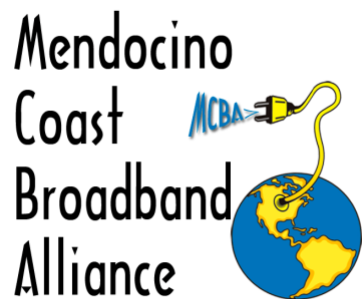


Presentation to the Mendocino County Board of Supervisors

May 24, 2011



Introduction & Background

Mendocino Coast Broadband Alliance - HISTORY

- ❑ **Feb 2007** - Albion residents met with Esplanade and later formed a team motivated neighbors
- ❑ **September 2007** - Participated in 4-county Redwood Coast Connect survey and meeting
- ❑ **Feb 2008** - started mapping project, conducted survey of residences and businesses
- ❑ **May 2008** - started newspaper articles called "Why Net Connect" for businesses and residents as education project, and advocacy with Legislators, County CEO and Supervisors, and State plus CPUC
- ❑ **March 2009** - commenced activist role with CPUC regarding CASF concerns
- ❑ **April 2009** - MCBA, the County CEO and Supt. of Schools organized a well-attended broadband conference with 120 attendees.
- ❑ **June 2009** - MCBA incorporated as 501C4 in preparation to apply for ARRA BTOP/BIP stimulus funds
- ❑ **June 2009** - started to work with the 4-county group to do regional stimulus application

Introduction & Background

The Community Foundation of Mendocino County

- ❑ **January 2010** – At the annual Community Foundation board retreat, chose broadband as their focus for economic development and worked with the BoS to pass a Broadband Resolution
- ❑ **August 2010** – The Community Foundation, MCBA, EDFC and the County partnered to create the AdHoc Broadband Committee
- ❑ **April 2011** – The Community foundation issued a challenge grant to move process forward

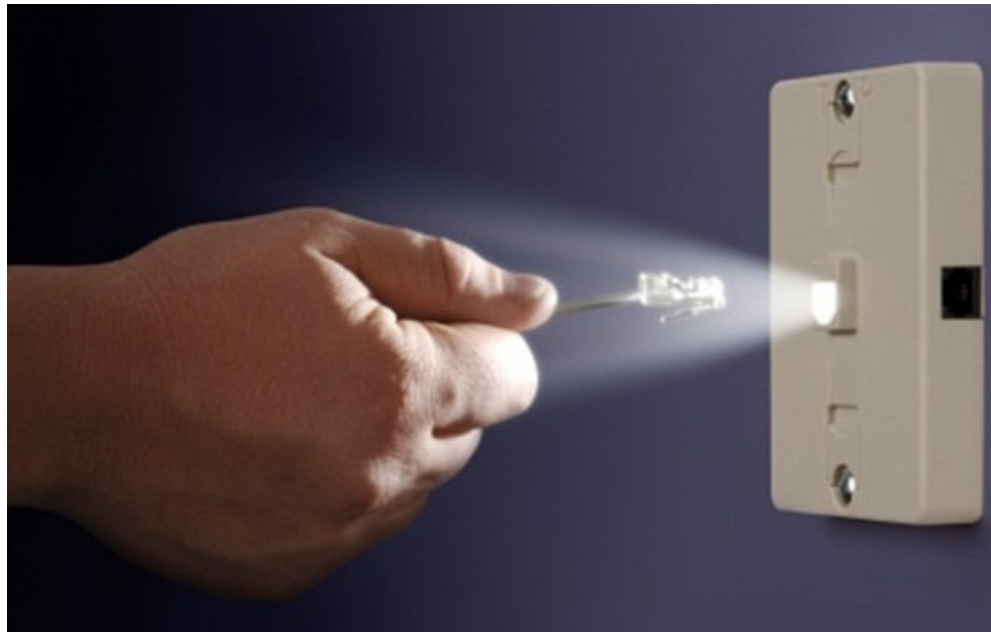
Economic Development & Financing Corporation

- ❑ **August 2010** - EDFC creates the AdHoc Broadband Committee and assigns staff after being approached by the Community Foundation of Mendocino County.
- ❑ **October 2010** - EDFC staff attends the Redwood Coast Broadband Forum in Fortuna, CA.
- ❑ **November 2010** – EDFC staff participates in the Rural Telecommunications Congress in Phoenix, AZ.
- ❑ **May 2011** – EDFC's Executive Committee passes a resolution to take on fiduciary responsibility for broadband related activities.

