Project Goals and Objectives

Connect underserved and disadvantaged communities with affordable, fast, reliable broadband internet service

1. Determine community and regional needs for internet access
2. Identify prospective priority projects
3. Assess feasibility of solutions
   - Funding sources
   - Public-private investment opportunities
   - Relative to current and future standards

Current Infrastructure and Services

- Typical cable-telco duopoly
  - CenturyLink (Lumen) and TDS Telecom
- Multiple fixed wireless providers
  - Blue Mountain Networks (Sureline Broadband)
  - PrineTIME Internet Solutions
  - T-Mobile
  - Webformix
  - Yellowknife
- Satellite

- Enterprise network services
  - BendTel
  - FatBeam
  - Link Oregon
  - LS Networks
  - Zayo
  - Ziply
- Extensive long-haul fiber routes running north-south
  - Primarily serving "hyperscaler" data centers in the Columbia River area

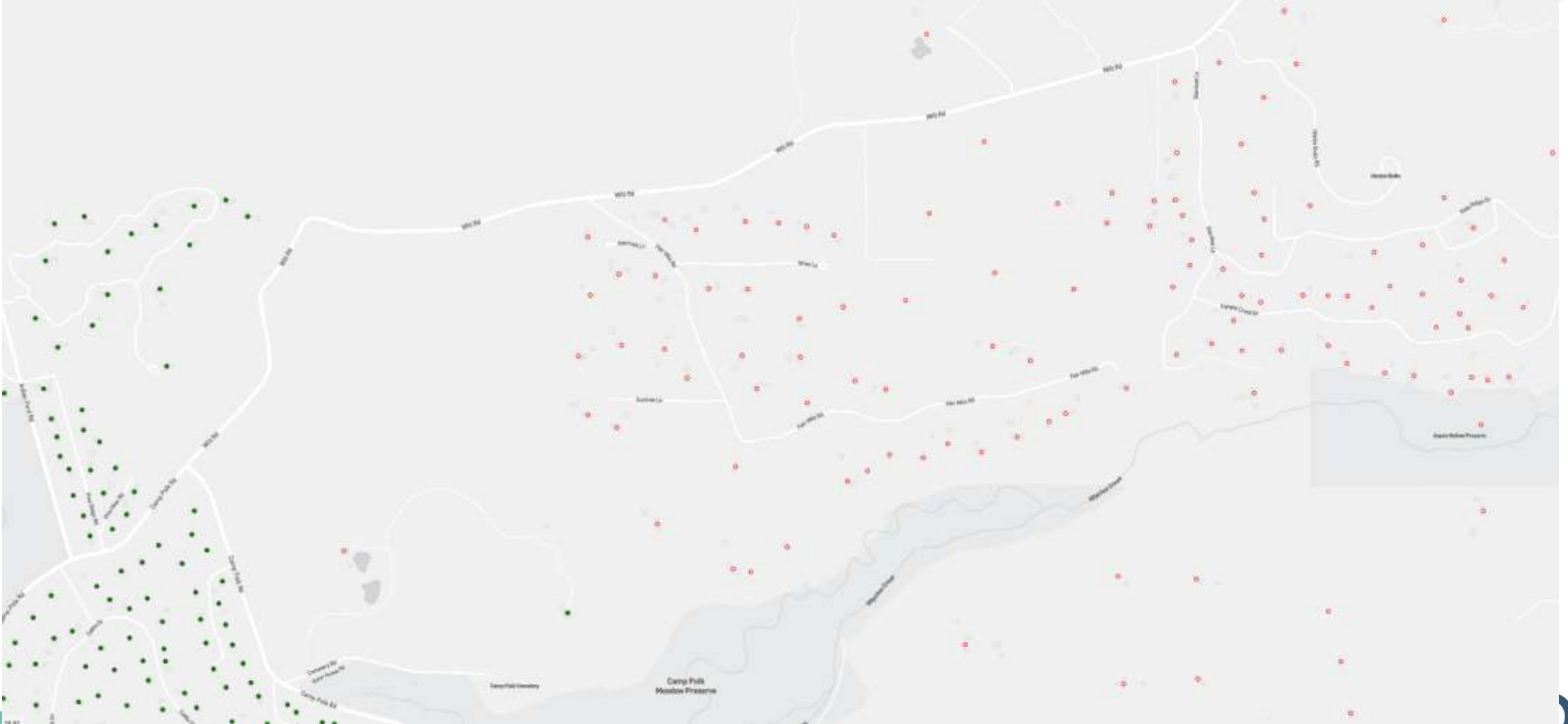## Availability of 1,000/100 Mbps
Source: FCC, data from providers

