



Redwood  
Coast  
Region

# Redwood Coast Connect

Demand Opportunities for Broadband  
Deployment in Del Norte, Humboldt,  
Mendocino and Trinity Counties

**Peer Review Presentation**

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# Methods of Investigation

- Surveys of both residents, businesses and public agencies
- Individual interviews with public agencies, business leaders
- Conversations with broadband providers
- Community meetings
- Convenings of community leaders, broadband providers and elected officials
- Focus groups of industry leaders

# Key Findings

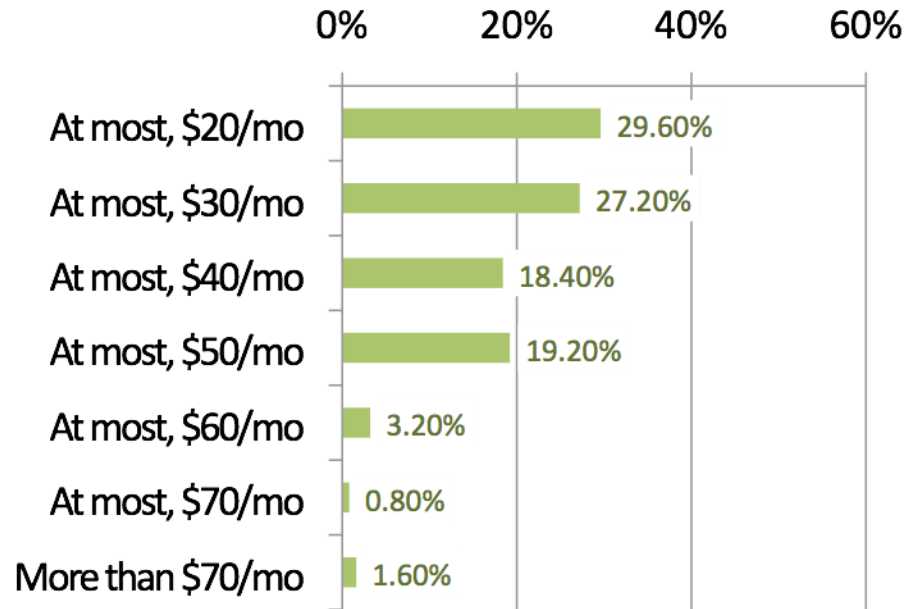
- Our North Coast communities do not fit the investment model of publicly traded companies
- Lack of middle mile is single greatest barrier to last mile deployment
- Reliability is more important as speed for business
- Private sector investment cannot be relied upon to make necessary investments to deploy broadband across the region w/o prompting

# Other Findings

- Large population centers have reasonably high quality broadband access at least for the limited uses we currently have.
- 60% of communities unserved/underserved
  - Business needs often indistinguishable from residential needs (small businesses)
  - Telecom companies, cable companies, mobile devices and wireless ISPs' may well be anchor tenants
- Public sector is generally well-connected
- Subsidization of middle mile will be required

# Residential: Amount Willing to Pay for Broadband

- Most respondents would pay up to \$30 per month for broadband.

