RAIN Network Rural Technology Programs

Using Technology to re-weave the fabric of traditional community

Timothy Tyndall
Director
RAIN Rural Technology Network
timothy@rain.org

- RAIN Networks Pacific Southwest Rural Technology Project linked 150 rural communities creating regional:
- Telemedicine Networks
- Distance Learning Networks
- Small Farmer and Small Business Economic Development Networks

About RAIN Technology Network

- Visible Light, Inc. is a California 501 (c)3 nonprofit Corporation founded in Santa Barbara, California in 1978 as a Community Education and Health Services Organization.

- Visible Light is now in its 31st year of service of bringing Educational and Community Wellness Resources to Rural Communities, children, women, low income families, and seniors.

- Since the beginning of Visible Light our goal has been to find new and innovative ways to make education and health information available to parts of our Community who often do not have access to or help in accessing important Education and Health resources.

- Visible Light has always worked to bring multiple Agencies together to create new programs which can be made available to the Community. Since 1989 Visible Light has focused on the use of new Technologies. Visible Light established the Central California Distance Learning and Telemedicine Network in 1991.

- The RAIN Rural Technology Network began as the Pacific Rim Technology Network through funding from the National Science Foundation. In the years since that beginning RAIN has helped begin "Community" level distance learning and telemedicine programs in 150 rural communities in California and the Southwest as well as helping start free Public Internet Health and Education programs in Belize, Costa Rica, and Ghana.

- Through Visible Light's Distance Education and Telemedicine program scholarships have been awarded to schools, libraries, and community health clinics in 150 rural communities, providing service to over 35,000 students in 150 schools, 90 community health clinics and to a broad range of physicians, nurses, teachers, and families. Over 200 physicians have received telemedicine and technology skills training through the Telemedicine Network's projects.

- Visible Light provides one of the leading Rural Technology services in the United States and has received two AOL community technology awards and a Smithsonian Institution Technology Innovation Award.

RAIN Technology Projects

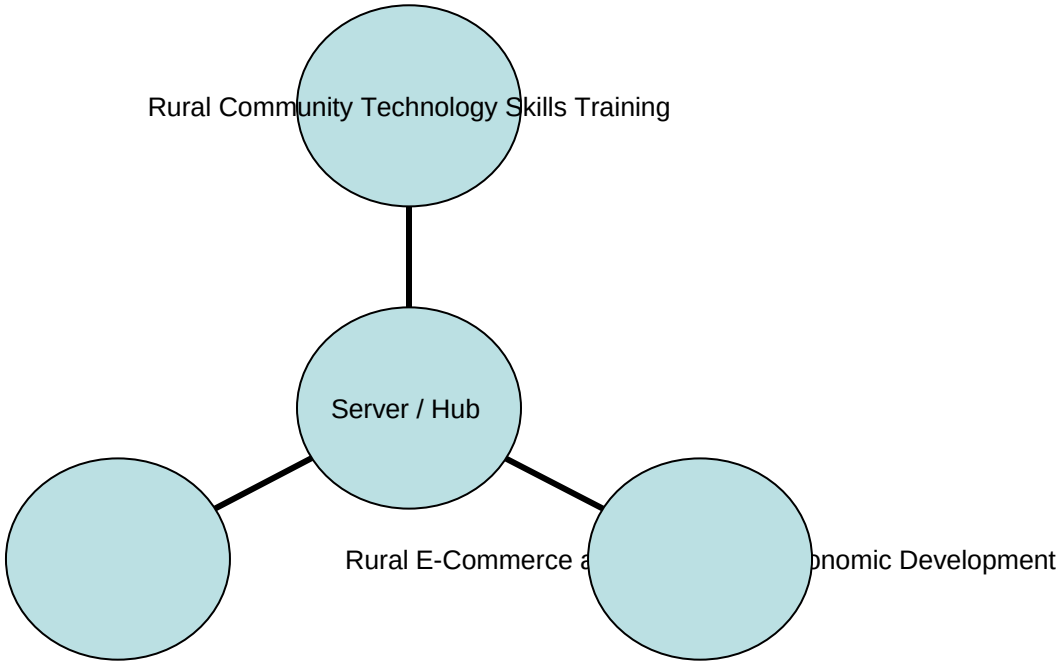
RAIN Network's activities have included projects such as:

- 5 USDA distance learning and telemedicine grants.
- National Science Foundation – Pacific Rim Business and Education Network.
- CYFAR Family grant - working with the Santa Barbara Housing Authority - (Child, Youth, Family at Risk) program serving youth and families in Santa Barbara County.
- The California Telemedicine and Telehealth Foundation, UC Davis, for physician and nurse training providing technology skills training for 200 physicians and nurses.
- U.S. Department of Defense (DoDea) ECRC (Electronic Commerce Resource Center) Network Technology Development and e-commerce training program.
- Albertsons Corporation Neighborhood Wellness grant.
- U.S. Geological Survey, (USGS), GIS metadata grant to establish a west coast Metadata Online Center.
- Kaiser-Permanente Community Telemedicine grant.
- California Council for the Humanities video production grant.
- California Consumer Protection Foundation – Youth and Family Education grant.

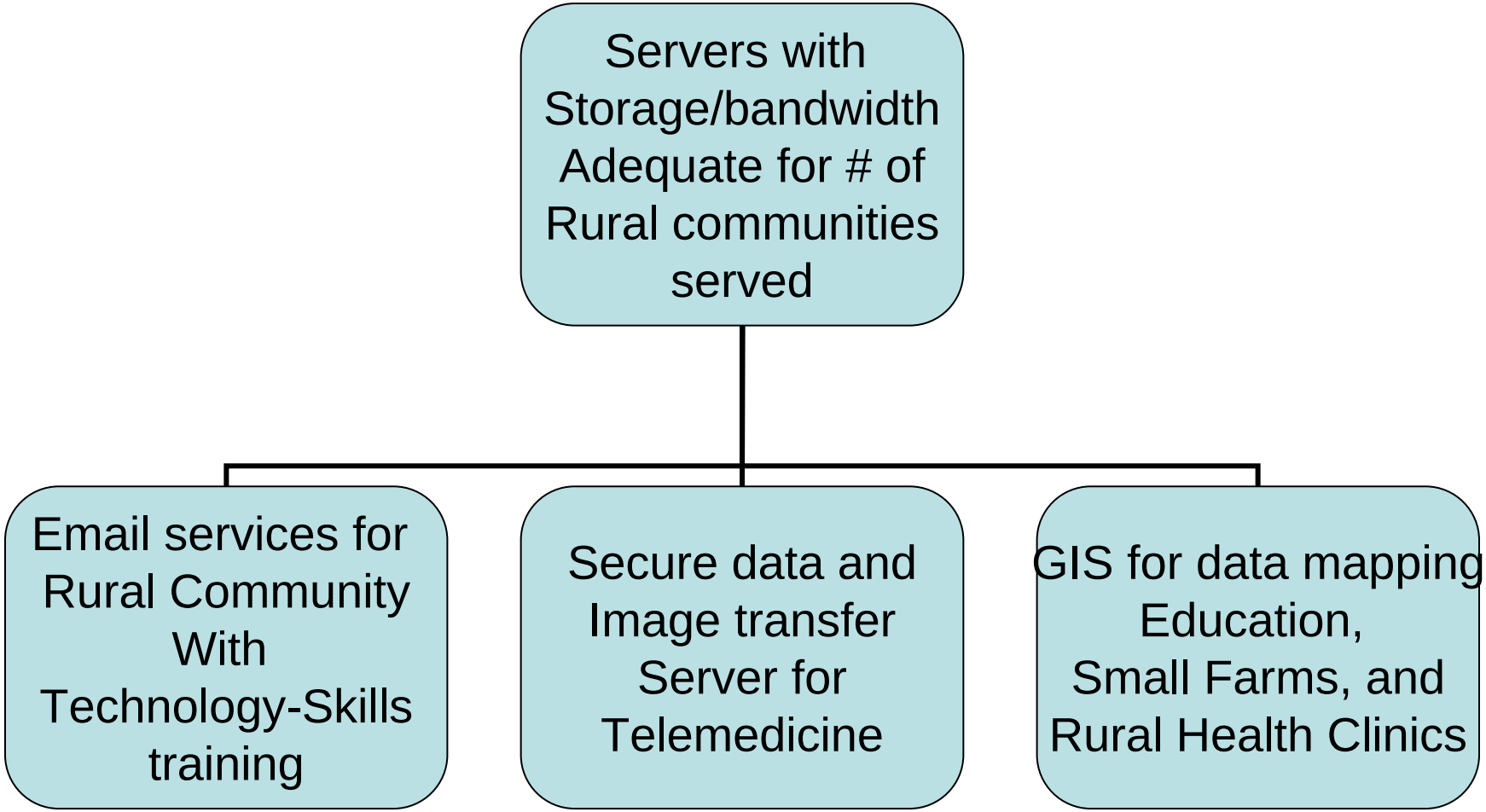
In all these projects Visible Light has worked to build local involvement and create ways to ensure that resources, hardware, and connectivity, stay in a workable condition in the rural communities served in order to ensure continuation of the projects after the grant funding period. To accomplish this Visible Light / RAIN Network has established Rural Community Technology Advisory Councils (CTAC's).

Visible Light represents a very well designed, comprehensive regional nonprofit Internet Systems which, through funding from USDA and other Federal and State Agencies, has developed the resources to provide essential Telemedicine, Distance Learning, and Rural Development services. The Network is able to provide a significant range of technology applications include live and streaming Internet video, secure telemedicine data and image transfer, classroom and community level distance learning programs, and GIS mapping.

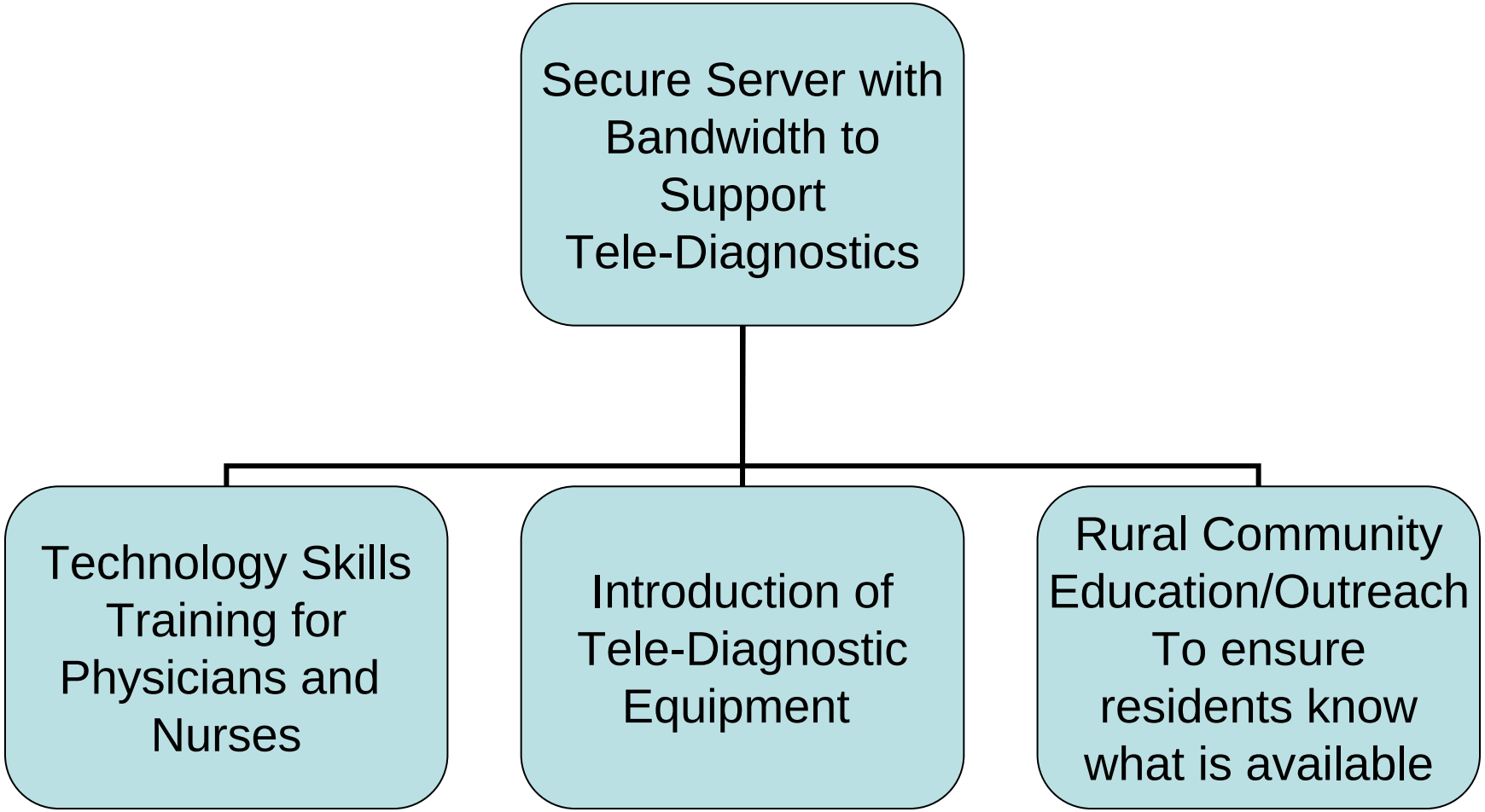
4 components of a Rural Technology Project which create jobs, introduce new technology skills and new Rural Community Economic, Health and Education Resources



The Rural Technology Project Server/Hub – What is Required



Rural Telemedicine Projects – What is Required



- For the 150 Rural Communities in RAIN Networks Telemedicine Network each community was connected to the Hub in California via a DS3 bandwidth line.
- Local clinics were connected to T1 lines wherever possible.
- Where T1 lines were not available satellite connection to the Hub was established.