Percentage of Units Served

- 0%
- 0 - 20%
- 20 - 40%
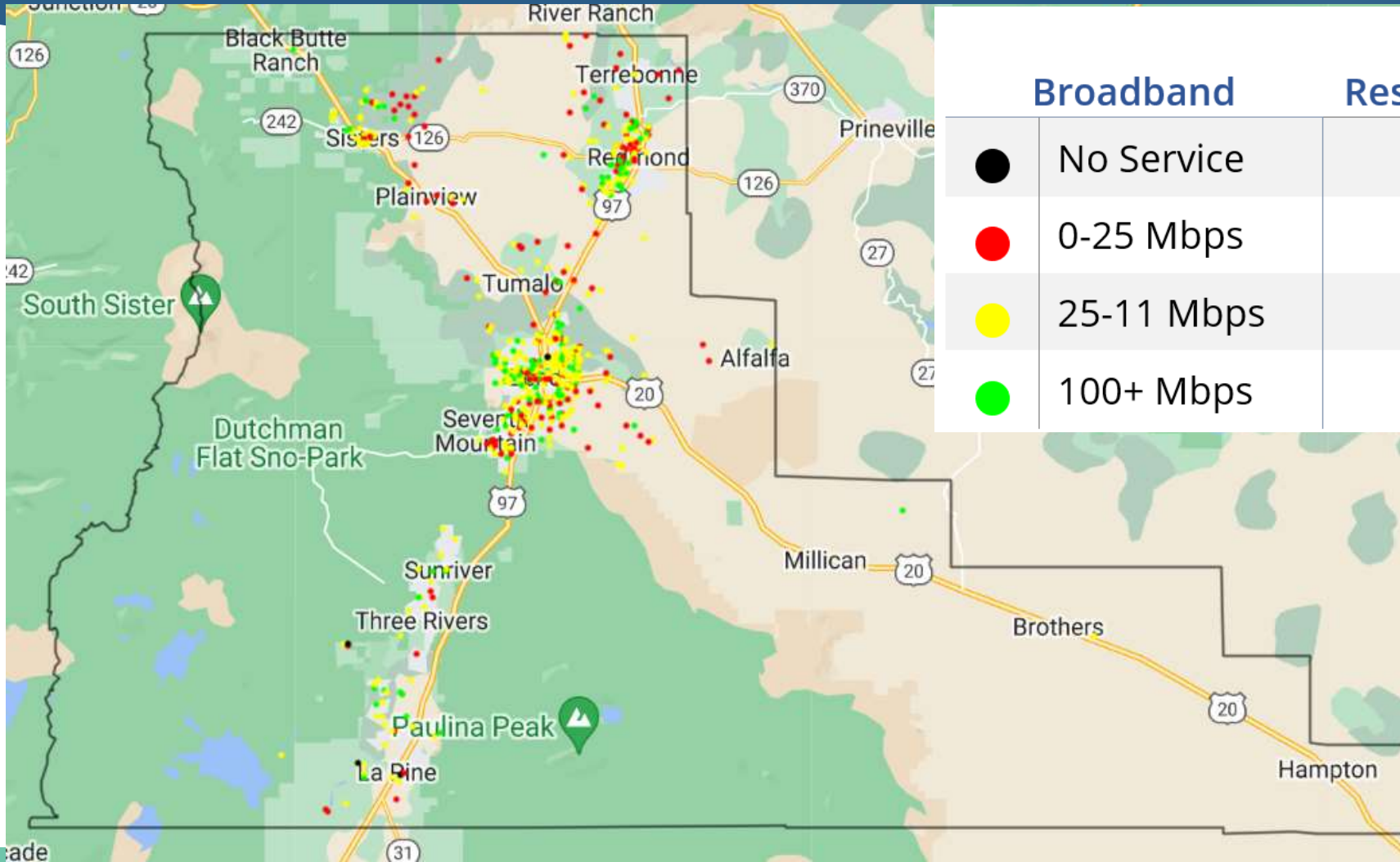- 40 - 60%
- 60 - 80%
- 80 - 100%