Agenda

- Why broadband is essential ?
- What is broadband
- Broadband in Mendocino County
 - Where are we today in broadband deployment
 - Where do we need to be in broadband deployment
 - How do we get there
- We need your help

Why is broadband essential ?



Why is broadband essential ?

More and more real life applications require **broadband** access to the internet

- Emergency services & rural medicine cannot survive without broadband

- Tele-medicine with major hospitals requires broadband
 - This can substantially reduce emergency room visits
- Remote medical imaging (MRI, X-Rays, etc.) not possible w/o broadband
- Pharmacy reporting is now through the internet
- Fire, Police, and disaster notification systems are on the internet
- Hospital / EMT links



- Education needs broadband to prepare our students

- Distance learning usage is increasing due to cost cuts
- Libraries and research have now moved entirely online
- Students need access in evenings at home for homework assignments



Why is broadband essential ?

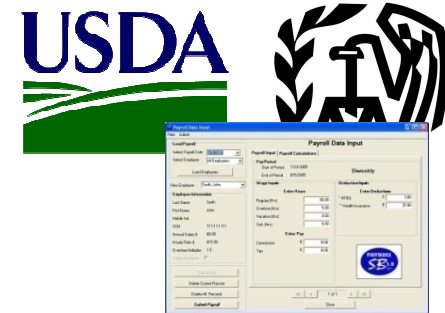
- **Broadband** access is crucial for economic development

- Broadband is now essential for economic development

- Federal taxes can **only** be paid online
- California EDD forms have to be entered online
- Workman's comp & payroll are now online
- Farmers - USDA food and livestock tracking is mandatory online
- Farmers - California water usage reporting is mandatory online
- More and more companies & agencies are requiring that proposals be submitted online
- Medicare social security benefits and services are moving online
- Bank statements /online banking exists today. Brick & mortar banks are disappearing.

- The true cost of an “internet commute”

- Parents today have to drive their children to “broadband hotspots” because no internet is available at home in our county
- Virtual office workers have to drive to the office when there is no broadband
- The cost of gas and drive-time from a relatively short commute can reduce a person’s pay by 10%, and a one-way commute of a ½ hour effectively reduces a person’s pay by a third.
- Not to mention the environmental, green-house gas impacts, parking, traffic and other impacts



Why is broadband essential ?

- **Action on the federal level ...**

- FCC Docket 09-47 –distributed to the Senate Utilities Committee on February 22, 2011
 - “AT&T strongly supports a Commission Notice of Inquiry regarding the transition from the circuit-switched legacy network to broadband and IP-based communications... That transition is underway already: ... leaving the public switched telephone network (‘PSTN’) and plain-old telephone service (‘POTS’) as relics of a by-gone era.”
- The carriers will soon have permission to discontinue maintaining land-line services in urban areas.
- The FCC is coming up with new guidelines for the Universal Service Fund (USF) distribution
 - Reverse auction of census blocks – we could be left on the auction block
 - Cherry picking is almost a certainty
 - So far no commitment to build is required at the moment
- Critical services will eventually be impacted by what is happening in Washington
 - E911 services will evolve, moving to the internet and cellular infrastructure
 - Lifeline services for the elderly & homebound may be discontinued
 - Handicapped services for the deaf & blind may be jeopardized (TDD/TTY, etc.)
 - The concept of “universal service” is under attack
 - Those who need communications the most will be cut-off

Take-away: Action is already underway by the lobbyists in Washington to abandon the policy of Universal telephone service (USF) for dial-tone

Why is broadband essential ?

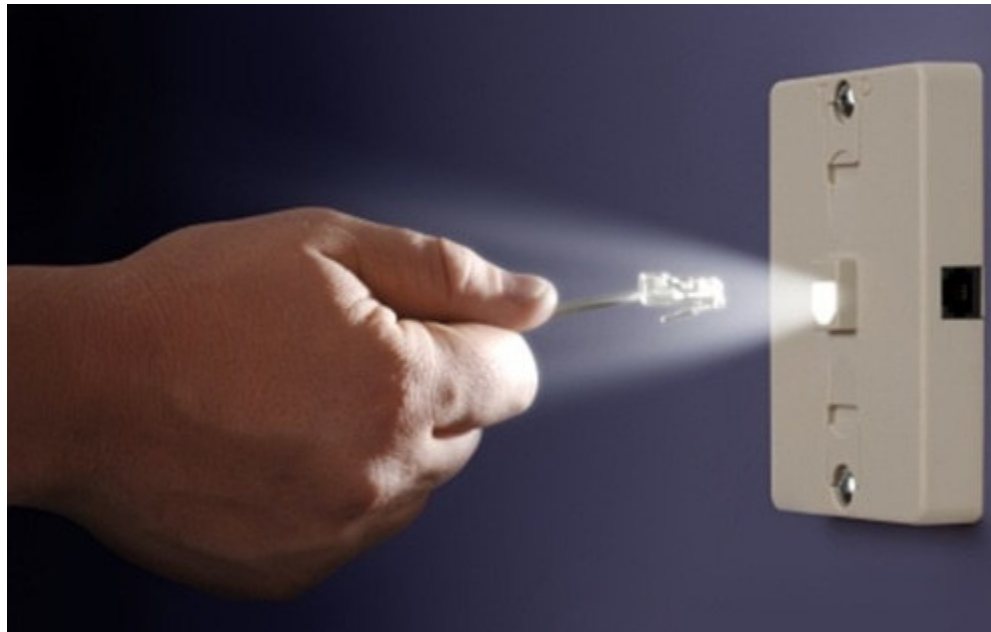
Dial-tone as you know it will be cut !