California Rural Technology Project

Telemedicine Center

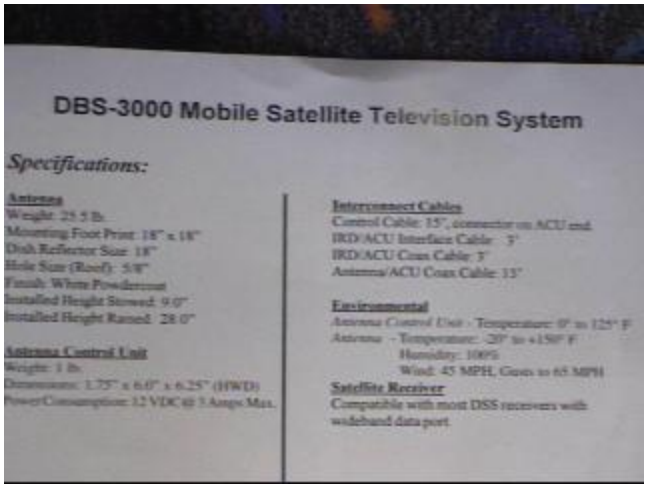
- Rural Clinics were setup with portable video phone units which included digital stethoscope, derma scope, exam camera, portable computer, and video conferencing camera.

California Rural Technology Project

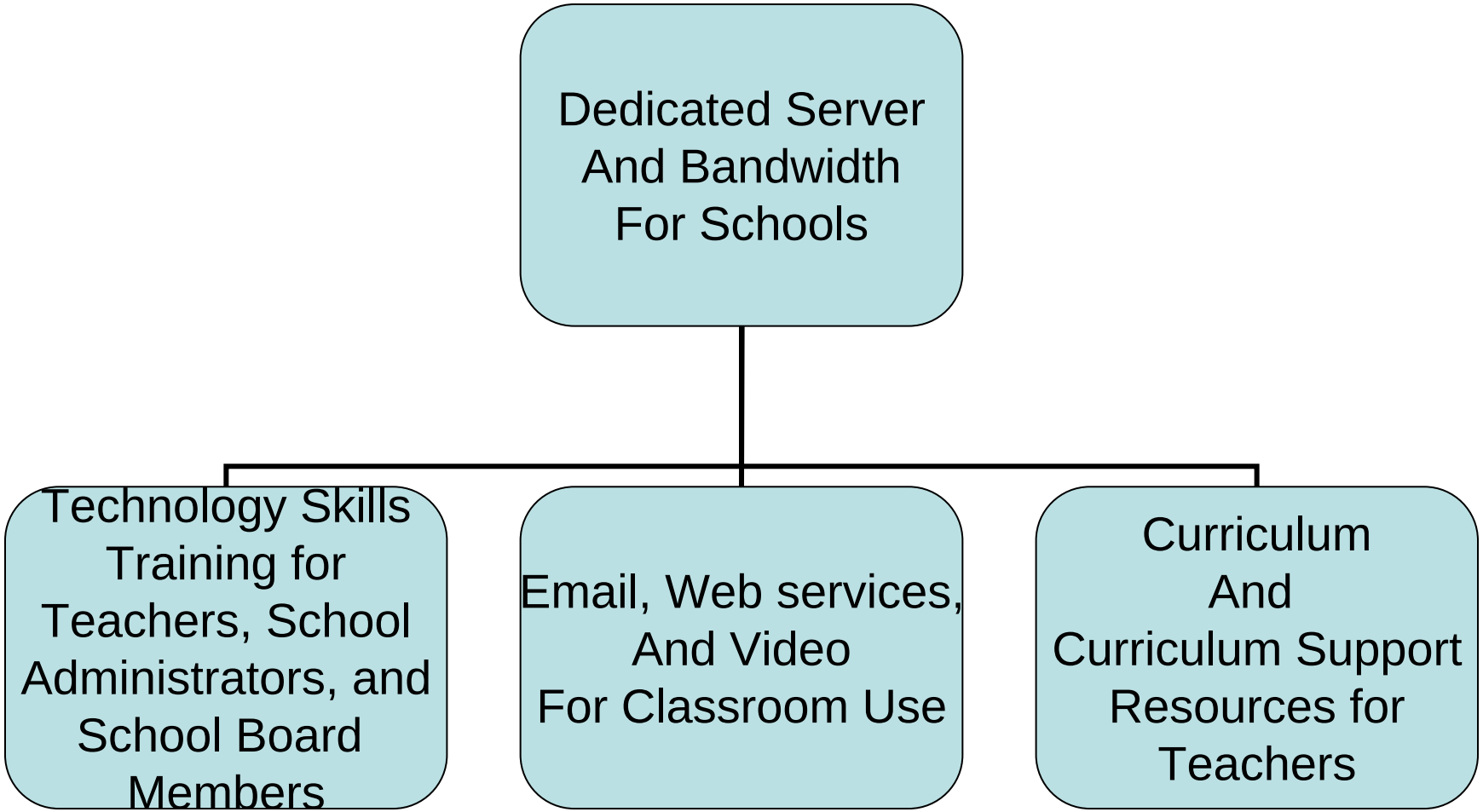
Telemedicine Center

Funded by USDA Rural Utilities Service and the RAIN Network

- The Telemedicine Network also made use of RAIN's solar powered "Internet Bus" which took a mobile computer lab with satellite connectivity out to the most rural communities.



Rural Distance Learning – What is Required



Camp Internet Distance Learning Program

- Camp Internet is the Smithsonian Institution Award winning Distance Learning component of RAIN's Rural Technology projects.
- Over 35,000 K-12 students have taken part in classroom and home learning.
- Camp Internet is introduced into at least 1 school in each rural community.

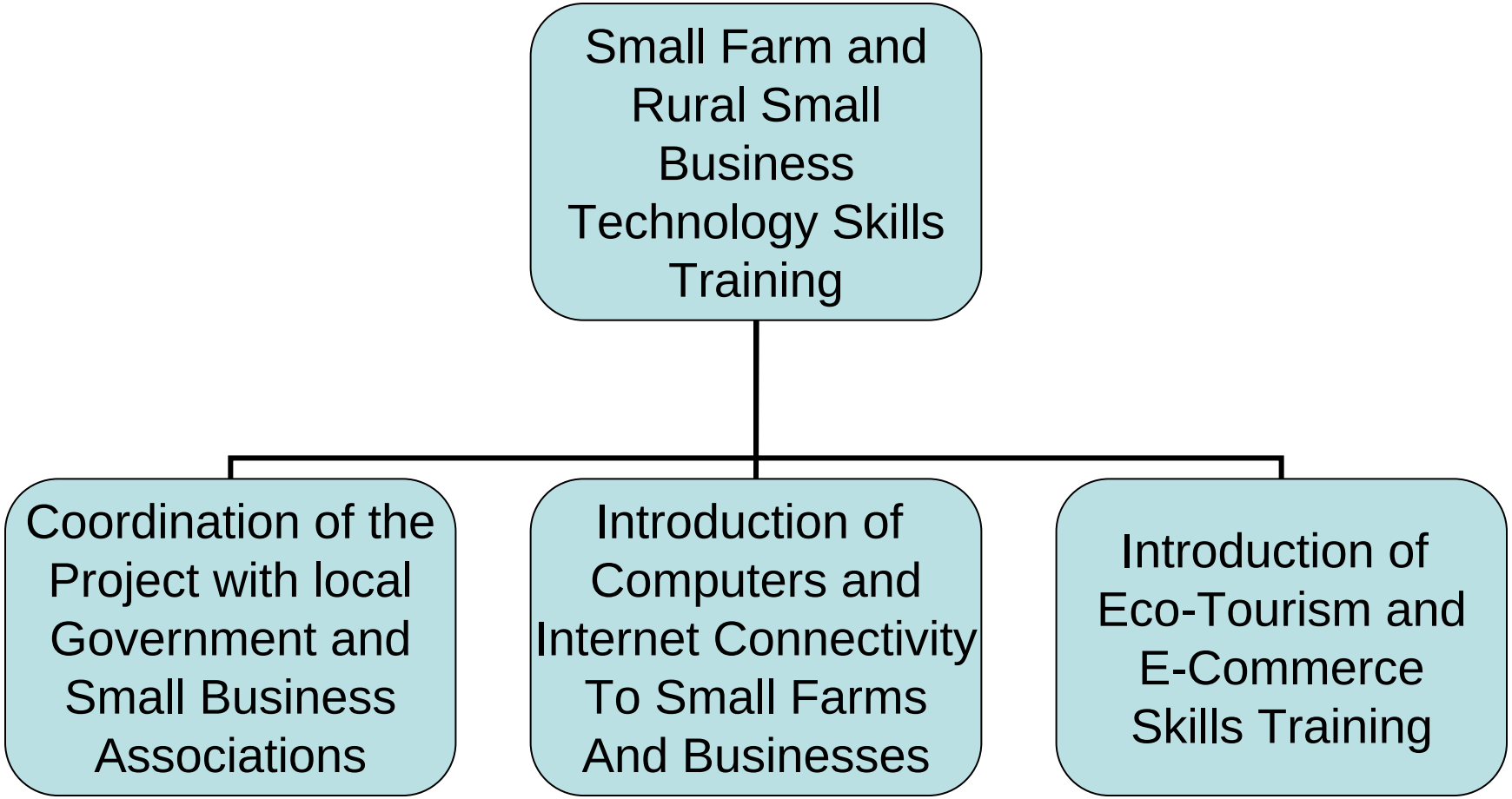
- The Rural Distance Learning Program provides a computer, printer and learning resources/curriculum guides to each participating school and community center program

Pacific Southwest Rural Technology Project

Funded by the USDA Rural Utilities Service and the RAIN Network

Rural Community Small Farm and Small Business Programs introduce community classes in the use of e-commerce and eco-tourism as tools for economic growth