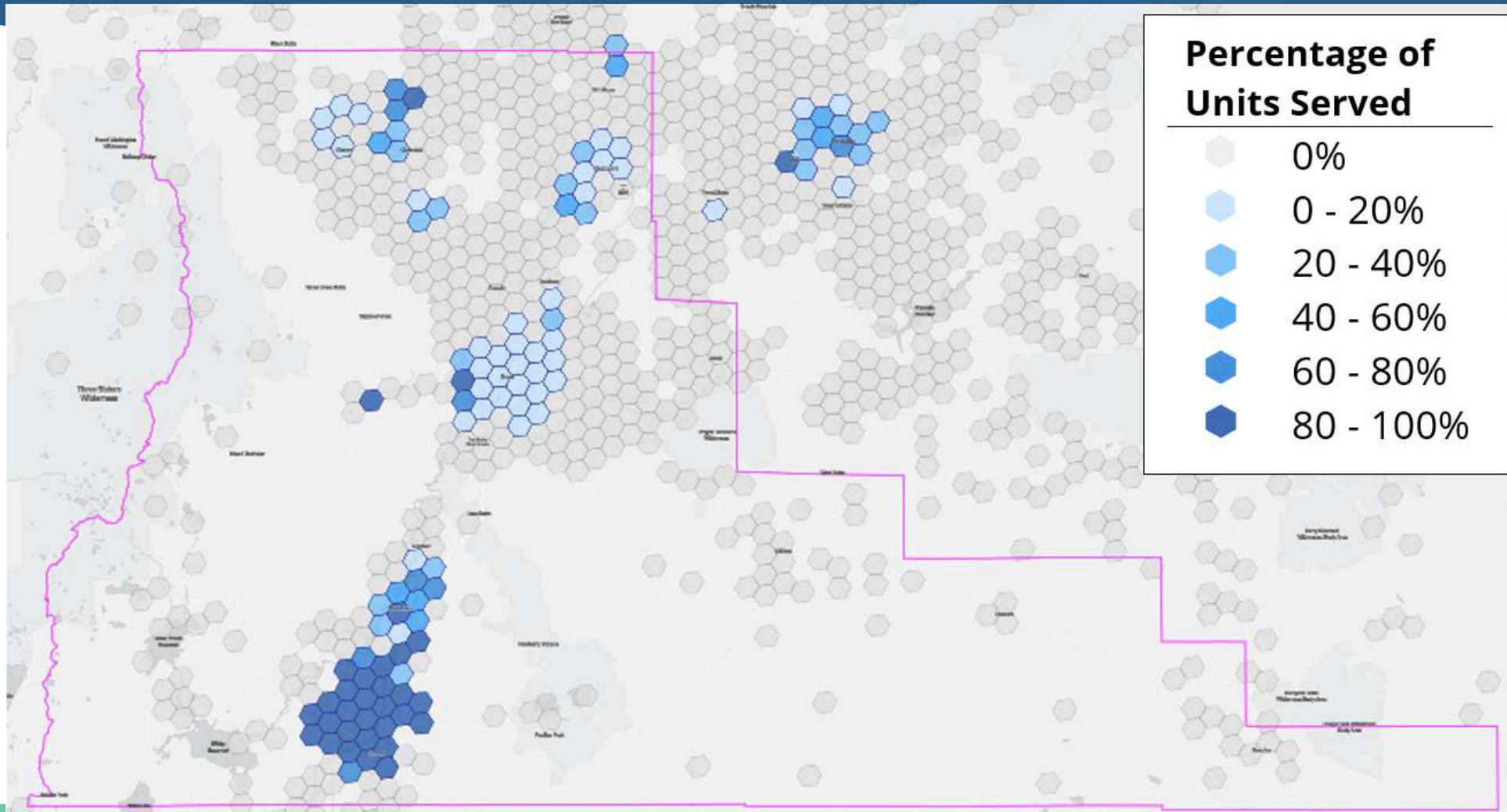
Detailed View of 100/20 Mbps
Wilt Rd north of Sisters according to FCC data from providers

