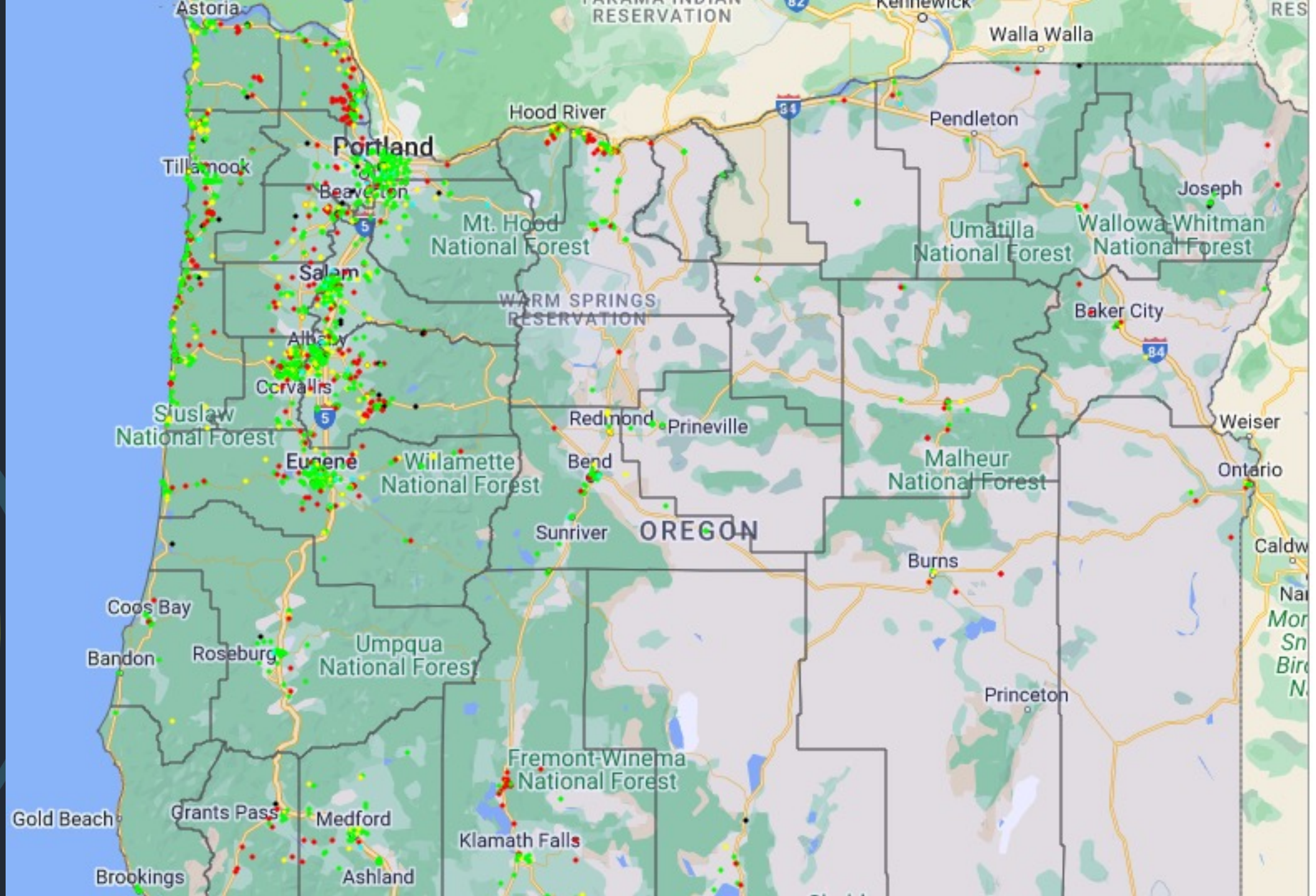
# How It Works - I

- Front end: Oregon residents take a home Internet speed test or report if they do not have Internet access. **Results are mapped**.



Goal:

100,000 Participating Households Statewide



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# Oregon Tribal Broadband Summits

- The OTBS series convenes Oregon Tribal leaders and IT staff, state and federal agency representatives, and community members
  - Discuss practical strategies for identifying successes and roadblocks
  - Develop sustainable broadband infrastructure initiatives led by the Tribes
- Many partners: UO, OSU, Network Startup Resource Center, ATNI-EDC
- Community of practice to establish trusted partnerships and advance digital equity and access for Tribal communities
- Three OTBS summits have taken place thus far:
  - December 2021, March 2022, and April 2022 (OBO Listening Session)
- Oregon Tribal Broadband Bootcamp scheduled for August 8-11 at UO

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# Recommendations for Lincoln County

- Recognize that this is an unprecedented, generational investment in broadband
  - 6-10 year process - not a *shovel ready* moment
- Prepare for multiple waves of funding (proposal teams)
- Leverage your Broadband Action Team and OSU HMSC+NOAA presence
- Participate in Faster Internet Oregon to drive state-based mapping
- Develop a robust plan for addressing broadband gaps in county
  - Fiber first – know the cost to build out to every premise
  - Resilience
  - Integrate other technologies (fixed wireless, LEOS)
  - Adopt plan to specific funding opportunities
- Consider public-private partnership (P3s) models
- Sustainability
- Accountability
- Don’t settle at the outset!

