

# Nevada County California Telecommunications Infrastructure: A Journey

CENIC Presentation  
July 21, 2004

# Nevada County Profile: Topography

- Located between Lake Tahoe and Sacramento, in Sierra foothills
- Heavily forested, hilly terrain

# Nevada County Profile: Industry

- Economy shifted from resource-based to technology in late 1950's
- One of top centers for development and manufacture of broadcast equipment
- IC design, scientific glassblowing, medical manufacturing, solar, tourism, agriculture

# Nevada County Profile: Home Business

- Estimates as high as 50% of homes have business activity
- Home business ranges from manufacturing to high tech

# Who is ERC?

- Public/private economic development corporation
- Responsible for activities supporting job creation
- Existing industry retention/expansion, industry attraction, industry creation

# The Issue

- Without broadband access, communities will be bypassed, similar to railroads and interstate highways

# The Journey Begins

- Telecommunications Infrastructure Team formed November, 2000
- Representatives from government, business, education

# The Journey Begins

- Three initial priorities
  - What do we have?
  - What do we need?
  - How do we close the gap?

# The Journey Begins

- Initial grant secured through California Rural E-Commerce
  - Provide E-Commerce training for local employers
  - Assess feasibility of expanding broadband/Metropolitan Area Network

# What Do We Have?

- Worked with County Information Systems to identify existing fiber
- Worked with ISP's to identify areas served with DSL

# What Do We Need?

- Community survey: February, 2001
  - Distributed in local newspaper
  - 1373 responses
  - Overwhelming demand for expanded DSL

# Bringing DSL to everyone in Nevada County!



## Dear Internet User,

The Economic Resource Council is working to bring high speed Internet access to Nevada County. We need your help in determining the scope of Internet user's needs. Please take time to complete this survey: enter your zip code, then put an "x" by your response to each question.

