Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
National Broadband Plan	)	GN Docket Nos. 09-47, 09-51, 09-137
	)	
Economic Opportunity	)	

To: The Commission

COMMENTS OF

CALIFORNIA CENTER FOR RURAL POLICY
HUMBOLDT AREA FOUNDATION
HUMBOLDT STATE UNIVERSITY
REDWOOD COAST RURAL ACTION
REDWOOD REGION ECONOMIC DEVELOPMENT COMMISSION

Respectfully submitted,

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December 4, 2009

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COMMENTS OF THE
REDWOOD COAST CONNECT

The California Center for Rural Policy, Humboldt Area Foundation, Humboldt State University and Redwood Coast Rural Action, Redwood Region Economic Development Commission (collectively Redwood Coast Connect) file these comments in the above captioned proceeding.

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SUMMARY

The Redwood Coast Connect commends the Commission for its interest in understanding the relationship between broadband and economic opportunity in rural communities. Our comments and recommendations our based on a comprehensive study we conducted focused on analyzing:

- Demand–including willingness to pay, the relative importance of broadband to homes and businesses, present uptake rates and potential for and challenges to demand aggregation.
- Supply–including mapping of current coverage, identifying unserved and underserved communities, and identification of critical missing infrastructure.
- Current policy climate–including identification of policy barriers to rural deployment as well as opportunities for advocacy.

Our rural region located at the top of California covers almost 11,000 square miles (the size of Connecticut and New Jersey combined) and has a total population of approximately 266,000. There are four counties—Del Norte, Humboldt, Mendocino and Trinity; and 11 incorporated cities encompassing approximately 48% of the total regional population. In addition to the cities and smaller communities, there are 20 federally recognized tribal communities.

Settlement patterns in the region follow geographic features including mountain ranges and rivers that create a variety of challenges in serving all communities with broadband. Much of the land is heavily forested, some of which is not easily accessible

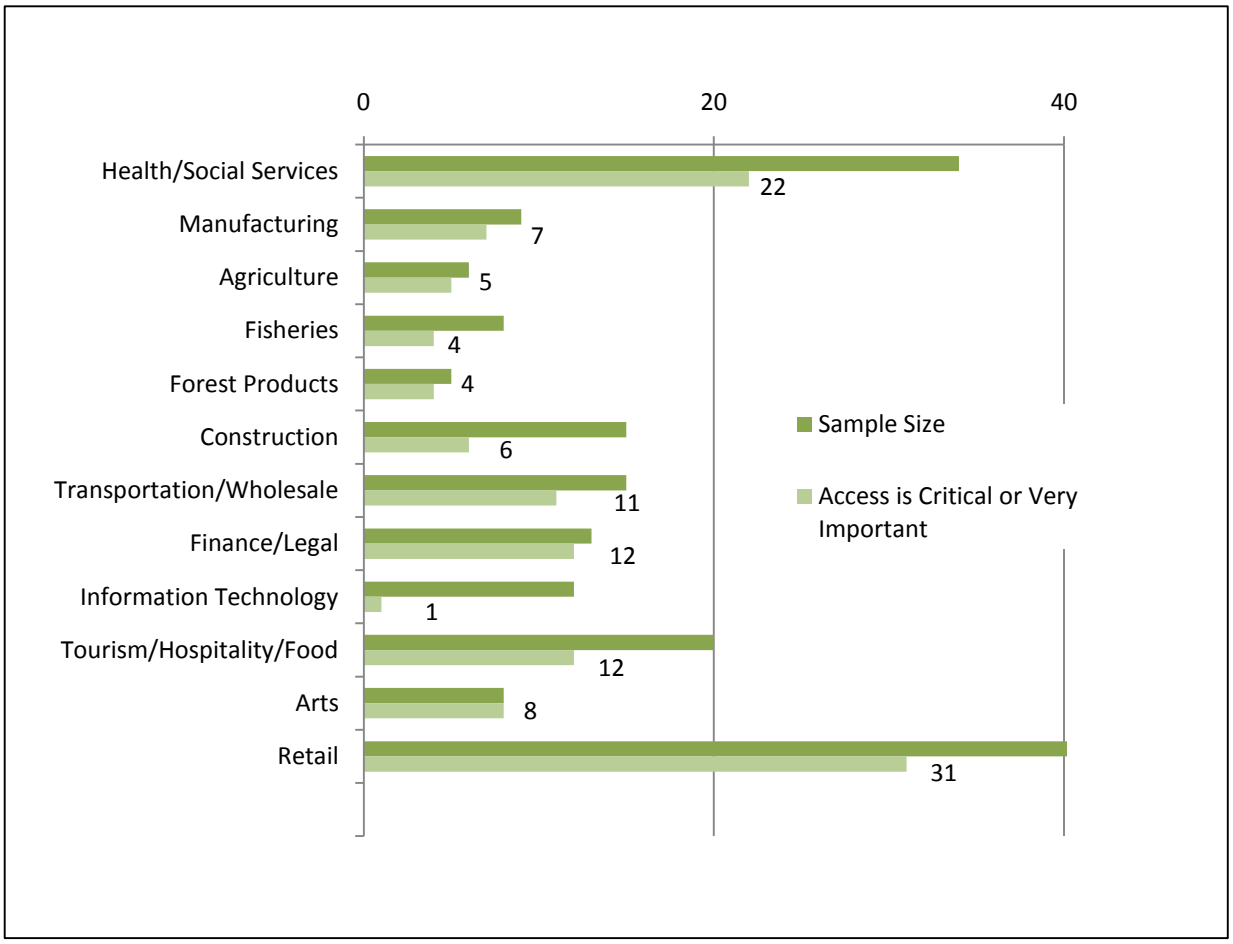
by road. Winter storms and constant roadwork all too frequently disrupt services–even to the most populated areas. Infrastructure is expensive to build and difficult to maintain.