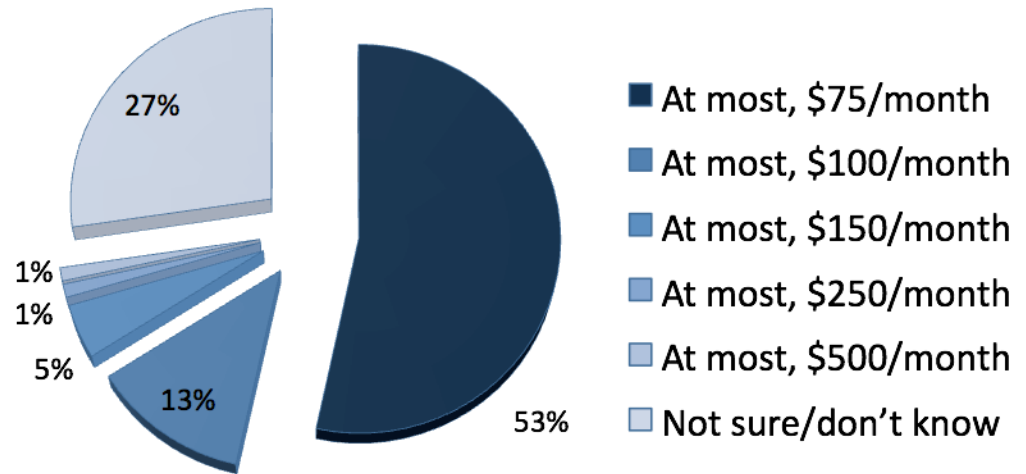


*95% confidence level, margin of error +/- 4%*

*Sample size = 556*

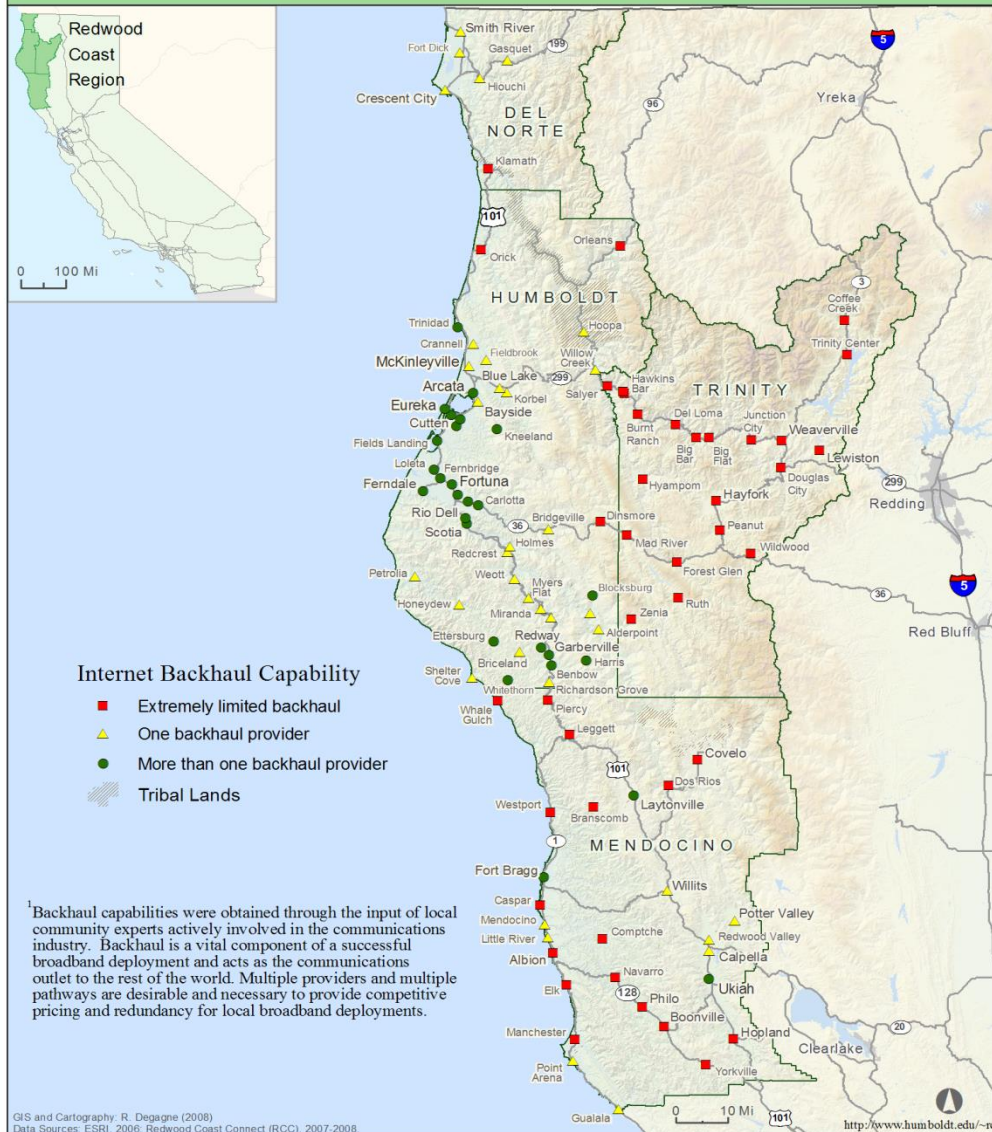
# Business Sector: Amount Willing to Pay for Broadband Access

- 53% of respondents would pay up to \$75 per month for broadband.
- 39% of respondents would pay more for greater reliability.



