

Broadband

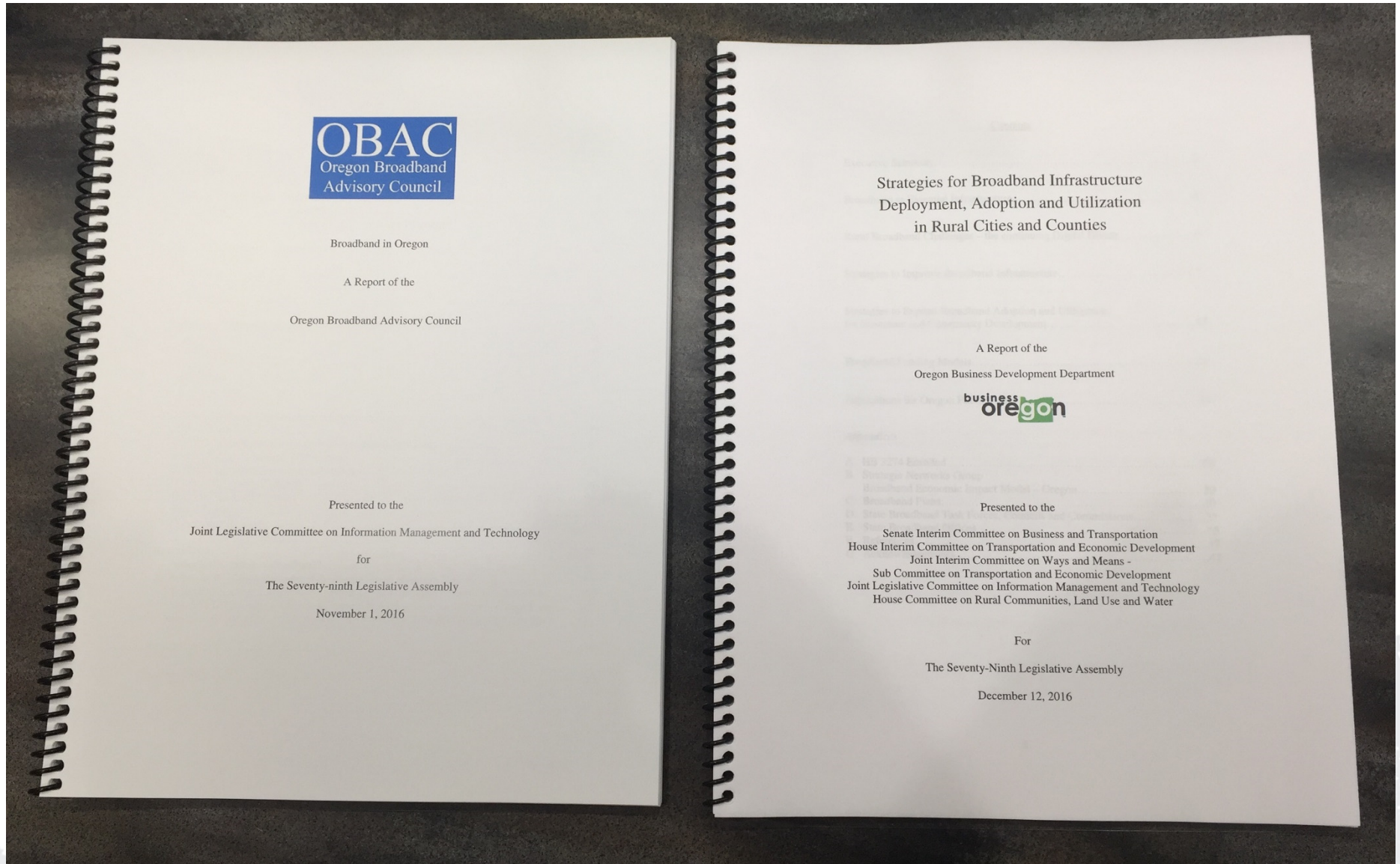
Christopher Tamarin

Oregon Business Development Department

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Recent Oregon Reports



A Challenging Work in Progress

- **Broadband infrastructure will always be a work in progress as technologies and applications change over time.**
- **What constitutes broadband, e.g., transmission speeds of thousands of bits per second, millions of bits per second, or billions of bits per second will be a moving target.**
- **The Internet has emerged as the global platform for communication, business, government, education, information storage and distribution, and entertainment.**
- **Competitive high-speed access to the Internet and telecommunications networks is essential for Oregon's institutions including schools, businesses and individual citizens.**

Broadband as Meta-Infrastructure

Broadband telecommunications may be viewed as a meta-infrastructure, an infrastructure that adds to and enhances other infrastructure.