Rural Technology Economic Development Programs – What is Required

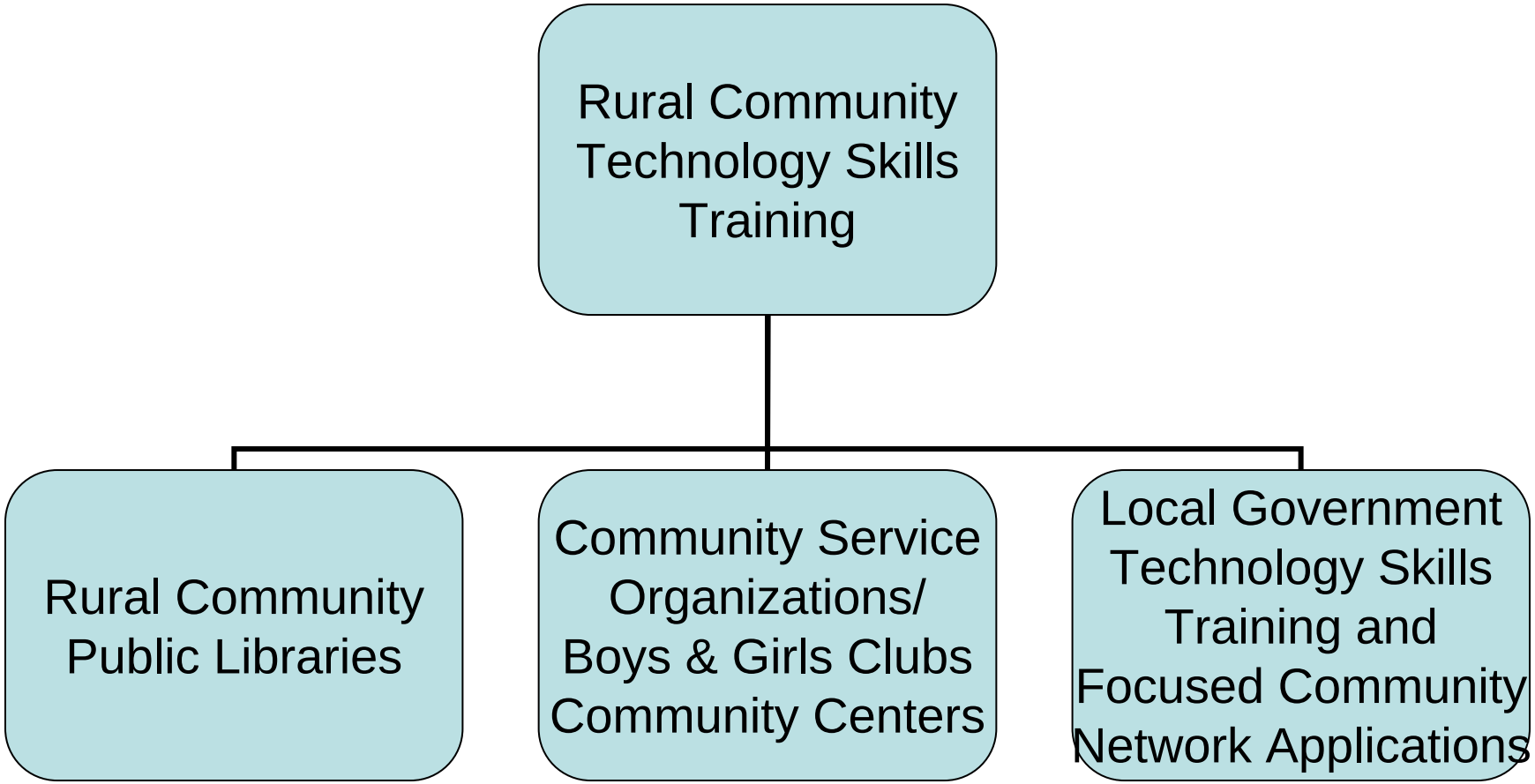


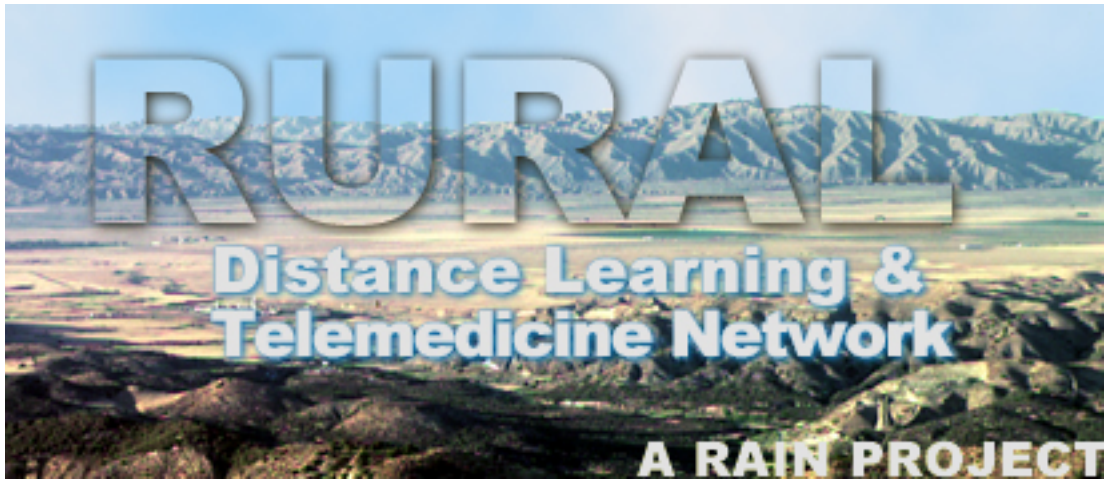
Pacific Southwest Rural Technology Project

Funded by the USDA Rural Utilities Service and the RAIN Network

- Each Rural Community Public Library receives two computers and a printer to setup a Public Internet Access Center.

Rural Technology at the "Community Level" What is Required?





- Essential to creating Rural Community buy-in to the Project were two local elements:
- “Community Technology Advisory Councils;” and
- “Youth Technology Advisory Councils.

- Community Technology Advisory Councils (CTAC's) were made of 12 or more community residents who took on responsibility to help ensure Sustainability of the Project.

Technology Advisory Councils

- Many communities are familiar with their local Master Gardner organization. Skilled gardeners who volunteer their time to teach others the skills of Gardening.

  RAIN has taken this model and shaped it to provide the framework for Neighborhood level Technology Literacy education.

  Working with families in each of our USDA RUS sponsored Communities RAIN provides intensive training for volunteer families who want to serve as “Change Agents" in this technology era, agreeing to provide Internet skills training for neighbors during the next year.

  These "Master Technology Families" become the key tool in bringing Internet skills out into rural and underserved urban communities. They become the Rural Technology Project’s “Technology Advisory Council”. Part of the core sustainability plan behind each rural program.

  Neighbors teaching neighbors, kids teaching parents, all working together to build new skills that will help make a real difference in their community.

  The Neighborhood Technology Master Family program is an important investment in training infrastructure - that will have a lasting impact in each community.

  The Master Families will be positioned (via direct training and the provision of public and home access technology) to train, encourage, and lead fellow families into the use of technology for family and community betterment.

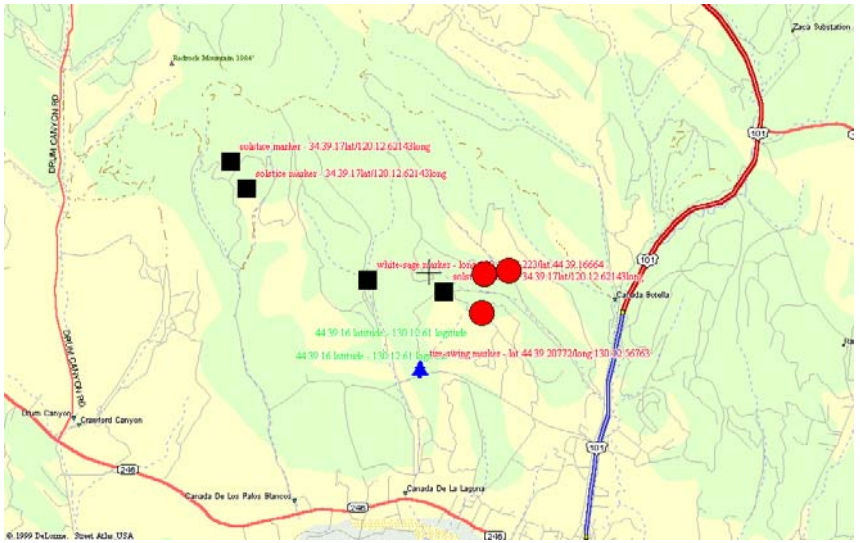
- A core focus of this neighbor-to-neighbor technology training method is to bring parents, children and neighbors together at local community centers, primarily libraries and schools, where the project has provided public access technology and connectivity. These public library and school sites form the end user hubs that provide direct connectivity to the central program hub, and open communication between all participating rural hubs.

  In this way the entire community can benefit from the installation of a low cost technology center, and economic and social barriers to the use of the technology are more easily overcome in a non-threatening, familiar community setting.

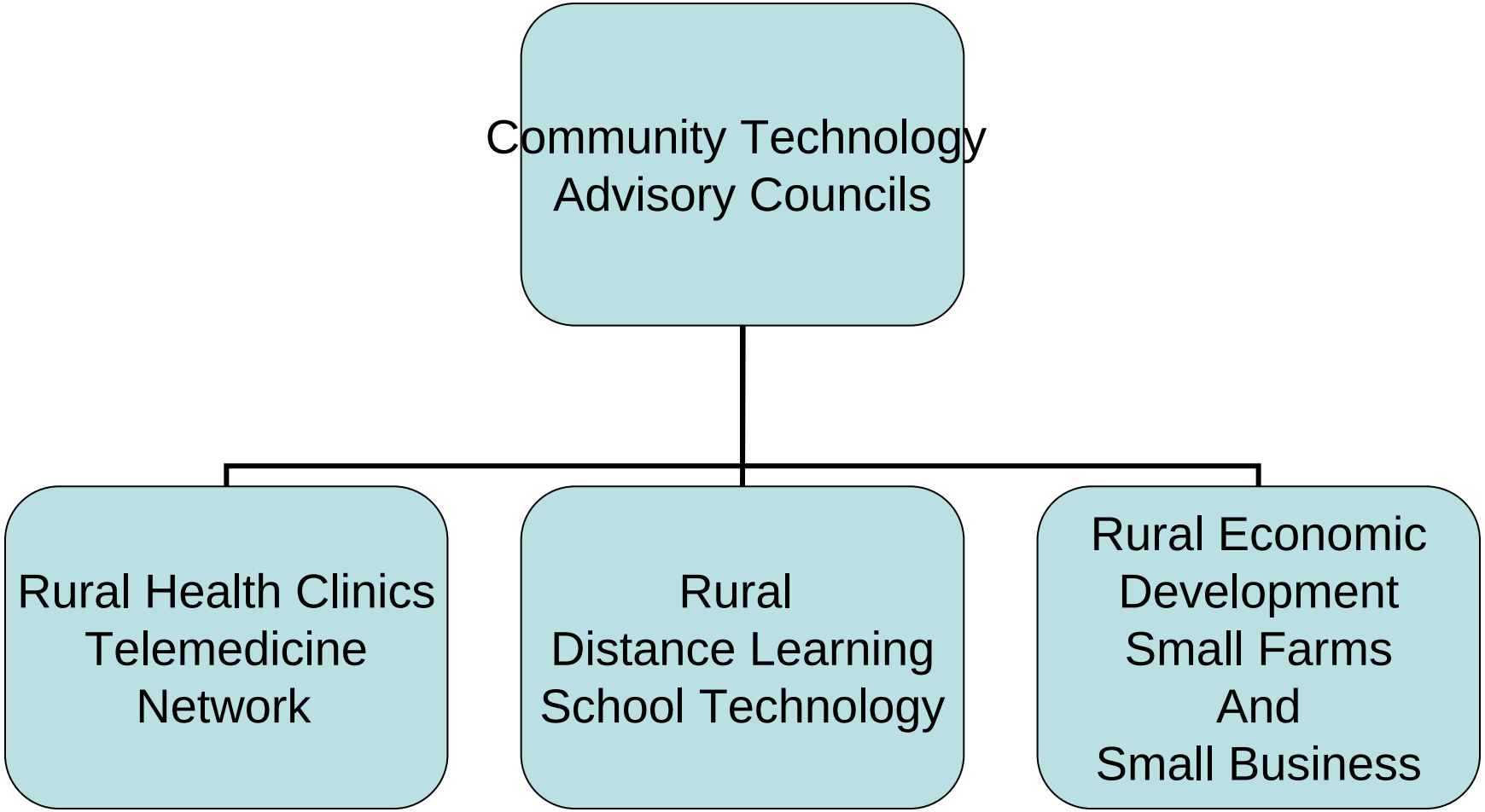
- Youth Technology Advisory Councils (YTAC's) were formed of 12 or more High School students from each rural community.
- Often the YTAC members served as trainers to introduce Technology Literacy Skills to adults in the community.

GIS Mapping

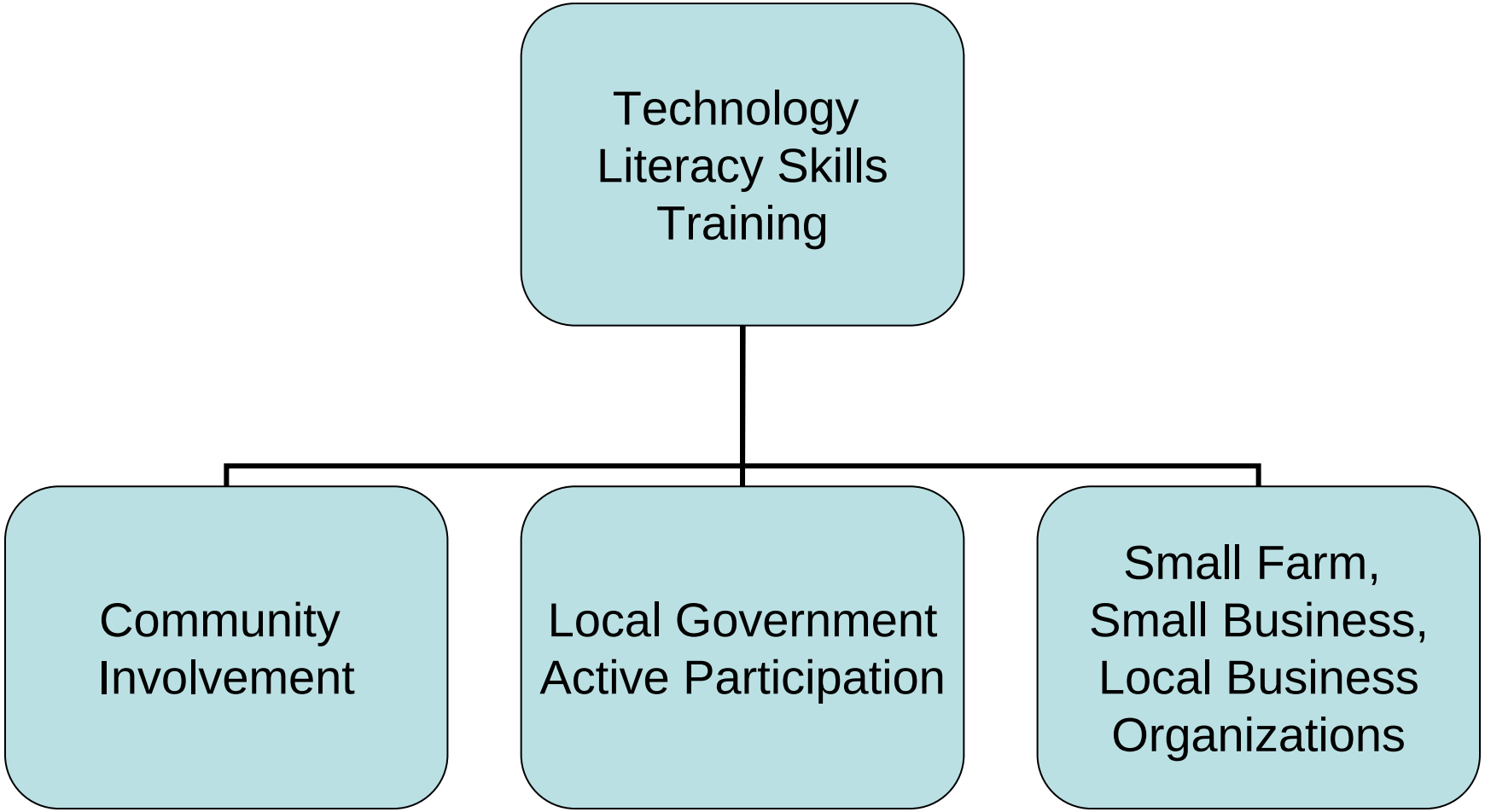
- GIS data mapping has been used to track:
- rural area resources, including land, water, and electricity use;
- participating health clinics and schools; and
- Economic Growth Models to help Small Farms and Rural Small Business learn to Grow.