*Numbers represent actual responses; Margin of error +/- 7% for total sample  
Sample Size= 212*

## Redwood Coast Connect: Internet Backhaul Capability by Community<sup>1</sup>





## Redwood Coast Connect: Broadband Internet Supply per Community<sup>1</sup>



### Broadband Supply Ranking

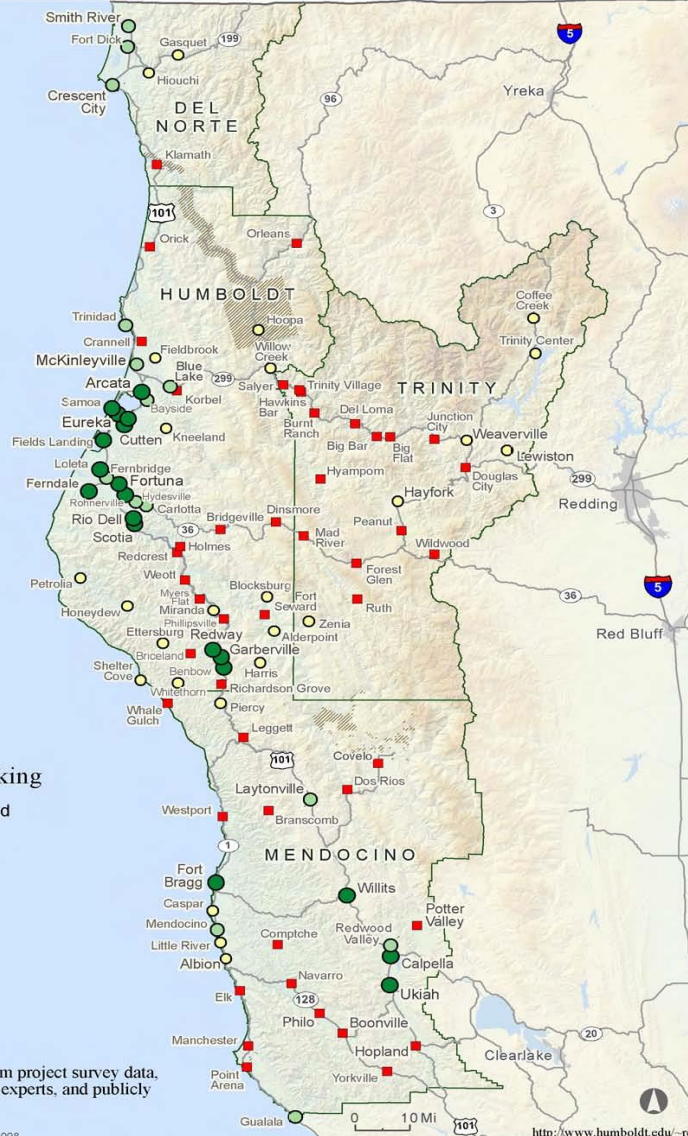
- 1 - None/Underserved
- 2 - Low
- 3 - Medium
- 4 - High Supply

▨ Tribal Lands

<sup>1</sup> Broadband supply rankings were derived from project survey data, project public meeting information, industry experts, and publicly available federal and state data sets.

GIS and Cartography: R. Degagne (2008)  
Data Sources: ESRI, 2008; Redwood Coast Connect (RCC), 2007-2008.

Redwood Coast Connect makes every effort to provide accurate data according to the resources available to us. However, RCC does not warrant or represent that the information is in every respect complete and accurate and is not responsible for errors or omissions.



ty Village TRINITY  
Del Loma Junction City  
Big Bar Big Flat  
Hyampom  
Hayfork  
Peanut  
Wildwood  
Forest Glen  
Ruth