Faster Internet Oregon speed test results

Broadband		Responses	Percent of Total
●	No Service	5	0.7%
●	0-25 Mbps	149	21.6%
●	25-11 Mbps	278	40.3%
●	100+ Mbps	257	37.3%

Stakeholder Input

- ▶ Economic Development
- ▶ Education
- ▶ Government Administration
- ▶ Healthcare & Social Services
- ▶ Land Development & Use
- ▶ Public Safety

- ▶ Support Industries & Small Business
- ▶ Transportation & Utilities
- ▶ Also:
  - Citizens and Community Groups session with one attendee
  - Workshops on prospective priority projects

Gaps and Priority Projects

A. Fiber-to-the-Premise
- Crooked River Ranch-Terrebonne
- North of Sisters
- South of La Pine

B. Local routing of local network traffic

C. Middle-mile fiber route from Bend to Salem

D. Wireless broadband solutions for remote, rural areas

Considerations

▶ Technical requirements and costs (barrier/negative)

▶ Linked projects (driver/positive)

- Complementary projects

- Regional opportunities

▶ Options for governance, ownership, and partnerships (driver/positive)

▶ Impacts on equitable access and affordability (driver/positive)

▶ Financial, legal, and regulatory complexity (barrier/negative)

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A. Fiber-to-the-Premise (FTTP)

▶ **Areas lacking wired 100/20 Mbps**

- - - City
- - - County
- • Premises
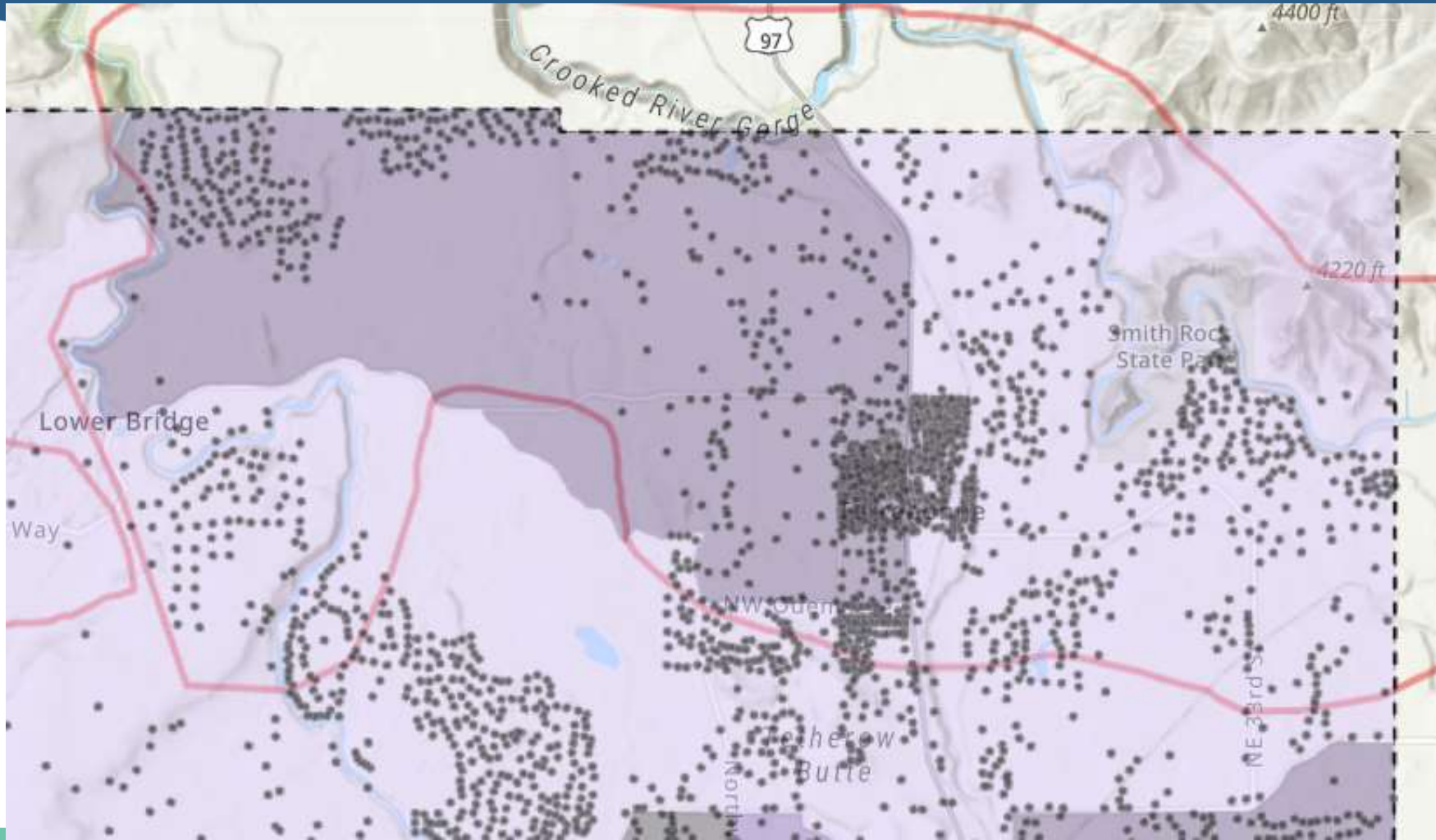- ☐ Under-served Area (approximate)