Creating Sustainable Rural Technology Projects



Creating Sustainable Rural Technology Projects requires Local Technology Literacy and Local Involvement



Connected Nation:
Connecting Rural Communities

Phillip Brown
National Policy Director

Who We Are

Connected Nation is a national non-profit 501(c)(3) organization that facilitates market-based strategies for 1) expanding broadband availability and 2) increasing broadband adoption rates across the United States through public-private partnerships.

Our Mission

We believe that states, communities, families and individuals can realize great economic and social advantages when we accelerate broadband availability in unserved areas and increase broadband use in all areas, rural and urban, alike.

The Five Key Components of the Connected Nation Model

1. **Street-Level Broadband Availability Mapping**

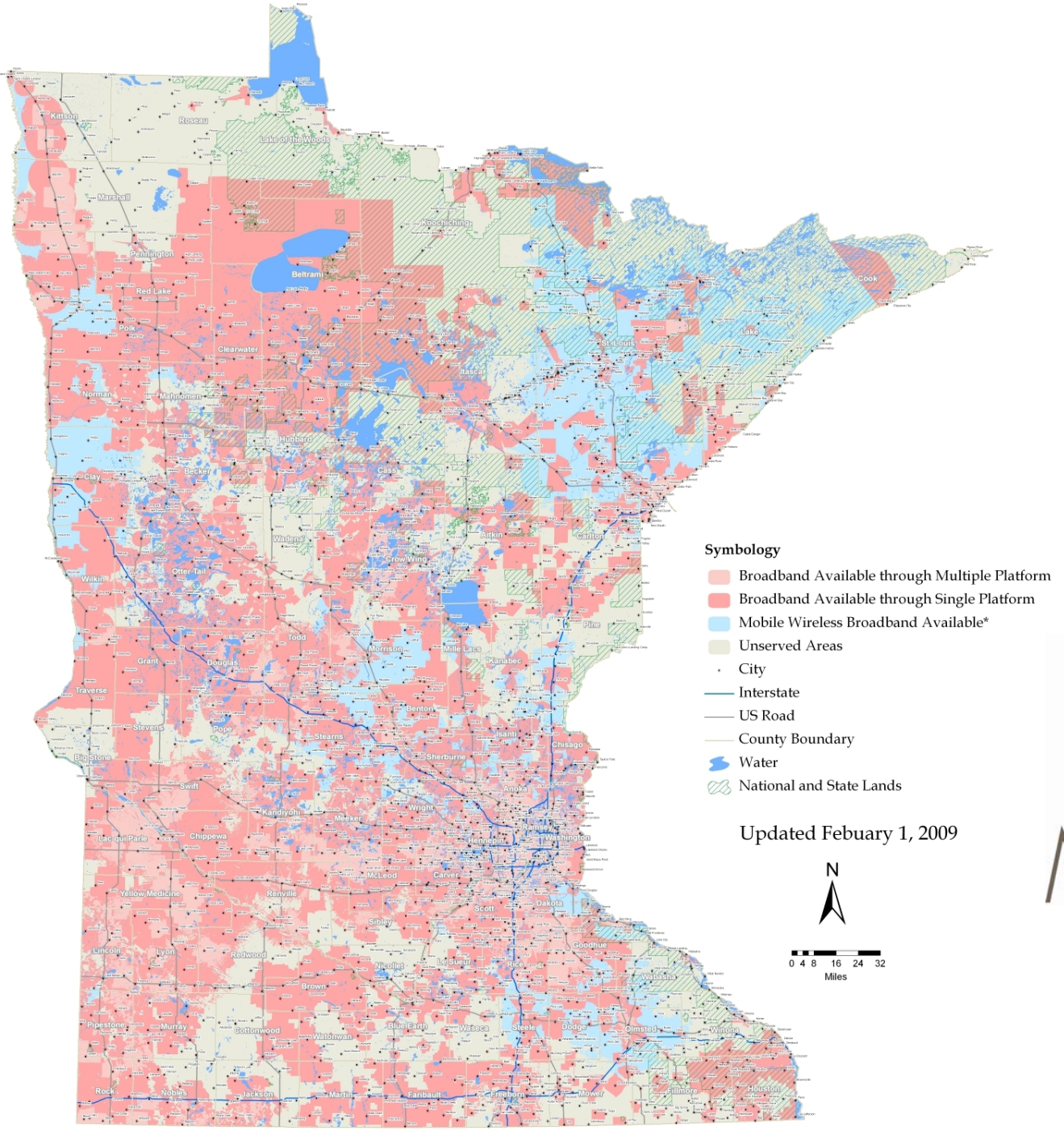
2. **Market Intelligence through Survey Research**

3. **Bringing Together Communities and Providers**

4. **Grassroots Technology Planning and Demand Stimulation**

5. **Computers for the Disenfranchised**

Minnesota Broadband Service Inventory Map



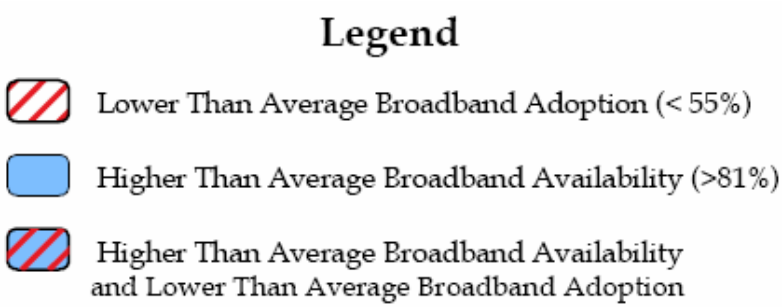
CONNECT Minnesota SM

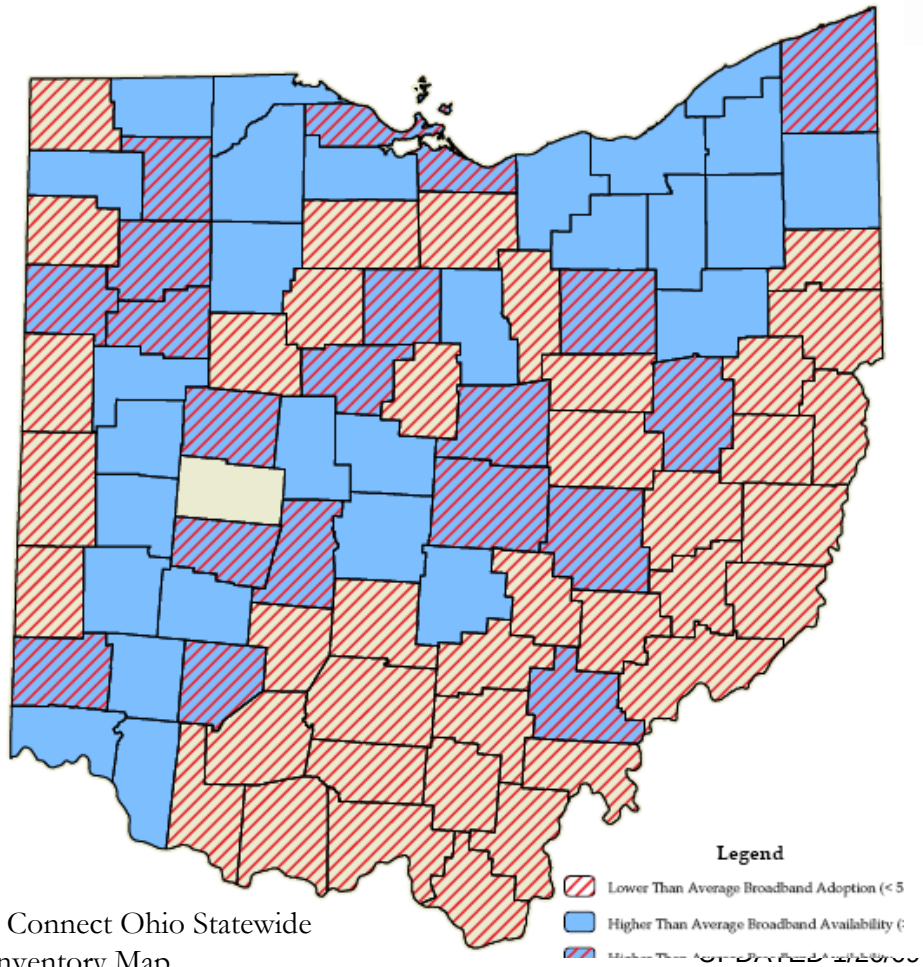
UPDATED 1/26/09
www.connectednation.org

Ohio Broadband Availability and Adoption by County

Low broadband adoption is not limited to areas with low broadband availability.

92% of Ohioans have broadband availability, yet only 55% actually subscribe.





Source: 2008 Connect Ohio Statewide Broadband Inventory Map

CONNECTED NATION℠

Demand at the Grassroots

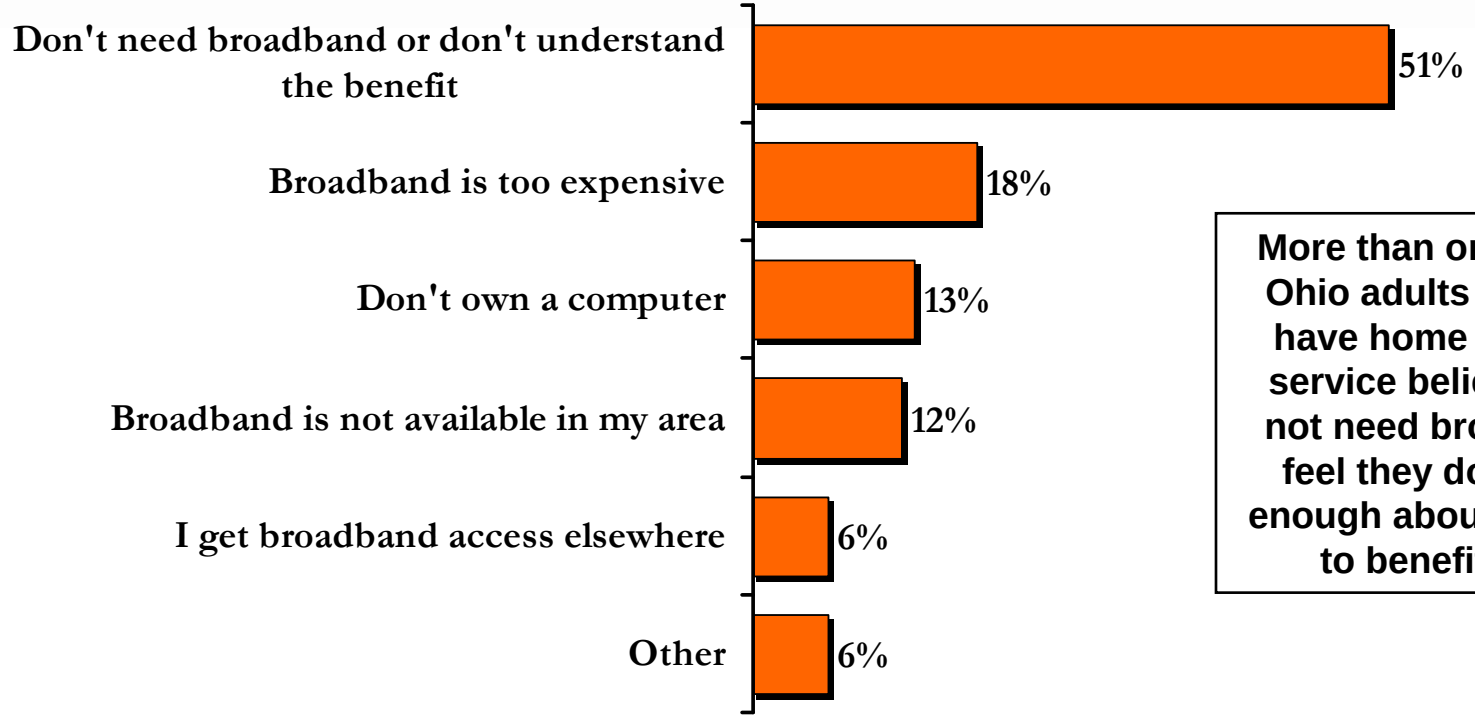
E-Communities

Community leaders from key local sectors team together to shape a locally-owned technology growth strategy.