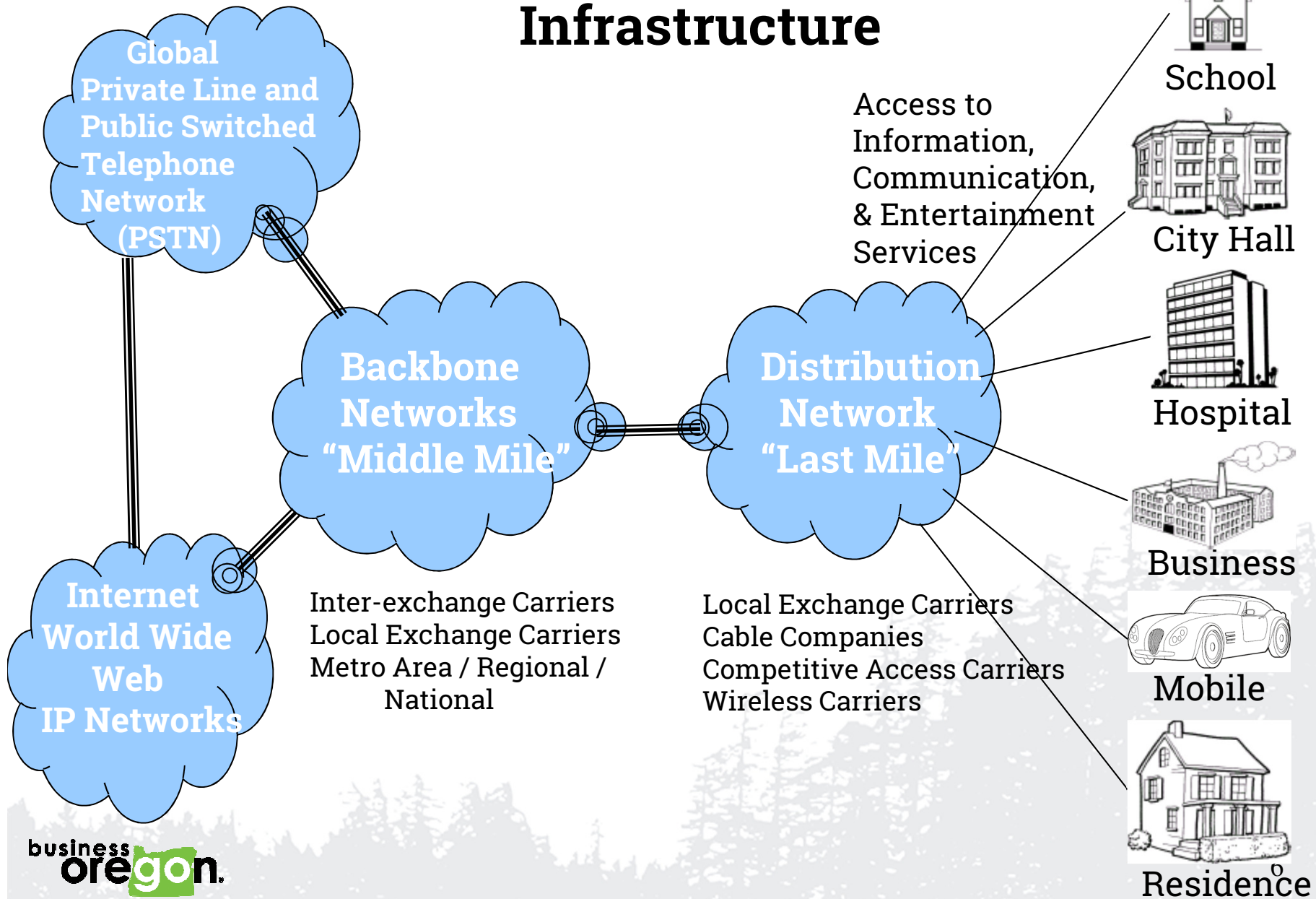
- Power grids**
- Transportation systems**
- Water and wastewater systems**
- The emerging Internet of Things**

Broadband as Essential Service

“Like electricity a century ago, broadband is a foundation for economic growth, job creation, global competitiveness and a better way of life. It is enabling entire new industries and unlocking vast new possibilities for existing ones. It is changing how we educate children, deliver healthcare, manage energy, ensure public safety, engage government, and access, organize and disseminate knowledge.”