Much of the region lacks access to any fiber network affecting broadband availability, quality and reliability. Efforts to provide broadband to all residents and businesses will depend on significant investments in both middle and last mile infrastructure.

The premise behind this study was that aggregation of demand would increase purchasing power making the economic case stronger for providing services to the unserved and underserved communities. In addition to aggregating demand, it is assumed that some level of public subsidy would be necessary to stimulate a build out of infrastructure, thus increasing broadband availability.

The geographic and geologic challenges, coupled with the low population numbers, have resulted in the determination by larger telecom and cable companies that the remaining communities do not fit their "investment return models." At the region's annual Broadband Forum in August 2008, telecom and cable company representatives stated that with few exceptions the remaining unserved and underserved communities are not priority targets for expanded services. In addition, locally based service providers, including Wireless Internet Service Providers (WISPs), have the desire to serve niche markets but lack infrastructure capital, have limited access to backhaul, and do not qualify for existing public subsidies.

BUSINESS DEMAND FOR BROADBAND IN OUR REGION



The above chart represents the relative importance of broadband to various industry sectors in the Redwood Coast Region. Over 70% of businesses surveyed indicated that a broadband connection at work is critical or very important. Health, manufacturing, finance/legal, information technology, and innovation and management services all stated that having reliable broadband services was critical to the future growth of their industries.

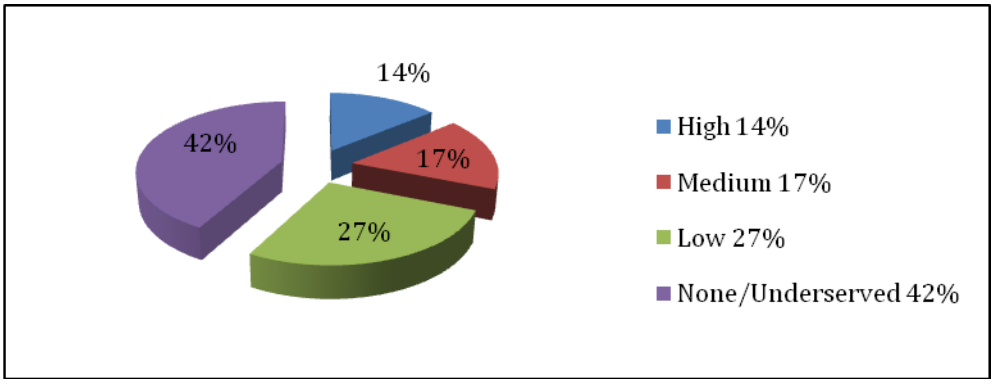
BROADBAND AND ECONOMIC OPPORTUNITY IN OUR RURAL REGION

Broadband technology has played an important role in compensating for many of the economic, transportation and social challenges our rural communities face. Our region is considered a statewide leader in promoting telehealth. However connection costs are three times higher than cost in urban areas of the state and speeds in the most remote areas are not adequate for transmitting health care data.