# Redwood Coast Connect: Demand for Broadband Internet per Community<sup>1</sup>

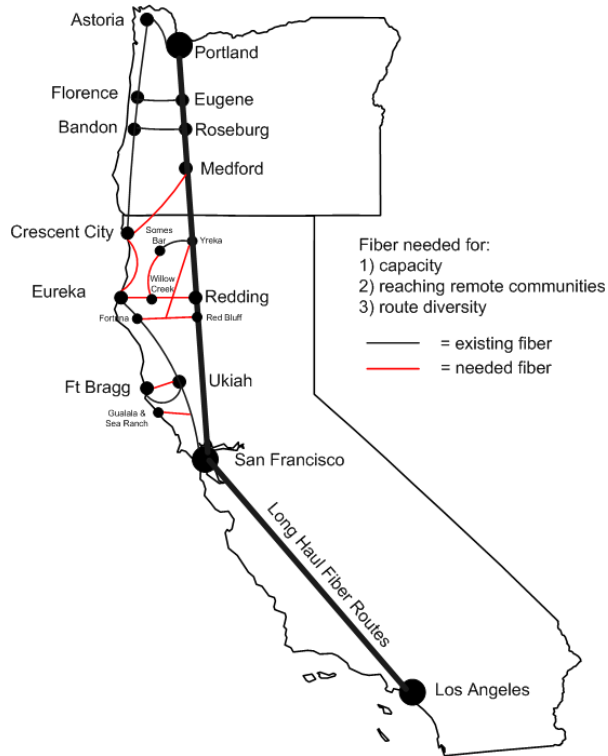


# Community Ranking Sheet

Humboldt County	Estimated Residences	Demand Rank	Supply Rank	Backhaul Needed	Estimated Annual Residential Revenues
Hoopa	1882	High	Low	Yes	247,907
Willow Creek	961	High	Low	Yes	126,679
Whitethorn	440	High	Low	Yes	57,925
Miranda	354	High	Low	Yes	46,587
Alderpoint	165	High	Low	Yes	36,339
Blocksburg	88	High	Low	Yes	11,556
Fieldbrook	Unknown	High	Low	Yes	unknown
Orleans	270	High	None	Yes	66,554
Weott	141	High	None	Yes	38,210
Myers Flat	133	High	None	Yes	29,193
Briceland	81	High	None	yes	17,806
Bridgeville	394	Medium	None	Yes	90.088
Kneeland	217	Low	Low	No	28,635
Shelter Cove	Unknown	Low	Low	Yes	Unknown

# Proposed Middle Mile Architecture

- Last mile broadband deployment is impossible without the middle mile.



Route (all have redundancy potential)	No. of Towns Under-Passed	Un-served	Counties	No. of Miles	Estimated Cost
Eureka to Redding	12	6	Humboldt, Trinity, Shasta	150	\$15-20m
Crescent City to Eureka	6	2	Del Norte, Humboldt	85	\$4-7m
Eureka to Red Bluff	8	4	Humboldt, Trinity, Tehama	140	\$10-20m
Ft Bragg to Ukiah	2	1	Mendocino	60	\$4-6m
Hwy 3 from Hwy 36 to Callahan	6	6	Trinity, Siskiyou	100	\$6-12m
Gualala/Sea Ranch to Hwy 101	4	2	Mendocino, Sonoma	80	\$4-7m
Willow Creek to Somes Bar	3	1	Humboldt, Siskiyou	48	\$3-6m
Crescent City to OR border & Medford	2	2	Del Norte, Oregon	110	\$4-7m

# Klamath-Orick Scenario

## Capital and Revenue

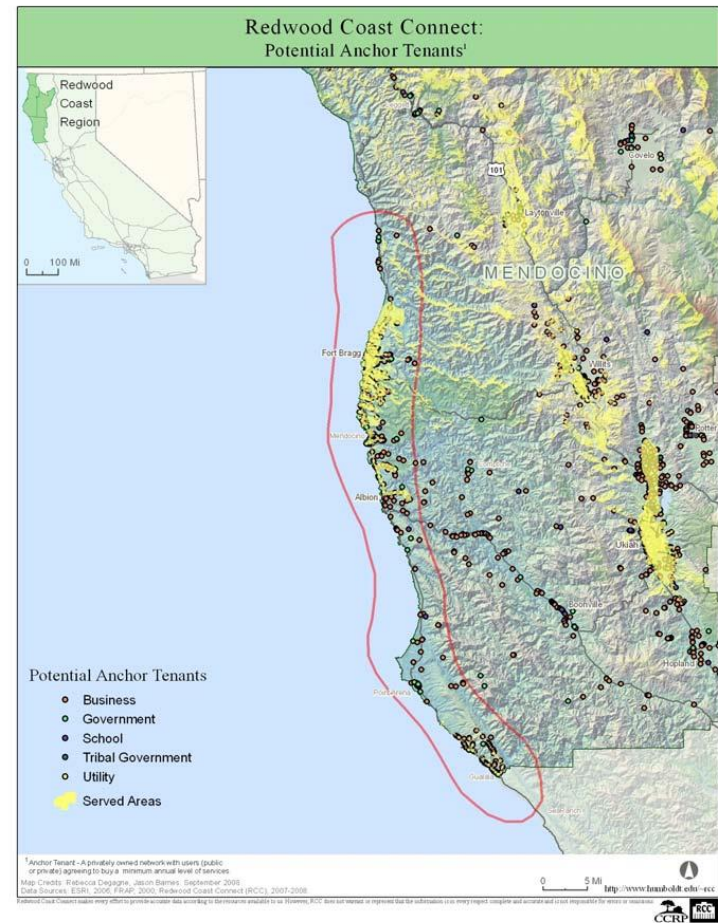
- Total Demand Revenues
  - Residential \$139,392
  - Business \$ 4,347
  - Public \$ 60,000
  - Wholesale ??
- Estimated Capital
  - Backhaul \$5,071,000
  - Local Loop 166,511
- Discounted Cash Flow
  - w/o public \$ 799,486
  - w/public \$1,105,537
- Est. Subsidy \$4-5 million