-The National Broadband Plan

Telecommunications Network Infrastructure



Key Broadband Technologies

- **DSL** (twisted pair copper)
- **Cable-Modem** (coaxial cable)
- **Mobile Wireless** (3G / 4G / 5G)
- **Fixed Wireless**
- **Satellite**
- **Fiber-to-the-Premises**

Broadband Service Providers

- **Franchised telephone companies**
- **Franchised cable companies**
- **Mobile wireless cellular companies**
- **Satellite companies**
- **Competitive Access Providers**
- **Municipalities/public entities/ public-private partnerships / Co-ops**

Oregon Public Policy

- **“...it is the goal of this state to promote access to broadband services for all Oregonians in order to improve the economy in Oregon, improve the quality of life in Oregon communities and reduce the economic gap between Oregon communities that have access to broadband digital applications and services and those that do not...” [ORS 759.016(1)]**
- **“It is the policy of the State of Oregon to promote, facilitate and encourage activities, projects and businesses that improve Oregon's Internet Protocol network infrastructure, performance and connectivity to the Internet backbone network and World Wide Web for the benefit of Oregon's commercial, educational, governmental and individual users.” (SJR 19 (2007))**

Oregon Public Policy

- **Public Safety:** “It is the policy of the State of Oregon to encourage and support the rapid deployment of broadband telecommunications services in areas of the state where such services do not exist, to support redundancy of critical telecommunications assets in order to ensure homeland security protections in the state and to ensure that a secure conduit is available for emergency communications and public safety networks in all Oregon communities.”
[ORS 401.706]
- It is the policy of the State of Oregon to promote and facilitate activities by Oregon's health care and education communities and their telecommunications providers to develop a network model that provides standards for interoperability, establishes a peering point for all health care and education telecommunications in Oregon and establishes peering agreements among health care and education networks that contain payment structures.” (SJR 20 (2007))