It is just simple economics

- Without USF and other subsidies it is not economical to support the rural copper plant which provides today's telephone services
- Everything – including telephone is moving to broadband



What is broadband ?



1 Gigabyte of Data is:

- A school term paper with YouTube
- Your family vacation pictures
- Your recent dental x-ray
- Your company's next business proposal
- 10 minutes of a doctors video exam
- 30 minutes of an online classroom session



What is broadband

- **Broadband** is the means of transporting this information *quickly* from one point to another.
 - Estimated time to move 1 Gigabyte of information
 - By dial-up: ~ 3.5 days *(if you're lucky!)*
 - By satellite: ~ 1.75 days *(if they don't shut your connection down!)*
 - By cellular (3G): ~ 4 hours *(with costly overage charges !)*
 - By broadband (FCC definition of 4Meg/1Meg): ~ 2.6 hours
 - By broadband (Comcast 10Meg): ~ 16 minutes
 - In a typical Korean household (1Gbps): ~ 9.6 seconds

What is broadband

**The United States is way behind the rest of the world
and we are behind the United States**

Selected Broadband Composite Index (BCI) Rankings, 2010 plus goal

1. South Korea - 1000 Mbps
2. Hong Kong - 1000 Mbps
3. Netherlands - 300 to 500 Mbps
4. Lithuania - 300 to 500 Mbps
5. Japan - 100 to 500 Mbps
- 23. United States - 4 Mbps**

Source: Strategy Analytics, Inc

- The **speed** of broadband is always evolving
 - FCC typically lags commercial service by a few years
 - USA lags the rest of the world by about five years

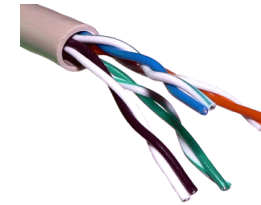
What is broadband

Broadband is more than just high speed internet

- **Broadband** is how you access the internet and the web
- **Broadband** is also much more
 - Telephone service is now delivered over broadband
 - Television is now delivered over broadband
 - Fire, Police and EMT use broadband to connect in the field
 - Utilities use broadband to monitor your electricity and gas
 - Home health monitoring , security and other services use broadband
 - Virtual offices and telecommuting rely on broadband

What is broadband

- How is **broadband** delivered to your home or business
 - Twisted-Pair - via AT&T, Verizon, Pacific Internet, Willitsonline, ...
 - 2 wires - Digital Subscriber Line (DSL, ADSL, ...)
 - 4 wires or more - N x T1, OC3E, etc.
 - Coax - via Comcast or Time Warner Cable
 - Cable modem technology (DOCSIS)