We are blessed with a robust higher education system that includes one State University and three Community College system hosting 10 campuses spread throughout the region. Our higher education institutions lack the state Broadband redundancy requirement and would like to vastly improve their distance learning capabilities.

I. Business Adoption and Usage

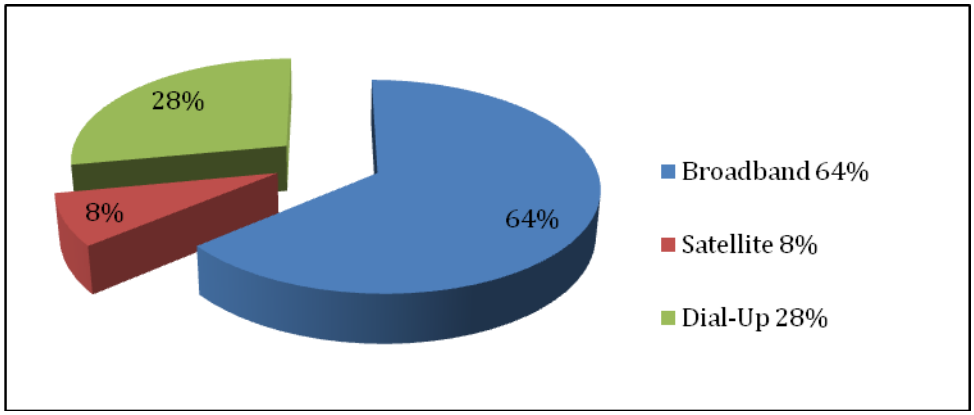
Ranking of Broadband Supply Available in Communities



N = 100 communities in the region

Most businesses surveyed in our region have access to broadband (wireless, DSL, T-1, cable, etc.) However more than half of the region's communities do not have adequate access to broadband with 42% of the communities completely without access. Several of these communities are on tribal lands.

