2008

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

MINUTES

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SESSION

Rep. Bill Faison
Chairman

Rep. Angela Bryant

Rep. Jim Gulley

Rep. Phillip Haire

Rep. Jim Harrell

Rep. Thom Tillis

Rep. Joe Tolson

Rep. Roger West

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SESSION

MEMBER	ASSISTANT	PHONE	OFFICE
Faison, Bill, Chairman	Lavada Vitalis, Committee Assistant	715-3019	537
Bryant, Angela	Karon Hardy	733-5878	542
Gulley, Jim	Brian Lehrschall	733-5800	1319
Haire, Phillip	Sara Jane Lennard	715-3005	639
Harrell, Jim	Beth LeGrande	715-1883	405
Tillis, Thom	Kristen Feneley	733-5828	1002
Tolson, Joe	Shirley Phillips	715-3024	307B2
West, Roger	Linda Johnson	733-5859	1004

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
ATTENDANCE

(Name of Committee)

DATES	18 March 08	8 April 08	12 May 08	22 October 08	14 November 08	18 December 08	27 January 09								
Faison, Bill, Chairman	√	√	√	√	√	√	√								
Bryant, Angela	√	√	√	√	√	√	√								
Gulley, Jim	√	√	√	√	√	√	√								
Haire, Phillip	√	X	√	√	√	√	√								
Harrell, Jim	X	√	√	√	√	X	X								
Tillis, Thom	√	√	√	X	√	X	√								
Tolson, Joe	√	√	√	√	√	√	√								
West, Roger	√	X	√	X	√	X	√								
STAFF:															
Carter, Brenda	√	√	√	√	√	√	√								
Riley, Barbara	√	√	X	√	√	√	√								
O'Shaughnessy, Karlynn	√	√	√	X	X	√	√								
Capriglione, Peter	√	√	√	√	√	√	√								
Fennell, Heather	√	√	√	X	√	X	√								

MINUTES

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

Tuesday, March 18, 2008

The House Select Committee on High Speed Internet in Rural Areas met on Tuesday, March 18, 2008, in Room 643 of the Legislative Office Building at 2:00 P.M. The following members were present: Chairman Bill Faison; Representatives Angela Bryant, Jim Gully, Phillip Haire, Thom Tillis, Joe Tolson, and Roger West. Staff in attendance: Brenda Carter, Barbra Riley, Karlynn O'Shaughnessy, Peter Capriglione and Heather Fennell. House Sergeant-at-Arms assisting: Marvin Lee, Jeral Perry, Tom Wilder, and Martha Gadison. The Agenda and Visitor Registration Sheet are attached. *(Attachment 1 and 2)*

The Chairman called the meeting to order. Members, Staff, and Sergeant of Arms introduced themselves. Chairman Faison gave a brief synopsis of what the committee was supposed to do which is to get and understanding on the availability of high speed internet in the state. If it appears that there is something that needs to be done after the committee assesses what our current standing is then we would look at considering legislation that would facilitate getting everybody together in an effort to make sure the citizens in our state have access to high speed internet, since it is the new back bone of our economical and educational growth.

Chairman Faison introduced our first presenters of the day, Jane Patterson and Joanna Wright from E-NC Authority. Mrs. Patterson spoke about where we stand with high speed internet:

Jane Smith Patterson (Executive Director, E-NC Authority) and Joanna Wright (Senior Program Director for Intelligence, Communications and Outreach) were recognized to present to the committee. Mrs. Patterson's Presentation is attached. (*Attachment 3*) Below are some key points of there presentation:

- E-NC authority is dedicated to ensuring that all NC citizens, businesses and communities are aware of, know how to use and have access to high-speed internet services at affordable prices, creating local opportunities for technology-based economic development and job creation.
- E-NC received $30 million in private foundation finding from MCNC in 2000
- E-NC focus is on tracking and supply-building and demand-building.
- Major telecom service providers in NC are ILEC's (Embarq, AT&T, and Verizon), independent telephone companies, telephone cooperative, cable companies, wireless and satellite providers, DSL and Cable Modems.

- Because of a 1.2 million dollar incentive from the legislature and grants E-NC has been able to bring a once 46% connectivity up to an 87% connectivity.
- In order to continue the growth of the broadband highway to un-served areas it will require at least a $5.5 million recurring to bring all counties up to 75%.
- Some build-out challenges are with DOT (Fiber down Highways) and Local Government Regulations (fees).
- E-NC tracks usage through wire centers. Wire centers do not match boundary lines so it makes it hard to determine who has service and who does not.
- Joanna showed a demonstration of the chairman's district and where wire centers are and possibly who can and can not get DSL.
- The e-NC Authority has been recognized by states across the country as a model for increasing broadband.
- The e-NC model differs from other states due to the comprehensive research and programs included in e-NC's model.
- There are about two public access centers in every county between e-NC funded sites and public library sites.

After Jane Patterson and Joanna Wright presentation Chairman Faison opened the floor for questions and then introduced our second speaker Myra Best. Mrs. Best spoke on the Joint report on information technology presented to the General Assembly in January of 2008. The Report is basically trying to fully infuse technology in our public schools and ultimately all of education.

Myra Best (Executive Director, Business Education Technology Alliance) was recognized to present to the committee. The Joint Report on Information Technology report is attached. (*Attachment 4*) Below are some key points of her presentation:

- Four critical elements that need to be in place to take advantage of broad band connectivity.
  - Delivery of 21st Century Curriculum, Instruction, Assessments and Accountability
  - Presence of Technology Tools in the classrooms
  - Existence of widely accessible and relevant personnel and professionals development
  - Pervasive existence of high broadband connectivity and scalable networks

- Some key points for the General Assembly to consider are:
  - 2008 General Assembly should appropriate an additional $12,000,000-R to fully fund the school connectivity initiative that will complete the $ 24,000,000-R annual funding request. This will connect all North Carolina public schools to a single statewide education network by 2009-2010.
  - The General Assembly should provide $20 million to establish a Future Ready School Fund to provide technology tools and support for classrooms.

After Myra Best's presentation Chairman Faison opened the floor for questions and then introduced our last speaker of the day Mark Johnson.

Mark Johnson (CTO and VP operations and Infrastructure, MCNC) was recognized to present to the committee. Below are some key points of his presentation:

- NCREN was created by the state 1980 to support micro electronics and began running networks for the Universities in the mid 1980s
- An interactive map of every public K-12 school in the state on North Carolina can be located on ncren.net
- This map shows connectivity of public schools on the NCREN system as of today.

Chairman Faison opened the floor for questions or comments.

With no further business to come before the committee Chairman Faison announced the adjournment of the meeting. The meeting adjourned at 3:34 p.m.

Respectfully submitted,

Representative Bill Faison
Chair

Lavada Vitalis
Committee Assistant

ATTACHMENT 1

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SHORT SESSION

AGENDA

Tuesday, March 18, 2008
2:00PM
Room 643, LOB

1. **Welcome**

   Representative Bill Faison, Chairman

2. **Introductions**

3. **Guest Speakers**

   - **E-NC Authority**
     Jane Smith Patterson, Executive Director
     Joanna Wright, Senior Program Director for Intelligence, Communications & Outreach

   - **Business Education Technology Alliance**
     Myra Best, Executive Director

   - **MCNC**
     Mark Johnson, CTO and VP Operations and Infrastructure

4. **Adjourn**

ATTACHMENT 2

VISITOR REGISTRATION SHEE

High Speed Internet in Rural Areas — **Name of Committee**

18 March 2008 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Mark Johnson	MCNC 3021 Cornwallis Rd RTP, NC 27709
Carla Hurt	MCNC 3021 Cornwallis Rd RTP, NC 27709
Abri Connery	MCNC 3021 Cornwallis RTP, 27709
Ed Turlington	Brooks Pierce
Tom Coley	CWA 3916 Kellaire, Dr Greensboro 27407
[illegible] Beason	AT&T
Cam. Cova	BPMIC
Brad Phillips	TWC
Mary Trotter	Brooks Pierce
Foyle Hightower	E N.C. 114 Briarridge Lane Wadesboro, N.C. 28170
Walt Church	WNC-Area. PO Box 760 Valdese NC 28690

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — 18 March 2008

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Steve Brewer	EMBARQ
Marty Bocock	EMBARQ
Jon Hamm	EMBARQ
Dorenda Gatling	Wow e-CDC
Ivy Hoffman	NCAPT
Charles Pittman	E-NC
Catharine Rice	Acton Audits, LLC 101 Pocano Lane Cary, NC 27513.
Daniel Baum	Kennedy Covington
Tom Coviello	Newton of Mtn & Assoc.
Ken Melton	Ken Melton & Assoc.

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — **Name of Committee**

18 March 2008 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
	P.O. BOX 1206 OXFORD, NC 27565
STAN FOX	E NC COMM
HERB CRENSHAW	AT+T 128 W HARGETT ST RALEIGH, NC 27601
Debra Derr	AT+T
Stan Pace	Verizon
Joanna Wright	e-NC
Dana Simpson	Smith Anderson
Ben Tate	—
Deborah Watts	e-NC Authority
Carol Torian	e-NC Authority
Angie Bailey	e-NC Authority

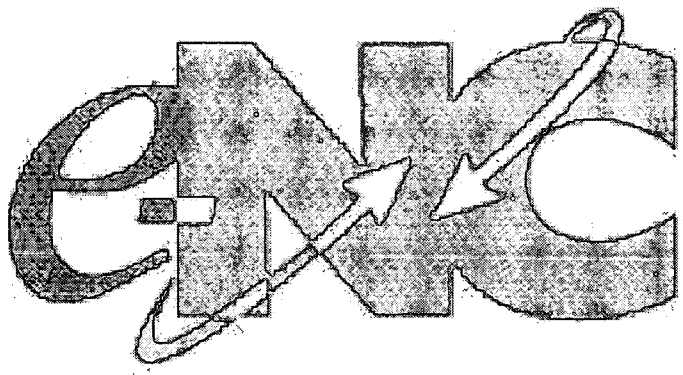
VISITOR REGISTRATION SHEET

House Select Comm on High Speed Internet — Name of Committee

3/18/08 — Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Terrance Herrin	Microsoft. 1 Microsoft Way Redmond
CS Hollis	KLL



Connecting North Carolina to a Better Future

The e-NC Authority
March 18, 2008

Jane Smith Patterson
Executive Director
www.e-nc.org

The e-NC Authority:

Creation,Mission, Tracking of High-Speed InternetAcc ess, and Build-Out Challenges

www.e-NC.org

Mission

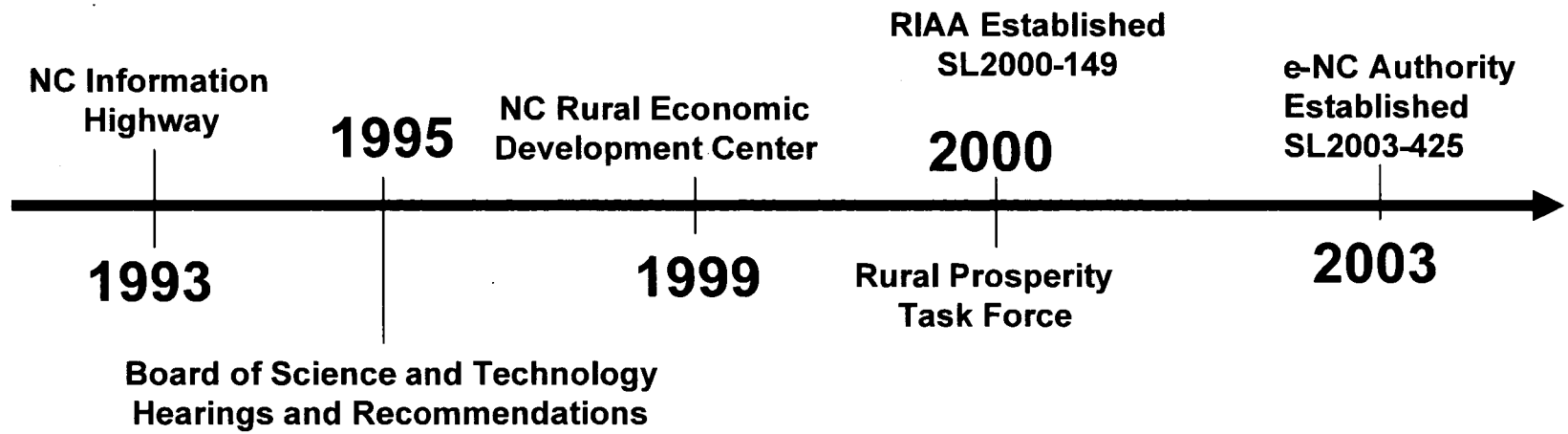
The e-NC Authority is dedicated to ensuring that all North Carolina citizens, businesses and communities are aware of, know how to use and have access to high-speed Internet services at affordable prices, creating local opportunities for technology-based economic development and job creation.

e-NC

www.e-NC.org

What Was/Is the Promise?

- More educated population with higher paying jobs.
- For N.C., this means a focus on technology based economic development with ubiquitous fiber!
- The goal: to transition our state from a manufacturing economy to a more diverse information economy.



www.e-NC.org

Rural InternetAccess AuthorityGoals

January 2001 – December 2003

- ✓ Ensure local, dialup service available statewide
- ✓ Complete, and keep up to date, an inventory of telecommunications infrastructure
- ✓ Establish Telecenters
- ✓ Identify and establish training programs
- ✓ Promote increased use of computers and the Internet
- ✓ Ensure that high speed Internet service is available to rural North Carolina citizens and businesses
- ✓ Provide Advice and Counsel to the N.C. General Assembly

e-NC

www.e-NC.org

The e-NC Authority: Legislative Mandate

- Continued as the e-NC Authority in 2003, under S.L. 2003-425
- Established as the primary Internet policy and planning body for the rural and urban distressed areas of the state
- Mandated to track availability of and deployment of high-speed Internet service across North Carolina
- Advocate and serve as catalyst for infrastructure build-out in underserved areas
- In July 2006, sunset was extended to Dec. 31, 2011

The e-NC Authority: Operations

- Received $30 million in private foundation funding from MCNC in 2000
- 8 staff members (3 are part-time)
- Governed by 15-member board – appointed by House, Senate and Governor
- Created by the state, but did not receive state funding for operations until 2005

www.e-NC.org

e-NC Focus – Two-fold

1) Tracking and Supply-Building

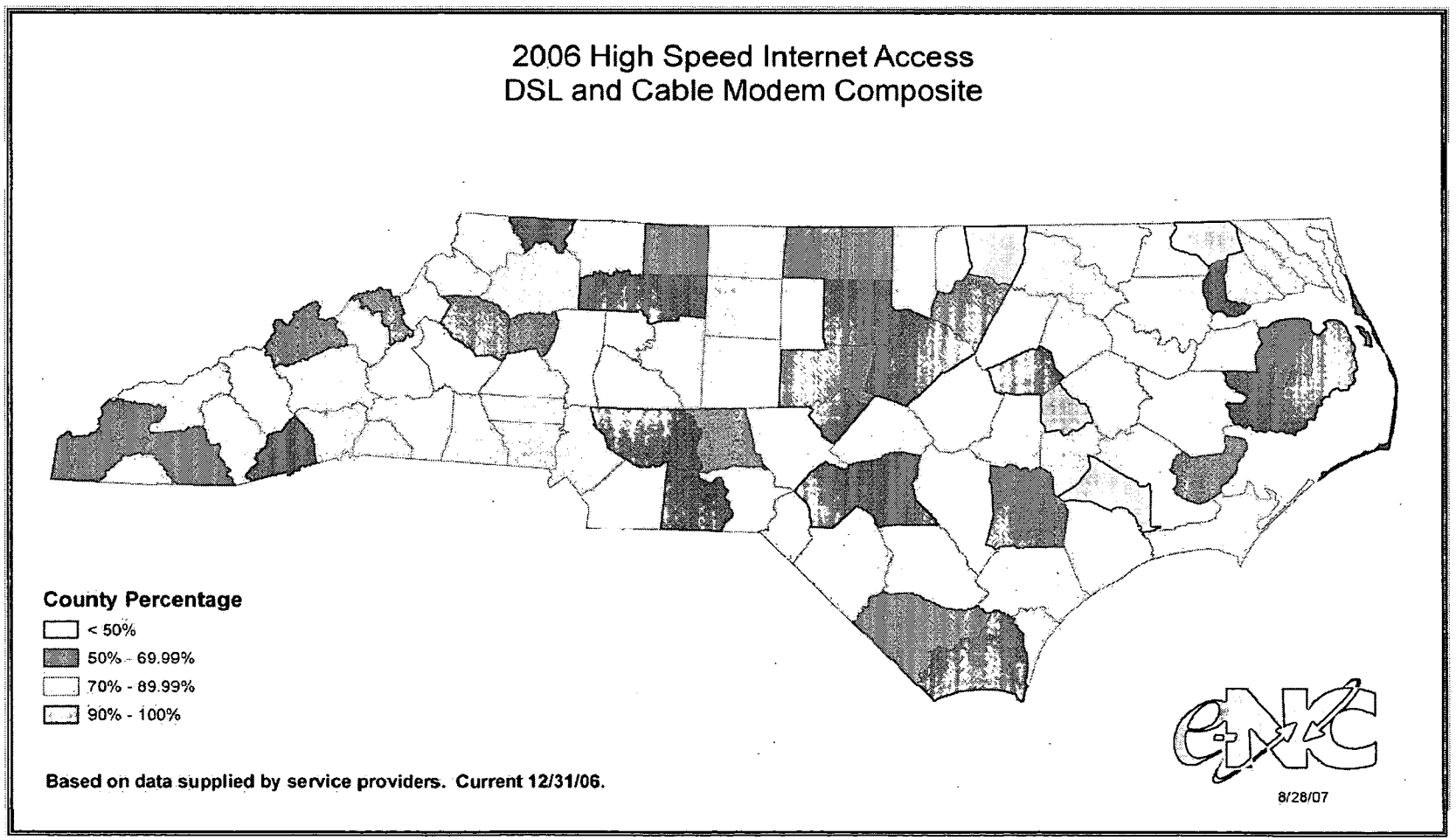
- 100 County Report on Availability of High-Speed Internet Services (released annually)
- GIS Mapping of Telecommunications Infrastructure
- Service Inquiries
- Connectivity Incentives Grants

2) Demand-Building

- Citizens Survey
- e-Communities, public access, digital literacy training
- Program and applications development

www.e-NC.org

Where Are We Now?
Households with Access to High-Speed Internet Service



Telecom Service Providers in N.C.

- ILECs - Embarq, AT&T, Verizon
- Independent Telephone Companies
- Telephone Cooperatives
- Cable Companies
- Wireless & Satellite providers

www.e-NC.org

Explanationof TechnologiesTracked in 100 County Report

- DSL (# of lines to number of households)
- Cable Modem

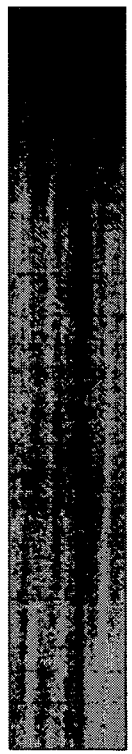
Not included:

- Wireless
- Satellite
- Fiber

www.e-NC.org

Varying Speeds

SLOW



FAST

- Dial-up
- Cellular
- ISDN
- Satellite
- Digital Subscriber Line (DSL)
- Cable
- T1
- Fiber

Note: The e-NC Authority does not track speeds of various services, but providers give a range of speeds for different services.

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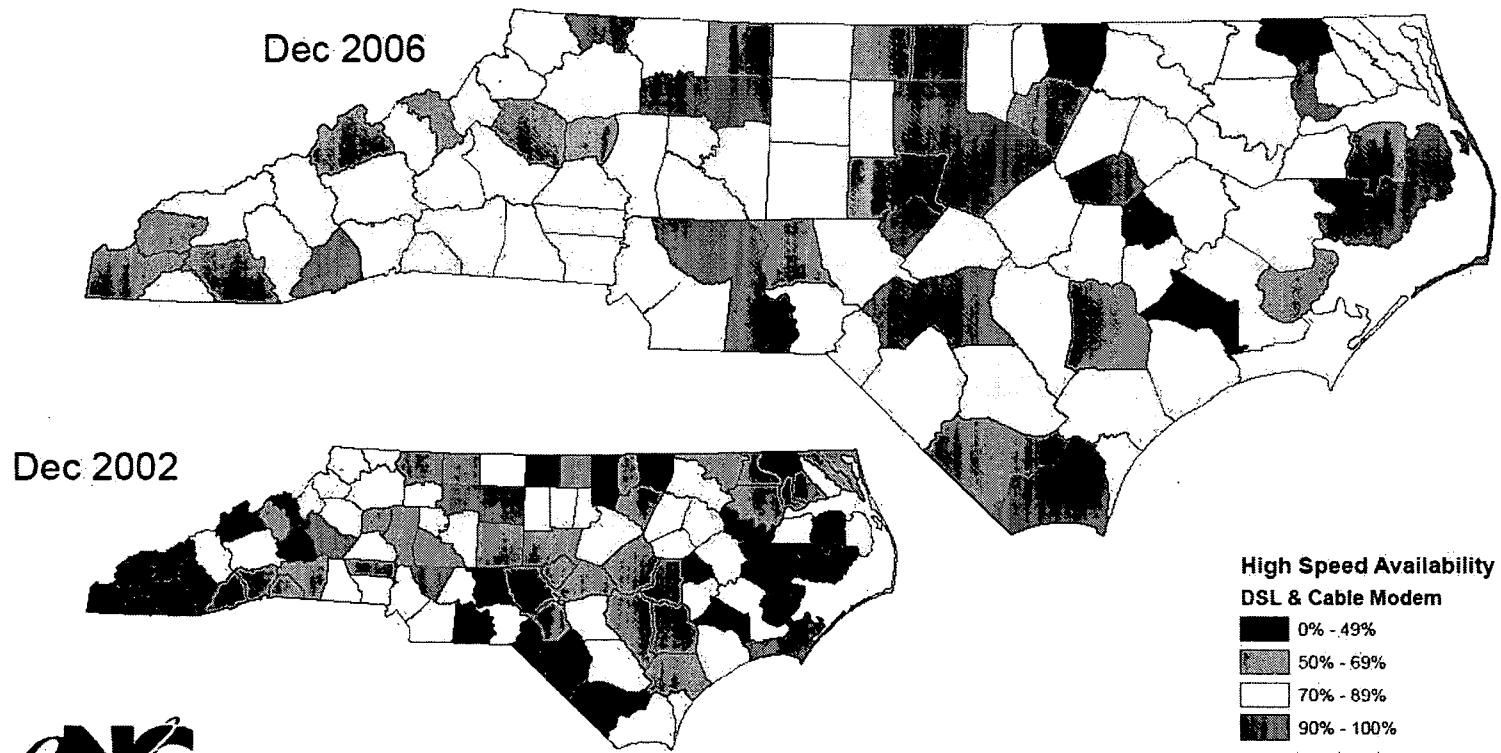
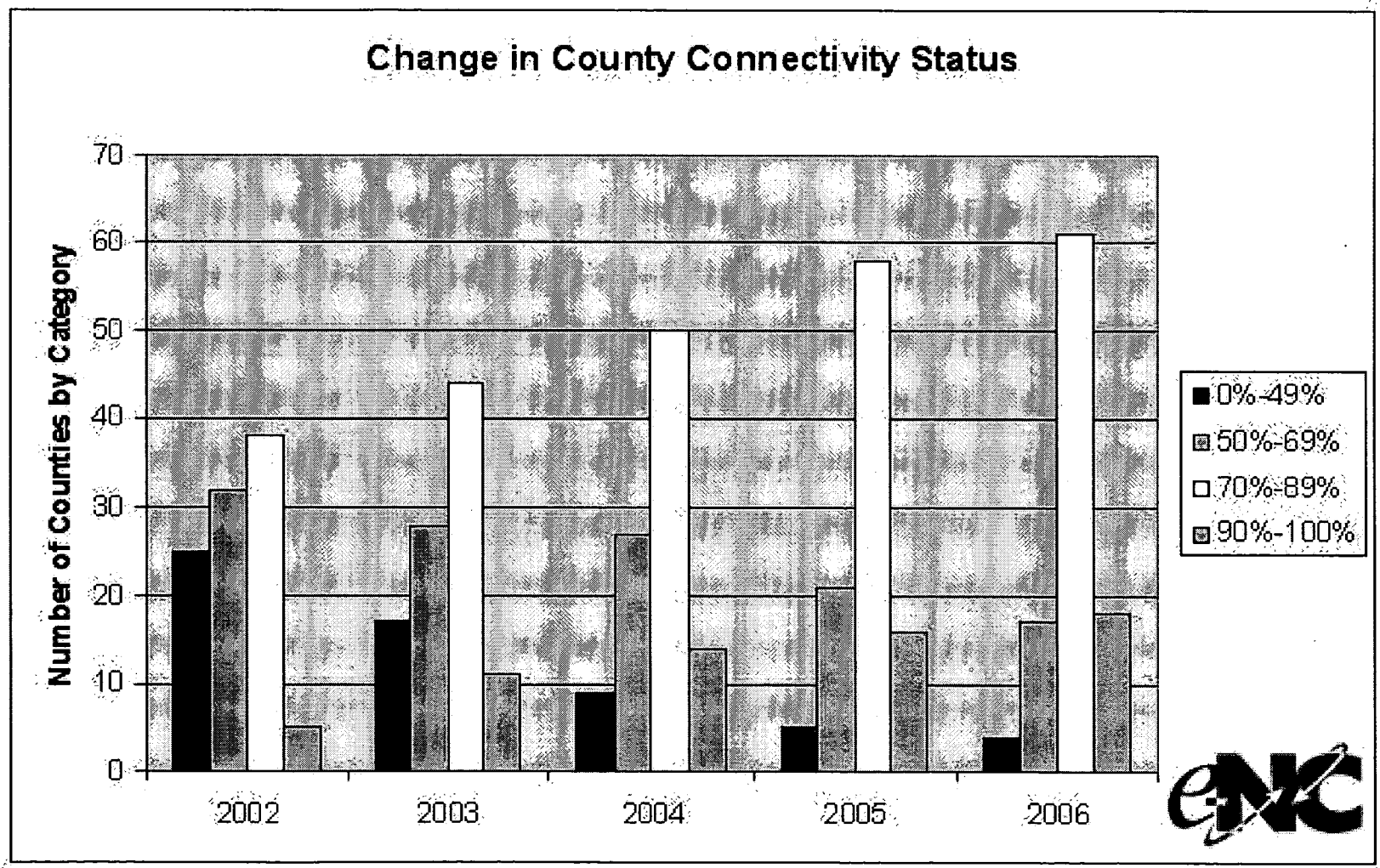
Changein Connectivity,2002 -2006