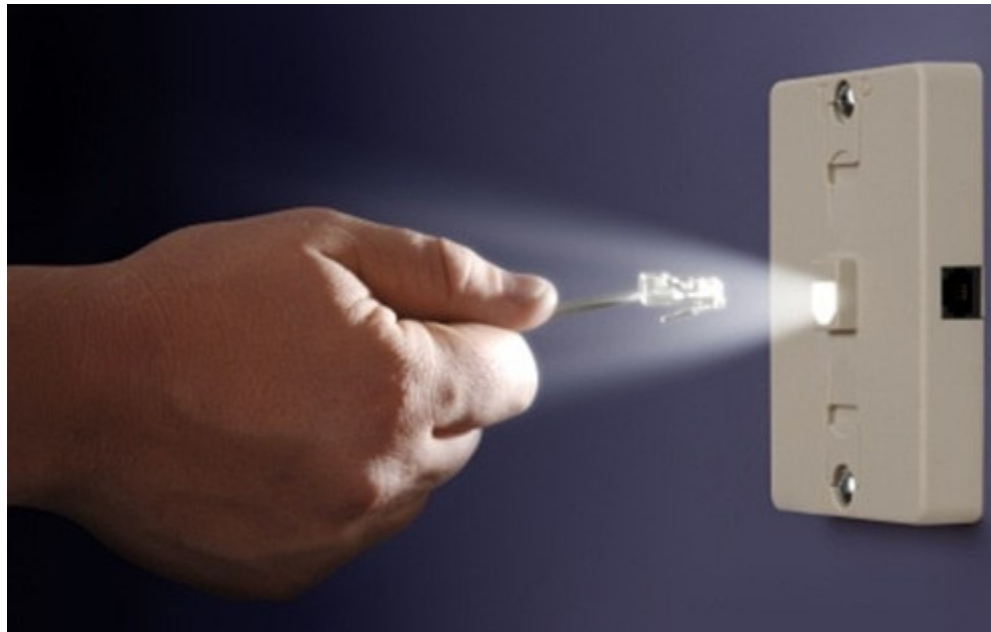
- Cellular – 4G technology only
 - AT&T Wireless, Verizon Wireless, US Cellular, etc.
 - 2G and 3G do not fit the broadband definition
- Radio infrastructure –WiFi, WiMax, Microwave
 - Willitsonline, 101Netlink, Advanced Link, Pacific Internet, and others
- Satellite
 - Hughes Net, Wild Blue, Starband



- Fiber
 - The “gold standard” of **broadband**
 - No fiber to the home in Mendocino that I am aware of

No one delivery system is the “magic bullet”

Broadband in Mendocino County



Where we are today

With the exception of a few cities – most of Mendocino county does not have access to a broadband connection

- Many dial-up users
 - Estimated at Over 50% of county



- Some satellite penetration
 - Terrain blocks some from receiving any satellite
- A few wireless subscribers
 - Cellular is not at broadband speeds yet and still very costly
 - Local wireless is line of sight

Where we are today



Broadband Technology

- DSL-AM coverage (3 miles)
- Cable modem coverage
- Wireless coverage (900 Mhz / 2.4 Mhz)

Notes:

- 1) Data is anecdotal derived from vendor web sites
- 2) Dots indicate presence - not coverage area

Where we are today

A quick coverage overview by exchange note:1

Exchange	DSL	Cable modem
Boonville (895)	Yes	None
Cobb (928)	None	None
Elk (877)	None	None
Ft Bragg (961-4)	DSL	Comcast
Gualala (884)	None	Central Vly
Laytonville (984)	DSL	None
Hopland (744)	DSL	None
Mendocino (937)	DSL	Comcast
Covelo (983)	DSL	None
Comptche (937)	DSL	None

Exchange	DSL	Cable modem
Pt Arena (882)	None	None
Potter Valley (743)	None	None
Ukiah & Redwood Valley (462-8) (472-485)	DSL, ADSL2+	Comcast
Willits & Brooktrails (456-9)	DSL, ADSL2+	Comcast