**Make a  
copy and  
give it to  
a friend.**

**Thanks for your  
help in bringing  
high speed  
Internet to  
Nevada County.**

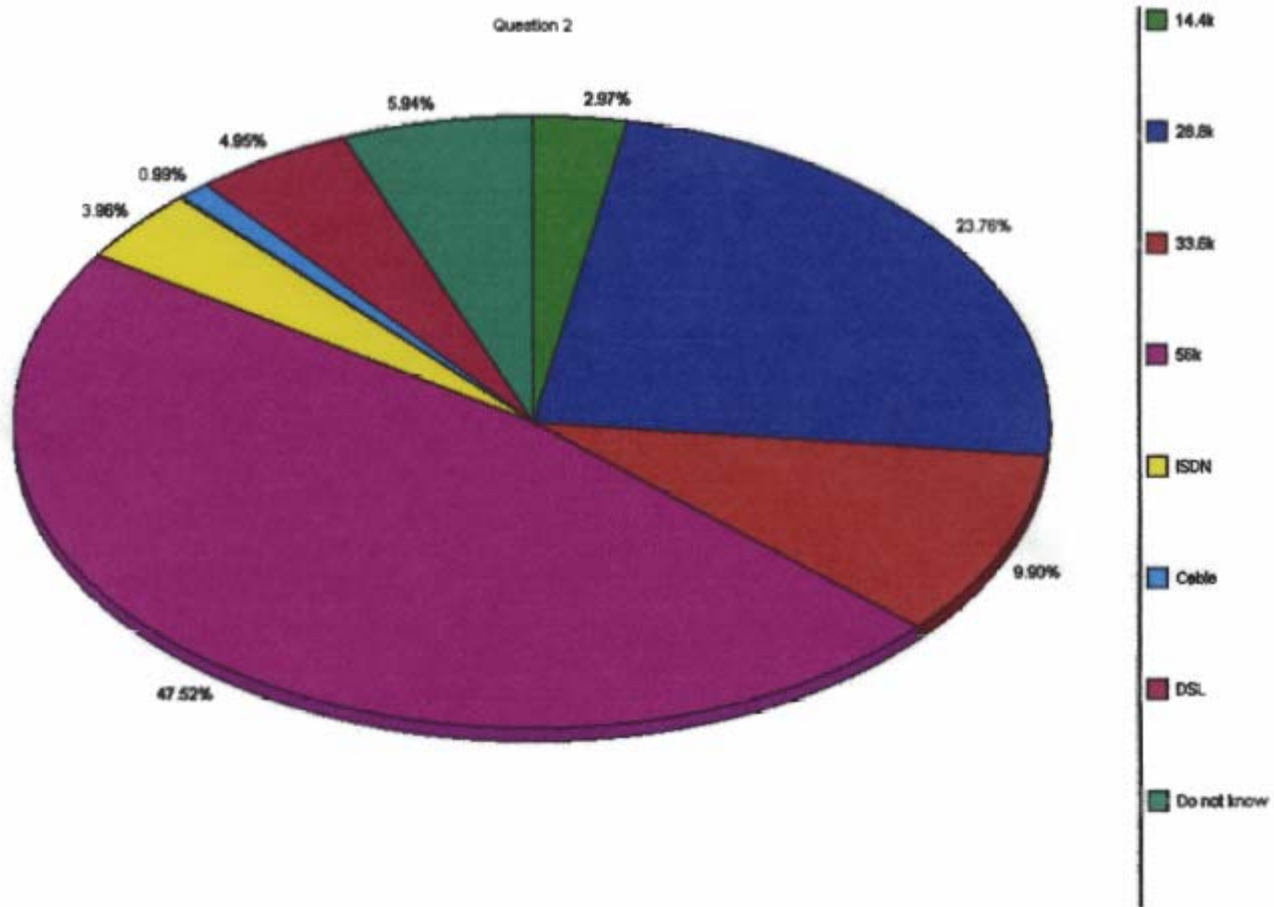
**FAX TO:**  
274-3942

**MAIL TO:**  
ERC  
PO Box 515  
Grass Valley, CA 95945

**OR COMPLETE ONLINE AT**  
<http://www.co.nevada.ca.us/survey>

- 1** Your Zip Code: \_\_\_\_\_
- 2** What is your current access speed? *(check one)*
- |                                |                                      |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> 14.4k | <input type="checkbox"/> ISDN        |
| <input type="checkbox"/> 28.8k | <input type="checkbox"/> Cable       |
| <input type="checkbox"/> 33.6k | <input type="checkbox"/> DSL         |
| <input type="checkbox"/> 56k   | <input type="checkbox"/> Do not know |
- 3** What is your primary use of the Internet?  
*(check all that apply)*
- E-Mail
  - Shopping
  - On-Line Gaming
  - Research for Home and School
  - On-Line Chat
  - News and Information
  - Investing and Banking On-Line
  - Maintain a web page for Home and Business
  - Other \_\_\_\_\_
- 4** Do you subscribe to *(check one)*
- Cable TV services
  - Satellite TV services
  - Cable is available, but I do not subscribe
  - None of the above
- 5** If you had a faster Internet connection, what would you utilize more? *(check all that apply)*
- Faster web page loading
  - Faster file downloads
  - Video and voice connections to other users
  - Buy movies over the Internet
  - Trade videos and pictures with family and friends
- 6** What other kinds of Internet services would you like to have?
- \_\_\_\_\_
- \_\_\_\_\_
- 7** How much would you pay per month to have a higher speed Internet connection? *(check one)*
- |                                    |   |
|------------------------------------|---|
| <input type="checkbox"/> \$20-\$29 | <input type="checkbox"/> \$45-\$60      |
| <input type="checkbox"/> \$30-\$44 | <input type="checkbox"/> More than \$60 |