High Speed Internet Access Increase in North Carolina

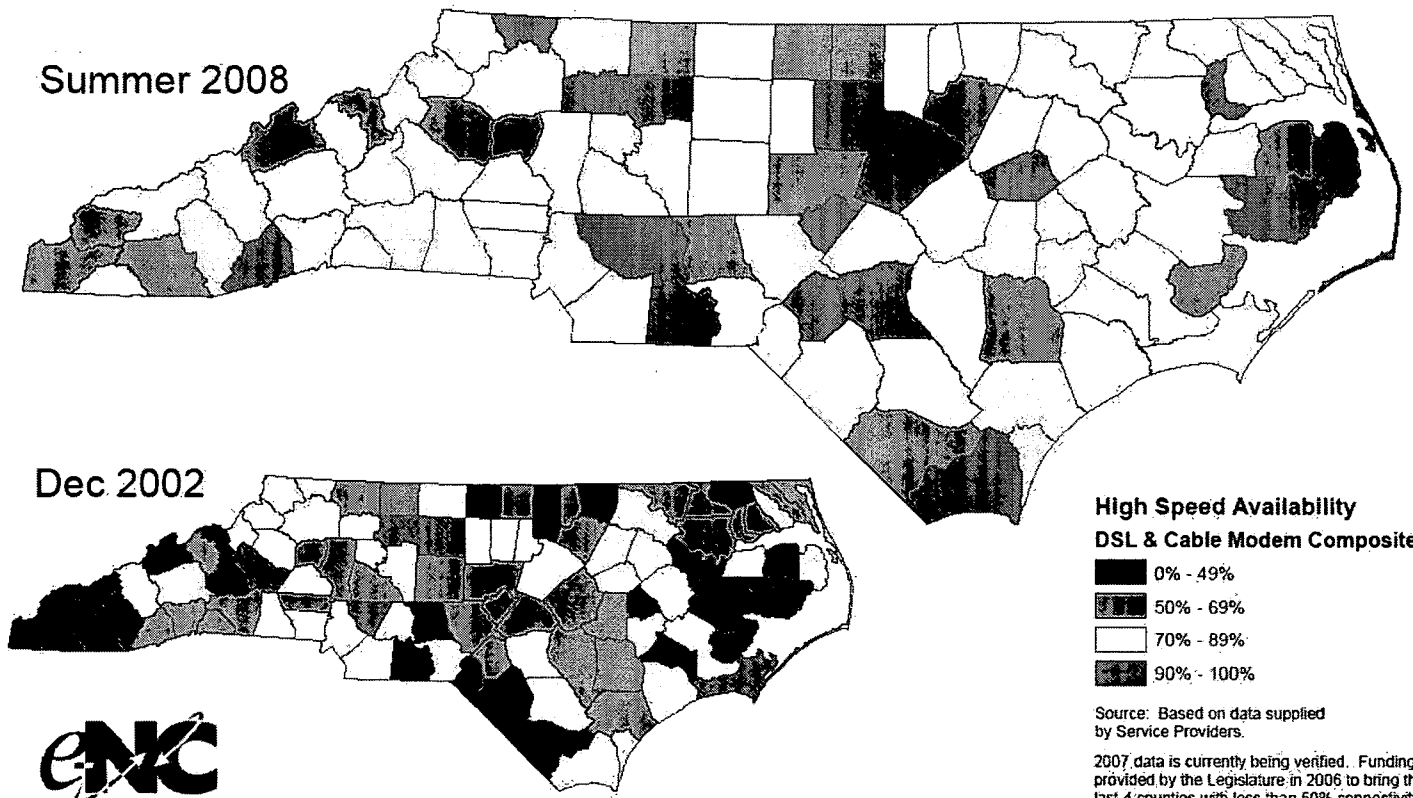


Changein Connectivity,2002 -2006



ExpectedChange in Connectivity As of Summer 2008

Progression of Counties Towards 100% - Update



High Speed Availability

DSL & Cable Modem Composite

- 0% - 49%
- 50% - 69%
- 70% - 89%
- 90% - 100%

Source: Based on data supplied by Service Providers.

2007 data is currently being verified. Funding was provided by the Legislature in 2006 to bring the last 4 counties with less than 50% connectivity up to at least 70% connectivity. This is reflected in the Summer 2008 map.

e-NC Connectivity Incentives Grants, 2007-2008*

Requested

In 2007, e-NC requested $7.5 million recurring, to bring all counties up to at least 70% access.

50 to 70% (17 counties)
Pamlico – 51.43%
Tyrrell – 53.25%
Duplin – 53.35%
Person – 53.95%
Graham – 56.00%
Mitchell – 58.25%
Cherokee – 59.04%
Caswell – 60.23%
Columbus – 61.46%
Alexander – 62.39%
Madison – 65.32%
Chatham – 66.82%
Franklin – 66.96%
Stokes – 68.07%
Montgomery – 69.87%
Caldwell – 69.88%
Macon – 69.90%

Funded

Awarded for service to un-served areas of counties where less than 50% of the households have high-speed Internet access (cable modem or DSL) available:

Less than 50% (4 counties)
Jones – 45.07%
Warren – 46.89%
Gates – 47.96%
Greene – 49.10%

*** 2006 Data shown**

www.e-NC.org

Along the BroadbandHighway

- Must have scaleable, targeted technology incentives for last mile service to un-served areas:

- Require at least $5.5 million recurring to bring all counties:

Up to 90%	est. $40.8 million @ $171.73/line
Up to 80%	est. $10.9 million @ $171.73/line
Up to 75%	est. $ 5.2 million @ $171.73/line

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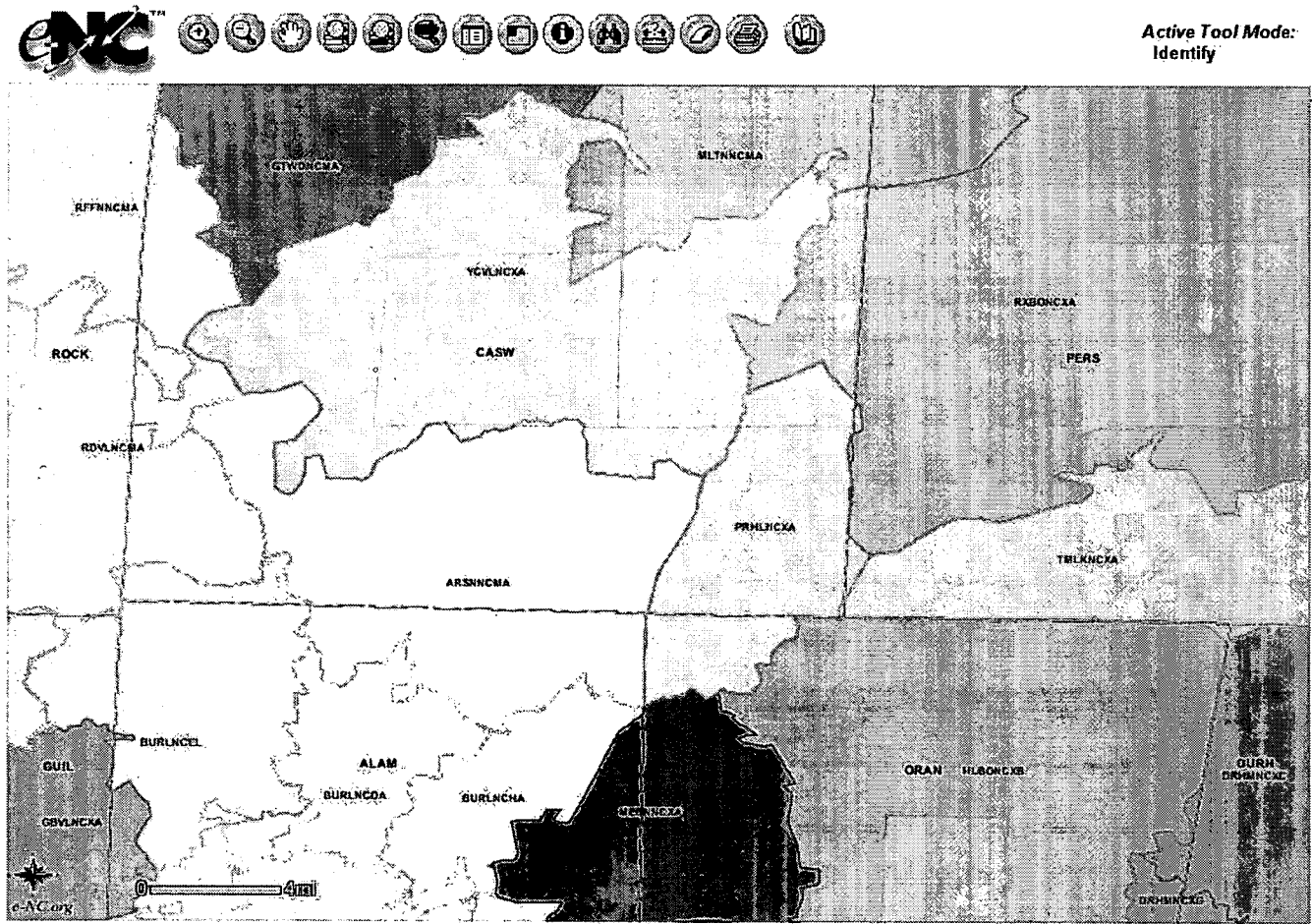
Build-out Challenges

- e-NC focus – last-mile service
- "Business case" challenge – telecom service providers rarely expand infrastructure as a gesture of goodwill
- Divide and conquer – N.C. is deceptively large (85 of 100 counties are considered to be rural)
- Topography challenges – mountains, bodies of water, forests
- Teaching them to fish – many elected leaders have lacked basic digital literacy and understanding
- Ubiquitous training needed

Build-out Challenges

- Taking a Flyer – PINE, PANGAEA, MAIN, America Connect, Cape Lookout,Belhaven (MCNC monies)
- DOT Issue
- Local GovernmentRegulations

Example of e-NC's GIS Mapping Program



% DSL Capable Lines (Click to open layer info. page.)

Record ID	CLLI Code	SPU Service Location ID	Provider Name	Website	City	Has DSL	DSL Service Loop Qualify Pct	DSL From_Client Max_Speed	DSL From_Client Min_Speed	DSL To_Client Max_Speed	DSL To_Client Min_Speed
1	ARSNNCMA	ARSNNCMA	AT&T	WWW.ATT.COM	ANDERSON	Yes	0	1500 Kb/s (?)	256 Kb/s (?)	0 Kb/s (?)	128 Kb/s (?)

Map Data Layers

You must zoom in for greyed-out layers to become available for viewing.

Refresh Map

Visible	Active	
☐	○	Wireless Towers
☐	○	CLLI Central Offices
☐	○	Distressed Schools
☐	○	Public Internet Access Sites
☐	○	TV Stations
☐	○	Water Towers
☐	○	TowerMap Towers
☐	○	*Health Care Facilities*
☐	○	Public Airports
☐	○	Unincorporated Communities
☐	○	Railroads
☐	○	BlueRidge Parkway
☑	○	Interstates
☐	○	Primary Highways
☐	○	Secondary Highways
☐	○	*Local Streets*
☐	○	Major Rivers
☐	○	Wireless Tower Service Areas
☑	○	Cable Modem Service Areas
☐	○	Activated Cable Franchise Areas
☑	◉	% DSL Capable Lines

Wire Center

www.e-NC.org

GIS Mapping

Mappingby LegislativeDdistricts

www.e-NC.org

The e-NC Authority as a model

Comprehensiveprograms throughthe years

www.e-NC.org

North Carolinaas a Model for Other States

The e-NC Authority has been recognized by states across the country as a model for increasing broadband.

- First in the nation to have a comprehensive GIS-based mapping program
- Only state to track availability data in the 100 County Report model
- Tracking of citizen use via Citizens Surveys
- First state to launch the grassroots "e-communities" program (2001)

e-NC

www.e-NC.org

North Carolinaas a Model for Other States

The e-NC model differs from other states due to the comprehensive research and programs included in e-NC's model:

- Supply-building and demand-building
- Research, program implementation and evaluation
- Grant programs working with all 85 rural counties plus the Eastern Band of the Cherokee Indians, plus urban-distressed areas

www.e-NC.org

Awards to the RIAA / The e-NC Authority

- 2002 National Association of State Chief Information Officers - Award of Recognition
- 2002 U.S. Dept. of Commerce Secretary's Recognition Before Press (best model for deploying broadband)
- 2005 Microsoft Unlimited Potential Award
- 2006 N.C. Technology Association 21 Award (Top Gov't/Nonprofit Award)
- 2006 Southern Growth Policies Board - Innovator Award
- 2007 Grassroots.org Techie Award - Top Technology Software in US for Nonprofits
- 2007 IBM-Recognition of top program for digital literacy and e-communities

www.e-NC.org

States SeekingG uidancefrom e-NC

Partial Listing:

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Georgia
- Illinois
- Iowa
- Kansas
- Kentucky
- Maine
- Michigan
- Mississippi
- Pennsylvania
- South Carolina
- Tennessee
- Vermont
- Virginia
- Washington
- West Virginia

www.e-NC.org

Work of e-NC has been possibledue to:

The foresight of the leaders of North Carolina in:

- Creating the N.C. Information Highway
- Creation of the Rural Internet Access Authority in 2000, and of the e-NC Authority in 2003
- Securing $30 million in private investment from MCNC
- Cultivating relationships with, and support from, the service providers
- Development of a cadre of local support leaders through e-NC programs

e-NC

www.e-NC.org

Highlightsof e-NC Work:
Key Research and Publications 2004-2007

- ***High-Speed Internet Access in North Carolina: A 100 County Report***
  By The e-NC Authority
  (Released annually since 2002, latest release September 2007)

- ***Business Connections; Using Technology to Build Success: A Handbook for e-Business Utilization***
  By The e-NC Authority
  (Released August 2007)

- ***Business Connections; Webcasting and Podcasting: Creating Electronic Media for Small Businesses***
  By The e-NC Authority and Doug Foster of Performance Podcasts.
  (Released August 2007)

- ***e-Communities Tool Kit: Working Together to Expand Technology Access and to Compete in the Global Economy***
  By The e-NC Authority
  (Released November 2006)

- ***The Time for Technology-Based Economic Development is Now: e-NC Business & Technology Telecenter Tool Kit,***
  By The e-NC Authority
  (Compiled in 2005, Released May 2006)

- ***Feasibility Study for Developing Regional Education Networks***
  By The e-NC Authority for the N.C. General Assembly
  (Released May 2006)

www.e-NC.org

Highlightsof e-NC Work:
Key Research and Publications 2004-2007 (cont.)

- ***Creating Wealth, Regional Development through Cross-Border Collaboration***
  For the e-NC Authority, By Nick Maynard, Aaron McKethan, and Rawley Vaughan, Carolina Center for Competitive Economies, Kenan Institute for Private Enterprise, Kenan Flagler Business School, UNC-Chapel Hill
  (Conducted in 2005, Released March 2006)

- ***e-NC Business & Technology Telecenter Evaluation 2005***
  For The e-NC Authority, By Dr. Catherine Renault, Research Triangle Institute International
  (Released December 2005)

- ***North Carolina Local E-Government Utilization Project, External Evaluation Report***
  For The e-NC Authority, By Dr. Harvey A. Goldstein, UNC-Chapel Hill
  (Released December 2005)

- ***North Carolinians Online: Trends from the Citizens Surveys 1999-2004***
  For The e-NC Authority, By Dr. Ed Feser, The University of Illinois, Urbana-Champaign
  (Released May 2005)

- ***High-Speed Internet Connectivity in NC's Distressed Urban Areas***
  For The e-NC Authority, By Dr. Robin Howarth and Dr. William Rohe, Center for Urban & Regional Studies, The University of NC at Chapel Hill
  (Released May 2005)

www.e-NC.org

Early RIAA Research

KPMG Infrastructure Study
Citizen Surveys
Annual 100 County Reports

Universities Involved:
Appalachian State Univ.
East Carolina University
N.C. State University
UNC-Chapel Hill
Western Carolina Univ.
Harvard University

Free Manuals:
Broadband
Building Communities
e-Business
Communications
e-Communities
Grid Computing
Wireless Primer

www.e-NC.org

Key Programs

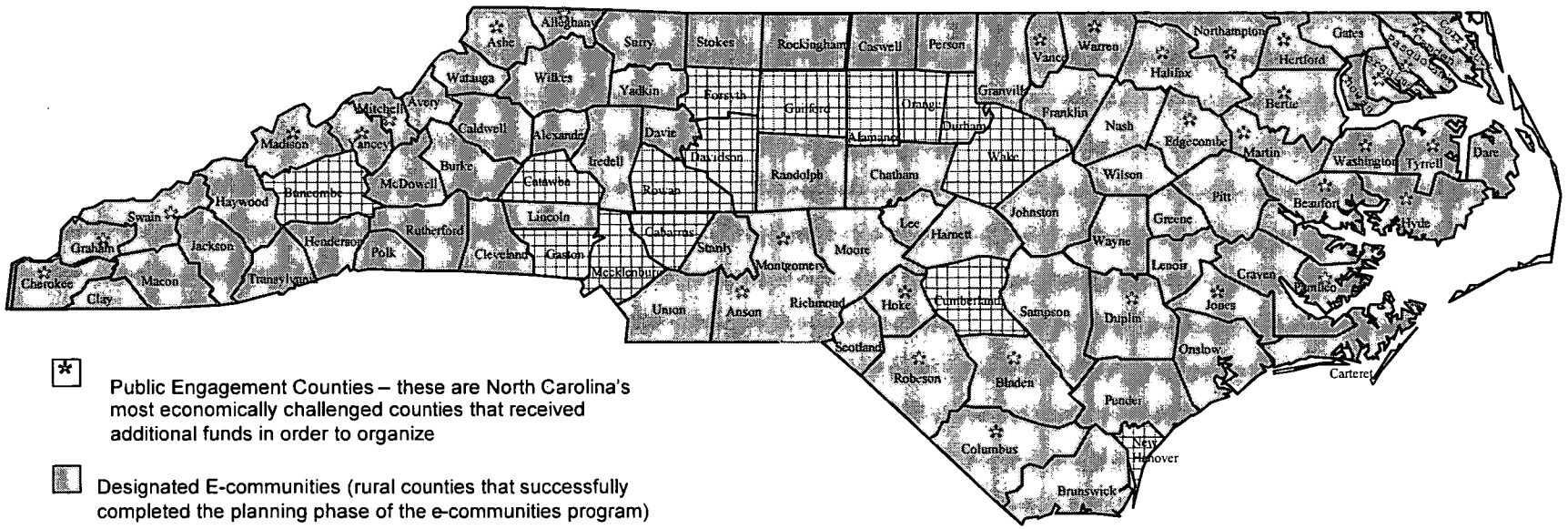
- Public Engagement
- e-Communities:
    - e-Champions and Trainings
    - Planning Grants (Connectivity, Public Access, Digital Literacy, Applications)
    - Implementation Grants
    - Public Access Site Grants
- Digital Literacy Training
- Business & Technology Telecenters, Phase I
- Connectivity Incentives Grants
- Tech Force
- Applications (e-learning, e-health, e-business, e-government)
- LEG-UP

www.e-NC.org

BuildingDemand

e-Communities Program

(Launched in 2001)



Public Engagement Counties – these are North Carolina's most economically challenged counties that received additional funds in order to organize

Designated E-communities (rural counties that successfully completed the planning phase of the e-communities program)

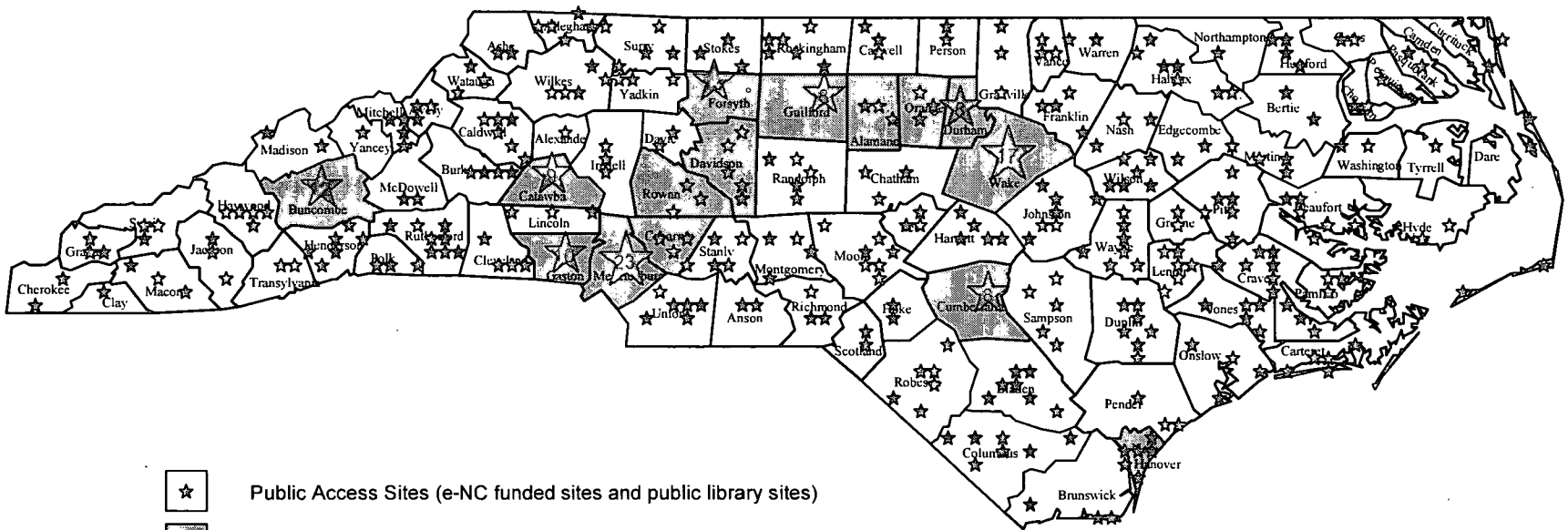
Urban Counties (Note: 2003 legislation authorized E-NC to work with distressed areas of urban counties)