# Mendocino Coast Scenario

## Capital and Revenue

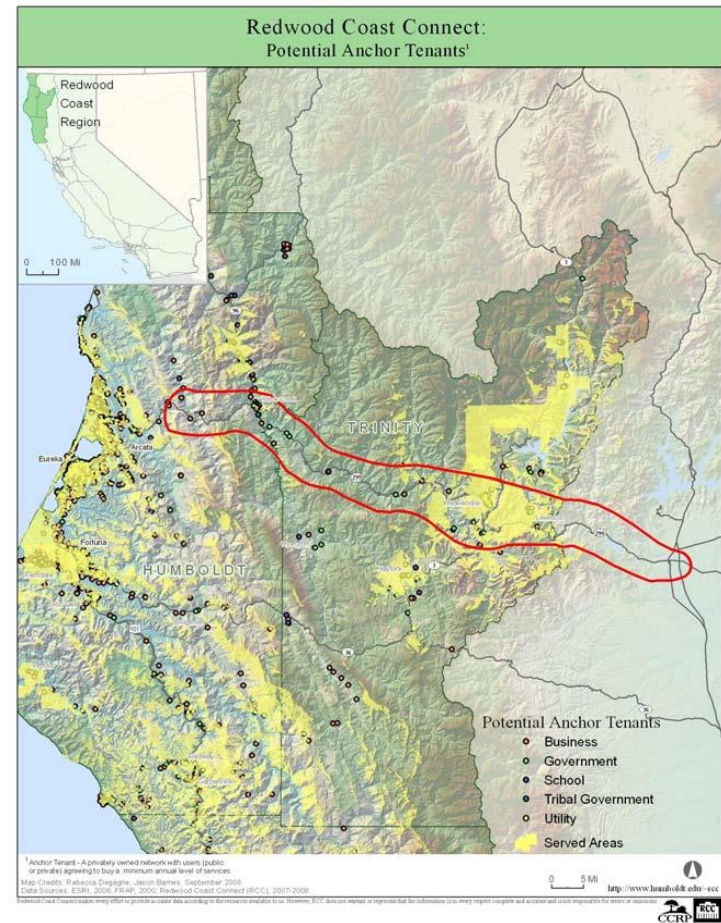
- Total Demand Revenues
  - Residential \$158,875
  - Business \$ 31,050
  - Public \$ 66,000
  - Wholesale ?
- Estimated Capital
  - Backhaul \$3,520,000
  - Local Loop 558,386
- Discounted Cash Flow
  - w/o public \$1,030,579
  - w/public \$1,388,711
- Est. Subsidy \$2.5-3.5 million