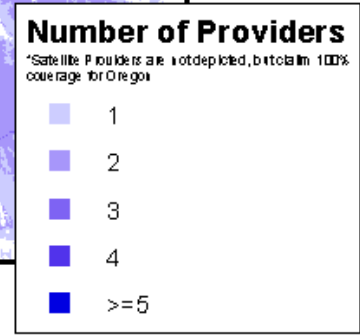
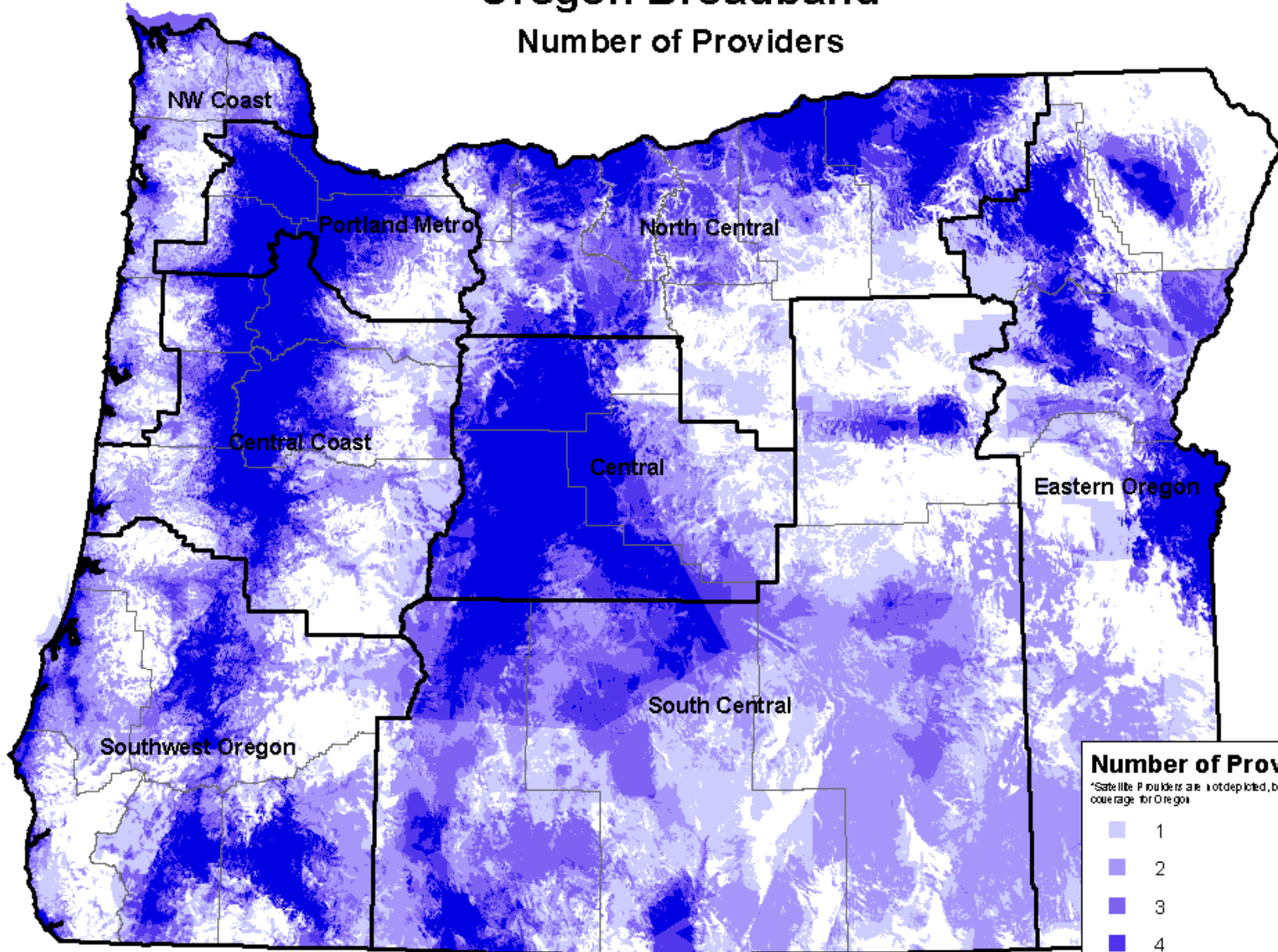
Oregon Broadband Advisory Council

- **Encourage coordination and collaboration between organizations and economic sectors**
- **Leverage the development and utilization of broadband for education, workforce development and telehealth**
- **Promote broadband utilization by citizens and communities.**