Rural: A county with a density of fewer than 200 people per square mile based on the 1990 U.S. Census (as defined in N.C. Senate Bill 1343)

www.e-NC.org

BuildingDemand

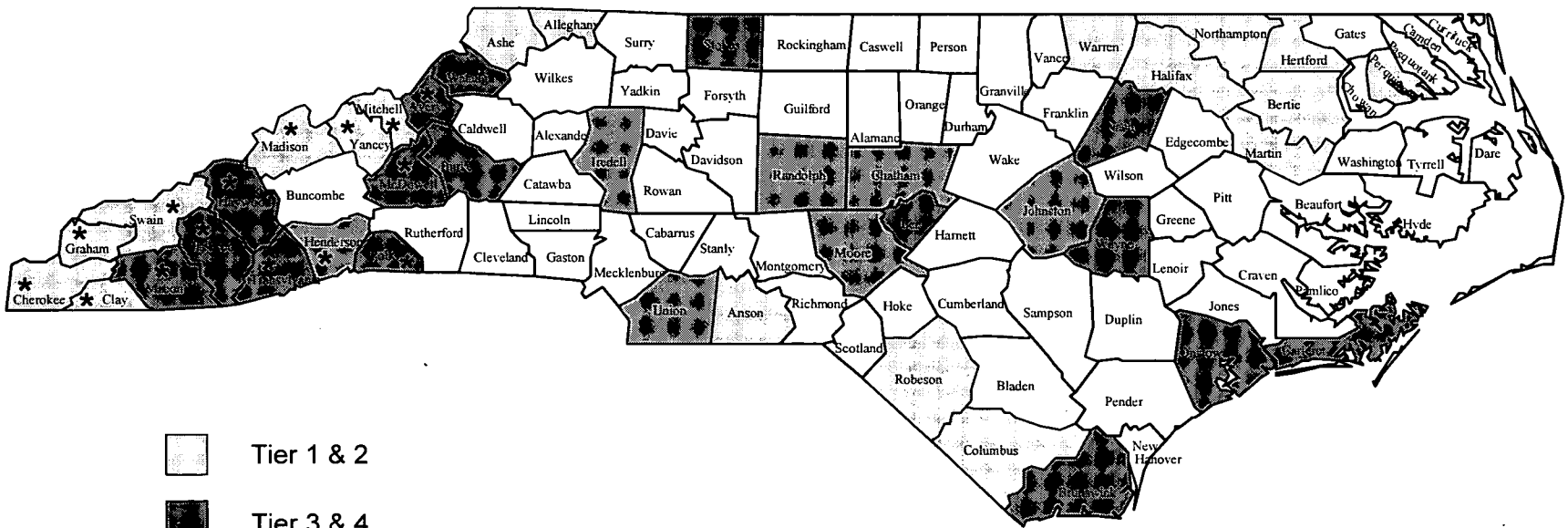
Public Access Centers



www.e-NC.org

BuildingDemand

Digital Literacy Training



Tier 1 & 2

Tier 3 & 4

Tier 5

* Mountain Area Information Network

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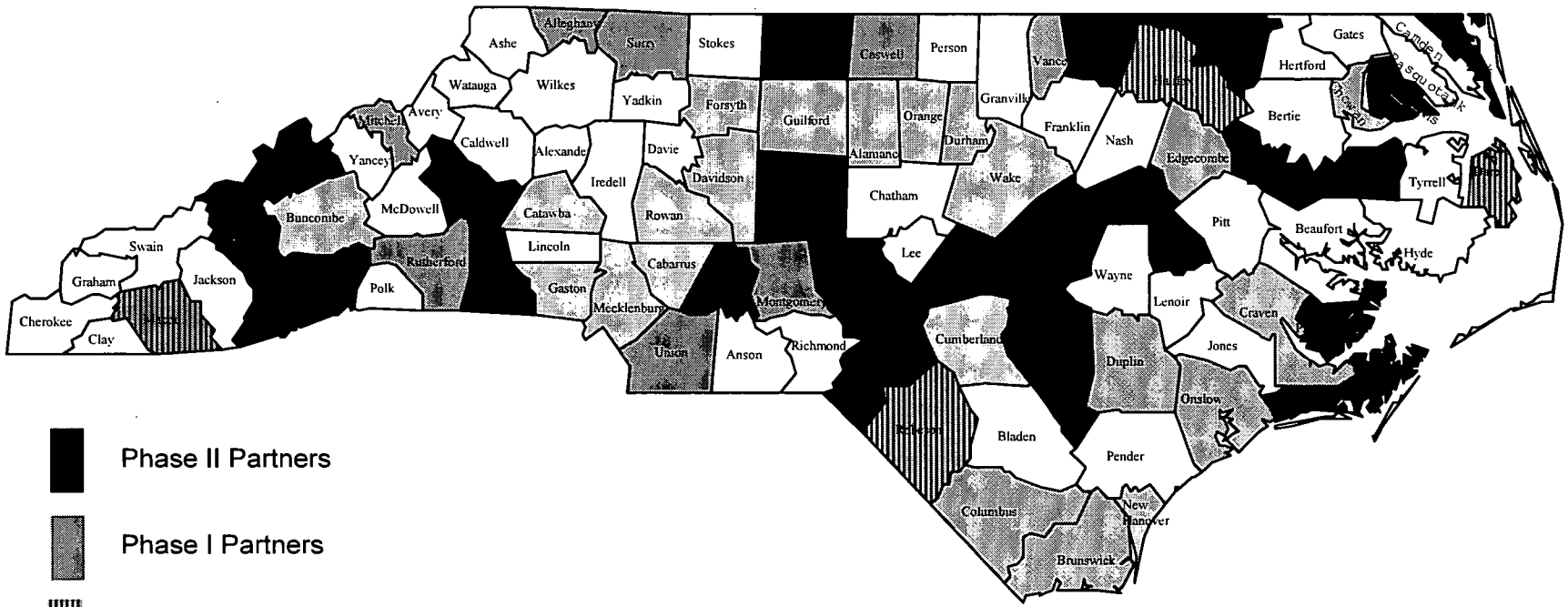
Leg-UpPhase I& IILocations 2004



www.e-NC.org

Highlights of e-NC Work:
Grant Programs 2001-2007

- **PUBLIC ENGAGEMENT GRANTS (2001-2002)**
  Eligible Applicants: Tier 1 & 2 counties only; 39 applicants representing 34 counties, 31 awards made, representing 32 counties
  Total amount contracted: $154,860 (up to $5,000 per award)
  Grant Period: December 1, 2001 – May 31, 2002; Funding Source: MCNC funds

- **e-COMMUNITIES PLANNING GRANTS (2001-2002)**
  Eligible Applicants: 85 rural counties & Eastern Band of the Cherokee Indians (EBCI); 82 awards made
  Total amount contracted: $820,000 ($10,000 per award)
  Grant Period: December 1, 2001 – May 31, 2002, with some extensions through July 31, 2002; Funding Source: MCNC funds

- **ADDITIONAL e-COMMUNITIES PLANNING GRANTS (2003-2004)**
  Eligible Applicants: 4 rural counties not previously participating in e-communities program; 4 awards made
  Total amount contracted: $20,000 ($5,000 per award)
  Grant Period: Spring 2003 through Spring 2004; Funding Source: MCNC funds

- **PUBLIC ACCESS SITE GRANTS (2002-2003)**
  Eligible Applicants: Counties who successfully completed the e-communities planning grants, including the EBCI
  64 applicants representing 62 counties, 64 awards made, representing 64 counties
  Total amount contracted in original round: **$756,000** ($12,000 per award)
  Grant Period: September 1, 2002 – August 31, 2003
  Additional Grant Extensions: **$265,000** (additional $5,000 per grantee)
  Grant Period: Extended through June 30, 2004
  Total amount contracted - $1,021,000; Funding Source: MCNC funds

- **DIGITAL INTERNET LITERACY TRAINING GRANTS 2002-2003)**
  Eligible Applicants: 85 rural counties; 65 applicants representing 74 counties, 28 awards made
  Total amount contracted: $721,908 (up to $20,000 per award, except for multiple county awards)
  Grant Period: August 1, 2002 – June 30, 2003, with extensions offered through December 31, 2003
  Funding Source: MCNC funds

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Highlightsof e-NC Work:
Grant Programs 2001-2007 (cont.)

- **BUSINESS & TECHNOLOGY TELECENTER GRANTS, Phase I (2001-2004)**
  Eligible Applicants: Tier 1 & 2 counties only; 16 applicants, 5 awards made in Year 1, 4 grantees eligible for Year 2 applications
  Total amount contracted for Year 1: **$2,536,509** (up to $650,000 per award)
  Grant Period: October 1, 2001 – December 31, 2002, extended to June 30, 2004
  Total amount contracted for Year 2: **$1,479,883, Total amount contracted - $4,016,392**; Funding Source: MCNC funds

- **CONNECTIVITY INCENTIVES GRANTS (2002-2007)**
  Eligible Applicants: organizations serving any of the 85 rural counties
  3 major rounds of funding (8/22/02, 12/16/02, 3/13/03); Additional awards 2003-2006
  Grant period: grants periods ranged from 2002-2006*; *Note: 2 grants in this program to be continued into 2008*
  Total contracted as of Dec. 2006 - $9,474,347.53; Funding Source: MCNC funds, plus includes $200,000 awarded from ARC monies

- **LEG-UP GRANTS (2002-2005)**
  The Local E-Government Utilization Program grant was awarded to the RIAA/e-NC by the U.S. Department of Commerce (TOP)
  Total amount contracted: $789,826.75
  Original project amount: $1,509,032(to include $700,000 from TOP, $605,000 in RIAA/e-NC matching funds, plus $204,032 in RIAA/e-NC in-kind monies.)
  Grant Period: Fall 2002 – Fall 2005; Funding Source: TOP funds and e-NC MCNC funds

- **e-COMMUNITIES IMPLEMENTATION GRANTS (2002-2004)**
  Eligible Applicants: original 81 designated e-community counties and the Eastern Band of the Cherokee, 14 awards
  Original amount contracted: **$1,508,462.75** (Awarded November 21, 2002)
  Additional awards:
  Amount contracted: **$25,000** (Awarded September 25, 2003), Amount contracted: **$30,000** (Awarded June 16, 2004)
  Total amount contracted - $1,563,462.75; Funding Source: MCNC funds

- **e-COMMUNITIES SUPPORT GRANTS (2003-2004)**
  Eligible Applicants: the 86 e-communities across North Carolina; 56 awards made
  Total amount contracted: $152,000 (approximately $3,000 per award)
  Grant Period: approx. November 15, 2003 – May 15, 2004, and June 1, 2004-December 31, 2004
  Funding Source: MCNC funds

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Highlightsof e-NC Work:
Grant Programs 2001-2007 (cont.)

- **BUSINESS & TECHNOLOGY TELECENTER GRANTS, Phase II (2004-2007)**
  Eligible to applicants across the state, 4 organizations selected for Phase II BTTs.
  Grant Period: early 2005-end of 2007
  Total amount contracted - $1,780,000 (plus part of technopreneur grants listed below)
  Funding Source: state funds (EIF and R&D, 2004 appropriation)

- **e-COMMUNITIES ACTION GRANTS (2005-2006)**
  Eligible Applicants: the 86 e-communities across North Carolina
  5 applicants representing 5 counties, 5 awards made
  Total amount contracted: $22,693 (approximately $5,000 per award)
  Grant Period: December 1, 2005 – May 31, 2006
  Funding Source: MCNC funds

- **TECHNOPRENEUR GRANTS (2006-2007)**
  Targeted to BTTs (Alleghany, Martin, Rockingham, Rutherford)
  Grant Period: Spring/Summer 2006-end of 2007
  Total amount contracted - $181,500
  Funding Source: state funds (EIF and R&D, 2004 appropriation) & Kellogg funds

- **URBAN DISTRESSED PILOTS (2006-2007)**
  Targeted to Cities of Charlotte and Wilmington, to act as e-communities pilots for urban-distressed areas
  Grant Period: Spring/Summer 2006-Spring/Summer 2007
  Total amount contracted - $10,000
  Funding Source: MCNC funds

- **APEC e-LEARNING GRANTS (2006-2011)**
  Targeted to school districts in eastern NC
  Grant Period: contracts beginning in 2006, all end by June 30, 2011
  Total amount available for contracting - $2 million
  Funding Source: Golden LEAF

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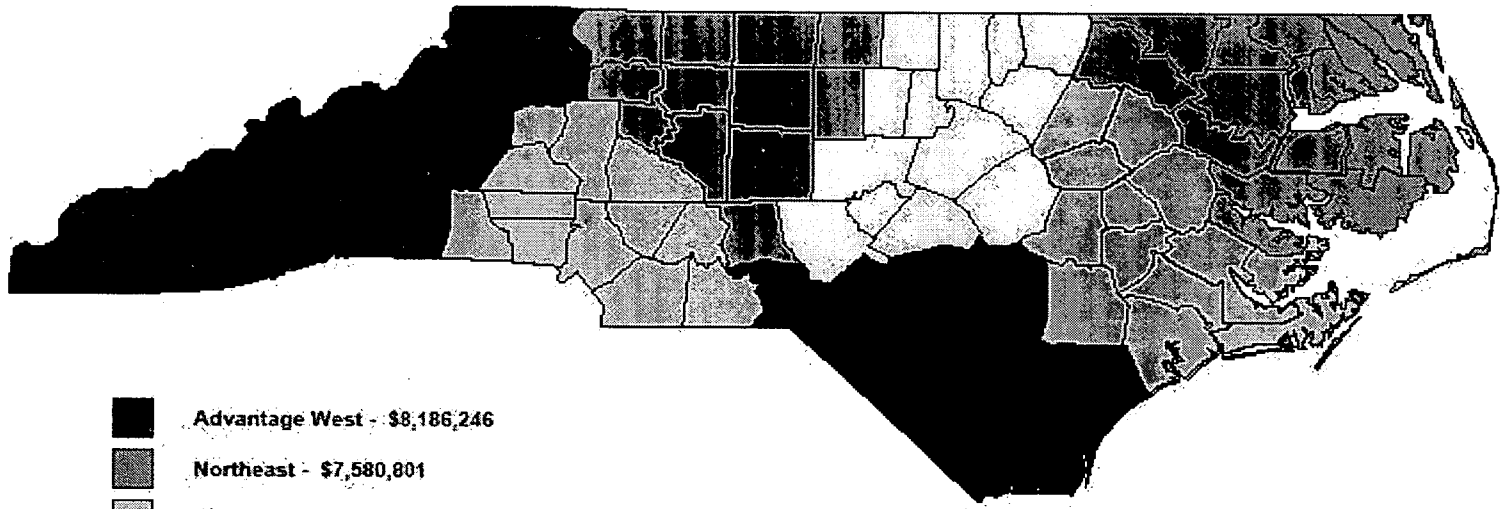
e-NC/RIAA Grant Money Awarded by Economic Development Partnership Regions



- Advantage West - $8,186,246
- Northeast - $7,580,801
- Eastern - $4,326,813
- Research Triangle - $1,684,214
- Charlotte - $1,398,528
- Piedmont Triad - $1,153,781
- Southeast - $767,475

Multi-Regional and Statewide grants not represented - $330,133

Total grant awards to date: $25,427,991

3/06/03

InvestedDirectly in LocalCommunities

- Nearly two-thirds of the $30 million (MCNC funding) invested in rural North Carolina counties through grants and incentives
- $3 million committed to education, outreach and awareness projects
- $2 million invested in research

www.e-NC.org

FundingSources

MCNC		**$30,000,000**		
State of North Carolina				
	NCGA	**$7,742,500**		
			Connectivity Incentives Grants	*$1,210,000*
			Bus & Tech Telecenter Grants	*$3,192,500*
			PEG Channel Grants	*$1,000,000*
			WOW e-CDC Grant	*$290,000*
			Operations through DPI/BETA	*$1,800,000*
				$250,000
	Golden LEAF	**$2,150,000**		
			e-Learning Grants	*$2,000,000*
			Entrepreneurship Grants	*$150,000*
Federal		**$925,000**		
Foundation		**$164,700**		
		$40,982,200		

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The e-NC Authority
CurrentKey Programs,2007 -2008

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Highlightsof e-NC Work:
Grant Programs 2007-2008

2007-2008 Grant Programs – some awards still being contracted:

• Business & Technology Telecenter Grants	$1,200,000
• Connectivity Incentives Grants	$1,210,000
• PEG Channel Grants (via G.S. 66-359)	$1,000,000
• Windows on the World e-CDC Funding	$ 290,000*

** Note - this funding was directed via legislative mandate, to be transferred to Windows on the World e-CDC in Roper, N.C. The e-NC Authority is only responsible for monitoring the grant.*

Plus - continuation of e-Learning Grants:

- $2 million from Golden LEAF (2006-2011)

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2007-2008 Grant Funding Awards

Connectivity Incentives – promotes public-private partnerships

$1.21 million awarded December 2007

Grant to Embarq Corp. to raise the level of available high-speed Internet access in the four counties in which less than 50% of the households have access to high-speed Internet:

As a result of this funding, high-speed Internet availability will rise from:

47.96% to 71%: Gates County

49.1% to 77%: Greene County

45.07% to 71%: Jones County

46.89% to 86%: Warren County

Embarq Share = $1,534,075
e-NC Grant = $1,210,000
Total Project = $2,744,075

$1.26 to $1.00 match

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2007-2008 Grant Funding Awards

e-NC Business & Technology Telecenter Grants

Continued funding for the **e-NC Business & Technology Telecenter** (BTT) Program

Awarded October 2007

$300,000 for each of the Phase II e-NC Business & Technology Telecenters:

- *New Ventures Business Development, Wadesboro, Anson County*
- *The Roanoke Center, Rich Square, Northampton County*
- *Rockingham County Business & Technology Center, Wentworth, Rockingham Co.*
- *Foothills Connect Business & Technology Center, Rutherfordton, Rutherford Co.*

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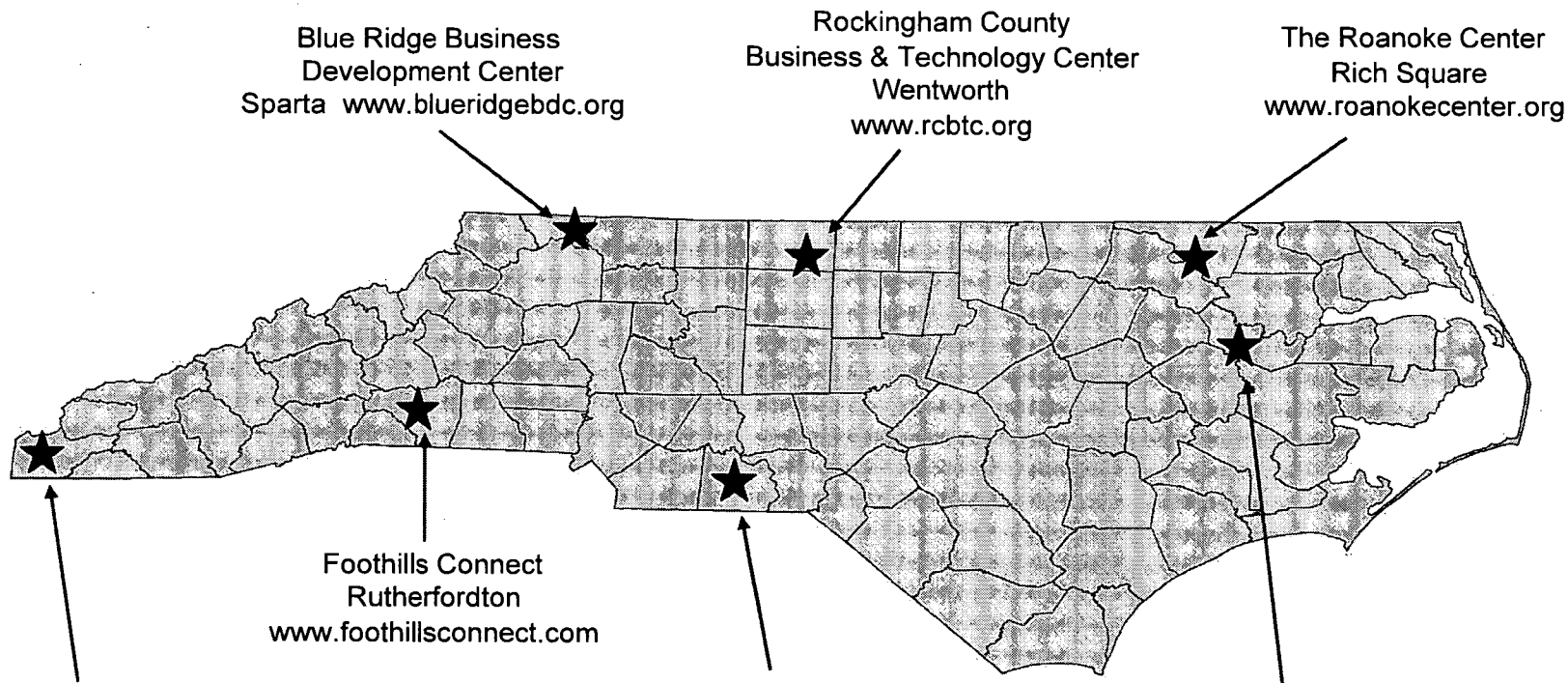
e-NC Business & TechnologyTelecenters



Blue Ridge Business
Development Center
Sparta www.blueridgebdc.org

Rockingham County
Business & Technology Center
Wentworth
www.rcbtc.org

The Roanoke Center
Rich Square
www.roanokecenter.org

Foothills Connect
Rutherfordton
www.foothillsconnect.com

Tri-County Community
College Telecenter
Peachtree
www.tricountycc.edu/TeleCenter/

New Ventures
Business Development Inc.
Wadesboro & Monroe
www.nvbdi.org

Northeast Technology
& Business Center
Williamston
www.nctelecenter.com

e-NC Business& Technology Telecenters

- **e-NC Business & Technology Telecenters** –

  The e-NC Authority is primary grantor for the SEVEN e-NC Business and Technology Telecenters (BTTs). The BTTs are multi-purpose technology, business, training, and public access centers whose mission is to strengthen and grow the economy in these economically-distressed areas, and act as catalysts to bring opportunities for technology-based economic development to these regions.