# Highway 299 Scenario Capital and Revenues

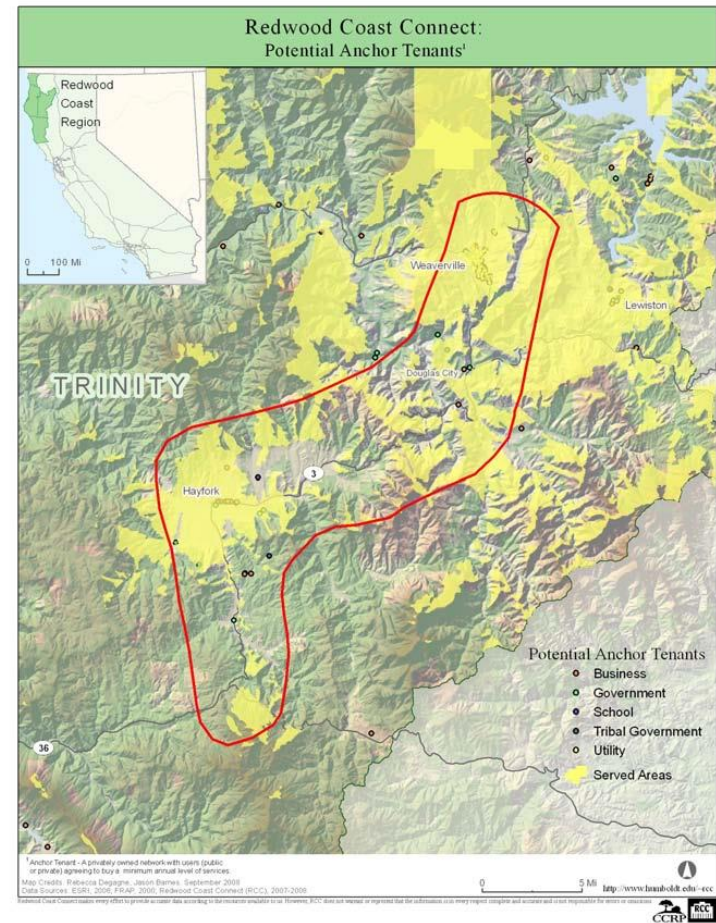
- Total Demand Revenues
  - Residential \$270,389
  - Business \$ 7,452
  - Public \$ 42,000
- Estimated Capital
  - Backhaul \$8,950,000
  - Local Loop 1,138,400
- Discounted Cash Flow
  - w/o public \$1,507,633
  - w/public \$1,735,535
- Est. Subsidy \$9-10 million





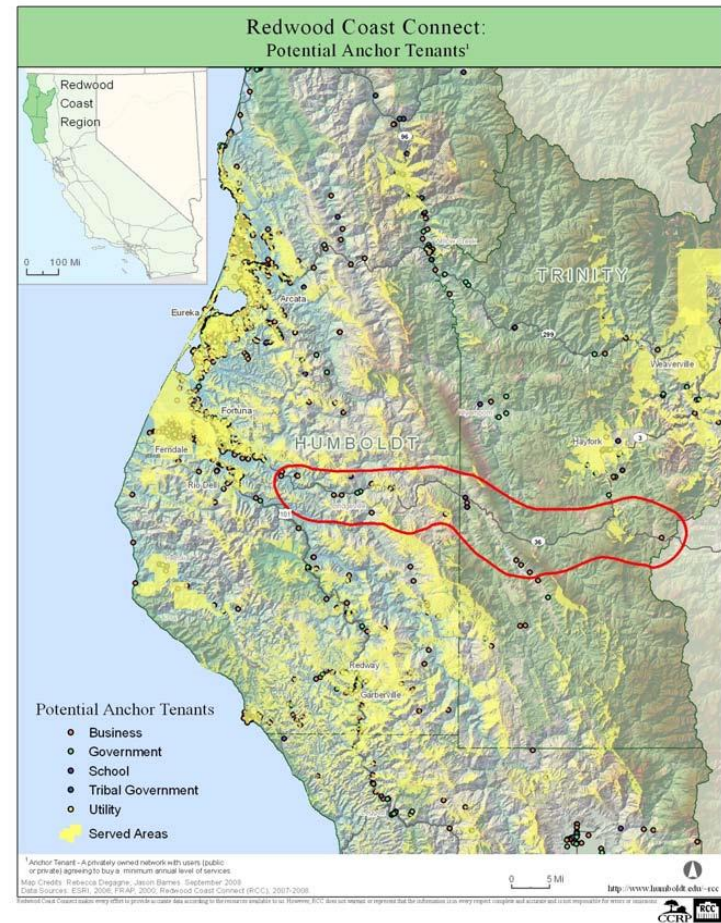
# Highway 3 Scenario Capital and Revenues

- Total Demand Revenues
  - Residential \$114,206
  - Business \$ 31,050
  - Public \$ 24,000
- Estimated Capital
  - Backhaul \$2,745,000
  - Local Loop 1,510,411
- Discounted Cash Flow
  - w/o public \$ 788,194
  - w/public \$ 918,424
- Est. Subsidy \$3-4 million