Business: Type of Internet Connection



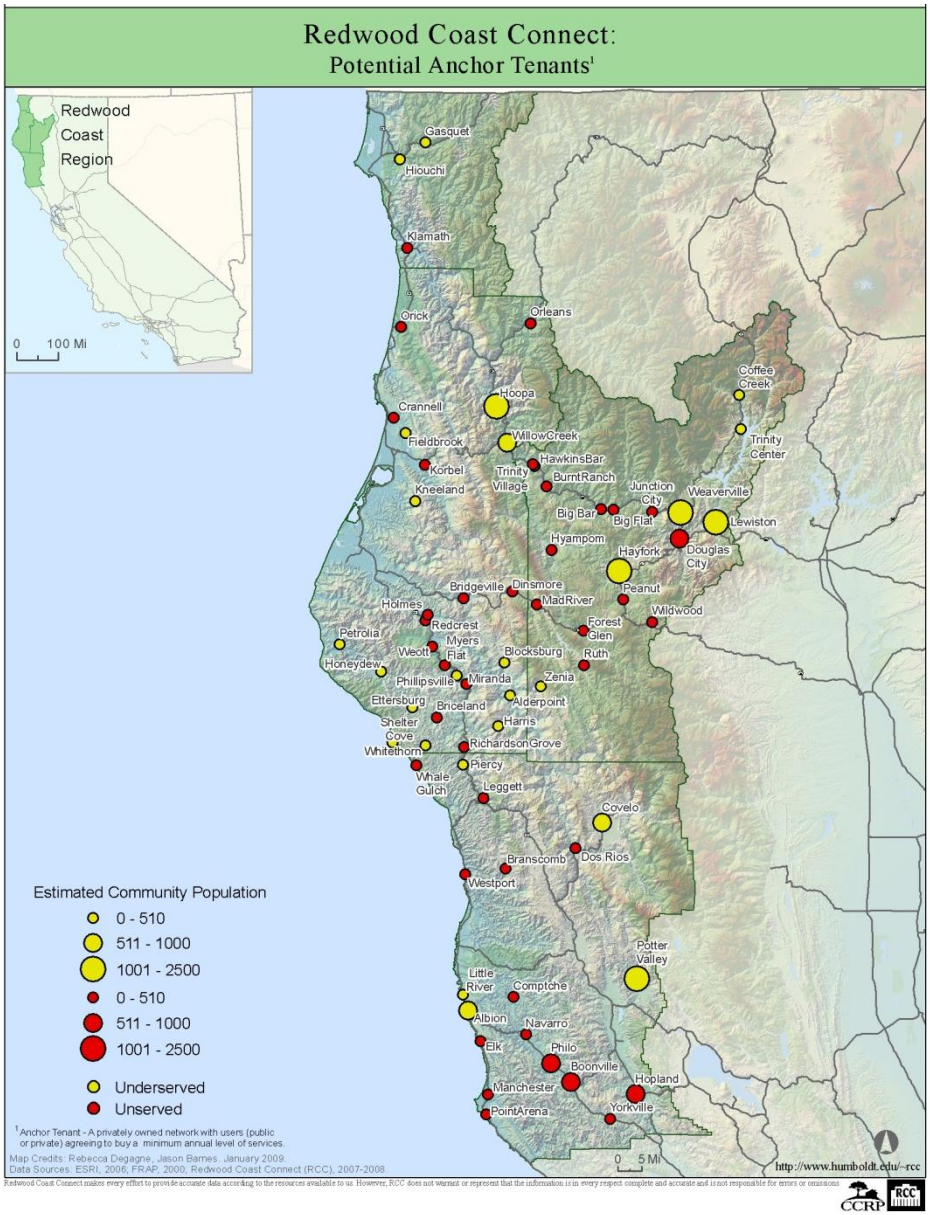
Anchor Tenants

Government agencies could help expand broadband economic opportunities for rural communities, however current policy gets in the way.

The "anchor tenant" (or "main customer") concept comes into play when talking about demand aggregation as a method for justifying the expense of providing broadband to remote communities. Small rural communities rarely have any businesses larger than microenterprise size, but they may have government offices in communities not served by broadband. Agency purchasing is generally with pre-negotiated contracts at very good prices, which takes them out of the mix for aggregating demand; in some cases, it takes out the sole potential anchor tenant in a small community.

For example, the National Park Service (NPS) was contacted in Orick, CA in 2006 as a potential anchor tenant for aggregation in the Orick Wireless Business Plan project since there is no backhaul available there and it would be extremely expensive to build microwave or fiber backhaul. While the NPS wants to help the community, security has been tightened since 9/11 and NPS was mandated to become part of a single domain model. As a result, Internet access for the NPS is now via a dedicated line to Denver. All non-exempt state agencies are required to utilize the CALNET MSAs to obtain mandatory telecommunications and network services. Exempt state agencies and departments are encouraged, but are not required, to use the CALNET MSAs to purchase mandatory services. These services are identified at www.calnet.ca.gov. According to State Parks CIO Alan Friedman, where local telecom services are less expensive than the CALNET rates, they can make a case to purchase locally. According to Michael Liang of the State Department of Business, Transportation, and Housing, a CALNET contract is the first option, but where lower pricing options are available, they may be used.

The Corporation for Education Network Initiatives in California (CENIC) is another example of a closed network, this one provides services statewide to the education system or both K-12 and higher education. CENIC is a network providing a fiber-based backbone to which district offices and schools can connect. These closed networks, while serving government institutions in a cost effective manner, remove the only available anchor tenants in many of the underserved and unserved communities, utilize all available backhaul capacity in many areas, and limit access to their infrastructure.



Infrastructure

Microwave connects areas of the Redwood Coast along with key fiber links for backhaul. Del Norte County is served by a single fiber optic line traveling south from Oregon and terminating in Crescent City. Humboldt County is served by a single fiber optic line traveling north along Highway 101 from Santa Rosa and terminating in Eureka. Trinity County has no fiber optic backhaul lines serving its communities. Mendocino County has

two fiber optic lines serving its communities: one traveling along Highways 1 and 128 and terminating in Fort Bragg and the other line along Highway 101 that also serves Humboldt County.