- BTT Metrics (2001-2007):
  - **1,490 new jobs** created ($4,049 cost per job created)
  - 158,477 public Internet access visits
  - 22,635 technical/business clients served
  - $11,902,986 leveraged by the e-NC Authority

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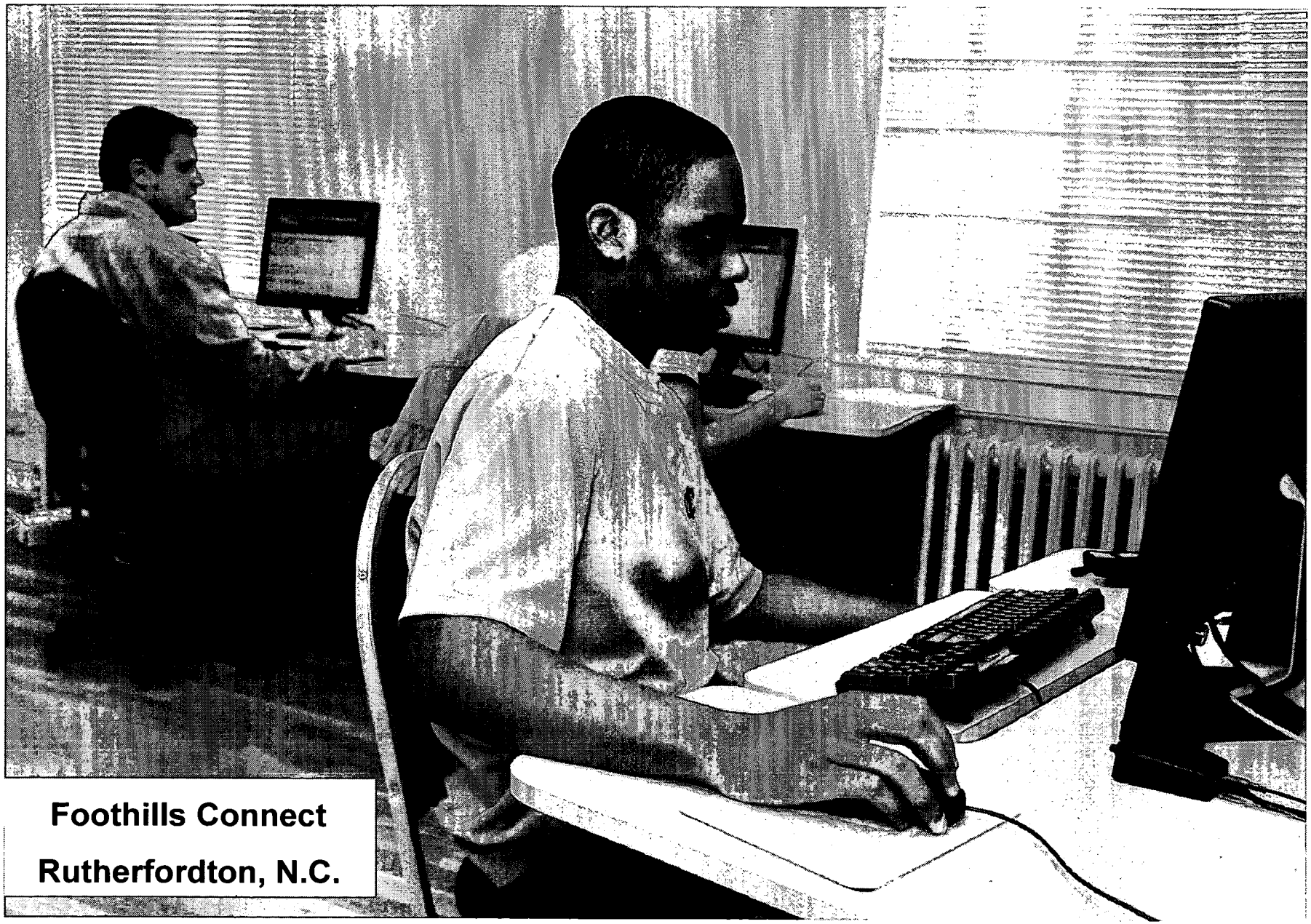
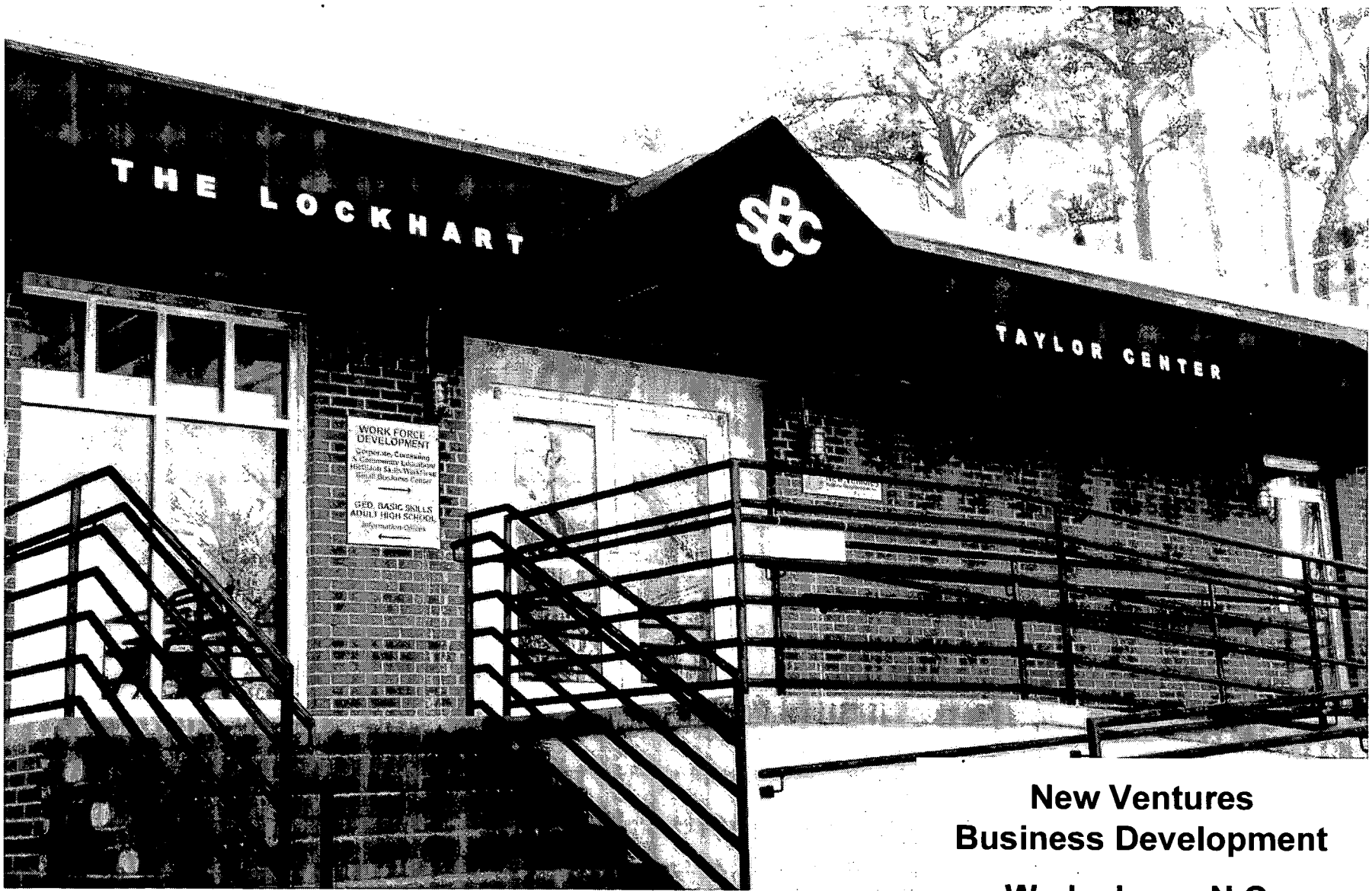


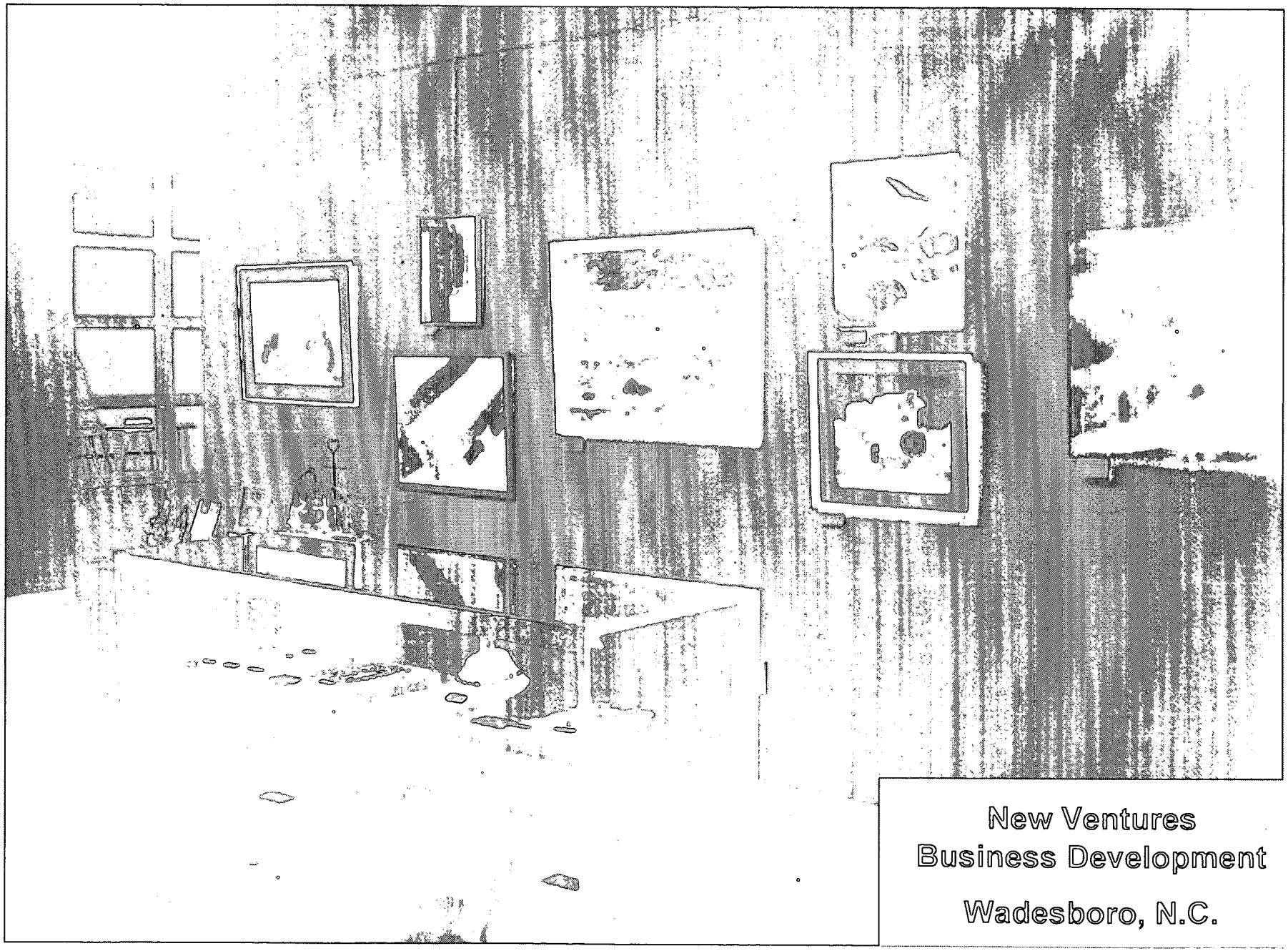
Foothills Connect

Rutherfordton, N.C.



New Ventures
Business Development

Wadesboro, N.C.



New Ventures
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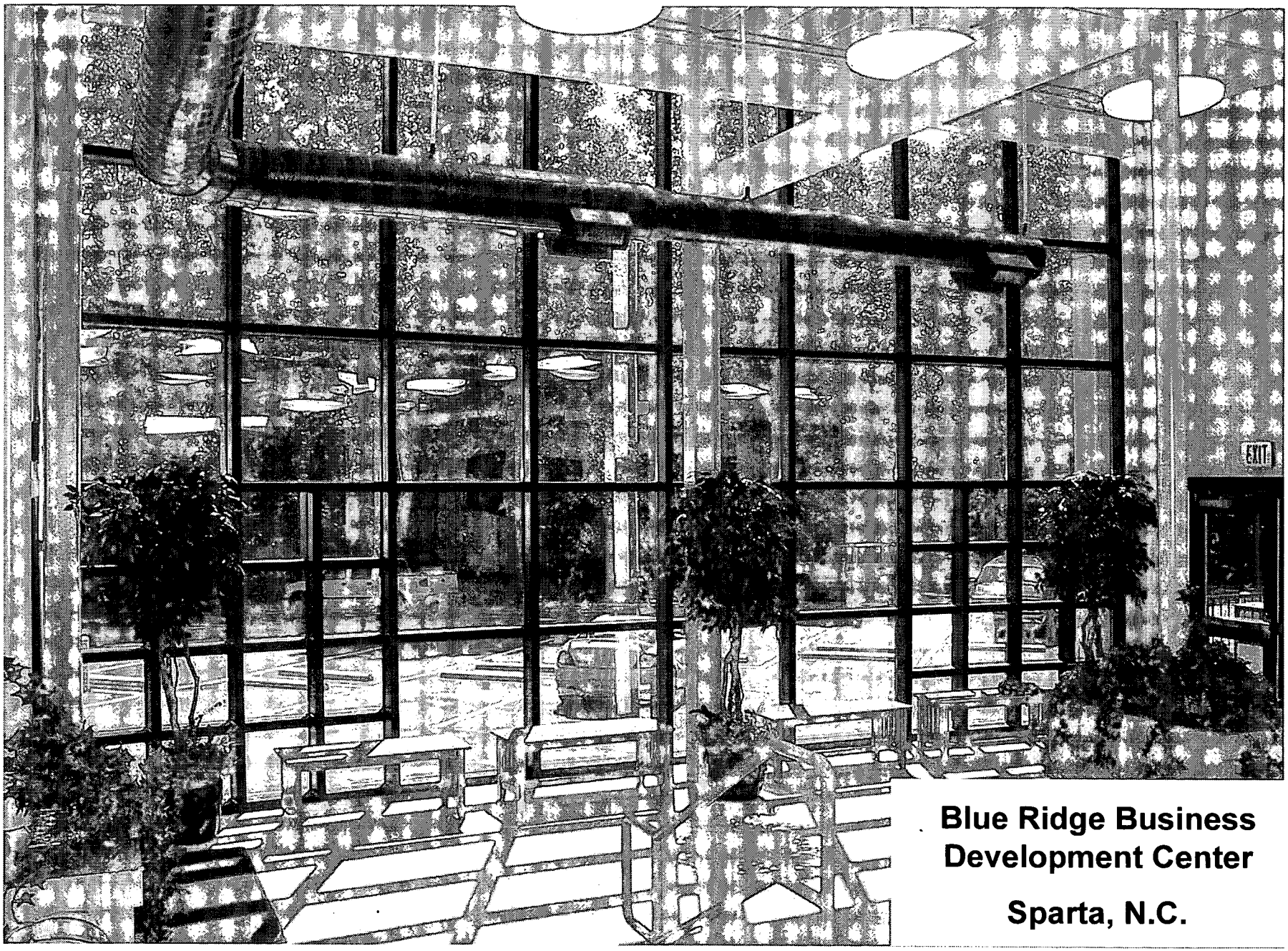
Wadesboro, N.C.

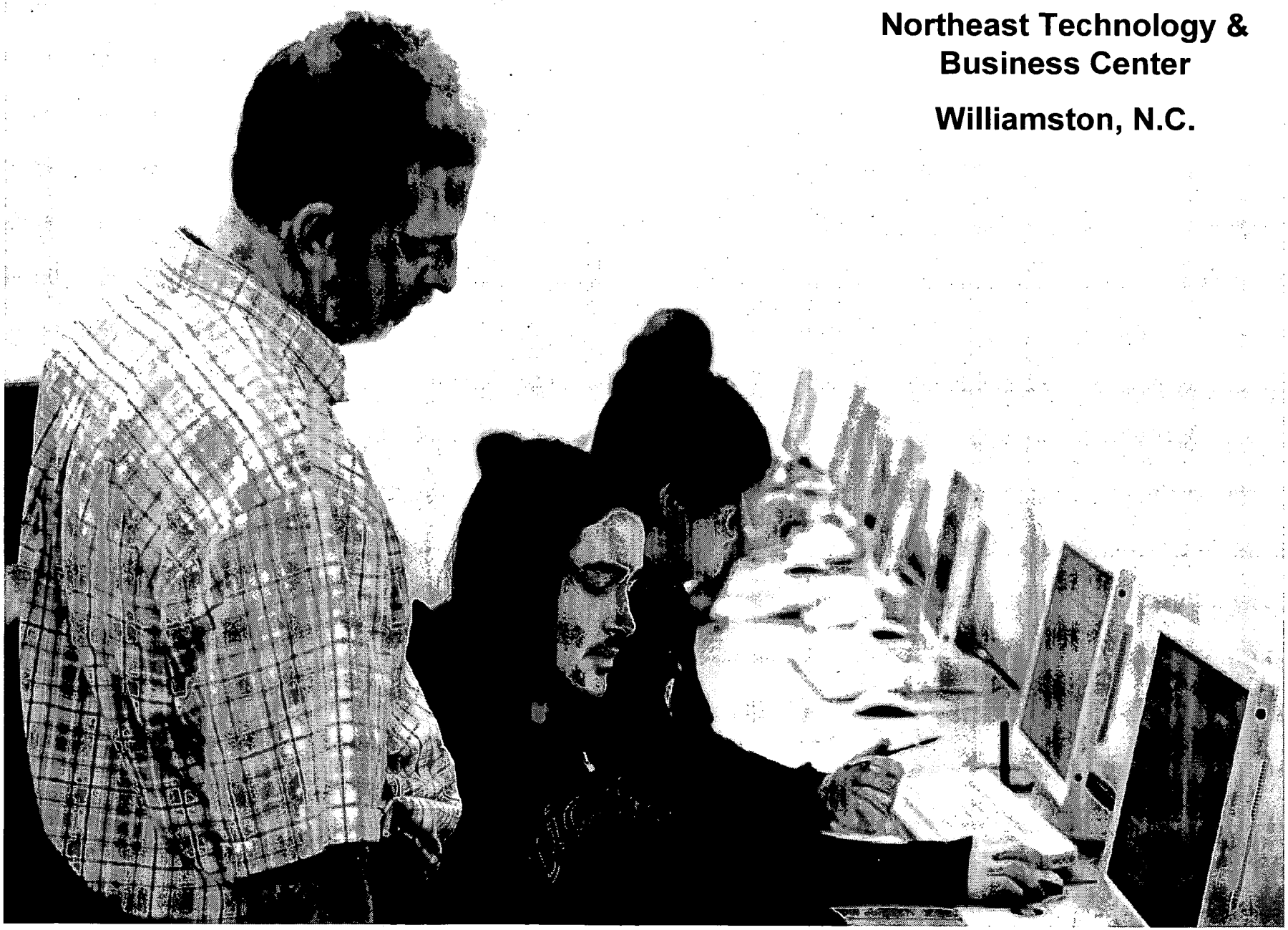


Blue Ridge Business Development Center

Sparta, N.C.

Northeast Technology & Business Center

Williamston, N.C.



2007-2008 Grant Funding Awards

e-NC Capital Expenditure Grants for Qualified PEG Channels

30 Grants to local governments for **PEG Channel Funding**

Over $572,000 Awarded December 2007

- Program is funded by a $1 million appropriation from state lawmakers.
- PEG channels are public, educational or governmental access channels provided to a county or city.
- Local governments receiving funds are required to match the e-NC Authority's award dollar-for-dollar.
- Program created by the N.C. General Assembly to help replace cable franchise fee revenues that were lost as a result of recent changes in the state video franchise system.
- Local governments with PEG channels certified by the N.C. Department of Revenue were eligible to apply. Each applicant may request up to $25,000 in funding per fiscal year.
- Second round of funding to be announced April 10, 2008

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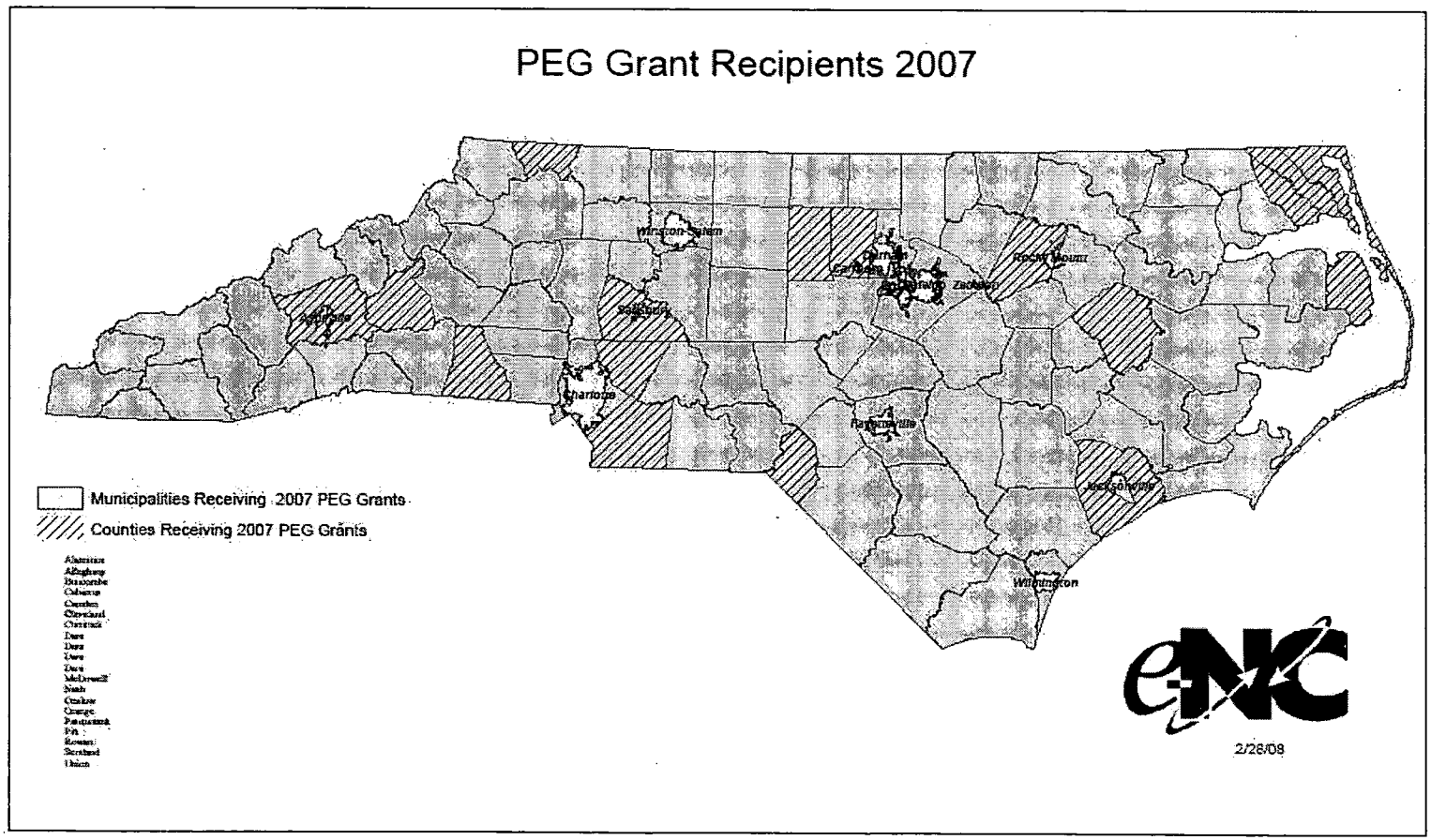
Distribution of e-NC PEG Channel Grants

Awarded December 2007,
Second Round Funding to be Announced April 10, 2008



Other Programs & Activities2007 -2008

- **Partner in School Connectivity Initiative** – The e-NC Authority provides technical assistance to statewide effort to provide increased connectivity to schools. Project in partnership with Friday Institute/NCSU and DPI (currently 168 schools, 60,598 students).

- **e-Learning Grants** – The e-NC Authority is providing connectivity funding to school districts in eastern N.C. for increased e-learning capabilities. Five year project in partnership with Golden LEAF (109 schools, 36,414 students).

- **BRAC Project** – The e-NC Authority is providing technical assistance in a regional growth plan for the Base Realignment and Closure Regional Task Force (BRAC RTF), looking at expansion of the Ft. Bragg/Pope Air Force Base military complex and surrounding counties. The e-NC Authority is partnering with TDA, Inc., to look at communication technology needs and infrastructure in the targeted counties.

- **NC TeleHealth Network (NCTN) / FCC Rural Health Pilot Program** – The e-NC Authority is a planning partner in this new program recently awarded by the FCC to pilot the N.C. TeleHealth Network (NCTN). FCC gave $12 million to assist.

- **Ubiquitous Training** – The e-NC Authority continually focuses on and deploys information and training statewide: Southeast ICT Symposium, digital literacy training, tool kits, manuals.

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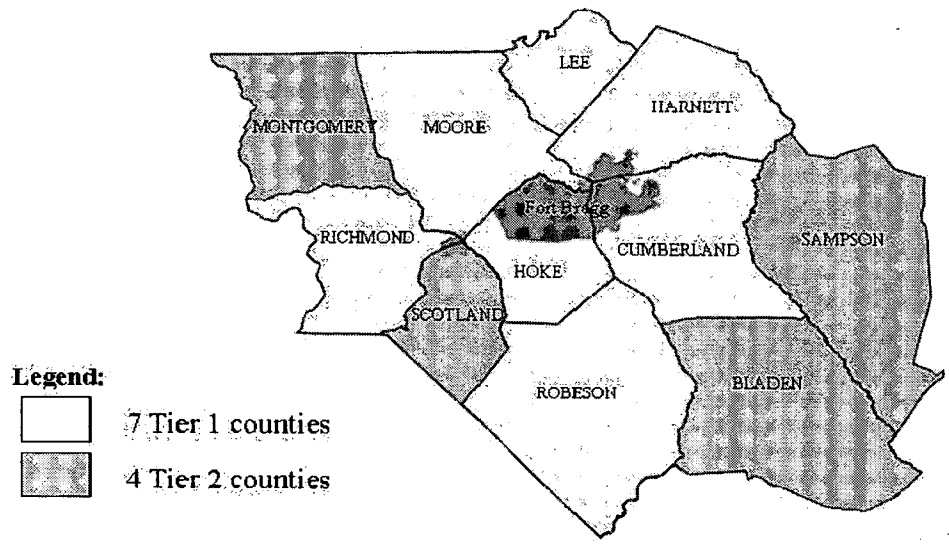
BRAC Project

BRAC RTF
Eleven Member Counties



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e-NC: Other Programs & Activities07 -08

Cross-Borders Work

Efforts to assist most needycounties:

- Far West – Clay / S.C.
- West - Polk, Rutherford / S.C.
- Northwest – Ashe, Alleghany / Va.
- N. Central – Caswell, Person, Granville / Va.
- S. Central – Anson, Richmond, Scotland, Robeson, Columbus / S.C.