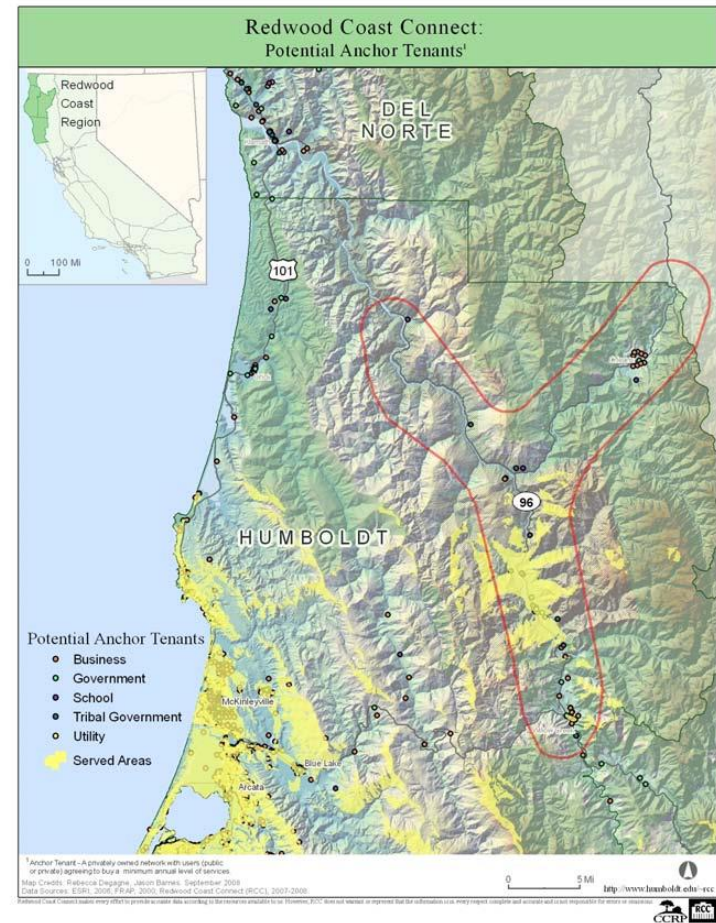
# Highway 36 Scenario Capital and Revenues

- Total Demand Revenues
  - Residential \$ 89,179
  - Business \$ 6,831
  - Public \$ 24,000
- Estimated Capital
  - Backhaul \$10,740,000
  - Local Loop 173,706
- Discounted Cash Flow
  - w/o public \$ 520,973
  - w/public \$ 651,203
- Est. Subsidy \$10-10.5 million



# Highway 96 Scenario Capital and Revenues

- Total Demand Revenues
  - Residential \$164,578
  - Business \$ 11,799
  - Public \$ 36,000
  - Wholesale ?
- Estimated Capital
  - Backhaul \$3,341,000
  - Local Loop 441,140
- Discounted Cash Flow
  - w/o public \$ 956,822
  - w/public \$1,152,409
- Est. Subsidy \$2-2.5 million