Population of above areas: 40,779 note: 2

Population of Mendocino County: 86,040 note: 2

Percentage **without access to broadband**: **53%** note:3

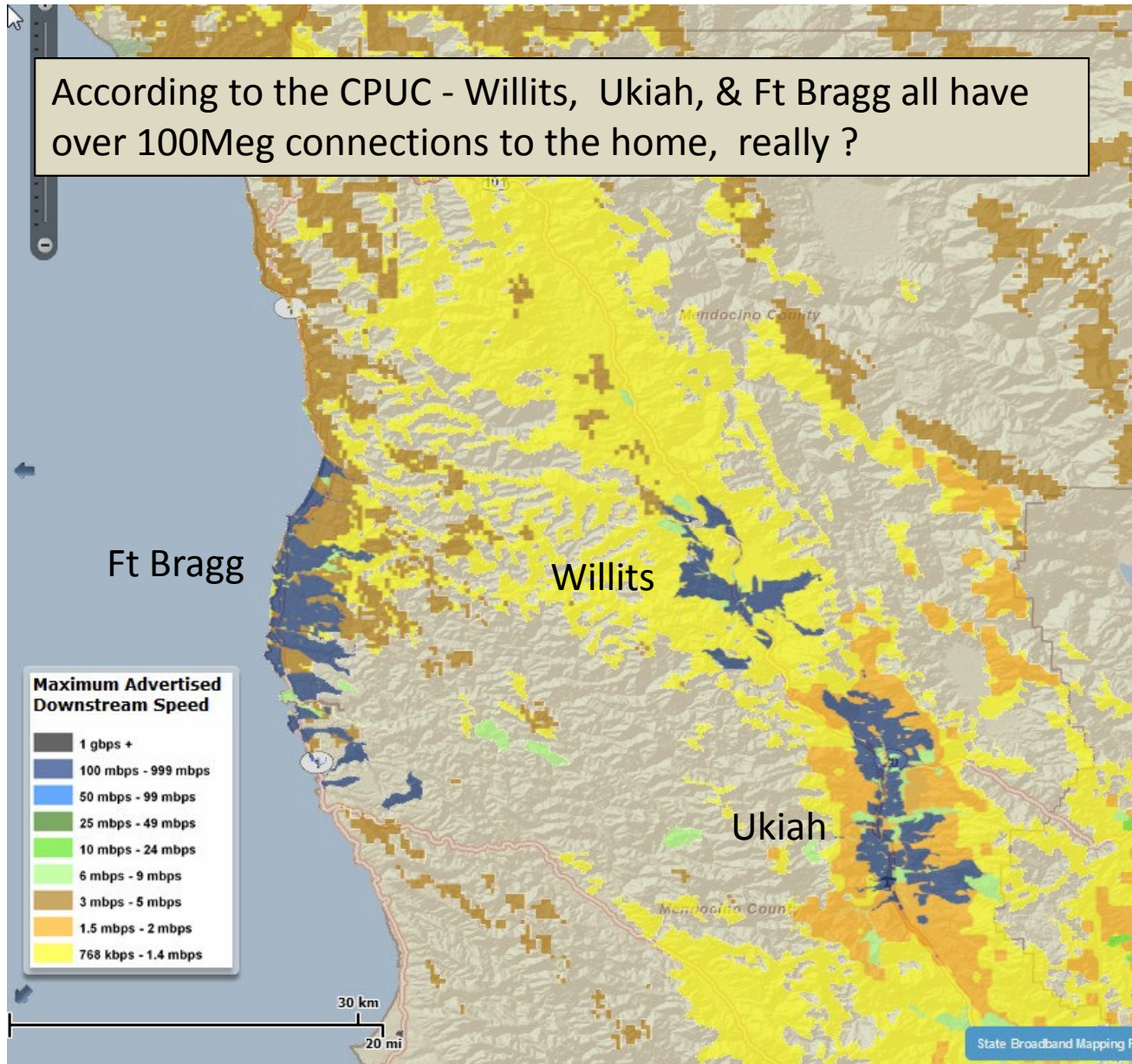
Notes:

- 1) Data is anecdotal and derived from vendor web sites
- 2) Source 2010 Census Bureau data
- 3) Estimated, actual figure may be greater due to 3 mile limitation of DSL technology

Where we are today

C
P
U
C

According to the CPUC - Willits, Ukiah, & Ft Bragg all have over 100Meg connections to the home, really ?