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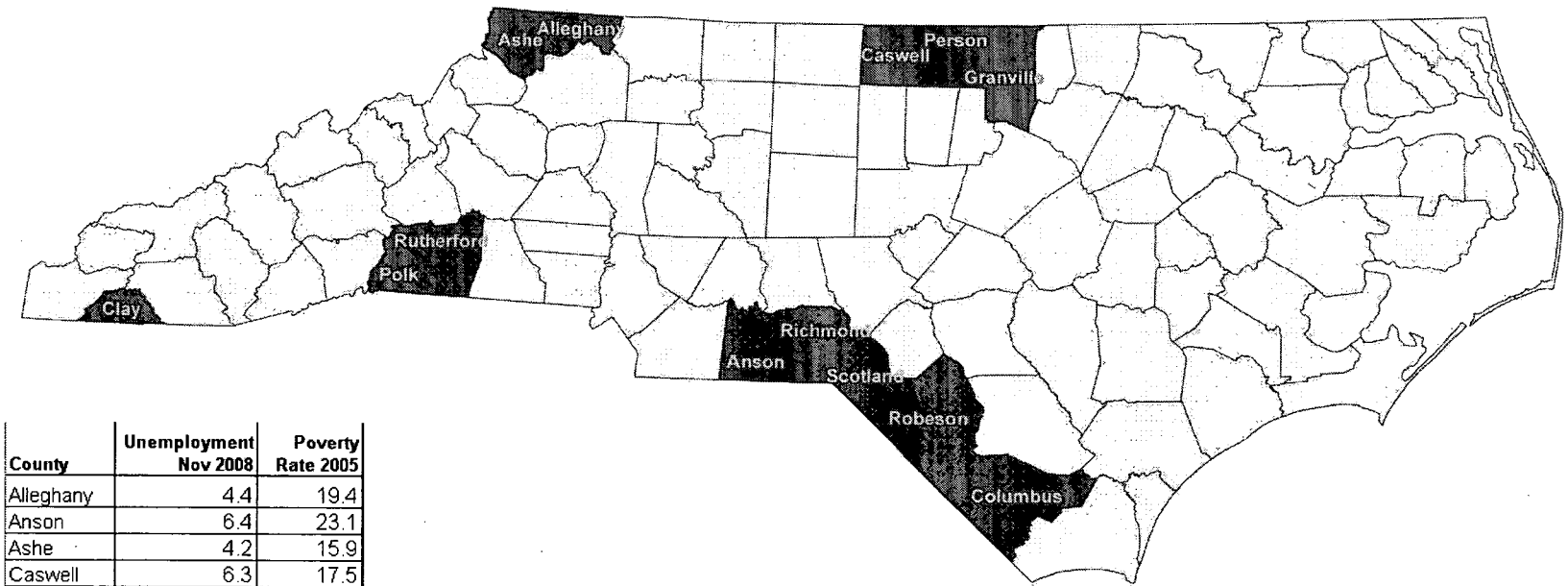
Cross-Border Projects



County	Unemployment Nov 2008	Poverty Rate 2005
Alleghany	4.4	19.4
Anson	6.4	23.1
Ashe	4.2	15.9
Caswell	6.3	17.5
Clay	3.7	13.3
Columbus	5.7	27.0
Granville	5.2	12.8
Person	5.6	13.6
Polk	3.4	11.3
Richmond	7.9	23.8
Robeson	6.3	32.0
Rutherford	5.8	16.3
Scotland	9.6	26.3

Source: NC Department of Commerce
County Profile Reports, 4th Quarter 2007

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The e-NC Authority
Legislation, Policy Issues and Closing

www.e-NC.org

State LegislationDirectly Impactinge -NC

- **Session Law 2000-149** **Creation of the Rural Internet Access Auth.**
- **Session Law 2003-425** **Creation of the e-NC Authority**
- **Session Law 2004-88** **Emergency Funding**
  $1 million to the e-NC Authority under Economic Infrastructure Fund – for BTTs
- **Session Law 2004-124** **2004 Appropriations**
  $992,500 to the e-NC Authority under Rural Center R&D funding – for BTTs
  Urban distressed requirements explained in R&D funding section
- **Session Law 2005-276** **2005 Appropriations**
  $500,000/yr. to the e-NC Authority under Rural Center funding – for operations
  Changes all commissioners to voting members
  Funded Study on Regional Education Networks for BETA, under DPI funding

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State LegislationDirectly Impactinge -NC (cont.)

- **Session Law 2006-66 Modification of the Appropriations Act of 2005**
  Extends the e-NC Authority's sunset date to Dec. 31, 2011
  Provides $500,000 to e-NC for fiscal year 2006-2007 (through the Dept. of Commerce)
  School Connectivity Initiative awarded $6 million non-recurring. This funding has paid for e-NC technical assistance of $50,000 for YR 06-07, and is paying for $100,000 for YR 07-08.

- **Session Law 2006-151 Video Service Competition Act**
  Mandates that the e-NC Authority administer the PEG Channel Fund and the grants awarded under this fund

- **Session Law 2007-323 Base Budget Appropriations**
  Appropriates $4 million to the e-NC Authority for connectivity, operations, and BTTs, including $1 million to fund the PEG Channel fund, to be distributed per G.S. 66-359. A portion in the amount of $290,000 was to be transferred to Windows on the World e-CDC.
  $500,000 from S.L. 2006-66 continued in recurring budget through the Dept. of Commerce.
  Changes the terms of the e-NC commission appointments so that all terms commence on Jan. 1, 2008 and are staggered.

Current Advocacy Work

- At the state level:
  - Advocating for targeted infrastructure incentive funds for counties with less than 75% access – to be matched at a minimum of 1:1 with industry dollars - to expand broadband in the most underserved counties
  - Advocating for funds for continued investment in e-NC Business & Technology Telecenters
  - Working toward the e-NC Authority's 2008 legislative and advocacy agenda – must have sign off on April 9 by board

Release of White Paper – April 16

- White paper to be released April 16 at Southeast ICT Symposium, on the state of broadband deployment in the U.S. and N.C.

- Paper to look at why build-out of broadband is essential to economic development, where we stand as a state and nation in terms of broadband deployment, initiatives to accelerate deployment and various barriers that exist.

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Register Now –
Complimentary Registration for Legislators

e-NC

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Strategic Partners – Partial Listing

- Citizens of North Carolina
- Local governments and economic developers in all 100 counties
- Microelectronics Center of North Carolina (MCNC)
- N.C. Association of County Commissioners & League of Municipalities
- North Carolina Chamber (NCCBI)
- N.C. Dept of Commerce / U.S. Dept of Commerce
- N.C. General Assembly
- N.C. Healthcare Information & Communications Alliance (NCHICA)
- N.C. Rural Economic Development Center
- N.C. Technology Association (NCTA)
- Regional Councils of Government
- Regional Economic Development Partnerships
- Telecom Service Providers
- UNC Center for Public Technology
- UNC System, NC Community College System, NC Dept of Public Instruction

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CriticalSuccess Factors

- Leadership – Legislative & Executive Gov't.
- Targeted funds toward last-mile incentives
- Public-private partnerships
- Grassroots involvement – e-Communities
- The e-NC Authority Board

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Additional Information

Information provided to committee staff for members:

- e-NC grants database (listing of all RIAA/e-NC awards made 2001-present)
- Listing of all e-NC legislation

Note: all RIAA/e-NC funds are audited within the audit of the N.C. Rural Economic Development Center. No audit exceptions.

www.e-NC.org

In Closing...

The existence, or lack of, broadband infrastructure in North Carolina will determine the future growth for this state. The existence of, or lack of, this infrastructure impacts all sectors, including:

- economic development
- education
- health care
- homeland security
- government
- culture
- entertainment

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"Broadband access does enhance economic growth and performance, and...the assumed and oft-touted economic impacts of broadband are real and measurable."

Measuring Broadband's Economic Impact
Broadband Properties, December 2005

William H. Lehr & Carlos A. Osorio
Sharon E. Gillett, Massachusetts Institute of Technology
Marvin A. Sirbu, Carnegie Mellon University

www.e-NC.org

To Reach Us ....

The e-NC Authority
4021 Carya Drive,
Raleigh NC 27610
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1-866-627-8725
www.e-nc.org

www.e-NC.org

ATTACHMENT 4

A Joint Report on Information Technology

presented to the

2008 Session of the General Assembly

January 2008

Submitted by:

Business Education Technology Alliance,
Lt. Governor Bev Perdue
Chairman

School Technology Commission
Representative, Joe Tolson
Chairman

Fred Bartholomew
Vice Chairman

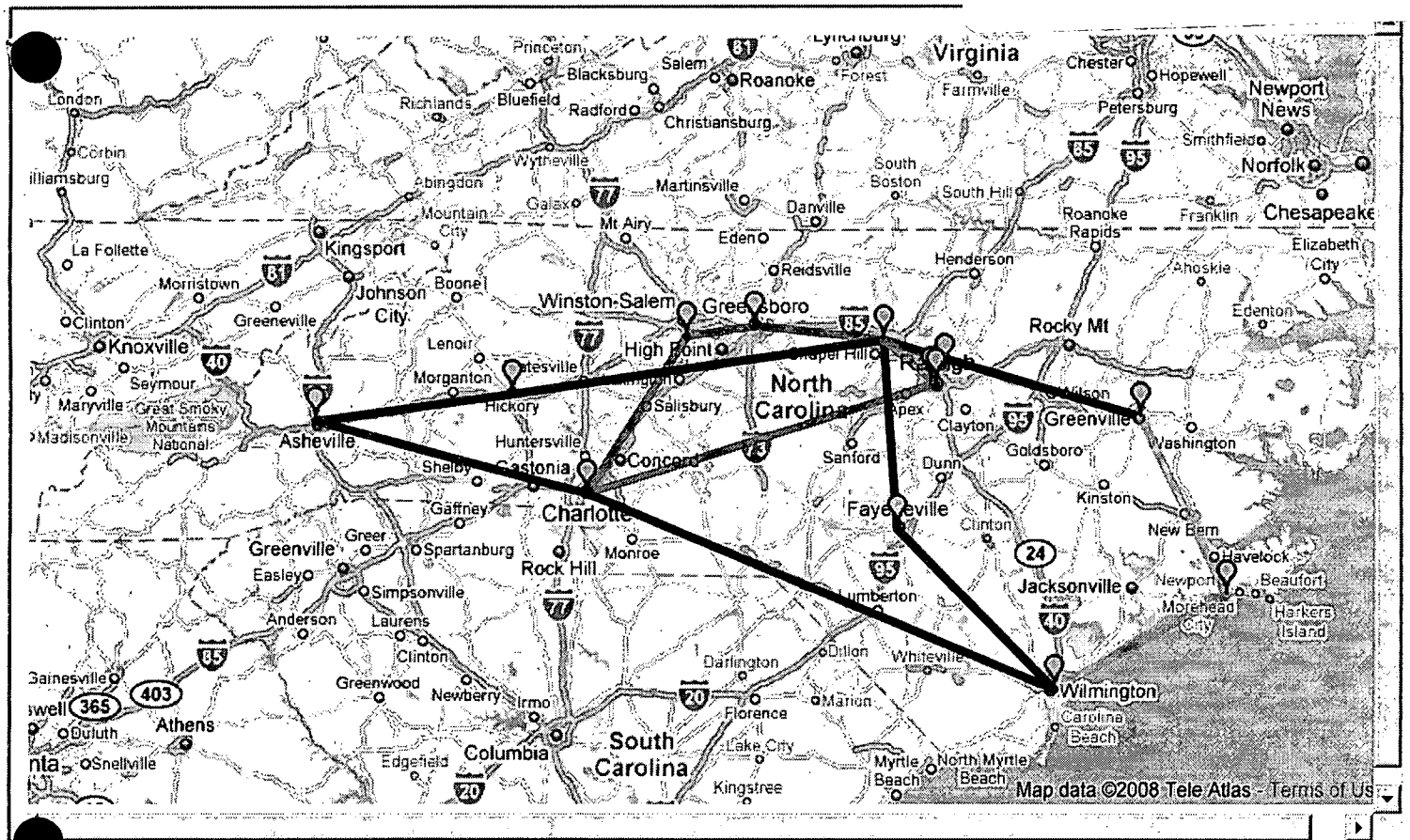
Joint Legislative Oversight Committee on Information Technology,
Senator Vernon Malone
Co-Chairman

Representative Joe Tolson
Co-Chairman

Select a county and/or type from below to view OR select an LEA

County: All Counties **LEA:** Select an LEA Go Reset Ma

ATTACHMENT 5



NCREN Node ☐ UNC University ☐ Private University ☐ Community College ☐ Other

☐ LEA ☐ Public K-12 ☐ Private K-12 ☐ Charter School

Questions or Comments? Please send email to nms@ncren.net

MINUTES

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

Tuesday, April 08, 2008

The House Select Committee on High Speed Internet in Rural Areas met on Tuesday, April 08, 2008, in Room 1124 of the Legislative Building at 10:00 A.M. The following members were present: Chairman Bill Faison; Representatives Angela Bryant, Jim Gully, Jim Harrell, Thom Tillis, and Joe Tolson. Staff in attendance: Brenda Carter, Barbra Riley, Karlynn O'Shaughnessy, Peter Capriglione and Heather Fennell. House Sergeant-at-Arms assisting: Tom Wilder, Toussaint Avent, and Bob Rossi. The Agenda and Visitor Registration Sheet are attached. *(Attachment 1 and 2)*

The Chairman called the meeting to order. Chairman Faison started the meeting off by reading a letter from a constituent in his district. The letter in brief spoke about the need of high speed internet in Caldwell and the appreciation of Embarq's investments. The letter is attached. *(Attachment 3)* At the last meeting there was a discussion of a need for *High Speed Internet 101* Charlie Pittman from e-NC has agreed to do that for the committee.

Chairman Faison introduced our first presenter, Charlie Pittman.

Charlie Pittman (Senior Program Director, Telecom & Technologies Convergence) was recognized to present to the committee. His presentation is attached. (*Attachment 4*) Below are some key points of his presentation:

- Broadband is the transmission facility capable of carrying bandwidth greater than 45mbps.
- High-speed is services that provide the subscriber with transmissions at a speed in excess of 200 kbps in at least one direction.
- Copper Vs. Fiber: Copper- multiple pairs can be combined with electronics to provide multi-megabits of bandwidth. As distance increases bandwidth decreases. Fiber- A single fiber can transport multiple 10 gigabits on one lambda (wavelength of light).
- Cable modem service is provided by the Cable Company and DSL/ADSL or fiber service is normally provided by phone companies.
- Cable companies pick up metropolitan areas around fibrillation. The requirement for build out is 15 to 20 homes per mile.
- Fiber has a lot of benefits over copper. Copper is affected by lightning, high maintenance, and high repair.
- Companies are beginning to deploy fiber to homes.

After Charlie Pittman's presentation Chairman Faison thanked Charlie and moved on to the scope of todays inquire which was provided to the company's representatives prior to the meeting. The key elements of that letter are: 1) Please provide to the committee the total customers in your service area/areas. 2) Of that total, the number of customers that have the infrastructure available to them to have access to high speed internet

using your cable infrastructure, e.g. wire or fiber. The letter is attached. *(Attachment 5)* Chairmen Faison introduced our next speaker Dwight Allen.

Dwight Allen (Executive Vice President, NC Telephone Cooperatives Coalition/Carolina Link) was recognized to present to the committee. His handouts are attached. (*Attachment 6*) Below are some key points of his presentation:

- North Carolina has nine membership companies that are very small, very rural and serve on the average 8 customers per route mile.
- Bottom Line: Rural – 173,939 total customers 170,835, 98.2% of total customer base have access to HS internet access for the service area/areas

After Dwight Allen's presentation Chairman Faison announced he will hold questions until the end of the presentations and then introduced our next speaker Jon Hamm.

Jon Hamm (Mgr. Community Development and Public Affairs, Embarq) was recognized to present to the committee. His presentation is attached. (*Attachment 7*) Below are some key points of his presentation:

- Embarq operates primarily in the rural parts of the state, serves 186 communities, and serves all or part of 67 counties out of NC's 100.
- 74.1% of Embarq customers have high speed access available.
- 82.6% of Embarq customers in six largest communities have high speed access available
- Bottom Line:
    - Caswell County: 4,325 access lines, HIS lines capable 2,732/63%
    - Chatham County: 2,0670 access lines, HIS lines capable 1,4201/69%
    - Pamlico County: 6,887 access lines, HIS lines capable 4,866/71%
    - Tyrell County: 1,838 access lines, HIS lines capable 1,286/70%
- Embarq has 1,222,734 access lines (residential household unit) in North Carolina of that 905,858 has availability which gives the 74.1 %

After Jon Hamm's presentation Chairman Faison introduced our next speaker Stan Pace.

Stan Pace (VP Public Policy and External Affairs, Verizon South) was recognized to present to the committee. His presentation is attached. (*Attachment 8*) Below are some key points of his presentation:

- Regional Breakdown:
    - Western Part of NC: 125,200 Lines; 88,100 qualified loops 70% of total; 80,780 qualified loops equipped - 92%.
    - Research Triangle Park: 111,500 Lines; 104,200 qualified loops 93% of total; 98,190 qualified loops equipped - 94%.
    - Union County: 22,700 Lines; 21,100 qualified loops 93% of total; No qualified loops equipped.
- The committee was shown a map that depicted the ability of coverage that Verizon could provide wirelessly. The map was blanketed with coverage that could be provided.
- The total broadband lines grew 26%; from 51.2 million to 64.6 million lines, and 59% of all ads were mobile wireless devices.
- Market shares for ADSL and cable modems are falling and wireless shares have leaped from 1% to 17%.. Consumers are moving to wireless as the technology becomes available.

After Stan Pace's presentation Chairman Faison introduced our next speaker Rob Smith.

Rob Smith (AT&T North Carolina) was recognized to present to the committee. His presentation is attached. (*Attachment 9*) Below are some key points of his presentation:

- Total square miles of AT&T in NC is 11,937 covering a geographic area of 25%.
- 85 of NC 100 counties are rural; AT&T serves some portion of 47 counties, 34 of which are designated as rural.
- 91% of all living units served by AT&T in NC are wire line DSL capable.
- 87% of all rural living units served by AT&T in NC are wire line DSL capable.
- Broadband competition in North Carolina has resulted in lower prices and increase speeds for AT&T consumers.
- Because it may not be feasible to serve everyone with a landline capability AT&T is working to drive the cost of wireless options down introducing satellite options.

After Rob Smith's presentation Chairman Faison introduced our next speaker Marcus Trathen.

Marcus Trathen (Brook, Pierce, McLendon, Humphrey & Leonard, LLP, Cable Association) was recognized to present to the committee. His presentation is attached. (*Attachment 10*) Below are some key points of his presentation:

- The association represents companies that provide service to over 1.6 million subscribers in the state.
- High-speed lines in NC (bus/res): 1,134,075 cable modem lines and 2,894,042 high speed internet lines (cable- 39% and wireless – 34%).
- Cable modem availability where cable system offers cable TV service have 96% availability.
- Bottom Line:
    - April 2008 NCCTA survey (approx 79% participation) – Out of 2,909,205 homes passed, 2,861,943 have broadband availability bringing the total to approx. 98%.

After Marcus Trathen's presentation Chairman Faison introduced our final speaker Robert Wells.

Robert Wells (Executive Director, NC Alliance of Independent Telephone Companies) was recognized to present to the committee. Below are some key points of his presentation:

- Four of the five companies represented by the alliance provide rural service.
- Because they are so small and very community oriented they can provide availability of broadband to nearly 95-100% of there customers.
- 161,269 access line, 37,100 23% have high-speed internet about 23%

Chairman Faison opened the floor for questions or comments.

With no further business to come before the committee Chairman Faison announced the adjournment of the meeting. The meeting adjourned at 12:11 p.m.

Respectfully submitted,

Representative Bill Faison
Chair

Lavada Vitalis
Committee Assistant

ATTACHMENT 1

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SHORT SESSION

AGENDA

Tuesday, April 8, 2008
10:00 AM
Room 1124, LB

1. **Welcome**

   Representative Bill Faison, Chairman

2. **Guest Speakers**

   - **The e-NC Authority**
     Charlie Pittman, Senior Program Director - Telecom & Technologies Convergence
   - **NC Telephone Cooperatives Coalition/Carolina Link**
     Dwight Allen, Executive Vice President
   - **Embarq**
     Jon Hamm, Mgr. Community Development and Public Affairs
   - **Verizon South**
     Stan Pace, Vice President Public Policy and External Affairs
   - **AT&T North Carolina**
     Rob Smith
   - **Cable Association**
     Marcus W. Trathen, Brooks, Pierce, McLendon, Humphrey & Leonard, LLP
   - **NC Alliance of Independent Telephone Companies**
     Robert Wells, Executive Director

3. **Adjourn**

ATTACHMENT 2

VISITOR REGISTRATION S

HSE Select Com. High Speed Internet Rural Areas — 4-8-08

Name of Committee — Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Ed Turlington	BP
Jon Hamm	EMBARQ
Marty Bocock	EMBARQ
Steve Brewer	EMBARQ
Stan Pace	Verizon
Dwight Aller	NC Telephone Cooperatives
Ivy Hoffman	ATT
Clifton Metcalf	AT&T
Tim Smith	AT&T
Chris Kelley	Alcatel-Lucent
Warren Zweigart	Alcatel-Lucent

VISITOR REGISTRATION SHEET

4-8-08

Name of Committee | Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Lori Ann Harris	LATA
Angie Bailey	e-NC Authority
Joanna Wright	e-NC Authority
Cary Edgar	The e-NC Authority
Carol Torian	The e-NC Authority
Bob Wells	n.c. Telephone Alliance
Connie Wilson	NCCTC
Ma Tratter	Brooks Fiber
Debra Derr	AT+T
Mark Deason	AT+T
Herb Crenshaw	AT+T

VISITOR REGISTRATION SHEET

4-8-08

Name of Committee | Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
DK McLaughlin	Time Warner Cable / GSO
Mark Prak	Brooks Pierce
Buck Hardaway	Time Warner Cable
Bill Phillips	TWC
Catharine Lee	Action Audits, LLC Cary, NC
Emily Freeman	Office of the Speaker
Dorenda Gatling	WOW c-CDC Roper NC
Don McConaughy	SAS
Joan Myers	"
Amy Fulkerson	Hunton & Williams

VISITOR REGISTRATION SHEET

4-8-08

Name of Committee | Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Jane A Patterson	the e-NC Authority
Dan Stopa	SLA

ATTACHMENT 3

Lavada Vitalis (Rep. Faison)

From: Andy Gates [cfdchief@mindspring.com]
Sent: Thursday, March 27, 2008 10:46 AM
To: Dana Chase
Cc: Donald Hughes; Rep. Bill Faison
Subject: Caldwell area internet service.

Ms. Chase,

I am very glad to hear of the time frame of improvement of service to our area. The lack of hi-speed in this area is a very big concern to our community. This hinders everything from our children working on a homework assignment to a local auto body shop losing a preferred standing with the insurance companies that they do repairs for, or the home owner who missed two sales of there home due to the lack of hi speed service. I am the Chief of the Fire Department and operate a local business that is affected. My business is where the petition that Don spoke of originated. As a business operator I understand the financial aspect of upgrading the equipment to provide this service. When this becomes available I will do my best to make the citizens in our area aware of Embarq's investment in our community.

Our Community Thanks You
Sincerely,

Andy Gates
919-732-2231
cfdchief@mindspring.com

ATTACHMENT 4

House Select Committee on High Speed Internet in Rural Areas

Charles Pittman
E-NC Authority
April 8, 2008

Connecting North Carolina to a Better Future

Bandwidth

Narrowband – a transmission facility capable of carrying up to and including T-1 (1.544 megabits per sec. symmetrical).

Wideband – Transmission facility capable of carrying bandwidth greater than T-1.

Broadband – Transmission facility capable of carrying bandwidth greater than 45 Mbps.

http://www.e-NC.org

Definition – High-speed

FCC's definition

Services that provide the subscriber with transmissions at a speed in excess of 200 kilobits per second (kbps) in at least one direction.