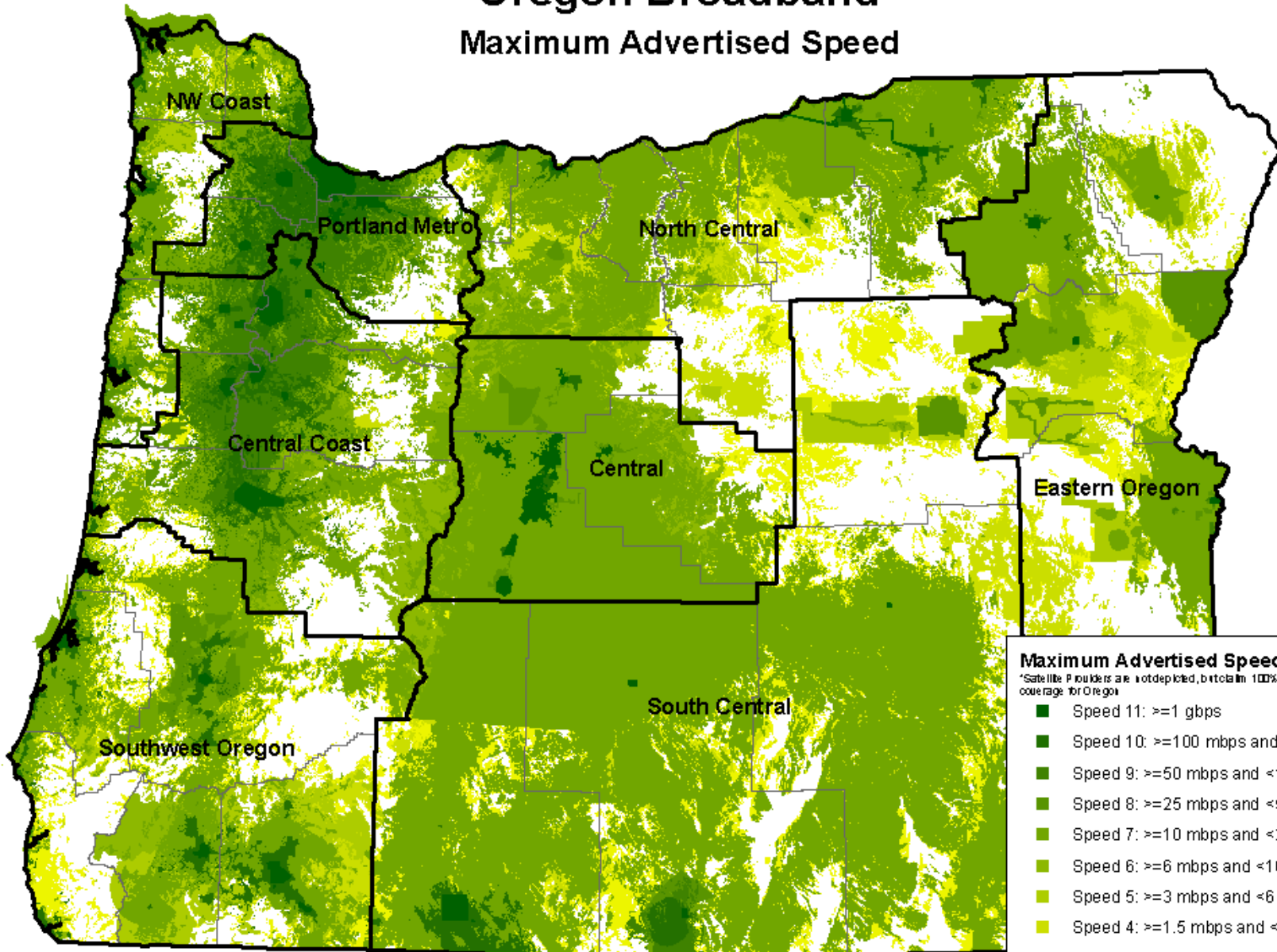
www.broadband-oregon.org

Oregon Broadband

Number of Providers



Oregon Broadband Maximum Advertised Speed



Maximum Advertised Speed

*Satellite Providers are not deployed, but claim 100% coverage for Oregon

- Speed 11: ≥ 1 gbps
- Speed 10: ≥ 100 mbps and < 1 gbps
- Speed 9: ≥ 50 mbps and < 100 mbps
- Speed 8: ≥ 25 mbps and < 50 mbps
- Speed 7: ≥ 10 mbps and < 25 mbps
- Speed 6: ≥ 6 mbps and < 10 mbps
- Speed 5: ≥ 3 mbps and < 6 mbps
- Speed 4: ≥ 1.5 mbps and < 3 mbps
- Speed 3: ≥ 768 kbps and < 1.5 mbps
- Speed 2: > 200 kbps and < 768 Kbps

Technology and Industry Structure

Rapid advances in technology, network performance, capacity and capabilities

Market migration from voice to text and data

Market migration from landline phone service to wireless and broadband

Network migration to Internet Protocol (IP)

Growth of end-user device mobility – wireless to the device

Emergence of Cloud Computing and Everything as a Service

Emergence of the Internet of Things

Emergence of broadband as the end user's primary delivery network connection for all applications

Industry consolidation

Continuing Digital Divide

Broadband Status	Total	NW Coast	Portland	Central Coast	SW Oregon	North Central	Central Oregon	South Central	Eastern
Broadband at home	82%	78%	85%	83%	79%	76%	83%	69%	67%
Not-at-home Internet User	4%	6%	4%	2%	4%	3%	5%	6%	4%
Dial-up	1%	3%	1%	1%	2%	1%	2%	1%	4%
Internet Non-user	13%	14%	10%	13%	15%	20%	10%	24%	25%

Oregon Broadband Adoption by Region

Broadband Strategies / Solutions

- **Private sector solutions**
- **Public sector solutions**
- **Non-profit organization solutions**
- **Cooperative model solutions**
- **Public-private partnership solutions**
- **Supportive public policy**
- **Local Champions**

Thank You

Christopher Tamarin
Telecommunications Strategist
Oregon Business Development Department
121 SW Salmon Street, Suite 205
Portland, Oregon 97204
503 508-0178
christopher.tamarin@oregon.gov