▶ **Relatively low income**

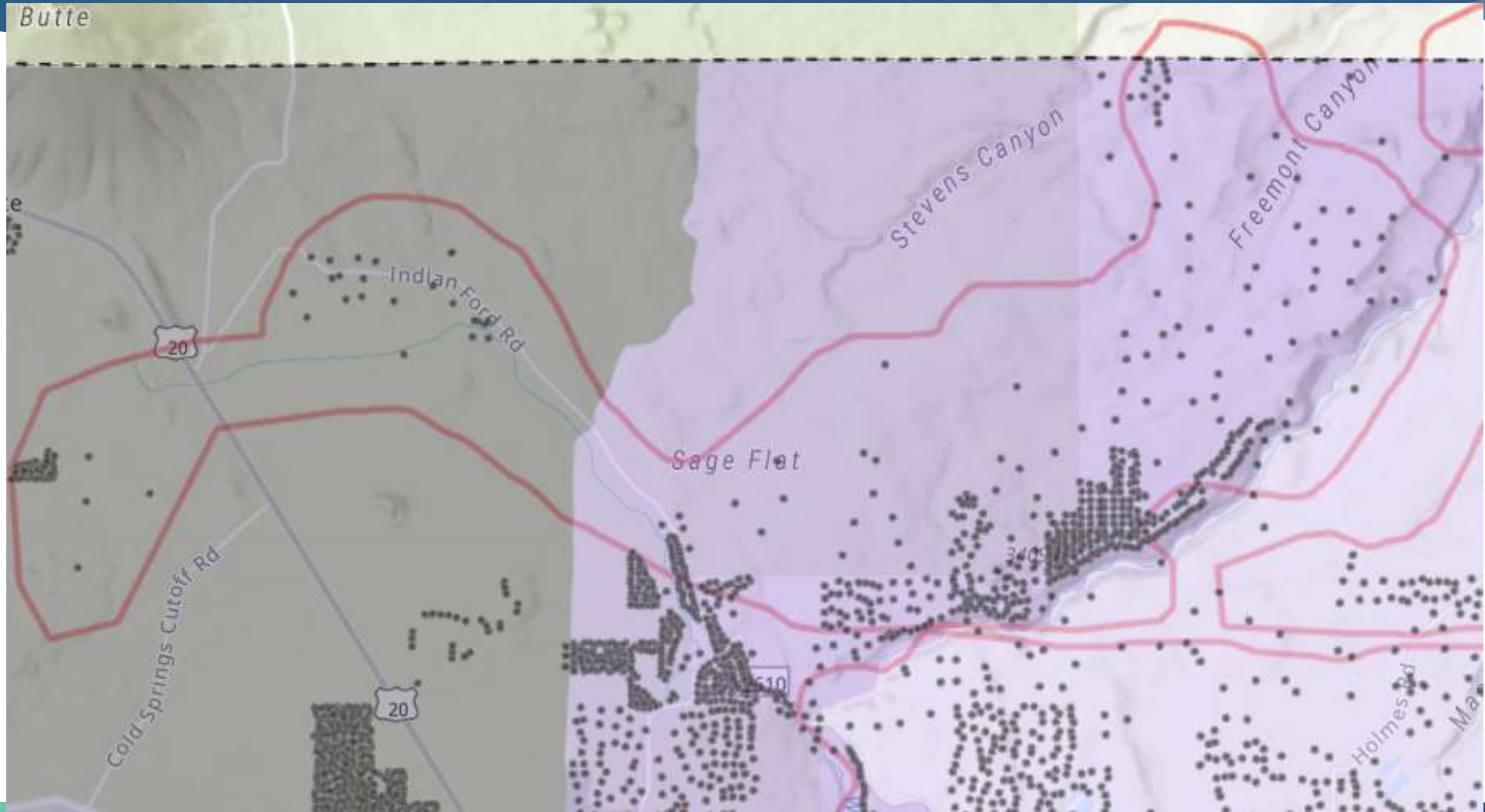**Median Household Income**
(Census Block Percentage of State)