Connecting North Carolina to a Better Future

FCC's March 19 Meeting

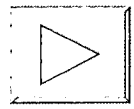
FCC ORDER

March 19, 2008, FCC Meeting

The FCC issued an order to require broadband service providers to report how many broadband subscribers they have in each Census Tract, broken down by speed and by type of technology. The order requires service providers to categorize both their upload and download speeds according to the defined Tiers of this order.

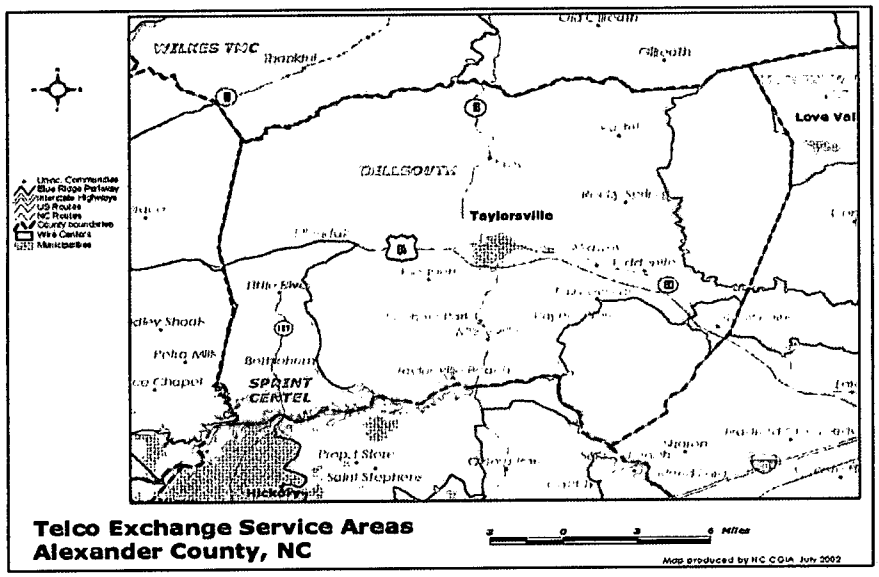
FCC ORDER ON BROADBAND	
Broadband Tiers	Upload and Download speeds according to eight speed tiers
First-generation Data	200 kilobits per second to 768 kbps
Basic Tier 1	768 kbps to 1.5 megabits per second
Tier 2	1.5 Mbps to 3 Mbps
Tier 3	3 Mbps to 6 Mbps
Tier 4	6 Mbps to 10 Mbps
Tier 5	10 Mbps to 25 Mbps
Tier 6	25 Mbps to 100 Mbps
Tier 7	greater than 100 Mbps.

Demo Speeds



http://www.e-NC.org

Wirecenter



Who Needs High-speed Internet?

http://www.e-NC.org

Copper versus Fiber

Copper – Multiple pairs can be combined with electronics to provide multi-megabits of bandwidth. As distance increases bandwidth decreases.

Fiber – A single fiber can transport multiple l0 gigabits on one lambda (Wavelength of light)

http://www.e-NC.org

Deployments

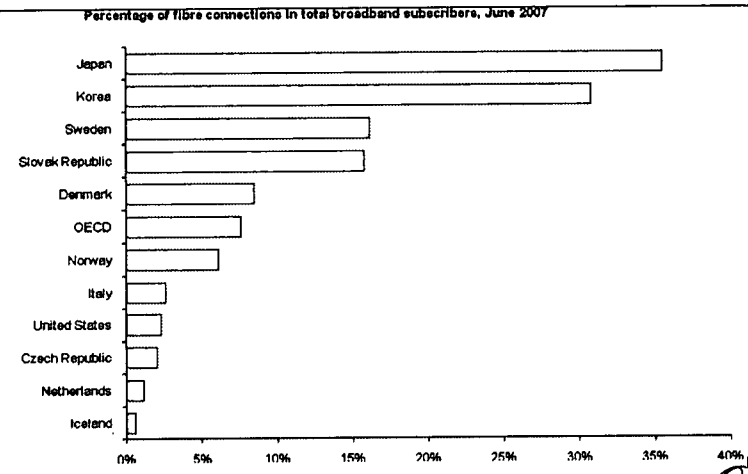
ATMC – deploying fiber to the home in the greenfields in their territory.

Windstream (previously Concord Telephone Company) – deploying fiber to the home.

Yadkin Valley TMC – deploying fiber to the home (80Mbps).

http://www.e-NC.org

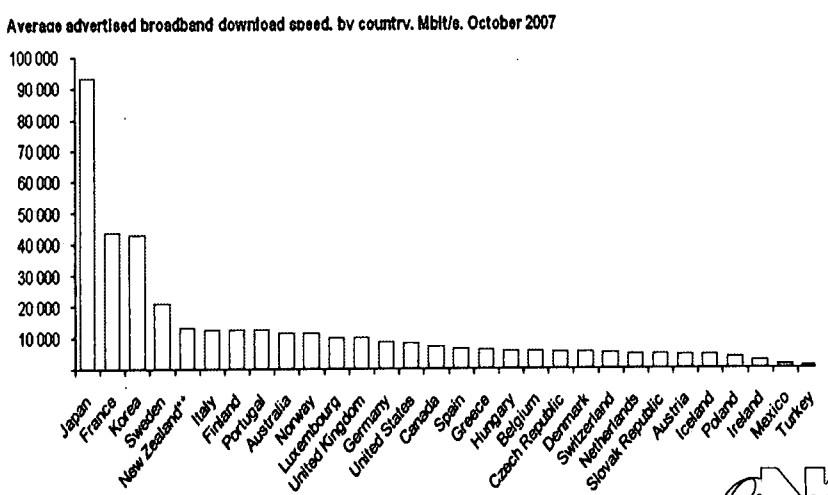
On fiber connections as a percent of total subscribers, the US ranked 9th among the OECD nations as of June 2007:



OECD, *Percentage of fibre connections in total broadband (June 2007)*, http://www.oecd.org/dataoecd/21/58/39574845.xls

http://www.e-NC.org

On average advertised download data speed, the United States ranked 14th among OECD nations as of October 2007:



OECD, *Broadband Average Advertised Download Speeds* (October 2007), http://www.oecd.org/dataoecd/10/53/39575086.xls.

http://www.e-NC.org

In Closing..

Technology is changing every day.

So are the broadband requirements for economic development, education and healthcare services.

Our rural and distressed areas require broadband services now.

http://www.e-NC.org

To Reach Us ....

Connecting
North Carolina
to a Better Future

e-NC Authority

4021 Carya Drive, Raleigh

1-866-627-8725

www.e-nc.org

Excerpt from white paper being developed for the e-NC Authority on the state of broadband in the U.S. and North Carolina. The results of the paper will be announced on April 16 at e-NC's Southeast Information and Communication Technology Symposium: *Expanding Broadband: Staying Competitive in the 21st Century Economy*. The paper will be released following the Symposium.

A. What is Broadband?

The term "broadband" has many technical, legal, political, and commercial meanings. Each is the subject of heated controversy in the United States and abroad.

The term "broadband" is generally understood to mean a service or facility that allows a human user or device to send or receive "digital" data over the Internet at "high speed." The Internet is a global "network of networks" that includes millions of interconnected public, private, commercial, and institutional networks that can communicate with each other because all follow a set of standardized rules called "Internet Protocol." The common language of these networks is called "digital" because it reduces information of all kinds, including numbers, mathematical formulas, spreadsheets, text, voice conversations, music, videos (including television and movies), photographs, X-Rays and Magnetic Resolution Images, and virtually all other kinds of information, to computer-readable sequences of the digits "1" and "0." The basic unit of digital language is the "bit," which consists of eight 1s and 0s in various combinations. Bits can be combined in infinite ways and lengths, as the letters of an alphabet can be combined to form words, sentences, paragraphs, etc.

One of the most common ways that broadband services and facilities are rated and compared is by data speed. Data speeds are usually expressed as the number of bits that a service or facility can process in a second of time. A "kilobit" is 1000 bits; a "megabit" is 1000 kilobits or 1 million bits; and a "gigabit" is 1000 megabits or 1 billion bits. Thus, a good dial-up connection operating at about 50 kilobits per second (kbps) can carry about 1/100 of the data that a good cable modem operating at 5 megabits per second (Mbps) can carry and about 1/20,000 of the data that a fiber-to-the-home connection operating at 1 gigabit per second (Gbps) can carry.

Another common term used to describe the information-carrying capacity of broadband is "bandwidth." According to the Federal Communications Commission (FCC), "bandwidth" is "the capacity of a telecom line to carry signals. The necessary bandwidth is the amount of spectrum required to transmit the signal without distortion or loss of information."[i] Another useful definition is "the width of the frequency band used to transmit data. The broader the bandwidth, the faster the connection."[ii] Some sources define "bandwidth" in a way that is virtually distinguishable from data speed: "Bandwidth refers to how fast data flows through the path that it travels to your computer; it's usually measured in kilobits, megabits or gigabits per second."[iii] We have no strong preference as between "data speeds" and "bandwidth" and will use both terms in this paper, depending on the context.

To compare bandwidths, practitioners sometimes refer to "pipes," with data-carrying capacity growing with the "fatness" of the pipes. For example, a dial-up connection may be compared to a straw, a DSL or CMS connection to a garden hose, and a fiber-optic connection to a fire hose. In real life, a fiber optic cable is as thin as a hair but can carry a virtually unlimited amount of data at the speed of light.

Until recently, the Federal Communications Commission (FCC) used the terms "broadband" and "high-speed Internet access" interchangeably to describe services and facilities that have the capacity carry data at more than 200 kilobits per second (kbps) in one direction – that is, either to receive it (download) or to send it (upload). The FCC used the term "advanced telecommunication capability" to describe services and facilities with the capacity to carry information at more than 200 kbps in both directions. The FCC received intensive and widespread criticism for these definitions, including from two of the current five FCC commissioners. The critics maintained that using such puny data speeds was out of step with current realities and gave the false impression that the United States was more "successful" in deploying "broadband" and "advanced telecommunications capabilities" than it really has been.

Recognizing that these criticisms were valid, the FCC recently issued an order that raised the minimum data speed necessary to qualify as "broadband" to 768 kbps.[iv] The FCC also adopted a new 7-tier classification scheme, as summarized in the following table:[v]

New Speed Tiers	
1st Generation Data	200 kbps to 768 kbps
Basic Broadband Tier 1	768 kbps to 1.5 Mbps
Broadband Tier 2	1.5 Mbps to 3 Mbps
Broadband Tier 3	3 Mbps to 6 Mbps
Broadband Tier 4	6 Mbps to 10 Mbps
Broadband Tier 5	10 Mbps to 25 Mbps
Broadband Tier 6	25 Mbps to 100 Mbps
Broadband Tier 7	Greater than 100 Mbps
Source: FCC Wireless Competition Bureau	

The FCC has not released the text of its order, so we do not have the FCC's rationale for these classifications.

Calls for High-Capacity Networks in the United States

Calls for high-capacity broadband networks have begun to proliferate in the United States. For example, the California Broadband Task Force (CBTF) recently stated that one of California's three key goals should be to construct next-generation broadband infrastructure that would position the State "as the global economic leader in a knowledge-based economy."[1] The CBTF developed the following list of applications that various levels of bandwidth can support:[2]

Upstream and Downstream Speed Range	Applications
500 kbps - 1 Mbps	Voice over IP SMS Basic Email Web Browsing (simple sites) Streaming Music (caching) Low Quality Video (highly compressed)
1 Mbps - 5 Mbps	Web Browsing (complex sites) Email (larger size attachments) Remote Surveillance IPTV-SD (1-3 channels) File Sharing (small/medium) Telecommuting (ordinary) Digital broadcast video (1 channel) Streaming Music
5 Mbps - 10 Mbps	Telecommuting (converged services) File Sharing (large) IPTV-SD multiple channels) Switched Digital Video Video on Demand SD Broadcast SD Video Video Streaming (2-3 channels) HD Video Downloading Low Definition Telepresence Gaming Medical File Sharing (basic) Remote Diagnosis (basic) Remote Education Building Control & Management
10 Mbps - 100 Mbps	Telemedicine Educational Services Broadcast Video SD and some HD IPTV-HD Gaming (complex) Telecommuting (high quality video) High Quality Telepresence HD Surveillance Smart/Intelligent Building Control
1 Gbps - 10 Gbps	Research Applications Telepresence using uncompressed high definition video streams Live event digital cinema streaming Telemedicine remote control of scientific/ medical instruments Interactive remote visualization and virtual reality Movement of terabyte datasets Remote supercomputing

Notably, this chart lists numerous desirable applications in the 10-100 Mbps range and even in the 100 Mbps – 1 Gbps range.

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1 California Broadband Task Force Report at 7.

ATTACHMENT 5

Lavada Vitalis (Rep. Faison)

From: Peter Capriglione (ISD)
Sent: Wednesday, March 26, 2008 10:48 AM
To: Lavada Vitalis (Rep. Faison); Rep. Bill Faison
Cc: Brenda Carter (Research); Barbara Riley (Research); Karlynn O'Shaughnessy (Fiscal Research)
Subject: Review of question format for 4-8 meeting

Attachments: 4-8 meeting information request.doc

4-8 meeting
nformation reques..

Rep. Faison,

Attached please find a document that contains the text of an e-mail I would like to send to the representative of, AT&T, Embarq, Verizon, the telephone cooperatives coalition, the NC Alliance of Independent Telephone Companies and the cable association, as a request for information for them to provide to us at our 4/8 meeting

Angie and Jane of the e-NC authority provided me with the contacts for this. The contacts I will be sending these e-mails to, on an individual basis, are:

- AT&T –Herb Crenshaw
- Embarq – Jon Hamm and Steve Brewer
- Verizon – Stan Pace
- For the telephone coops – Dwight Allen, head of the NC Telephone Cooperatives Coalition
- For the smaller independents – Bob Wells, head of the NC Alliance of Independent Telephone Companies
- For cable – Marcus Trathen – one of the attorneys that work for the cable association

With the exception of Dwight Allen and Bob Wells, all were present at the 3/18 meeting.

Additionally, a member of the committee asked if we could do a Telecom 101 course for them so they could be better acquainted with the terminology. Catherine Rice has made a couple of recommendations. Her first recommendation would be to have MS. Shery McCuller. Her bio is as follows:

"Peregrine Mgt Svces in Burnsville, NC. She understands BBND technology inside and out and issues involved in bringing bbnd to rural NC. She was intimately involved in bringing BBND to Western North Carolina via the building of a fiber backbone from rural Appalachians all way to Georgia on project called Balsam West. (Access to affordable backhaul was a key problem for BBND developing in rural western part of NC). She could teach committee about BBND technologies in simple terms: What is Broadband, Why is it important, How do People get it now, What are the differences. She wrote this testimony in May 2007 about the Balsam West project which was presented to the Federal House of Reps Committee on Small Business Subcommittee on Rural & Urban Entrepreneurship."

Please let me know your thoughts on this and/or please call as I would like to get this to the above contacts by the end of the week.

Peter

Peter Capriglione
Business Applications Manager
North Carolina General Assembly

Information Systems Division
Phone: 919-715-7840
E-mail: Peterc@ncleg.net

On behalf of Representative Bill Faison, Chairman of the House Select Committee on High Speed Internet in Rural Areas, the committee would like you, or a representative of your company or organization, to present to the committee information on the availability of high speed internet access for your service area.

The manner in which the committee would like to see this information presented is to be based on the following:

- The total customers in your service area/areas.
- Of that total, the number of customers that have the infrastructure available to them to have access to high speed internet using your cable infrastructure, e.g. wire or fiber.
-

Please break out the information to distinguish availability in urban versus rural areas for your service areas.

For example:
Urban - 1000 total customers, 1000, or 100% have access to HS internet service.
Rural – 1000 total customers, 400, or 40% have access to HS internet service.
Urban/Rural – 2000 total customers 1400, 70% of total customer base have access to HS internet access for the service area/areas.

I will follow up this e-mail with a phone call. If you have questions I am available at 919-715-7840.

The meeting will to be held on April 8, 2008 at 10:00am. We are going to have several presenters at this meeting so we would like to have you present for 10 to 15 minutes.

Thank you.

CarolinaLink
North Carolina
Telephone Cooperative
Coalition

NCTCC
3737 Glenwood Ave.
Suite 100
Raleigh, NC 27612

Phone 919.573.6107
Fax 919.575.6104

ATTACHMENT 6

North Carolina Telephone Membership Cooperatives*

Access Lines Served- **173,939**

DSL Compatible Lines- **170,835**

Percentage of Lines DSL Compatible- **98.2%**

Broadband

Lines Served- **55,036**

Percentage of Access Lines with Broadband- **32.2%**

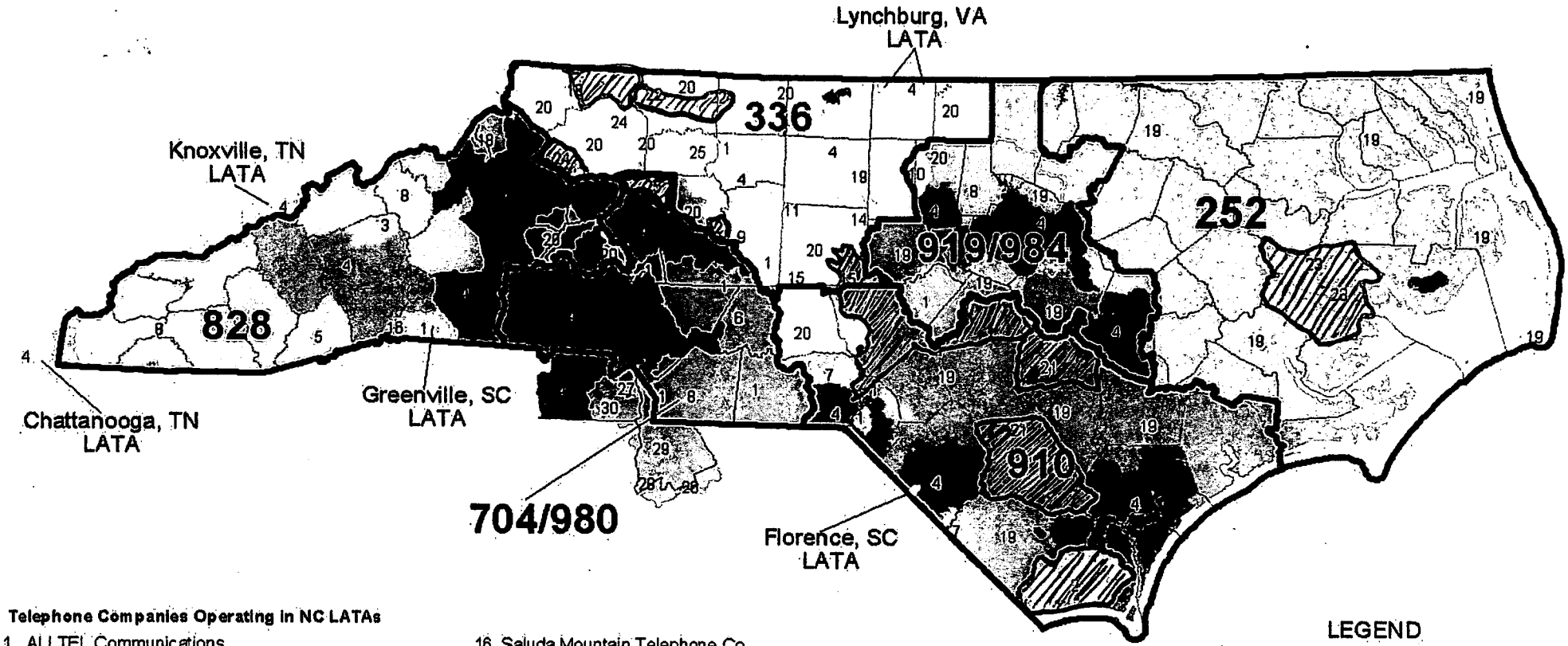
Trunk Miles of Fiber Cable- **3,746**

*end of 2007

Telephone Company Operating Areas

State of North Carolina

LATA/Area Code Map



Telephone Companies Operating in NC LATAs

1. ALLTEL Communications
2. Atlantic Telephone Membership Corp.
3. TDS Telecom - Barnardsville Office
4. BellSouth
5. Citizens Telephone Co.
6. CT Communications/Concord Telephone Co.
7. Ellerbe Telephone Co., Inc.
8. Verizon South, Inc.
9. Lexcom Telephone Co.
10. MebTel Communications
11. North State Telephone Co.
12. Piedmont Telephone Membership Corp.
13. Pineville Telephone Co.
14. Randolph Telephone Co.
15. Randolph [illegible]hone Membership Corp.
16. Saluda Mountain Telephone Co.
17. Service Telephone Co.
18. Skyline Telephone Membership Corp.
19. Sprint
20. Sprint
21. Star Telephone Membership Corp.
22. Surry Telephone Membership Corp.
23. Tri-County Telephone Membership Corp.
24. Wilkes Telephone Membership Corp.
25. Yadkin Valley Telephone Membership Corp.
26. ALLTEL Communications, SC
27. Fort Mill Telephone Co., SC
28. Heath Springs Telephone Co., SC
29. Lancaster Telephone Co., SC
30. Rock Hill Telephone Co., SC

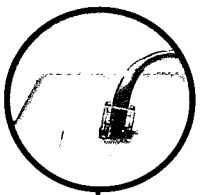
LEGEND

LATAs
- Asheville - BellSouth/Associated Companies
- Charlotte - BellSouth/Associated Companies
- Greensboro - BellSouth/Associated Companies
- Raleigh - BellSouth/Associated Companies
- Wilmington - BellSouth/Associated Companies
- Fayetteville
- Rocky Mount
- LATAs From Adjacent States

Lake
County Boundary
Area Code Boundary

20 0 20 40 Miles

The North Carolina Telephone Cooperative Coalition, Inc. (NCTCC), *operating as* ***CarolinaLink****, was organized in January 2001 to educate state policy makers and the general public about the unique role of the state's nine telephone membership corporations (TMCs) in providing high-quality, modern telecommunications services to the most rural areas of North Carolina. In addition, CarolinaLink supports public policy decisions to ensure that rural areas throughout North Carolina have access to emerging telecommunications technologies and advanced services that are comparable in quality and price to those available in urban areas.*



CarolinaLink Members

- Atlantic Telephone Membership Corporation (Brunswick County)
- Piedmont Telephone Membership Corporation (Davidson County)
- Randolph Telephone Membership Corporation (Chatham, Davidson, Montgomery, Moore, and Randolph counties)
- Skyline Telephone Membership Corporation (Allegheny, Ashe, Avery, and Watauga counties)
- Star Telephone Membership Corporation (Bladen, Columbus, Cumberland, Duplin, and Sampson counties)
- Surry Telephone Membership Corporation (Surry and Stokes counties)
- Tri-County Telephone Membership Corporation (Beaufort, Hyde, and Washington counties)
- Wilkes (Wilkes County)
- Yadkin Valley (Alexander, Davie, Iredell, Rowan, Wilkes, and Yadkin counties)

For more information, contact CarolinaLink at:

CarolinaLink
North Carolina Telephone Cooperative Coalition

3737 Glenwood Ave., Suite 100
Raleigh, NC 27612

Phone: 919-573-6103
Phone: 919-573-6104

Or visit our website at:

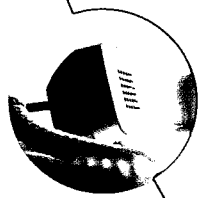
www.carolinalink.org

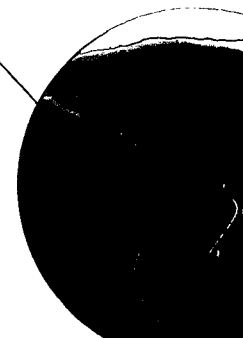
Connecting Communities

To The World

CarolinaLink

North Carolina Telephone Cooperative Coalition





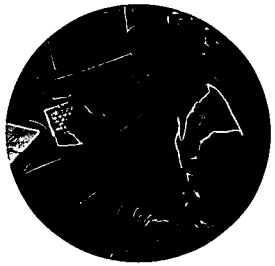
Origins of North Carolina's Telephone Membership Corporations (TMCs)

Following World War II, many of North Carolina's rural and farm communities had no telephone service. Large investor-owned companies judged the cost of serving these areas as too high and the investment too risky. To fill the void, public-minded community leaders banded together to organize and develop their own telephone systems through member-owned cooperatives. Supported by public policy decisions at the federal and state levels, North Carolina's TMCs have grown to become state-of-the-art telecom providers on a par with any in the nation and providing an array of services equal to or exceeding those available in urban markets.