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# THANK YOU

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503-998-3957

# Oregon Broadband Middle Mile Infrastructure Working Group – Summer 2021

- Convened by Rep. Pam Marsh with Sen. Lee Beyer and Rep. Mark Owens – bipartisan, bicameral
- Group of middle-mile experts including provider and low earth orbit satellite (LEOS) sectors, Kurtis Danka of EIS, Daniel Holbrook of OBO, and David Barber of OSU
- Co-chaired by Stuart Taubman of Zayo and Steve Corbató of Link Oregon

## TWELVE KEY RECOMMENDATIONS

- Ensure a robust, capable broadband office
- Future-proof residential broadband standard
- Accelerate broadband mapping
- Create a central repository of middle-mile maps
- Support a richer array of local Internet exchanges
- Set effective strategies for making public broadband investments
- Fund needed middle-mile extensions
- Future growth and equitable access for publicly funded network assets
- State & local governments are important stakeholders
- Take a 'whole of government' approach
- Consider the full spectrum of technologies, including LEOS
- Broadband adoption is not just a technical issue

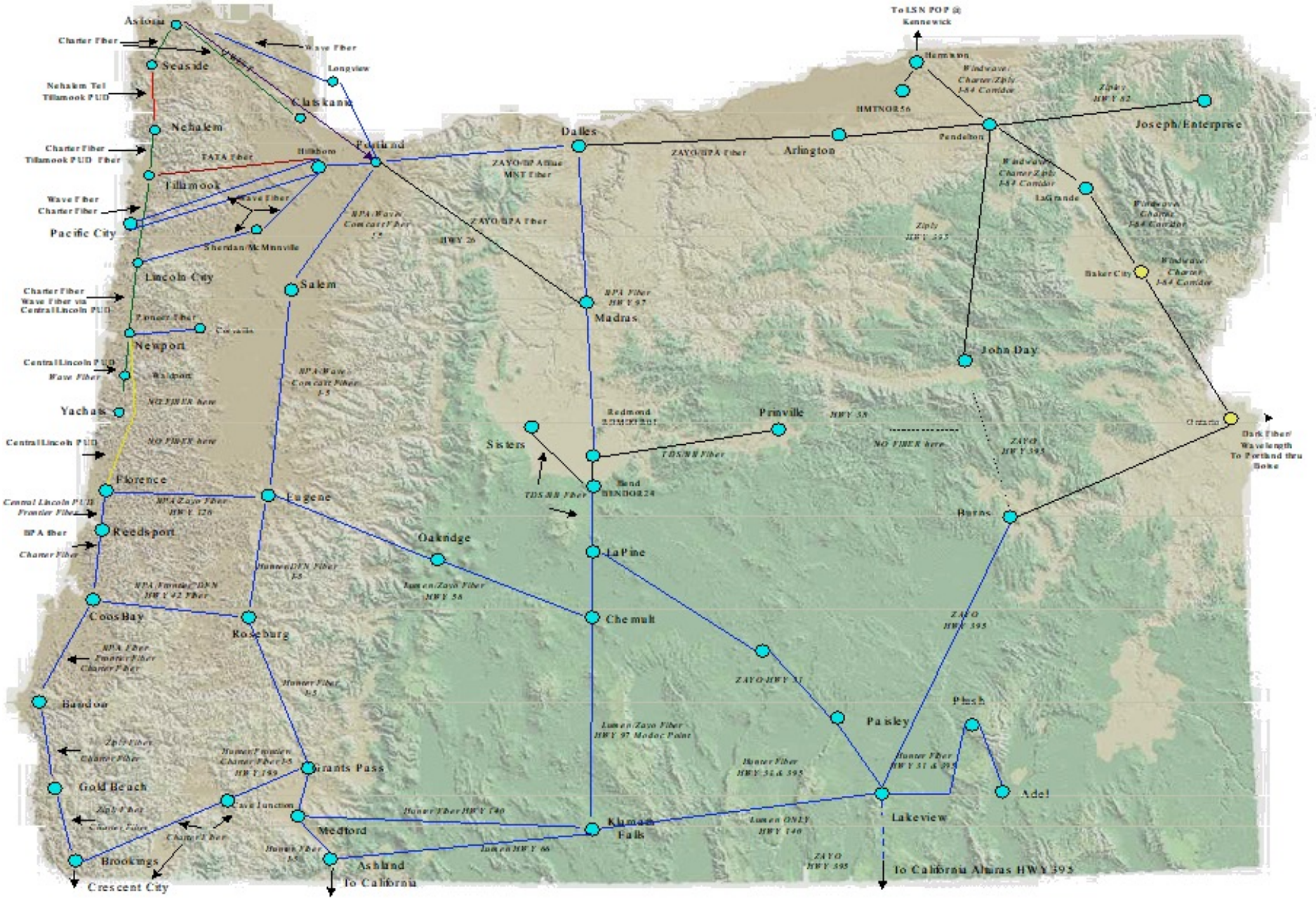
# All Middle-Mile Fiber is Not the Same!

When evaluating a community's middle-mile fiber resiliency or assessing the need for additional public investment to construct a new route, consider these **interdependent factors** that can differentiate existing fiber builds:

- **Physical characteristics**: fiber type, age, and estimated capacity (number of fiber pairs installed, maximum bandwidth per fiber pair)
- **Design considerations**: placement (**buried vs. aerial**), path redundancy, network purpose (i.e., express vs. local – a highway analog is I-5 vs. 99W), spacing and location of access points
- **Resiliency factors**: environmental risks (wildfire, geotechnical, inundation due to tsunami or flood), human risks (accident, vandalism)
- **Business considerations**: availability of unused fiber pairs and equipment colocation space under commercially reasonable terms

Engineering and general public benefit considerations can frequently provide justification for new middle-mile fiber builds along previously built corridors such as when there is outdated fiber, capacity exhaustion, aerial installations in fire-prone areas, or other forms of non-resilient connectivity.

# Preliminary Oregon Middle-Mile Network Map




July 2021