- Business and Industry
- K-12
- Healthcare
- Libraries
- Higher Education
- Community-based Organizations
- Government
- Tourism, Recreation and Parks
- Agriculture

Barriers to Broadband Adoption

Among Ohio residents who do not subscribe to home broadband service:*

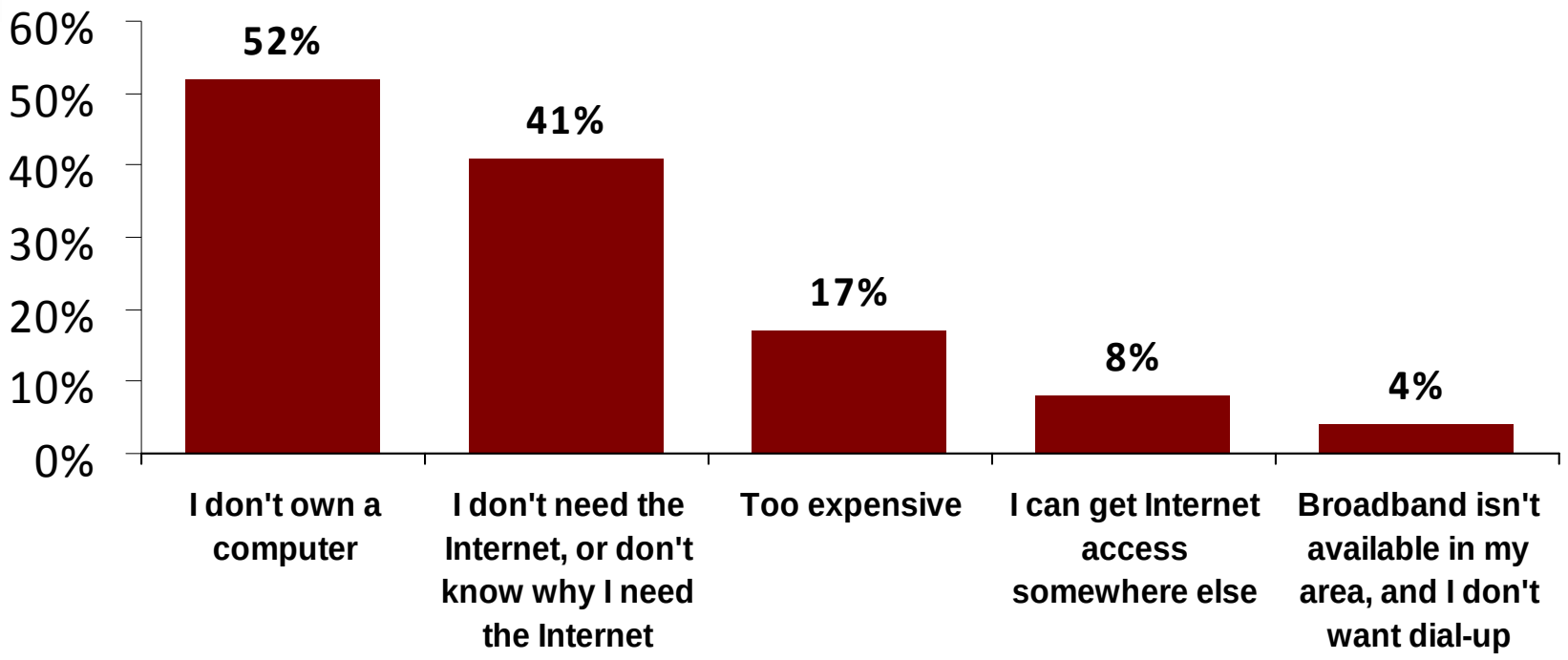


More than one-half of all Ohio adults who do not have home broadband service believe they do not need broadband, or feel they do not know enough about broadband to benefit from it.

Q: Why don't you subscribe to broadband Internet service?
Or if broadband is not available:
Q: Why wouldn't you subscribe to broadband Internet service?
(n = 542 OH residents with no home broadband service)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

Barriers to Broadband Adoption

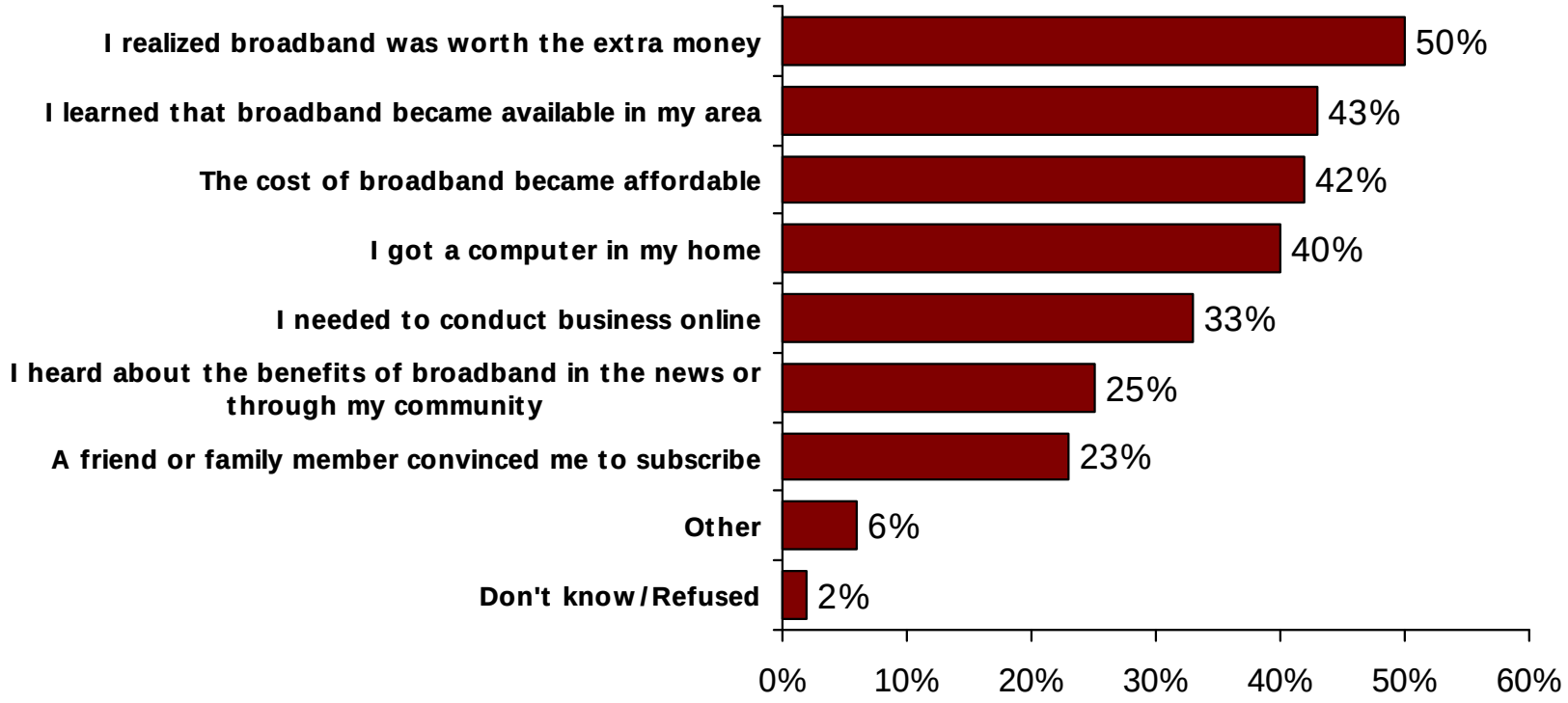


*Percentages do not add up to 100% because respondents could give multiple responses.

Q: Why don't you subscribe to broadband Internet service?
Or if broadband is not available:
Q: Why wouldn't you subscribe to broadband Internet service?
(N = 4,309 KY residents who do not have Internet service at home).

2007 CK Residential Technology Assessment, October 2007.

Reasons for Broadband Adoption



"Which of the following contributed to your decision to subscribe to broadband?"

n=3,776 with broadband service at home.

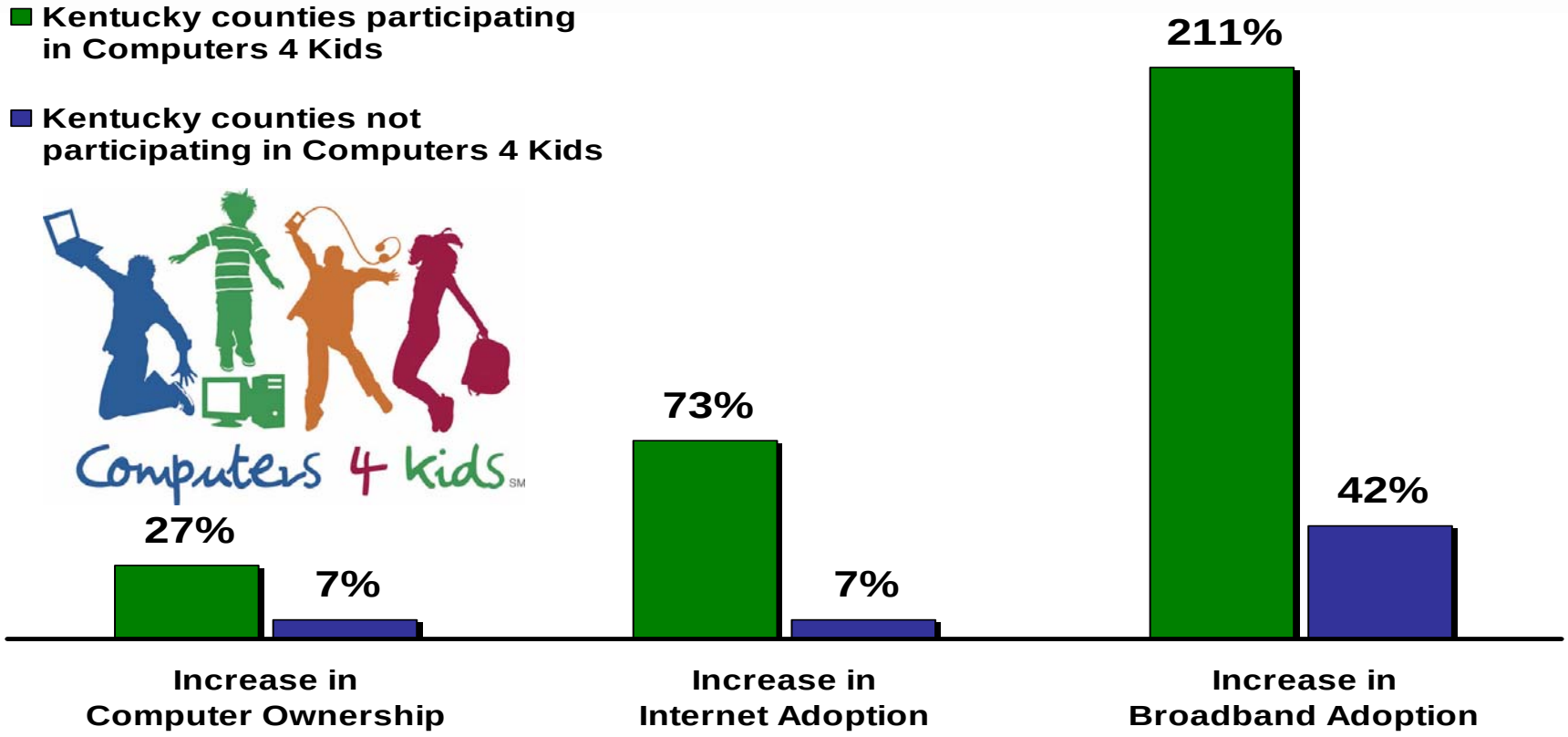
2007 CK Residential Technology Assessment, October 2007.

Every Child Online/ Computers 4 Kids

Every Child Online/Computers 4 Kids Program
ConnectKentucky = 3,102
Connected Tennessee = 1,298
Connect Ohio = 588
Total = 4,988

Pictured above is a photo from a recent Computers 4 Kids event in Rogersville, TN, where alongside Rogersville Mayor Jimmy Sells, we proudly presented 51 deserving families with brand new Dell computers.