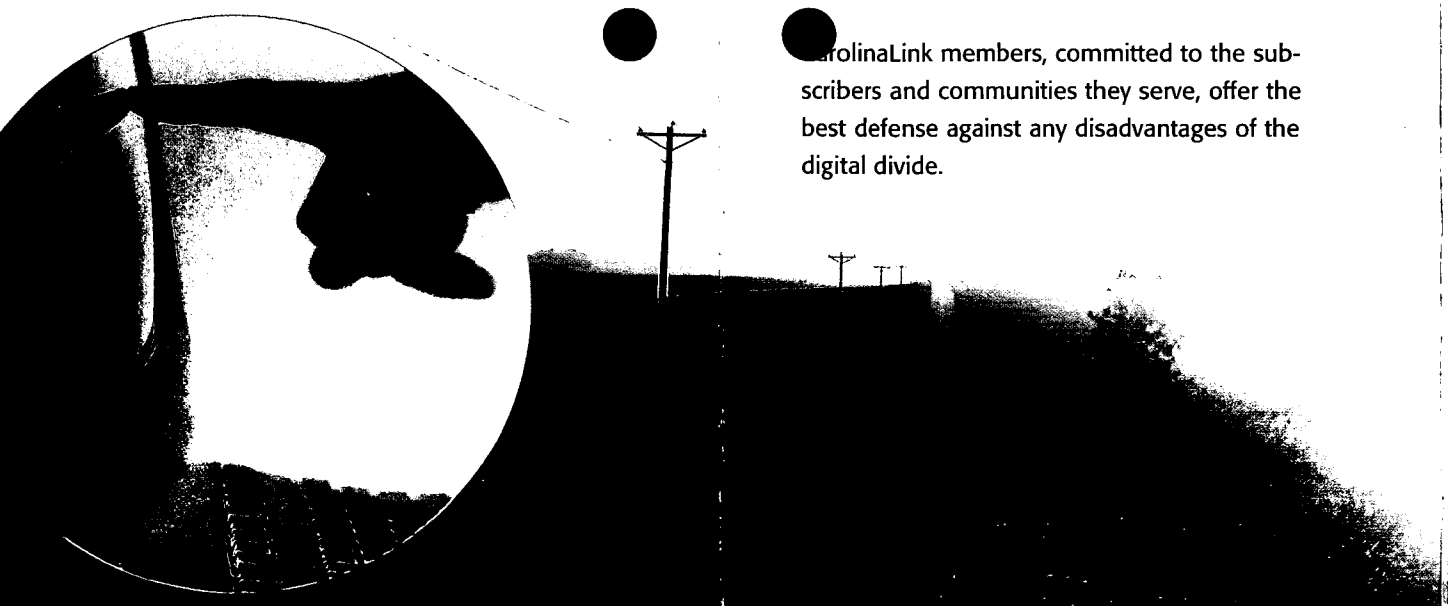
The Job Is Not Yet Finished

Federal and state officials recognize the need for rural citizens to have access to the same variety of high-quality telecom services as urban residents enjoy. To minimize what has become known as the "digital divide," CarolinaLink members have brought to rural North Carolinians the benefits of high-speed Internet connectivity at a pace equal to or exceeding that of companies serving urban areas of the state.

The North Carolina General Assembly created the Rural Internet Authority to promote these efforts. It is imperative that public policy directives continue to recognize the unique challenges of providing modern telecom services to high-cost, low-income, rural areas. At the same time, policy initiatives must be well balanced to guarantee that limited resources are used wisely. Providing access is not enough; the effort must be accompanied by educational and economic resolve to ensure that citizens have the training and means to make use of available facilities.



CarolinaLink members, committed to the subscribers and communities they serve, offer the best defense against any disadvantages of the digital divide.



CarolinaLink
North Carolina Telephone Co Coalition

CarolinaLink Members Service Highlights

Connecting Communities to the World

- The nine CarolinaLink members serve almost 180,000 access lines across 26 of North Carolina's 100 counties.
- Member companies serve the most sparsely populated regions of the state, with an average of approximately 8 customers per route mile – and densities as low as 5.1 and 5.3 customers per mile. The member companies serve some of the lowest per-capita income areas in the state.
- Members provide high-quality service throughout their areas, with 100% of the lines using digital switching technology and an average of less than 2.5 trouble reports per 100 access lines.
- Since 1998, CarolinaLink members have provided toll-free, local dial-up access to the Internet to all their subscribers.
- Approximately 85% of all residential and business lines are currently equipped for high-speed Internet access, and more than 95% will be broadband-capable by the end of 2003.
- Company leaders, employees, and Board members serve in key leadership roles in civic, cultural, church, and community organizations. CarolinaLink members directly impact their local economies by more than $80,000,000 annually.
- CarolinaLink members currently employ more than 700 North Carolinians.

ATTACHMENT 7

EMBARQ™

House Select Committee on High Speed Internet in Rural Areas

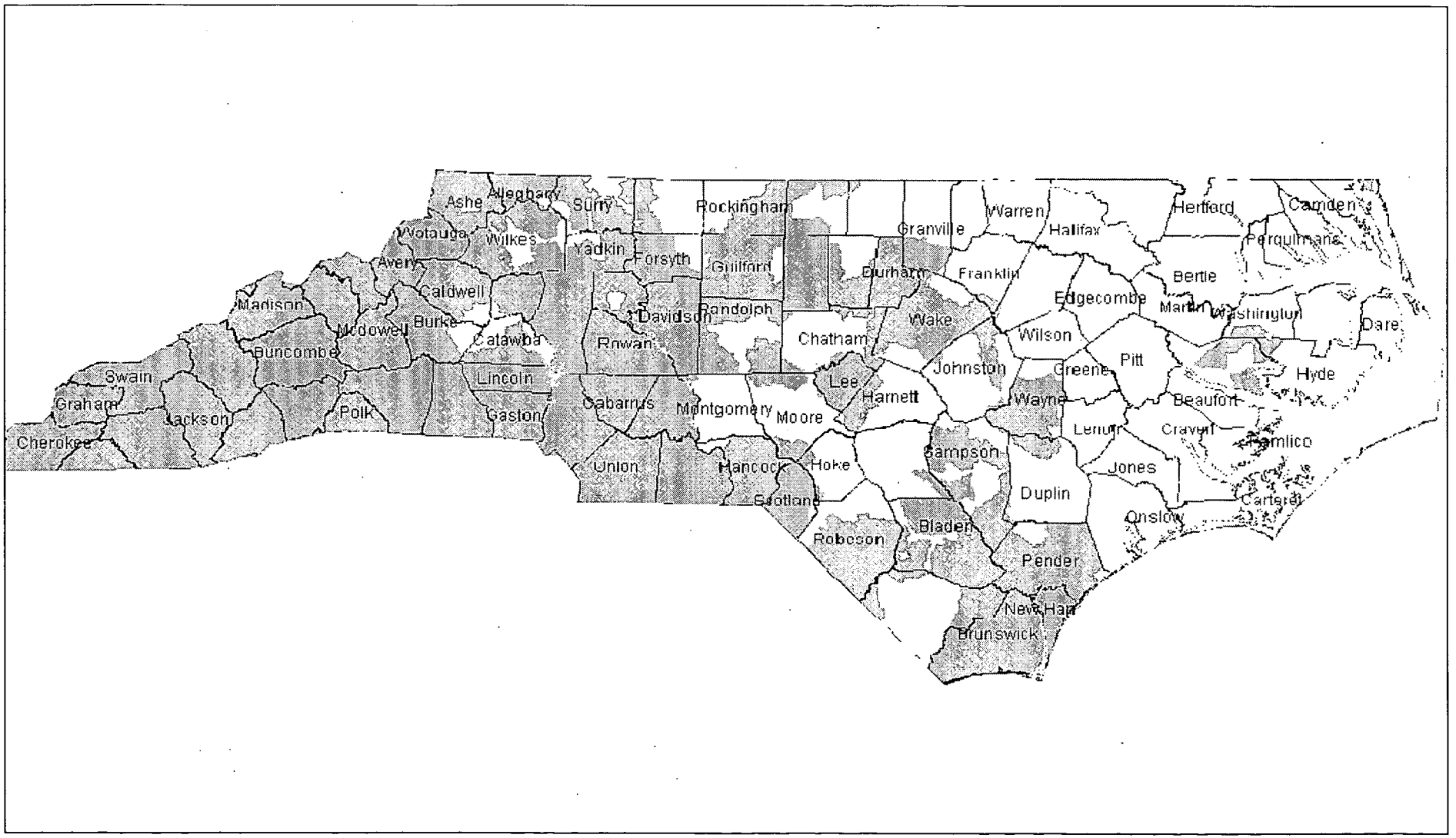
Jon Hamm, EMBARQ

Manager - Community Development and Public Affairs

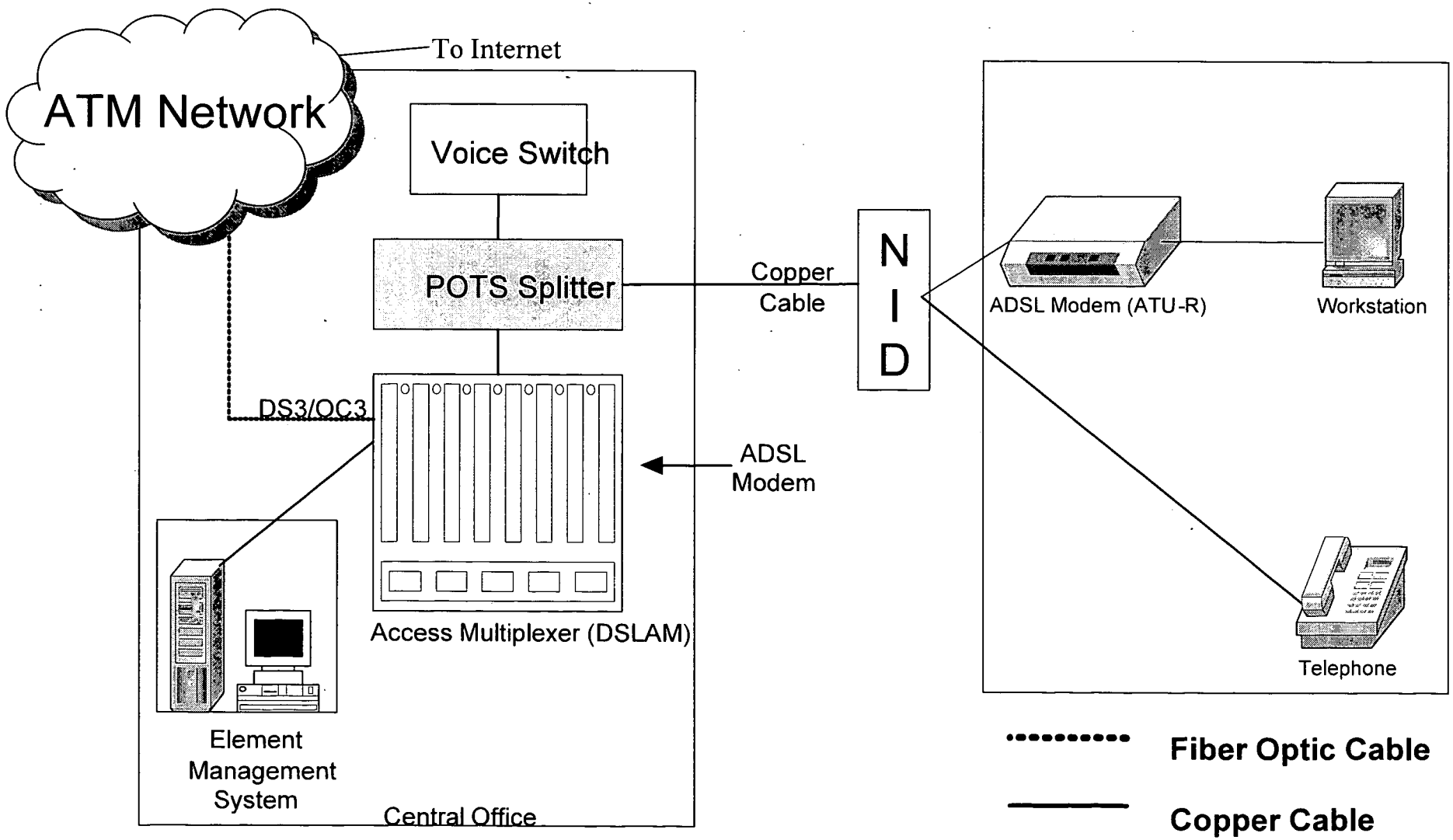
April 8, 2008

Voice | Data | Internet | Wireless | Entertainment

EMBARQ in North Carolina



EMBARQ ADSL Design



HSI Overview

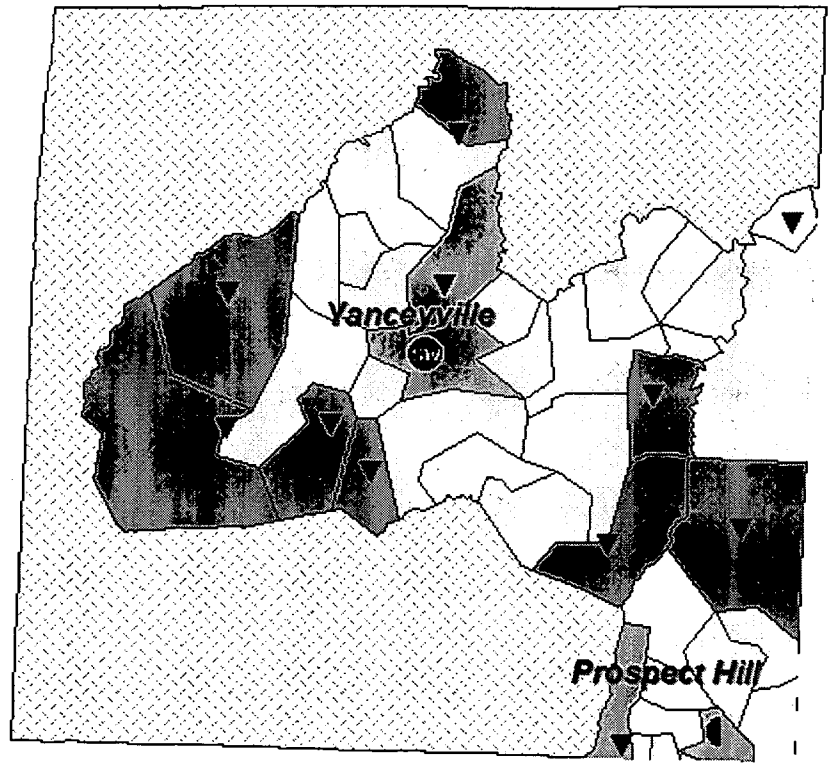
	EMBARQ™ HIGH-SPEED INTERNET				
Features	Basic $19.95*	Preferred $24.95*	Premium $29.95*	Premier $39.95*	MAX $54.95*
Download Speed	768Kbps	1.5Mbps	3Mbps	5Mbps	10Mbps
Upload Speed	384Kbps	512Kbps	684Kbps	768Kbps	896Kbps
Dial-Up Comparison	13 x Faster	25 x Faster	50 x Faster	85 x Faster	175 x Faster
Modem	FREE	FREE	FREE	FREE	FREE
Computer Security Package	FREE	FREE	FREE	FREE	FREE
Free Email Addresses	8	8	8	8	8
Email Storage	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
24/7 Technical Support					
For Households Who...	Check Email Browse Occasionally	Go Online Daily Instant Message Share Photos Shop Online	Work from Home Download Music & Video Support Multiple Users	Play Online Games Download Movies	Want Maximum Speed for Multi-media Applications

High Speed Internet Access in EMBARQ

- Data as of 12/31/07
- EMBARQ serves 186 communities
- EMBARQ serves all or part of 67 counties
- 74.1% of EMBARQ customers have high speed access available
- 82.6% of EMBARQ customers in six largest communities have high speed access available
- However, the percentage of customers purchasing high speed access is HIGHER in the smaller communities

CaswellCounty

Embarq Access lines = 4325
HSI Lines Capable = 2732 / 63%
Add'l Potential lines = 1246 / 92%



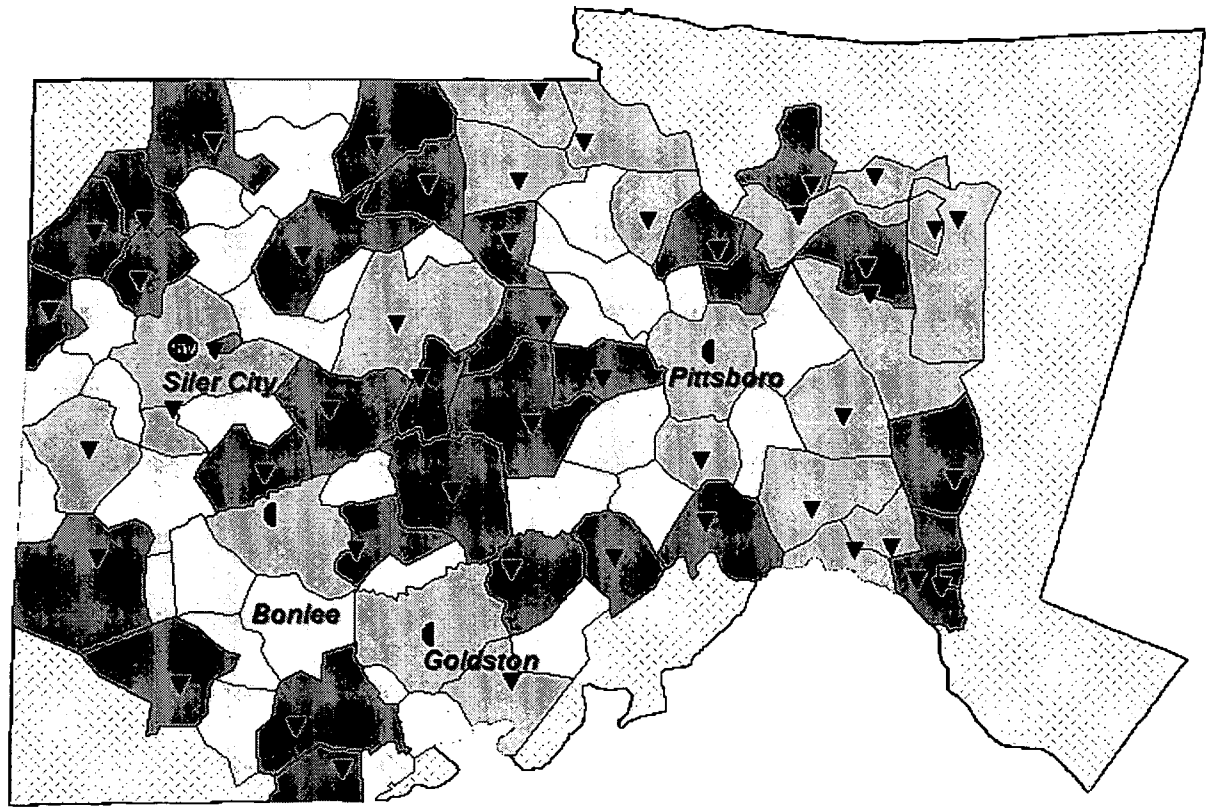
- Existing Embarq HSI
- Opportunities for Embarq HSI Deployment
- Embarq Service Territory with Limited Opportunity for Deployment
- Non-Embarq Territory

Areas of HSI coverage and available data speed rate can vary due to location (loop length) of the customer from the HSI serving device.

ChathamCounty

EMBARQ

Embarq Access lines = 20670
HSI Lines Capable = 14201 / 69%
Add'l Potential lines = 4794 / 92%



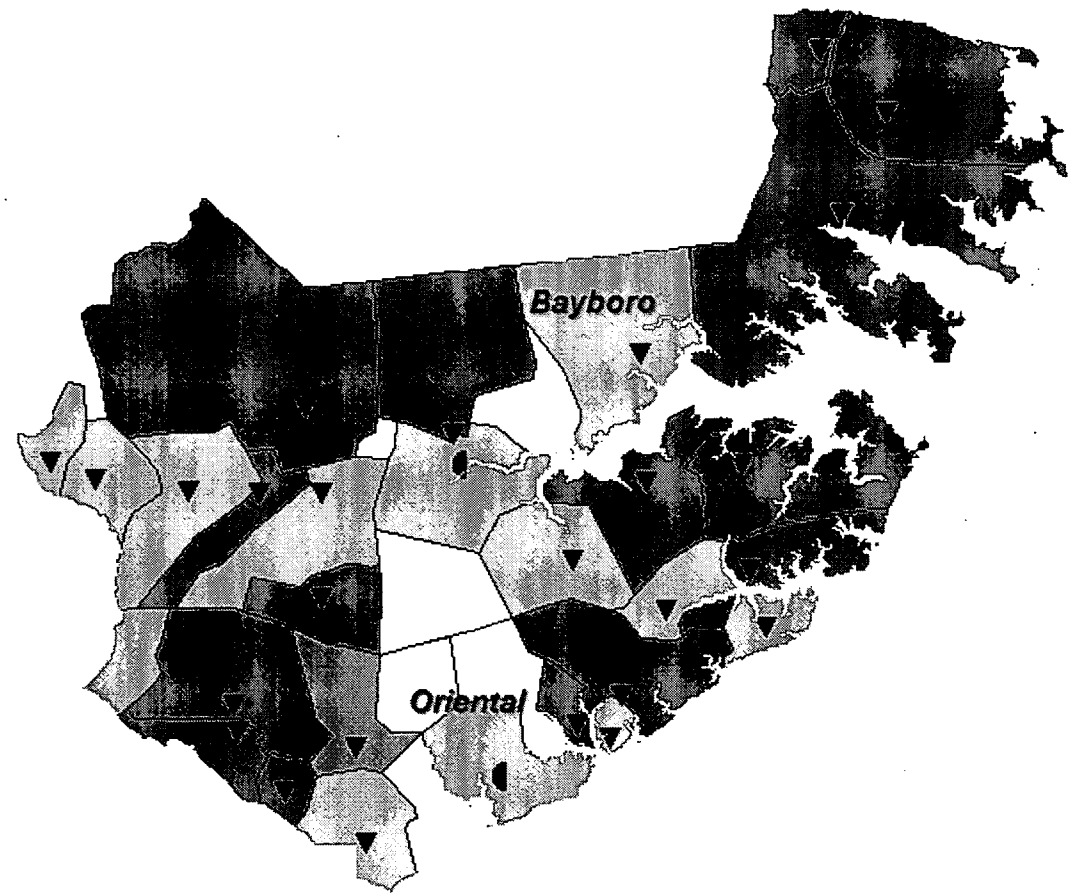
- Existing Embarq HSI
- Planned Embarq HSI Deployment
- Opportunities for Embarq HSI Deployment
- Embarq Service Territory with Limited Opportunity for Deployment
- Non-Embarq Territory

Areas of HSI coverage and available data speed rate can vary due to location (loop length) of the customer from the HSI serving device.

PamlicoCounty

EMBARQ

Embarq Access lines = 6887
HSI Lines Capable = 4866 / 71%
Add'l Potential lines = 1722 / 96%

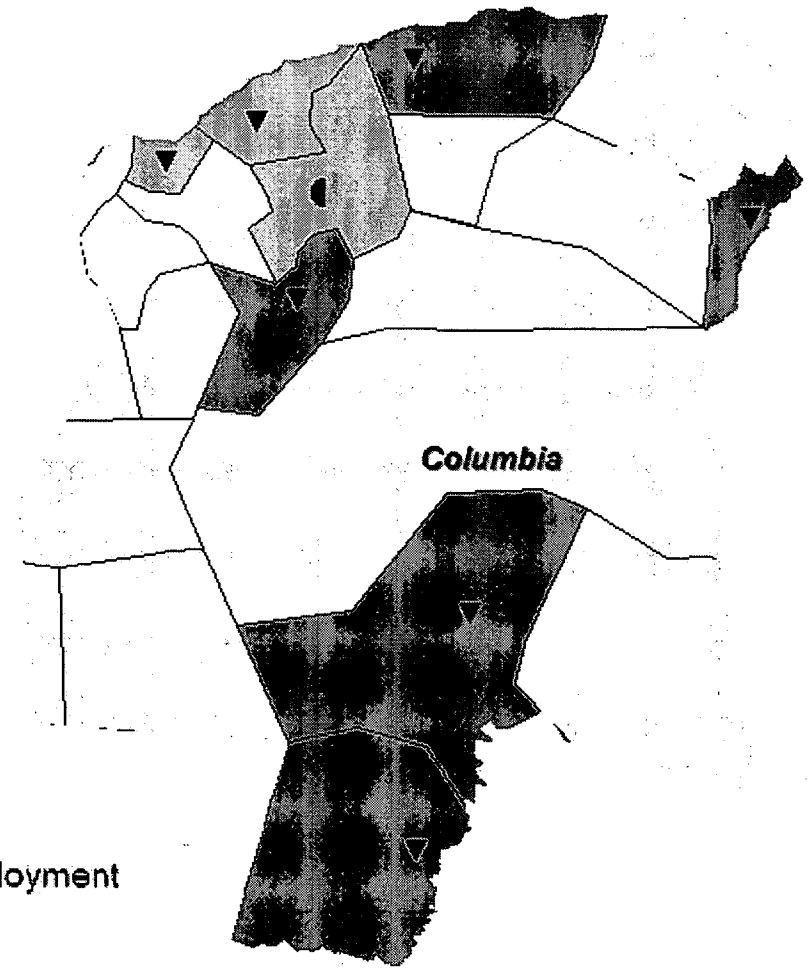


- Existing Embarq HSI
- Planned Embarq HSI Deployment
- Opportunities for Embarq HSI Deployment
- Embarq Service Territory with Limited Opportunity for Deployment

Areas of HSI coverage and available data speed rate can vary due to location (loop length) of the customer from the HSI serving device.