Where we are today

Two sites officially track broadband data

CPUC site – www.broadbandmap.ca.gov

FCC site - www.broadbandmap.gov

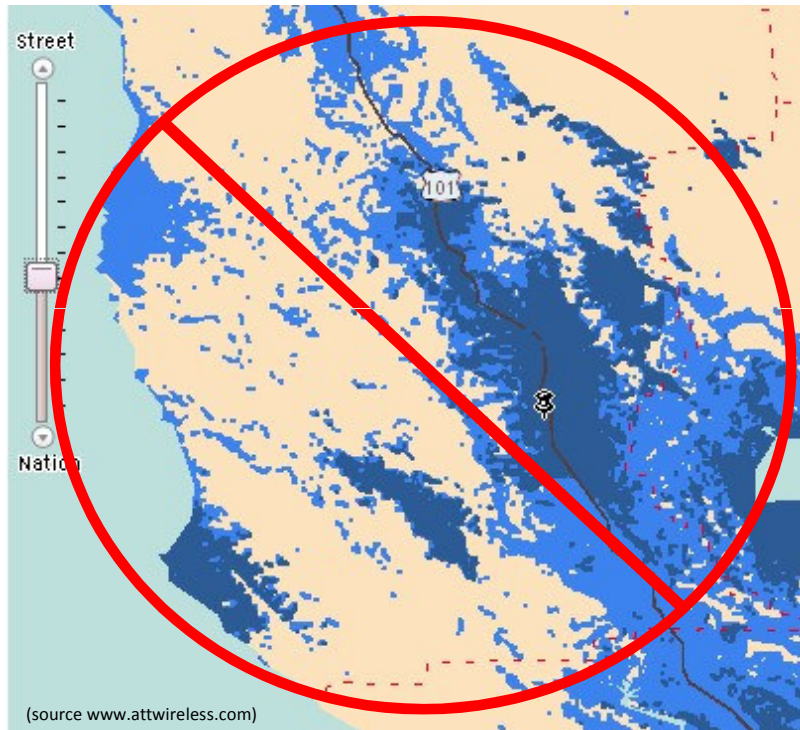
The official maps are misleading

1. They show higher speeds than actually available
2. They show coverage where it does not exist
3. Why are they misleading ?
 - It's in the carrier's best interest to overstate data
 - Carriers want to block community broadband
 - Carriers want to block potential competitors

Where we are today

Cellular data coverage is overstated by the carriers

UMTS/HSPDA/GSM



CDMA



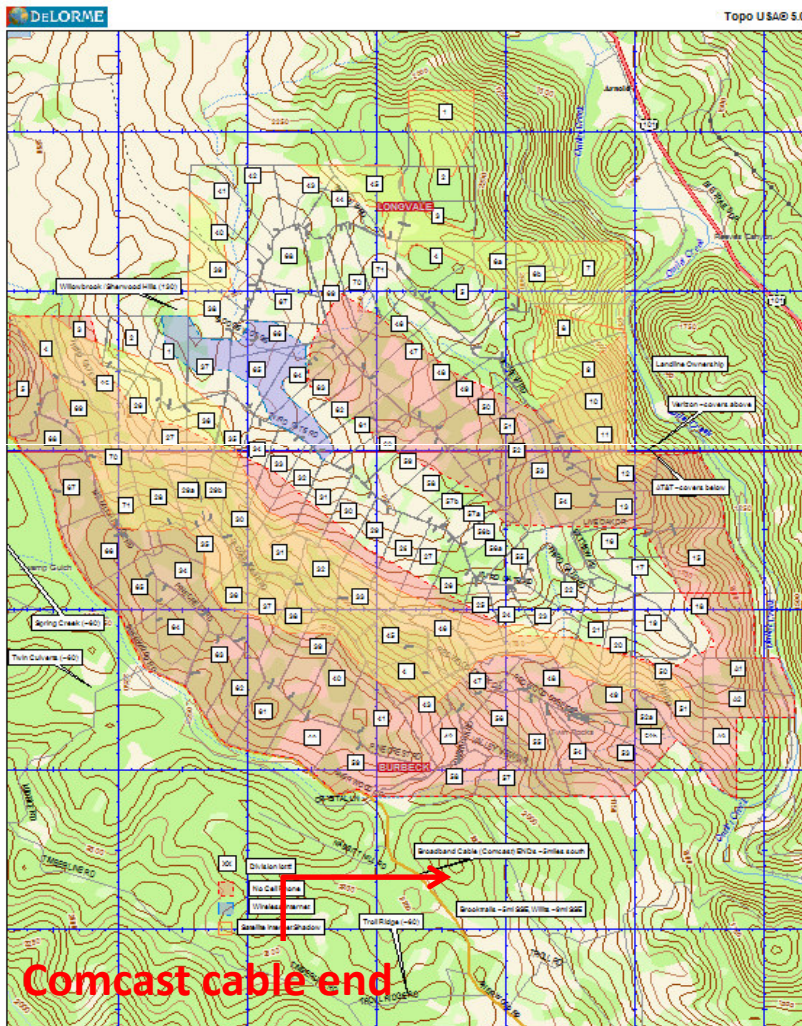
The 4G technology that meets the broadband definition is only just now being deployed to LA & SF

Notes:

- 1) Data is anecdotal derived from vendor web sites
- 2) Shaded areas indicate presence - not a guarantee of coverage

Where we are today

Satellite Internet Access **(is not broadband quality)**



Satellite service is very costly

- \$ 349.99 per month for broadband speeds
- Service is capped at 200-800 MB per day (HughesNet)
- Industry admits it is currently over-subscribed

Satellite coverage requires

- Unrestricted view of the south horizon
- Trees, buildings & hills limit coverage

Satellite service is not broadband quality

- Latency (1/2 second delay)
- Unusable for voice, VPN (telecommuting) ...

<<<< An example of satellite shadows

Willowbrook-Sherwood Forest Hills

- Community of 130 properties
- 10 miles NW of Willits
- No DSL, Cable or radio internet
- Terrain to the south blocks horizon

Where we need to be ...