Technology Adoption Among Low-Income Families



Kentucky counties participating in Computers 4 Kids include Johnson, Clay, Wolfe, McCreary, Owsley, Carter, Lawrence and Morgan Counties. Low-income families are households where children are present and the annual household income is less than $25,000.

Source: 2007 ConnectKentucky Residential Technology Assessment

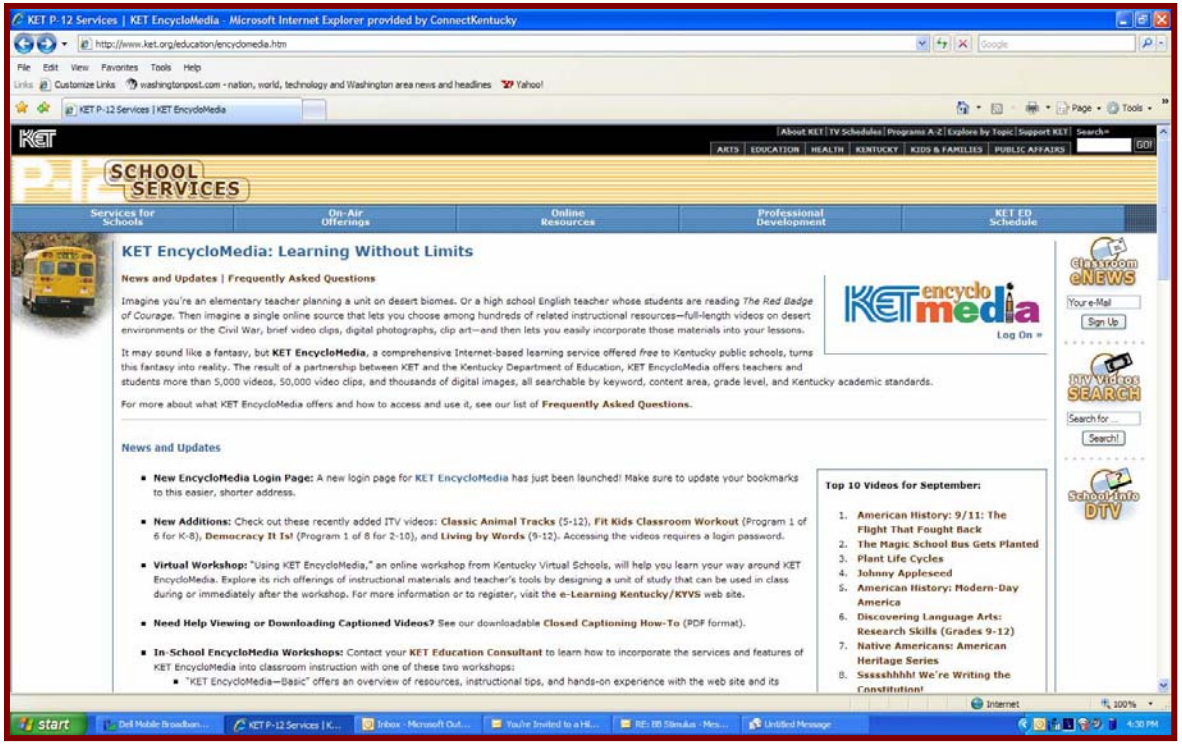
UPDATED 1/26/09

PBS Teacherline

Online learning for teachers – Broadband required

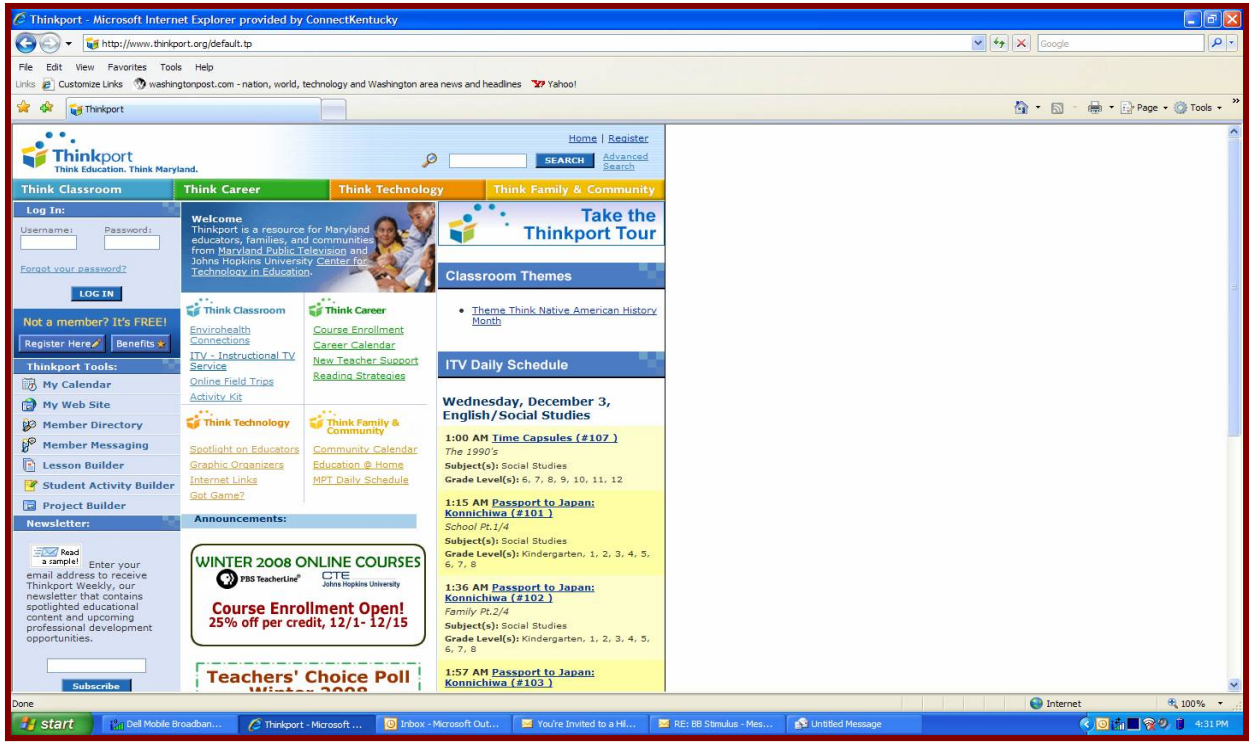
CONNECTED NATION℠

KET Encyclomedia



Online Educational content for the classroom – Broadband required

Maryland PTV's Thinkport



Online Educational content for the classroom – Broadband required

Value Proposition

- **Improving the lives of the formerly disconnected**

Value Proposition

- **Renewing hope for previously withering communities**

FTTH deployment in rural Johnson County, KY

Value Proposition

- **Driving increases in the number of tech-intensive companies and jobs**

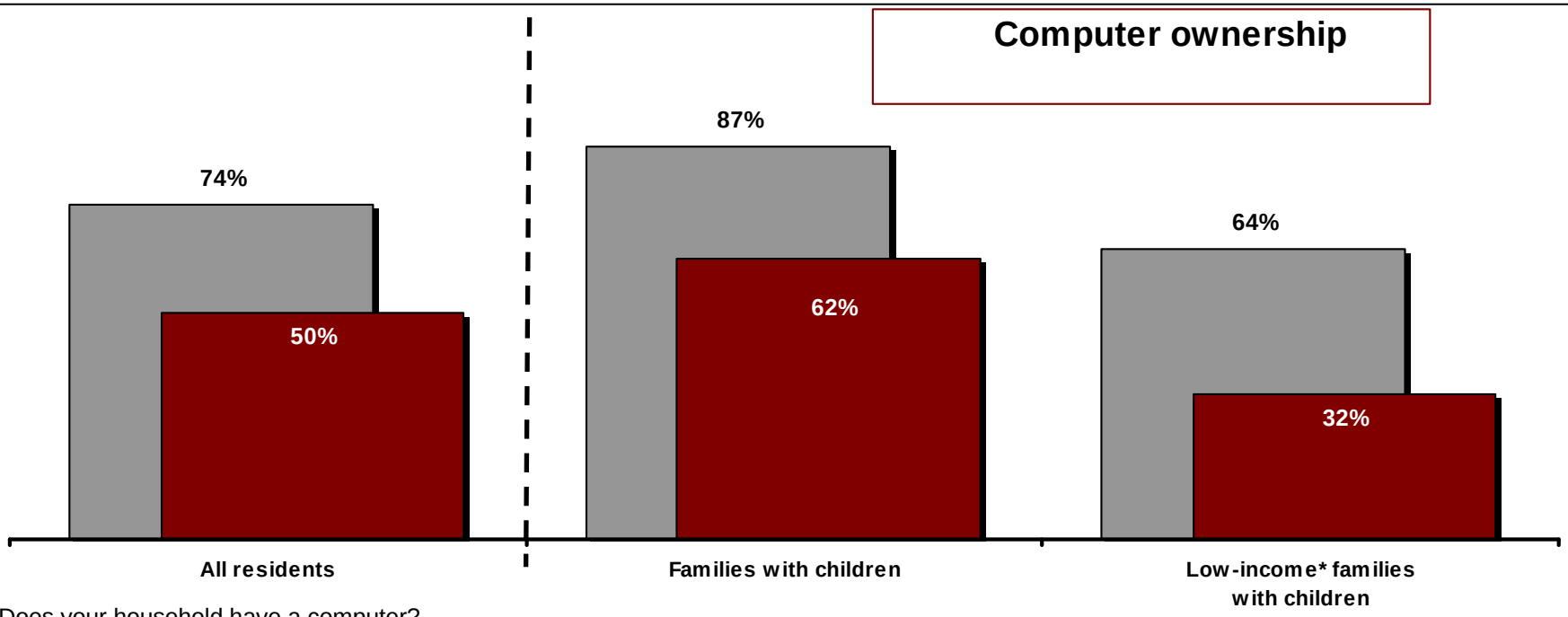
Value Proposition

- **Enabling technology for lifetime learning, improved healthcare and higher quality of life**


EAST
20
FRONT

Computer Ownership and Broadband Adoption by Presence of Children

Among low-income families with children, computer ownership and broadband adoption are well below the average.

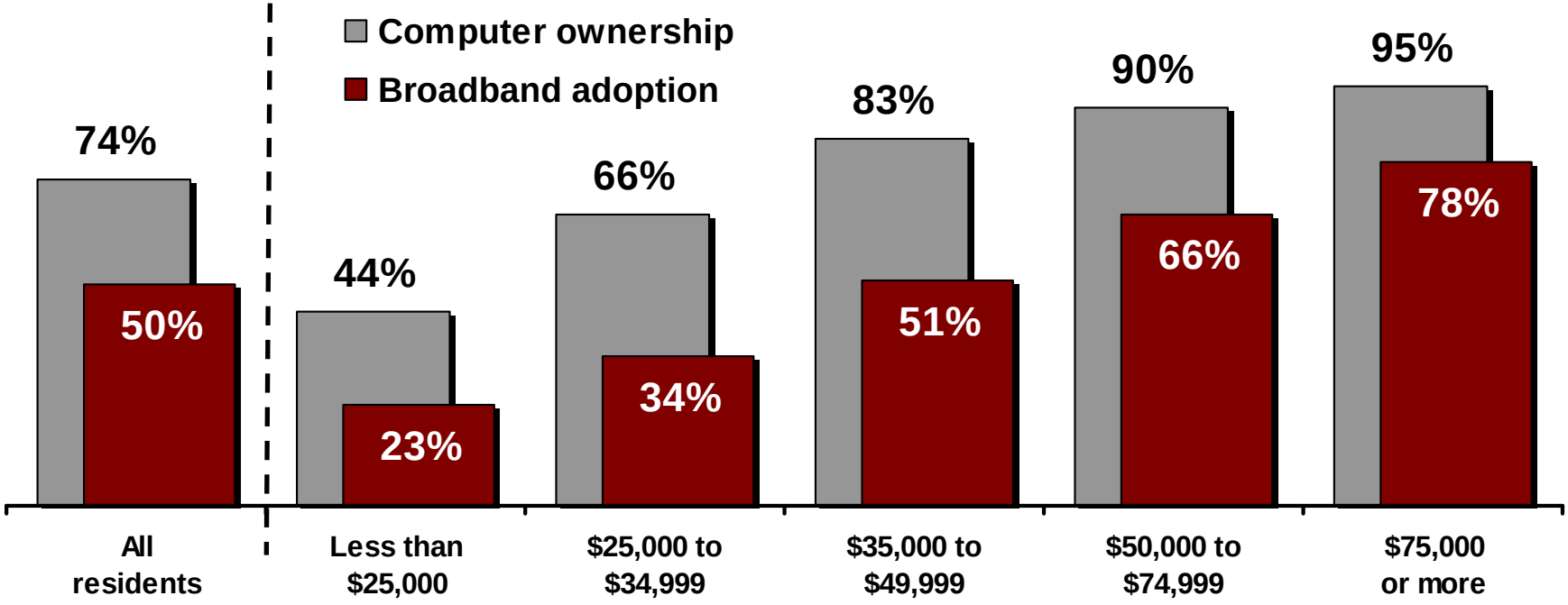


Q: Does your household have a computer?
Q: Which of the following describe the type of Internet service you have at home?
n = 3,005 residents in Ohio, Tennessee and Kentucky