Question 2



**Access Speed**

14.4k

28.8k

33.6k

56k

ISDN

Cable

DSL

Do not know

**Count**

42

332

132

650

48

7

66

85

**Percent**

3.1%

24.4%

9.7%

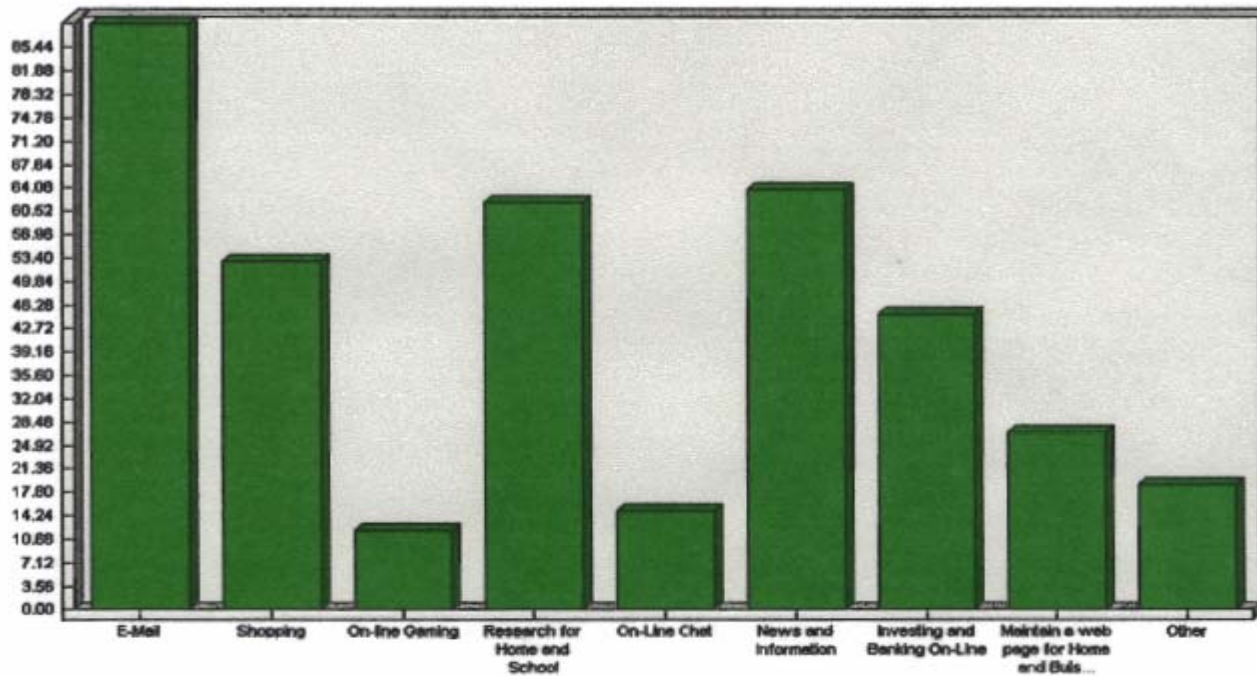
47.7%

3.5%

0.5%

4.8%

6.2%



Primary Use	Count	Percentage Answered
E-Mail	1223	89.1%
Shopping	732	53.3%
On-line Gaming	170	12.4%
Research for Home and School	850	61.9%
On-Line Chat	201	14.6%
News and Information	872	63.5%
Investing and Banking On-Line	611	44.5%
Maintain a web page for Home and Buisness	370	26.9%
Other	260	18.9%

# What Do We Need?

- Business survey: distributed to product export employers, Chamber members
  - 109 responses
  - Need for better connectivity
  - Businesses willing to pay \$50--\$150 for better technology
  - Needed better technology, but couldn't specify use

# How Do We Close the Gap?

- Technology neutral
- Identified five options:
  - Fiber or coax for OC3, DS3 and T1
  - Twisted pair phone wire for DSL
  - Coax cable with cable modem service
  - Satellite service
  - Wireless

# How Do We Close the Gap?

- First three options require physical connection to network via wire or cable
  - Given topography and development patterns, cable options too expensive

# Provider Response

- Started with no remote terminals; latest information shows 14
- Able to bring provider representatives to community to outline plans
  - Soon found that several remote terminals had been installed, expanding DSL access throughout Grass Valley and Nevada City

# Provider Response

- Plans for infrastructure installs changed with entry of wireless providers
  - Case in point: Penn Valley/Lake Wildwood