For those with adequate speed reliability is a key issue. Critical gaps in fiber to provide backhaul and route diversity/redundancy are both north-south and east-west:

- Crescent City to Eureka (85 miles)
- Eureka to Redding (150 miles)
- Eureka to Red Bluff (150 miles)
- Crescent City to Medford (110 miles)
- Mendocino South Coast to Highway 101 or Fort Bragg (60-70 miles)

The key to providing last mile service in the unserved or underserved areas is backhaul. In well-served areas of the Redwood Coast, lack of route diversity/redundancy is a broadband reliability issue, with outages causing disruptions in Internet access, long distance calls, credit card processing and cellular service.

In 2007, Redwood Coast Connect interviewed several businesses after a series of fiber-optic communications outages in Humboldt County to study the potential impacts of future outages and the need for redundant fiber-optic connections.

Managers at the firms and agencies interviewed reported experiencing a wide range of impacts from a complete disabling of core functions to time-consuming and costly

delays. But more significantly, many interviewed believe that the region will suffer grave economic and social consequences going forward if the telecom infrastructure is not soon upgraded to include redundant fiber-optic connections to regional and global telecom networks.

Informants predict that companies with customers outside this region — particularly information technology and financial service companies — will constrain or scale back their local operations or relocate from the region entirely. According to the chief operating officer of one growing IT companies, absent a redundant fiber connection, remaining in Humboldt County would soon destroy his firm's reputation with its customer base. A large financial services employer is holding up the creation of 40 professional positions pending the establishment of redundant fiber connections.

A rural community doesn't need to have unique businesses to need reliably connections. Below are some examples of businesses common in rural communities that have been impacted by the lack of reliable broadband connection.

Edge Wireless (Now AT&T)

Wireless telecom service provider Edge Wireless lost 80% of its capacity during two of the regions fiber outages in 2006, according to Eric Anderson, Director of Engineering. The resulting loss of call activity by customers was costly, but the larger issue was disappointing customers who rely upon their cell phones. "Even though Edge didn't

cause the outage, our customers expect a reliable network and we let our customers down," said Anderson. "Their cell phones quit working when they needed them."

Edge has since established a redundant microwave backup system by interweaving some of its cell phone sites and trunks to an existing microwave backbone from Eureka to Ukiah. Anderson said that costs of building the redundant system were high.

But Anderson notes that most businesses cannot afford redundant telecom systems, and he predicts that construction of a second fiber line to Humboldt County will have significant economic benefits for the region.

Humboldt Merchant Services

A provider of credit card processing services, Humboldt Merchant Services requires consistent and secure access to the Internet. The December and January outages caused acute anxiety for the company's 80 local employees as they scrambled to understand and troubleshoot the total loss of Internet connectivity and long-distance phone service. A two-day December 2006 outage alone cost the company approximately $20,000 in lost production and in the direct expenses of flying staff to another location as a stop-gap measure.

More serious consequences probably lie ahead if redundant fiber is not established, according to President Ken Musante. The outages negatively impacted Humboldt Merchant Services's reputation with its customers. "We are an entity that handles their

funds, and for us not to have Internet access even for a short time is very serious," said Musante. "Merchant customers do not understand when you tell them that Internet to the entire county is down. In the world we work in, your Internet access is like your phone dial tone."

Musante explains that his company's corporate parent, First National Bank Holding Company of Scottsdale, AZ, is in a growth mode, having acquired two additional merchant customer portfolios since it acquired Humboldt Merchant Services in 2003. The company may, however slow investments if a secondary connection is not obtained. "Our parent organization appreciates the knowledge base that we have here, but two outages like that are surely going to give them cause to consider their future investments here more carefully."

The Sun Valley Group

Like many rural regions agriculture plays a significant role in the economy. A large producer of cut flowers with 700 employees, The Sun Valley Group depends heavily on the Internet for its business. It transmits orders and instructions daily to a subsidiary in Oxnard and fulfills orders for online consumer floral delivery websites nationwide. The company also transacts virtually all of its business with major retail accounts via web-based applications.