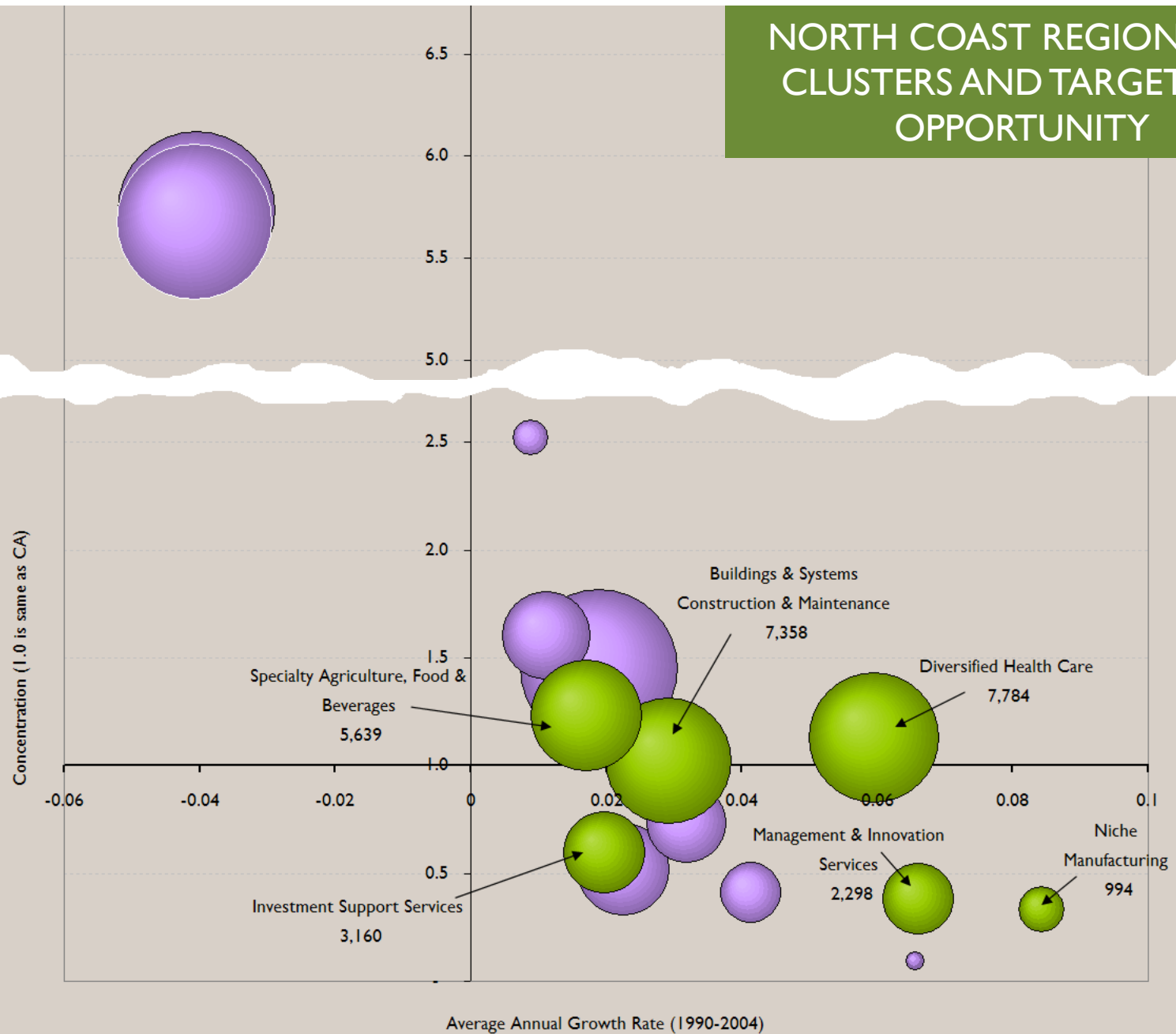


# Six Targets of Opportunity

- Diversified Health Care
- Building and Systems Construction and Maintenance
- Specialty Agriculture, Food, and Beverage
- Investment Support Services
- Management and Innovation Services
- Niche Manufacturing



# NORTH COAST REGION BASE CLUSTERS AND TARGETS OF OPPORTUNITY



# Helpful but Currently Missing Information

- Quantifying how much more businesses might be willing to spend for additional capacity (speed and redundancy)
- Identification of any broadband infrastructure owned publically (or privately) that is currently unavailable for use in deploying to hard to serve areas
- An understanding of the strategies to add capacity to meet statewide network goals--now and for the future (E-Health Network, CENIC)



# Key State Policy and Program Considerations

- Anchor Tenants
  - Create new public-private partnerships utilizing public assets to support new infrastructure (cell towers)
  - Open closed networks (CENIC) for extending broadband into the hard to serve communities
  - Allow government offices in hard to serve communities participate in aggregation of demand

- Capital Funding

- Expand funding available to WISPs and other small local entrepreneurial enterprises.
- Include Community Services Districts providing broadband access to CASF funds.
- Provide grant funding to support the development of community-provider joint ventures.
- Support research and development of new technologies that hold promise for rural communities

- Infrastructure Build Out

- Create an “open trench” policy whereby state funded infrastructure projects at a minimum encourage burying of conduit or fiber whenever a ditch is open- issue at local, state and national levels
- Fund a pilot project to determine the viability of micro-trenching as an alternative to laying fiber in public right of way (Caltrans)
- Create publicly-owned infrastructure that can be leased by private operators willing to serve hard to serve communities.