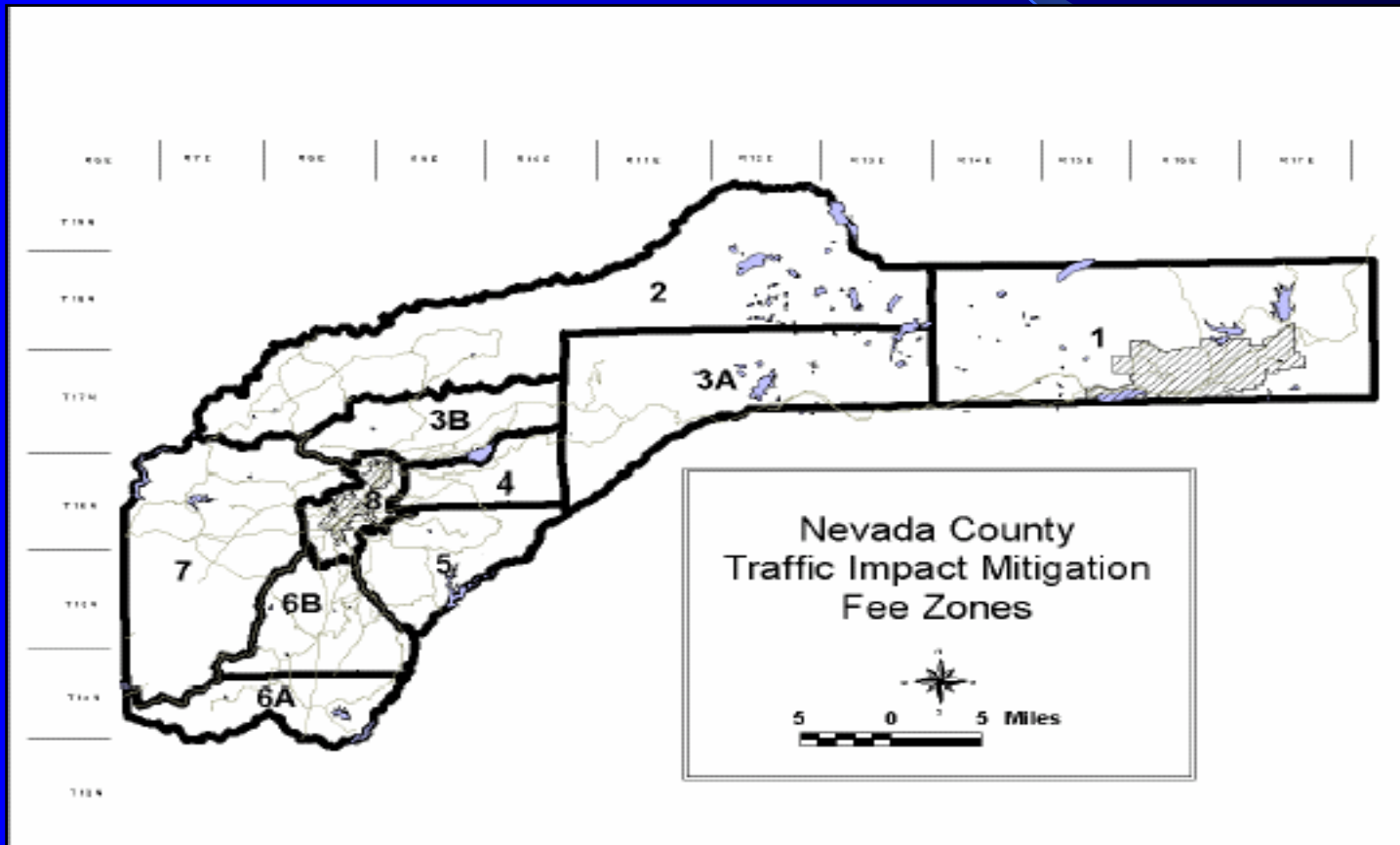
# Sierra Telecommunications Coalition

- An effort to collaborate with nine area counties for leverage
  - To have been funded by Rural E-Commerce grant
  - Initial meeting October, 2002
  - Funding lost

# Current Efforts: Telecommunications Team

- Demand model:
  - Define potential broadband needs, residential and commercial, with anticipated 25 year growth

# Current Efforts: Telecommunications Team



# Current Efforts: Telecommunications Team

- Draft telecommunications policy for local government
  - Use of rights of way, antenna installations, etc.
  - Identify potential incentives to encourage provision of best technology

# Current Efforts: Telecommunications Team

- Define office and home architectural and construction requirements
  - Articles and workshops for local construction industry

# Current Efforts: Telecommunications Team

- Pursue appropriate grant funding

# Keys to Progress

- Identify community advocates
- Enlist technical support
- Encourage participation from government
- Look for partnerships
- Persistence: remember that the stakes are high