During the outages in 2006, Sun Valley lost Internet connectivity and its ability to process electronic transactions. Because these include complex pricing, labeling and

shipping data, they cannot be communicated effectively person-to-person over voice lines.

Had the outage occurred at a busier time like the periods before Mother's Day or Easter, the firm could stand to lose as much $1 million per day in revenue. Such an event during a busy period would also damage the company's reputation and potentially affect its market position.

During busy periods, Sun Valley operates around the clock, seven days a week, and to maintain its operations during power outages, the company has installed diesel electric generating systems. Gustafson says the firm considers redundancy for telecommunications just as important.

The company has since developed a wireless backup strategy that provides what Gustafson calls "very primitive DSL speed." Sun Valley has investigated satellite backup, but accommodating the delays and batch-transmission requirements would require significant restructuring of its operations.

Some Outage could be life threatening!

Arcata/Eureka Airport (and associated FAA services)

During two outage events in 2006, the Arcata/Eureka Airport and the two airlines it hosts (United and Horizon) lost Internet and Intranet connectivity and both local and long distance phone services (United's Intranet stayed up on Dec. 26-27). Transactions were

done by hand, and passengers without receipts or printouts for their electronic tickets were unable to fly. As a result of the outages, on Dec. 26, 16 of 28 scheduled flights were delayed; and on Jan. 20, 14 of 28 flights were delayed and one was cancelled.

The fiber outage broke the connection between the airport's weather monitoring equipment and the Oakland and Seattle facilities that communicate weather data to pilots. To keep the airport running, staff had to manually read the weather gear, and then search the airport terminal for a passenger with a working cell phone (most cell phones did not work) with which to call Oakland. According to Humboldt County Airports Manager Jacquelyn Hulsey, the airlines offered bonuses for passengers with working cell phones. "Airlines couldn't depart for here from other airports until they had weather reports from here, nor could they leave from here," said Hulsey. Lack of weather information also impacted the general aviation (non-commercial flight) airport operations at the county's five general aviation airports. Pilots were unable to call in flight plans to the FAA Flight Service Station Centers.

The loss of the fiber also disrupted two navigation systems operated by the Federal Aviation Administration, according to Pete Peterson, Manager of the Arcata Systems Service Center. These systems included the Runway Visual Range (RVR) system at the Arcata/Eureka Airport, which provides visibility information for commercial flights; and the Radio Communication Outlets in Humboldt County that allows local pilots to communicate directly with the Oakland Automated Flight Service Station. FAA's radar sites and mountaintop communication sites were automatically re-routed to a backup

satellite system than FAA established several years ago.

Peterson and Hulsey both reported that the consequences of future outages could be more severe if they occurred during periods of fog or low cloud ceilings. Hulsey also noted that loss of communication functions (including the airport's local landlines and most cell phones) during a natural disaster such as an earthquake or tsunami would be extremely dangerous.

St. Joseph Hospital

St. Joseph Hospital is the largest acute care facility and the most significant health care provider in Humboldt County. During the 2006 outages, the hospital experienced loss of many vital services, including Internet access and the ability to make phone calls. Additionally, the hospital could not use Internet-based system for storing and reviewing medical imagery such as X-rays and sonograms, and only non-networked computers (about 25%) functioned. Compounding the loss of communication was the fact that most staff members' cell phones did not function either. Communicating by phone with clinical experts around the country is particularly vital in this region, given the scarcity of expert specialists and academic hospitals nearby.

Since the outages, St. Joseph's parent organization St. Joseph Health System has installed redundant local servers, storage and communication devices in Eureka so that in future outages, clinicians will have access to medical images, such patients' previous x-rays. St. Joseph Health Systems Chief Technology Officer Scott Cebula said this redundant

investment cost at least $25,000. And in addition to the capital expenditures, the hospital faces ongoing costs for service and spare parts for the local system, many of which must be imported from the Bay Area.

Eureka is the only market in which St. Joseph Health Systems operates where it has invested in such redundant systems because all its other hospitals are located in regions with more secure telecom infrastructure. In fact, of St. Joseph's 13 health care facilities in California, Texas and New Mexico, only Humboldt County suffers from the lack of redundant fiber connections, according to Cebula. "This is only place that is dependent on a single line. The interruptions we've had there are ones that we have not seen in other markets."