- **The story of the typewriter ...**

- As reported in the UK Daily Mail on April 27th 2011

- “Godrej and Boyce - the last company left in the world that was still manufacturing typewriters - has shut down its production plant in Mumbai, India with just a few hundred machines left in stock.”



Where we need to be ...

Today's telephone will soon come to the same demise as the typewriter



AT&T (2009) - That transition is underway already: ... leaving the public switched telephone network ('PSTN') and plain-old telephone service ('POTS') as relics of a by-gone era."

Where we need to be ...

Broadband is fundamental to the economic survival of Mendocino County

Historical economic growth occurred in rural communities when ...

- Electricity was deployed in the 1920's & 30's - (energy)
- The telephone was deployed in the 1940's & 50's - (communication)

Economic growth will **not** occur without communication

- No broadband means no communication
- No communication means no economic viability
- The **economic viability** of Mendocino County is tightly linked with broadband deployment

But they built utilities for us in the past, why not now ?

- This time there will be no universal service mandate
- Carriers no longer have to provide access where it's needed
- Carriers will provide access only where it's profitable

Where we need to be

- **Today the carriers currently have little incentive to grow broadband outside of the county population centers**
 - Telecom & Cable providers go for the “low hanging fruit”
 - Ukiah, Fort Bragg, Willits – Profitable
 - Rest of County – Not enough margin or volume to interest them
 - Local providers don’t have access to the capital required
 - Pacific Internet, Willitsonline, Sonic, etc.
 - The story of Esplanade
- **If we do not expand broadband in our county - we will be left behind**
 - Business cannot survive without broadband and will leave
 - Growth will flow to other “better connected” communities in California

Bottom line:

Broadband in Mendocino will not happen unless the community takes action to make it happen

Where we need to be

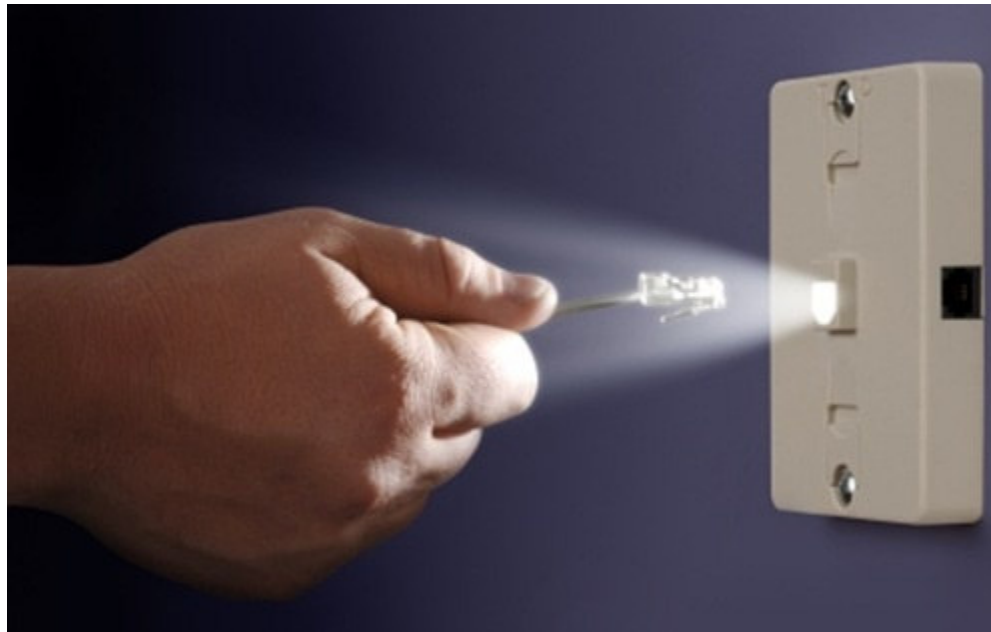
- **Access – 5 year plan - Preliminary**
 - 75% of the county has access to a net neutral 4 Mbps down/1 Mbps up broadband connection, with higher speeds available for businesses to allow economic development
 - 90% of county residents have access to higher speeds within a drive of 15 minutes
- **Access – No one type fits all**
 - We will need a combination of broadband solutions to reach our businesses, communities and rural residents
 - Fiber, Copper, Radio, Cellular, Satellite
- **Access – It will take everyone's involvement**
 - We will need a combination of resources to accomplish this task
 - County, City, Commercial, Co-operative, and Charitable