- Over 130%
- Over 110% to 130%
- Over 90% to 110%
- Over 70% to 90%
- 70% or less

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Around Terrebonne

A. Fiber-to-the-Premises (FTTP)

Consideration	Amount/Level
Technical Requirements and Costs	High
Linked projects	High
Governance, Ownership, and Partnerships	Low
Equitable access and affordability	High
Financial, Legal, and Regulatory	Medium

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B. Local Routing of Local Traffic

- Decrease costs, improve performance, and increase resilience

- Interconnection of providers and major enterprise/institutional networks via COIX

  - Regional internet exchanges can be assets for regional competitiveness

- Currently connected:

  - BendTel data center, Cascade Divide datacenter, and Lumen's Bend central office interconnected via dark fiber donated by BendTel

  - All local/regional network service providers

- Currently not connected: The Vault data center and TDS Telecom; Lumen routes all CenturyLink traffic through Portland

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B. Local Routing of Local Traffic

Consideration	Amount/Level
Technical Requirements and Costs	Low
Linked projects	Medium
Governance, Ownership, and Partnerships	Medium
Equitable access and affordability	Medium
Financial, Legal, and Regulatory	Low

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C. Redundant Middle-mile Fiber Route

▶ Between Bend and Salem via Santiam River Canyon

▶ Increase resilience

▶ Meet long-term demand for additional backhaul capacity

▶ Many partners

▶ Costly but numerous funding sources

▶ Strong regional linkage

C. Redundant Middle-mile Fiber Route

Consideration	Amount/Level
Technical Requirements and Costs	Very High
Linked projects	High
Governance, Ownership, and Partnerships	High
Equitable access and affordability	Medium
Financial, Legal, and Regulatory	High

D. Wireless Broadband for Rural Areas

▶ Relatively inexpensive means to reach remote locations

▶ Relatively low-speed

▶ Requires backhaul—ideally via fiber—and towers

▶ Numerous prospective partners and providers

▶ Could be a key enabling technology for agriculture

D. Wireless Broadband for Rural Areas

Consideration	Amount/Level
Technical Requirements and Costs	Medium
Linked projects	Medium
Governance, Ownership, and Partnerships	Medium
Equitable access and affordability	Medium
Financial, Legal, and Regulatory	Low

Recommendations

- Approach network development as economic development

- Designate a lead agency

- Establish a geographic information system

- Adopt smart policies for broadband development

- Include broadband in capital projects

- Review public spending on connectivity and aggregate demand

- Assess demand with data

- Identify and track network infrastructure

- Analyze locations for radio infrastructure

- Analyze routes for priority areas

- Track industry trends

- Utilize public assets

Action Plan

1. Organization a task force for each priority project
2. Identify and fully engage stakeholders for priority areas
3. Define priority project areas, outcomes, tasks, and work products
4. Seek public funding
5. Maximize private investment

Questions?

THANK YOU FOR YOUR TIME!

Deschutes County Broadband Needs Assessment