*Low-income here is defined as annual household income less than $25,000

Computer Ownership and Broadband Adoption by Income

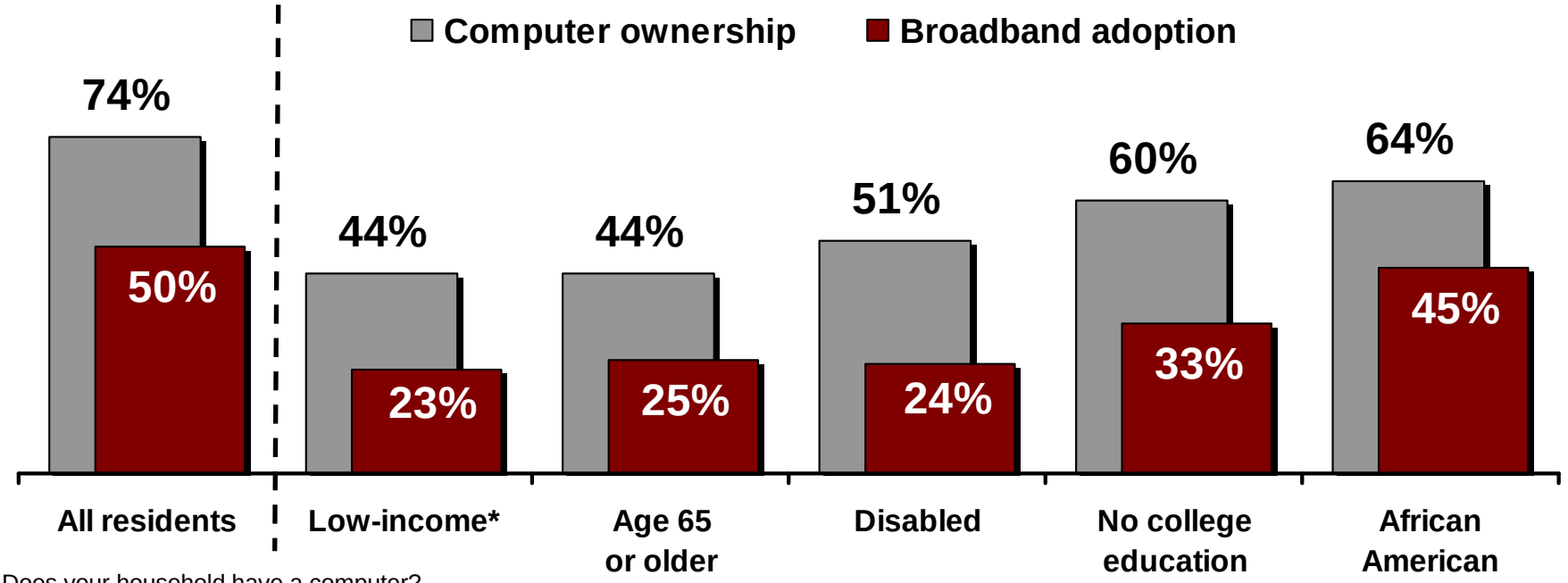
Computer ownership and broadband adoption are both directly related to annual household incomes.



Q: Does your household have a computer?
Q: Which of the following describe the type of Internet service you have at home?
n = 3,005 residents in Ohio, Tennessee and Kentucky

Low Adoption Demographics

Among various "disenfranchised" groups that are traditionally underrepresented, computer ownership and broadband adoption are lower than the average.

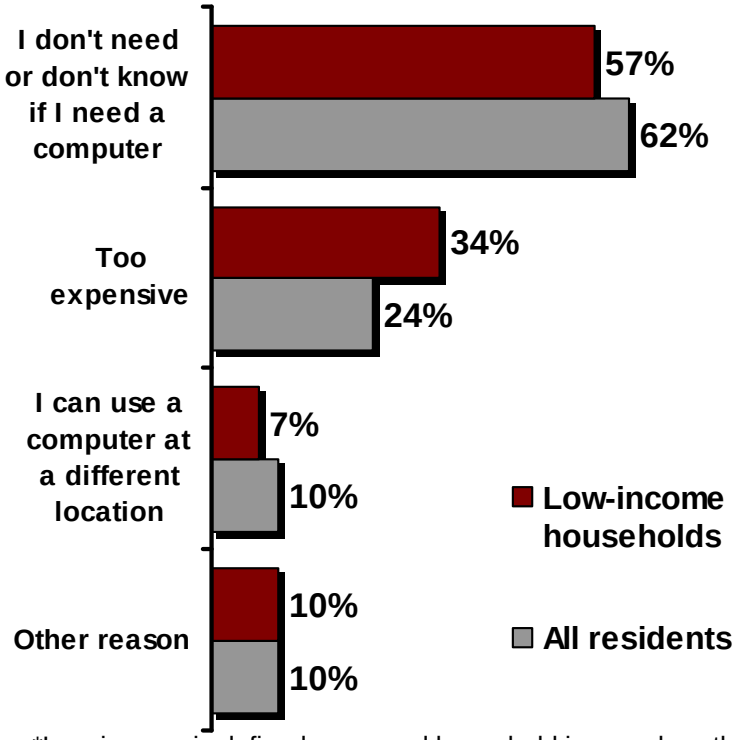


Q: Does your household have a computer?
Q: Which of the following describe the type of Internet service you have at home?
n = 3,005 residents in Ohio, Tennessee and Kentucky

*Low-income here is defined as annual household income less than $25,000

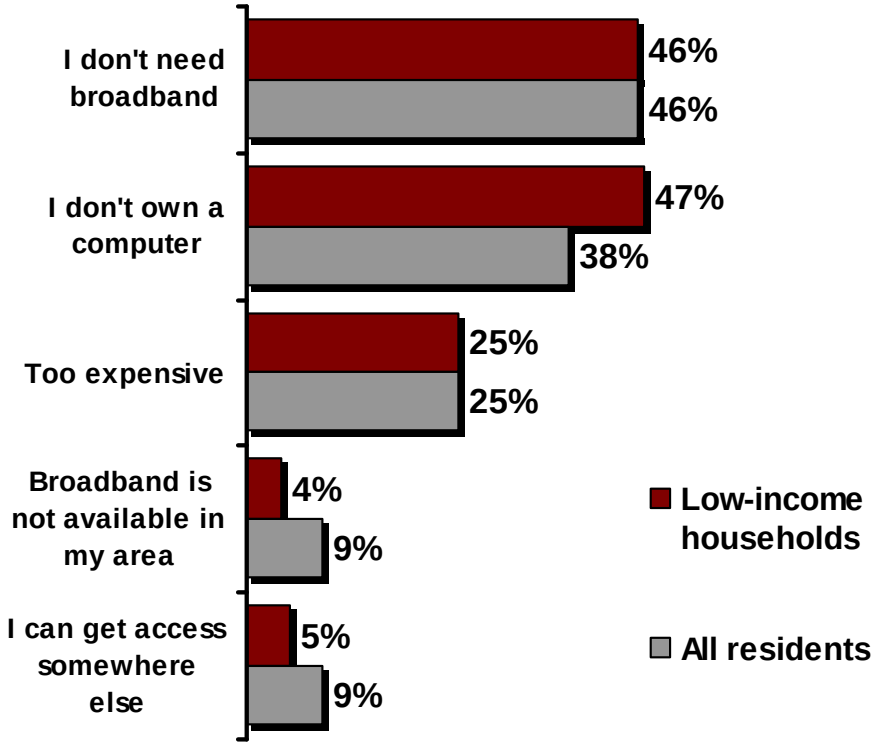
Low-Income* Households

Barriers to Computer Ownership:



*Low-income is defined as annual household income less than $25,000
Q: Why don't you have a computer at home?
n = 795 Ohio, Tennessee and Kentucky residents without a computer

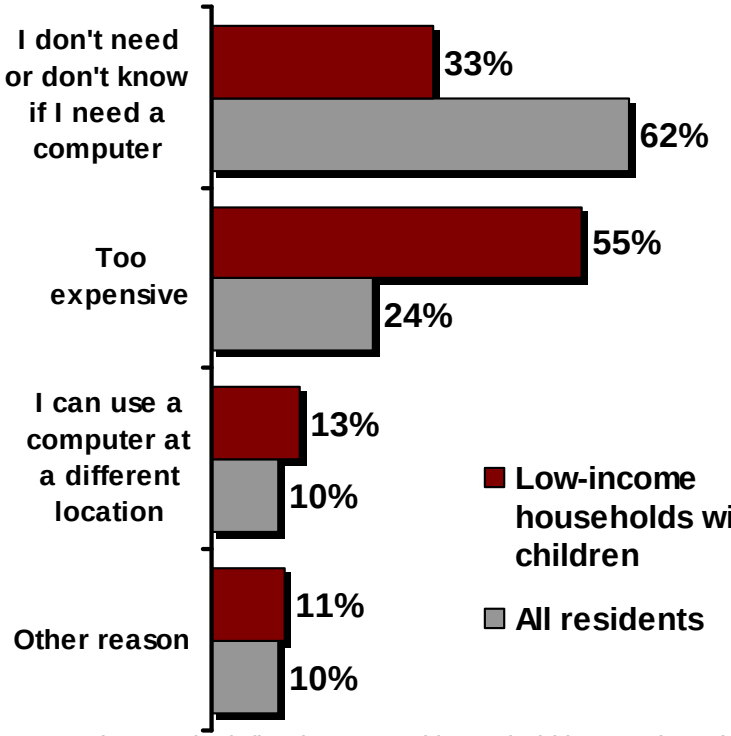
Barriers to Broadband Adoption:



Q: Why don't you subscribe to broadband Internet service?
n = 1,270 Ohio, Tennessee and Kentucky residents without broadband service

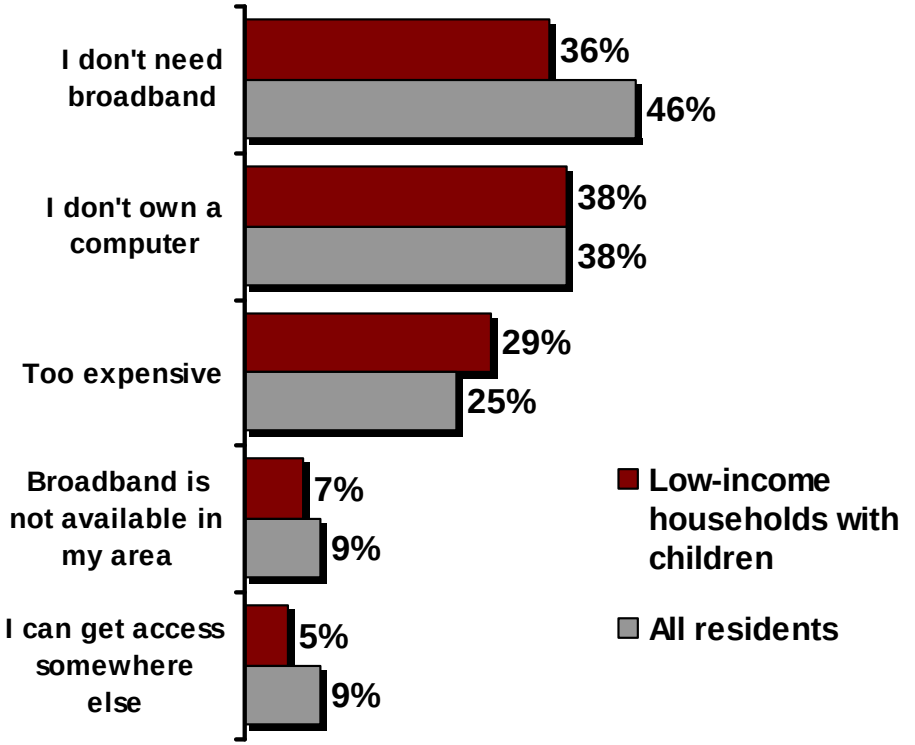
Low-Income Households with Children*

Barriers to Computer Ownership:



*Low-income is defined as annual household income less than $25,000
Q: Why don't you have a computer at home?
n = 795 Ohio, Tennessee and Kentucky residents without a computer

Barriers to Broadband Adoption:



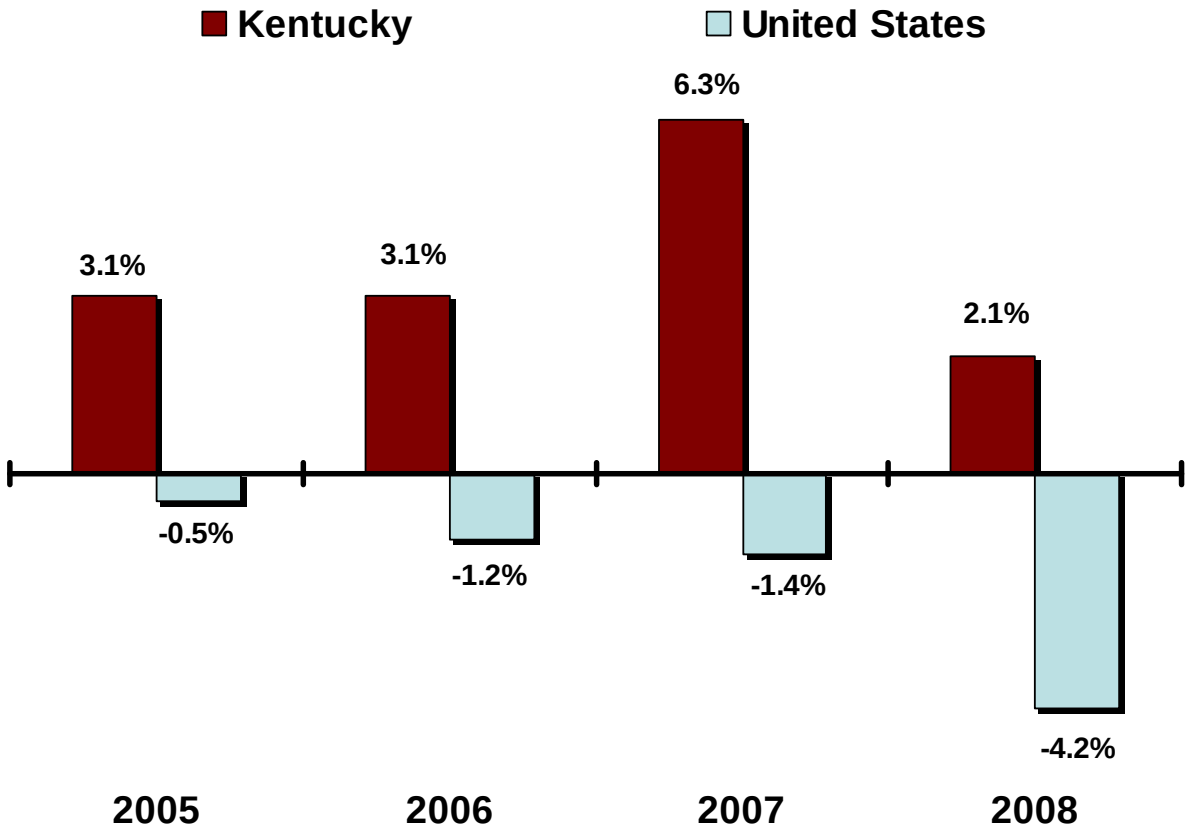
Q: Why don't you subscribe to broadband Internet service?
n = 1,270 Ohio, Tennessee and Kentucky residents without broadband service

Information Sector Jobs Since 2004

Percent change in the number of information sector jobs since 2004:

The United States has seen a steady decline in information sector jobs since 2004.

During this same time, Kentucky's information sector has experienced continual growth since the inception of ConnectKentucky.



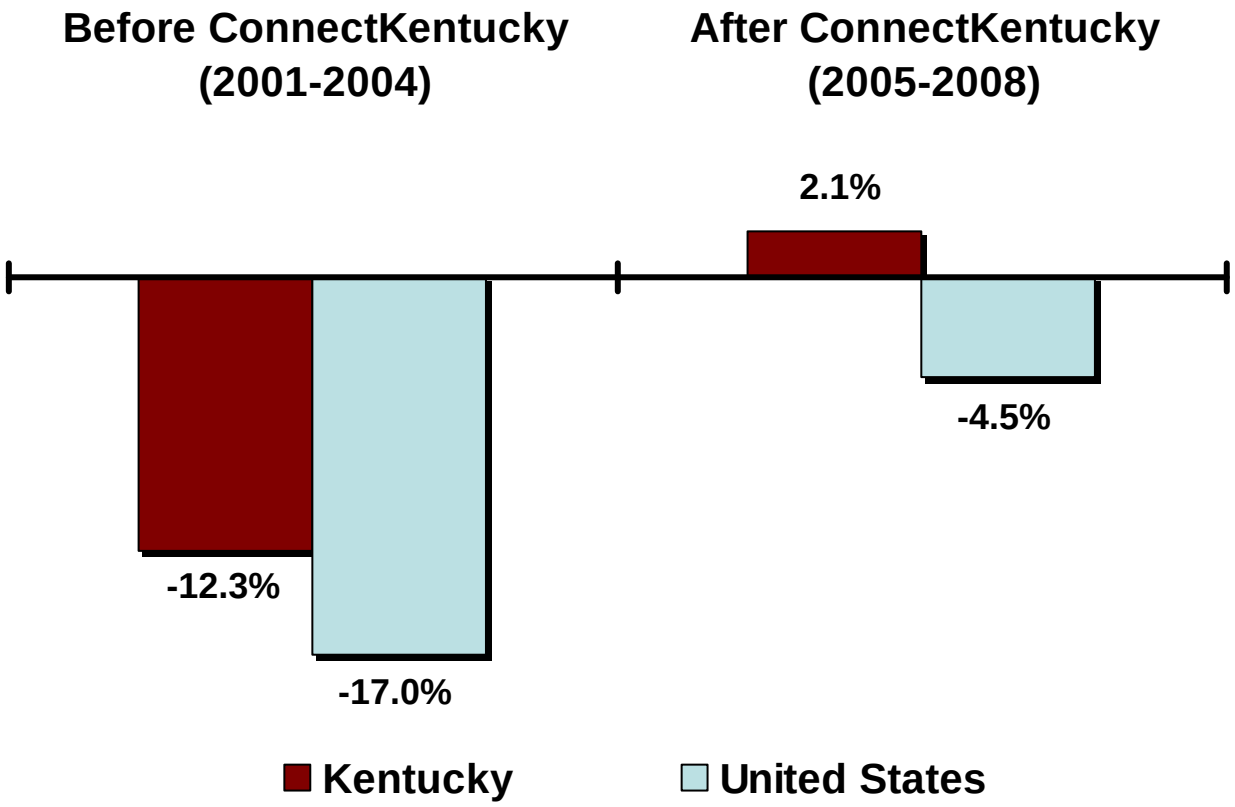
Source: United States Bureau of Labor Statistics

Information Sector Jobs Before and After Inception of ConnectKentucky

Percent change in the number of information sector jobs in the four years before and after the inception of ConnectKentucky:

In the four years prior to ConnectKentucky's work, Kentucky and the nation as a whole were both losing information sector jobs.

While information sector jobs have continued to drop nationally, Kentucky has reversed the downward trend in the past four years, and information sector jobs have increased by 2.1% since ConnectKentucky began its work.

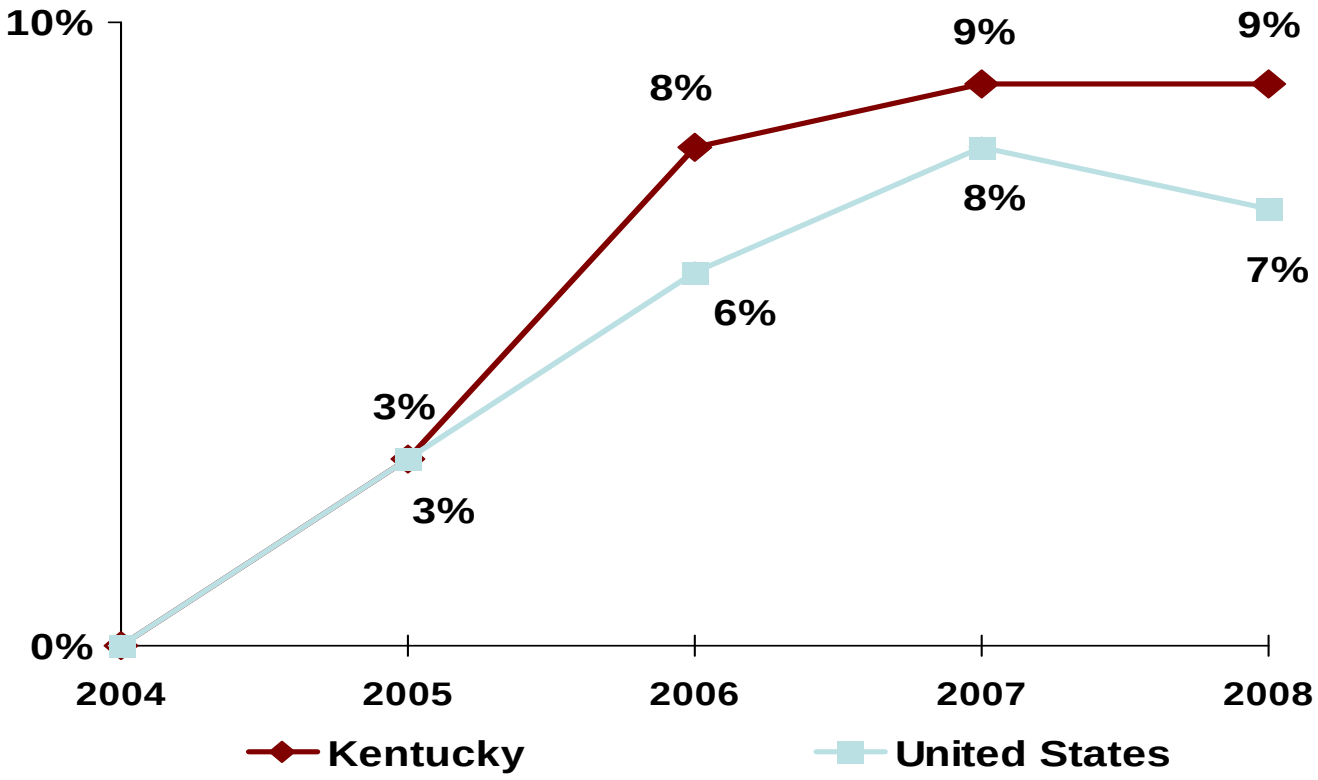


Source: United States Bureau of Labor Statistics

Growth in Finance, Scientific, and Technical Service Sector Jobs Since 2004

Percent growth in finance, scientific, and technical service jobs since 2004:

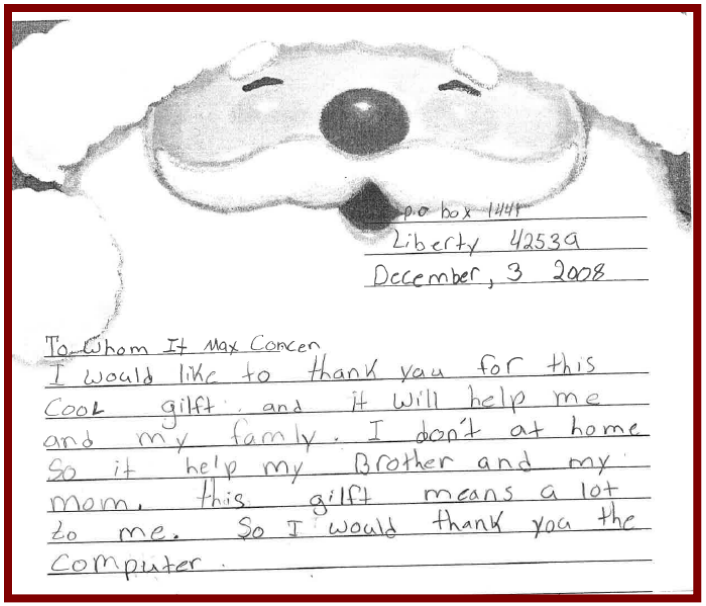
Since the implementation of ConnectKentucky in 2005, Kentucky has outperformed the country in terms of job growth in the finance, scientific, and technical service job sectors.



Source: United States Bureau of Labor Statistics

UPDATED 1/26/09

Every Child Online: Perfect Testimony



po box 1144
Liberty 42539
December, 3 2008

To Whom It May Concen
I would like to thank you for this Cool gilft. and it will help me and my famly. I don't at home So it help my Brother and my mom. this gilft means a lot to me. So I would thank you the Computer.

"This gift means more to me than you will ever know. Not only will it help me, but it will also help my mom and four other brothers and sisters…"

"The computer you have given me will help me through middle school, high school and even college with my school work. You are really helping me out."

"There is not a way I can thank you enough but until I figure a way I will just tell you thanks."

"Thank you so much for the computer. I always wanted one, I was surprised that I earned one…"

- Computers 4 Kids recipients – Walnut Hill Elementary School in Casey County, KY

Broadband Stimulus Funding

The American Recovery & Reinvestment Act

- $7.2 billion for broadband activity
- NTIA Broadband Technology Opportunities Program (TOP)
  - $4.7 billion
    - $3.9 billion = infrastructure
    - $250 million = creation of sustainable adoption
    - $200 million = strengthening public computing center capacity
    - $350 million = State Broadband Data & Development Grant Program (P.L. 110-385) and national broadband inventory map
- USDA RUS Distance Learning, Telemedicine and Broadband Grant Program
  - $2.5 billion

Connected Nation:
Connecting Rural Communities

Phillip Brown
National Policy Director