How do we get there

We propose a three step process

- **1st step – Get organized**
 - Connect and galvanize
 - County IT personnel
 - Tribal organizations
 - Local businesses and stakeholders
 - Education, Health, and Community service groups
 - The general community as a whole
- **2nd step - Get funded**
 - Community foundation challenge grant
 - Seek funding at the federal and state levels (CPUC, USF, USDA, RDA, etc.)
 - Seek help from the private sector
- **3rd step – Implement a plan**
 - It will be a county-wide broadband deployment strategy
 - It will involve the private and public sectors
 - It will have recommendations for the county (land use plan, permitting dept, etc.)
 - We will come back to you with the plan and periodic updates

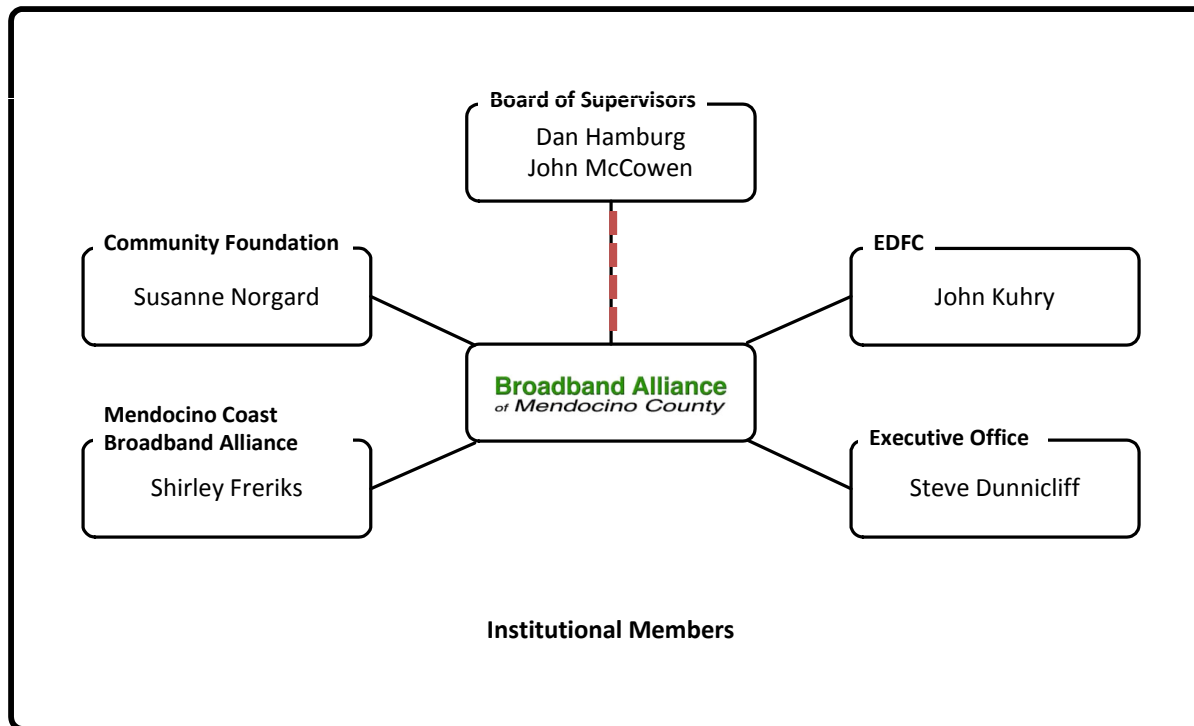
We need your help in broadband deployment



Where we need your help

Broadband Alliance of Mendocino County

The mission of the Broadband Alliance of Mendocino County is to ensure that the population of Mendocino County has affordable universal broadband Internet access in their homes and in their businesses in order to support economic viability, ensure health and safety, and access educational opportunities.



Where we need your help

Broadband Alliance of Mendocino County

We encourage the Board of Supervisors to adopt the resolution we submit today to join, as a founding member, the Broadband Alliance of Mendocino County.

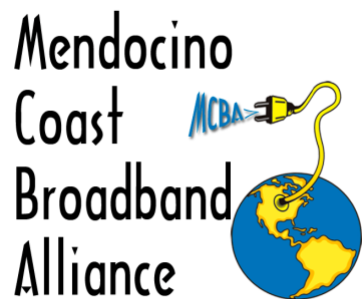
By joining the Alliance, the Board will be taking concrete action to address the County's critical broadband Internet access problem.

By actively participating in the Alliance, the Board will help ensure that Mendocino County has the broadband infrastructure it needs to remain a viable economy.

Broadband Alliance
of Mendocino County

Thank you !

Broadband Alliance
of Mendocino County



THE COMMUNITY
FOUNDATION
OF MENDOCINO COUNTY