TyrellCounty

Embarq Access lines = 1838
HSI Lines Capable = 1286 / 70%
Add'l Potential lines = 437 / 94%

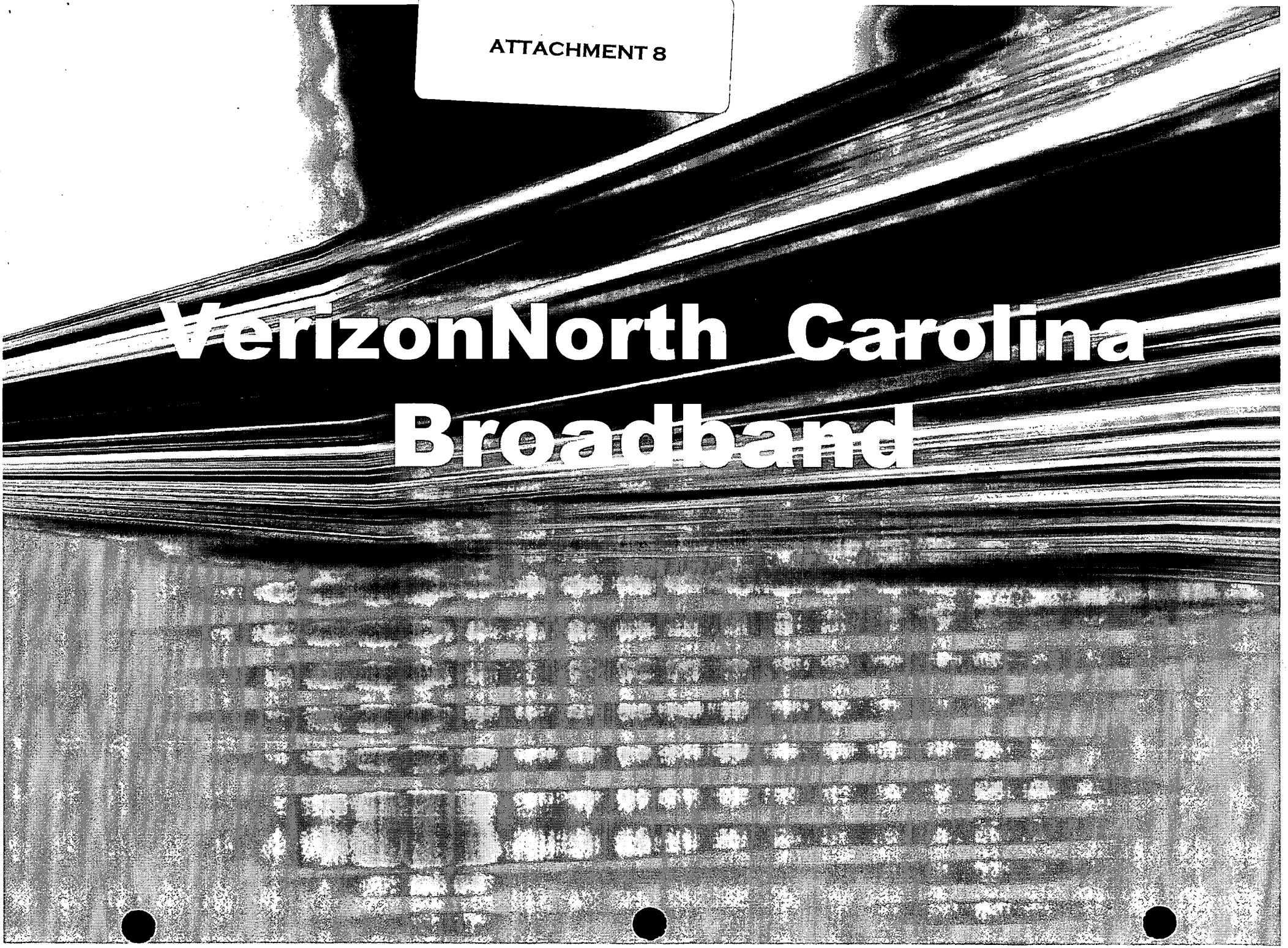


- Existing Embarq HSI
- Opportunities for Embarq HSI Deployment
- Embarq Service Territory with Limited Opportunity for Deployment

Areas of HSI coverage and available data speed rate can vary due to location (loop length) of the customer from the HSI serving device.

QUESTIONS?

ATTACHMENT 8



Verizon Telecom Operating Areas in NC

125,200 Lines

88,100 qualified loops-70% of total

80,780 qualified loops equipped – 92%

Broadband Deployed

Take Rates: Min – Max – Avg.

16% - 80% -------- 34%

111,500 Lines

104,200 qualified loops -93% of total

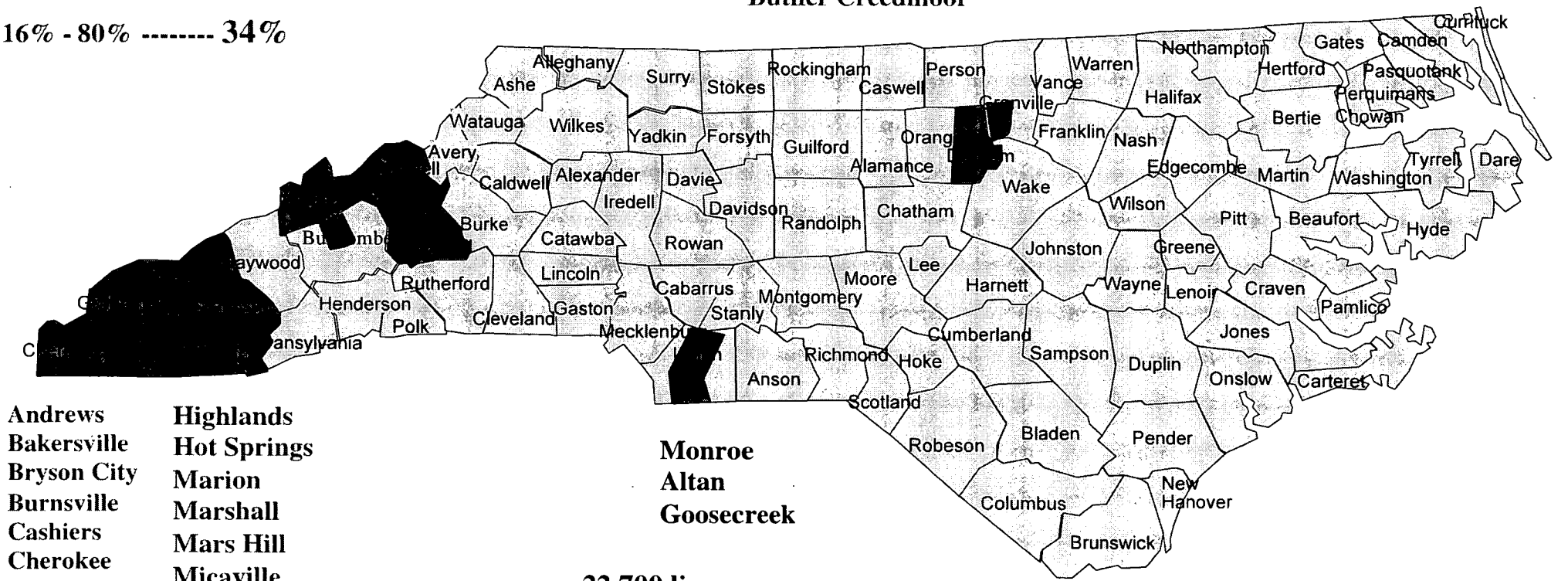
98,190 qualified loops equipped - 94%

Broadband Deployed

Take Rates: Min – Max - Avg

7% - 69% --------24%

Durham
Research Triangle Park
Butner Creedmoor



Andrews
Bakersville
Bryson City
Burnsville
Cashiers
Cherokee
Cullowhee
Fontana
Franklin
Garden City
Glenwood – Providence
Guntertown
Hayesville
Highlands
Hot Springs
Marion
Marshall
Mars Hill
Micaville
Murphy
Old Fort
Robbinsville
Sevier
Suit
Sylva
Weaverville

Monroe
Altan
Goosecreek

22,700 lines

21,100 qualified loops - 93% of total

No Broadband Deployed

Verizon Telecom Operating Areas in NC

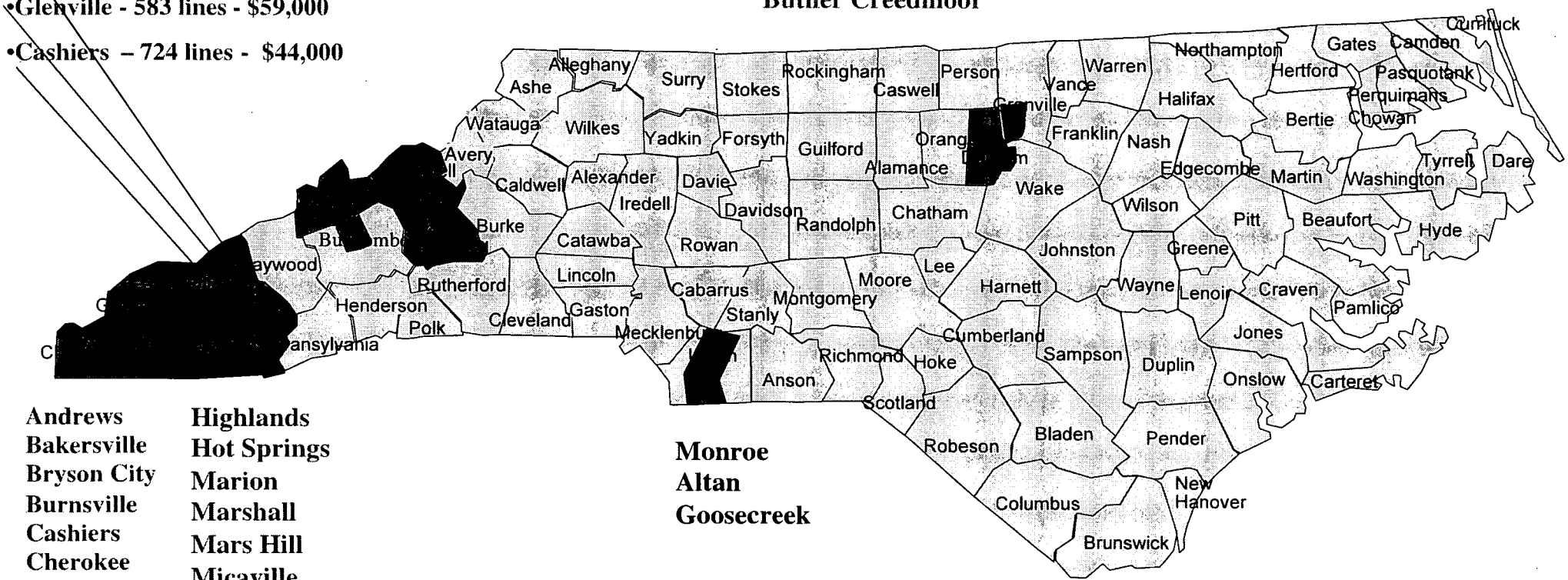
DSL Expansions are:

Expensive

(final estimated Capital Outlay)

- **Cullowehee (Canada Remote) 220 Lines - $42,000**
- **Glenville - 583 lines - $59,000**
- **Cashiers – 724 lines - $44,000**

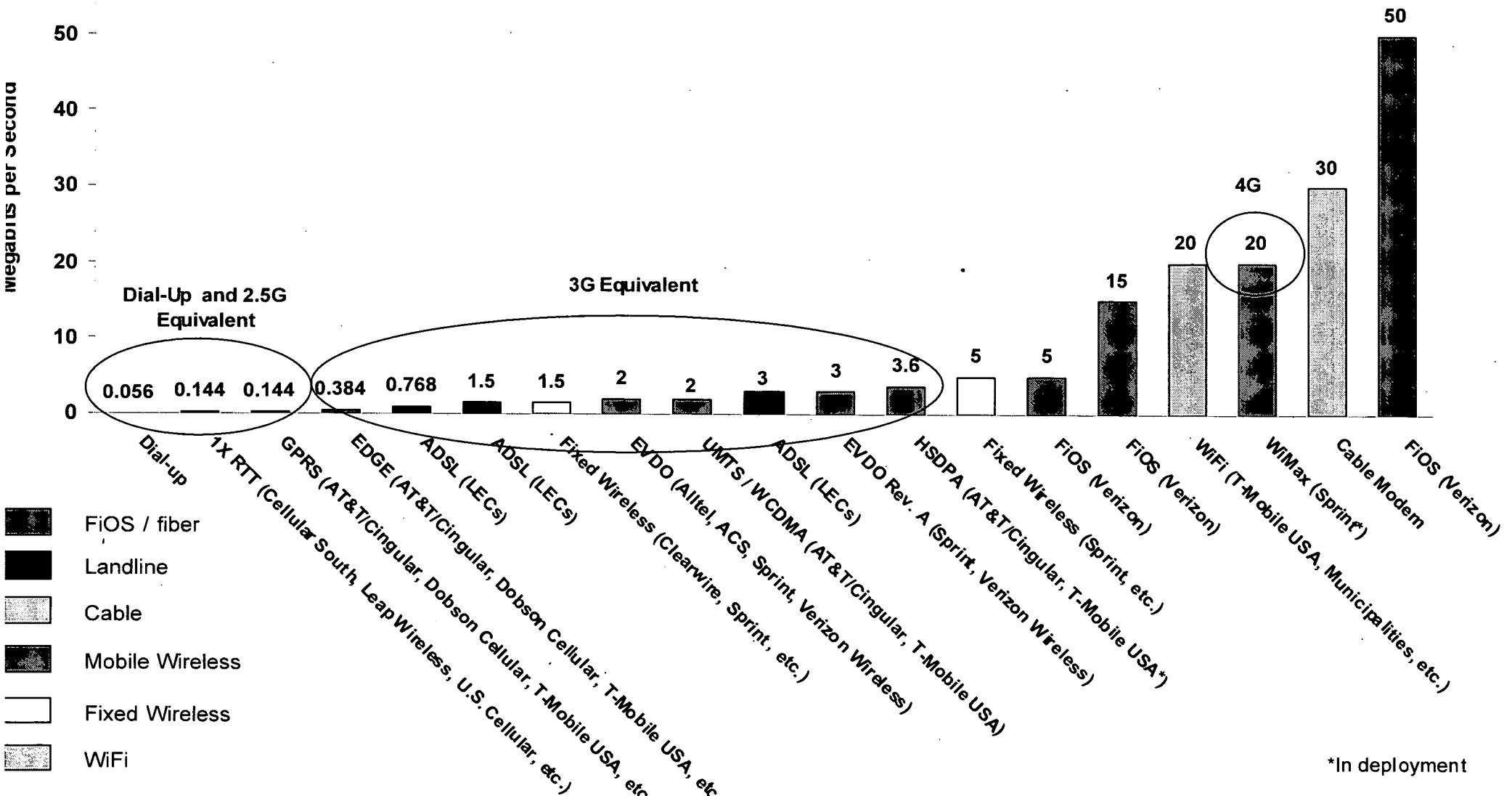
Durham
Research Triangle Park
Butner Creedmoor



Andrews
Bakersville
Bryson City
Burnsville
Cashiers
Cherokee
Cullowhee
Fontana
Franklin
Garden City
Glenwood – Providence
Guntertown
Hayesville
Highlands
Hot Springs
Marion
Marshall
Mars Hill
Micaville
Murphy
Old Fort
Robbinsville
Sevier
Suit
Sylva
Weaverville

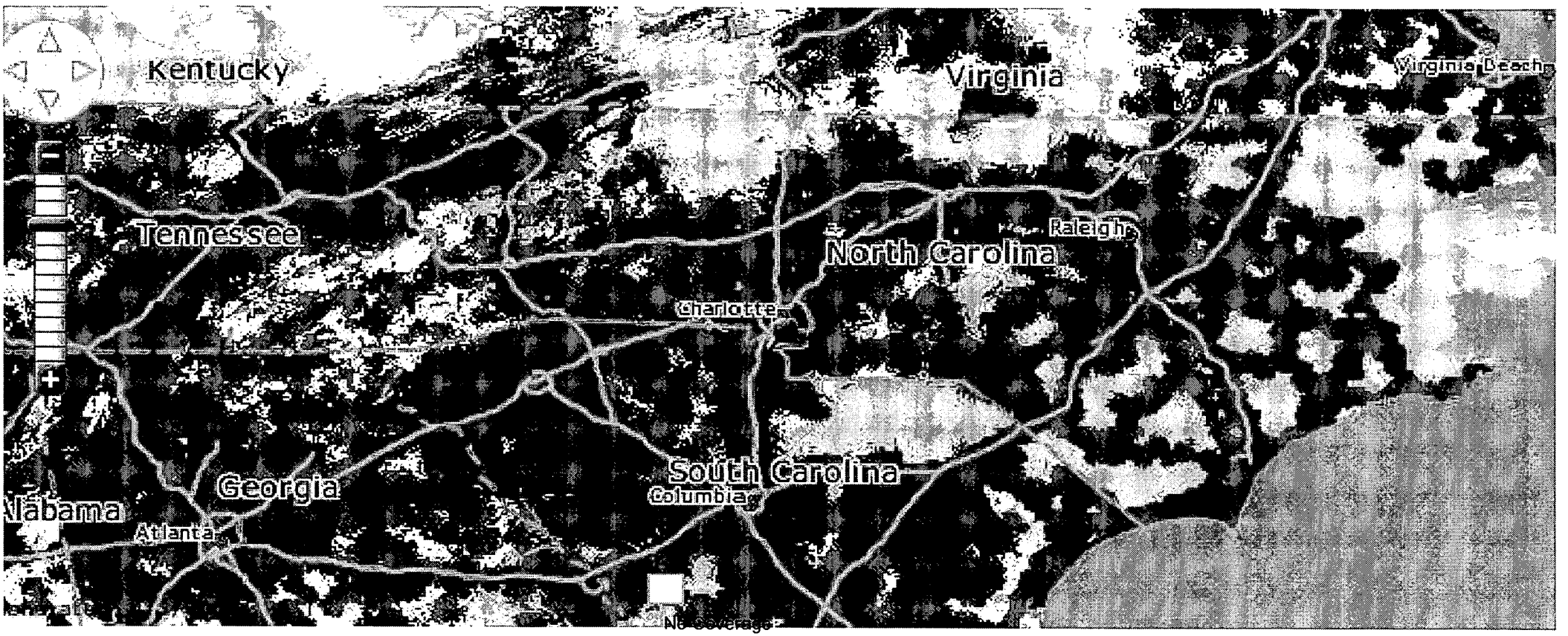
Monroe
Altan
Goosecreek

Estimated Maximum Broadband Download Speeds



Multiple Sources: Webopedia, bandwidthplace.com, PC Magazine, service providers, ISPs, Phonescoop.com, etc.

VerizonWireless ' NorthCarolina Broadband



Map Legend

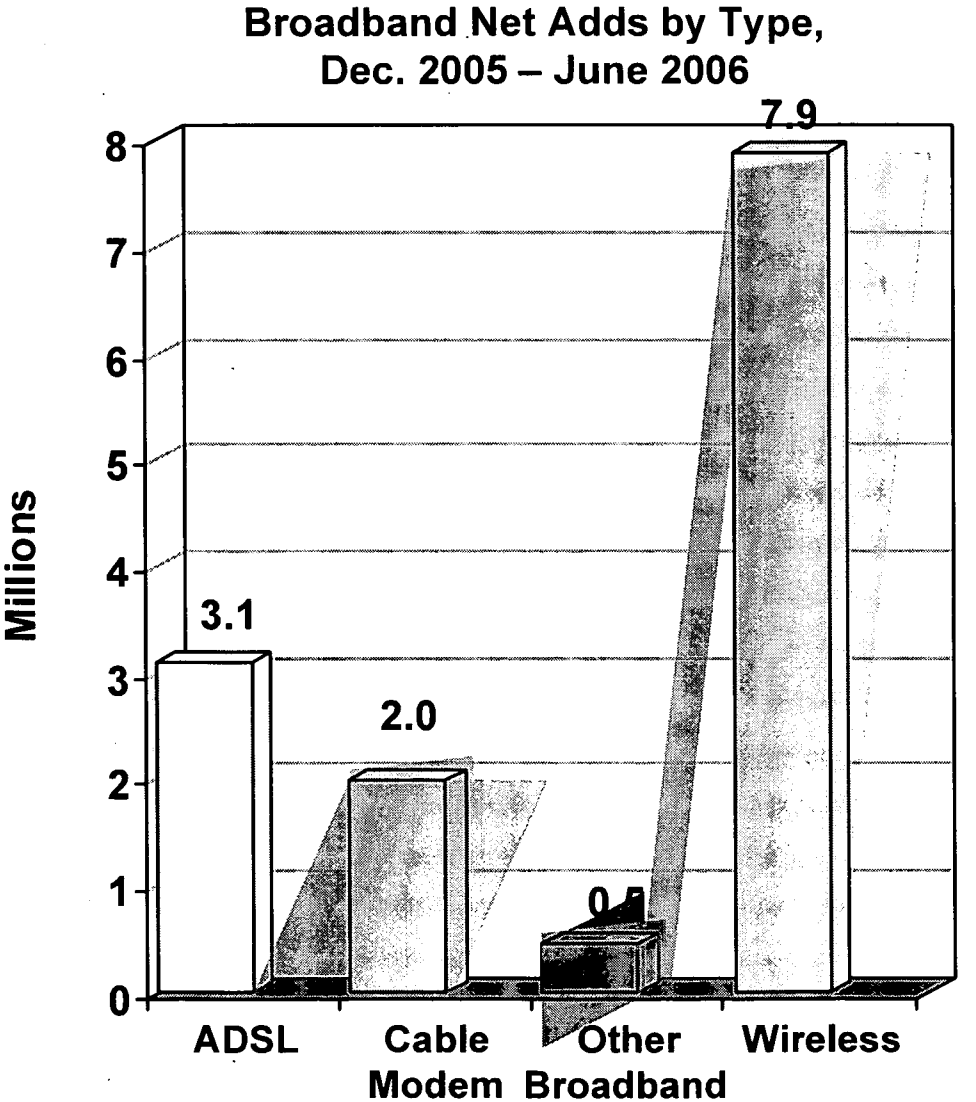
- **VZW Wireless Broadband & V CAST- (1.5d – 750k up)**
- Enhanced Services (Email – Push to Talk – Navigator)
- Extended Enhanced Services
- No Coverage

BroadbandGrowth

In 1H06, total broadband lines grew 26%, from 51.2 million to 64.6 million lines, and 59% of all adds were mobile wireless devices.

From June 2005 to June 2006:

- ADSL's share of total broadband lines fell from 38% to 35%
- Cable modem's share fell from 56% 44%
- Mobile wireless' share of total broadband lines rose from 1% to 17% of total broadband lines.
- FCC considering changing to wireless broadband subscribers from current reporting of devices (we'd like it if all capable devices used the service!)



Sources: FCC Report on "High-Speed Services for Internet Access," Jan. 07.

High Speed Services for Internet Access: Status as of June 30, 2007"
NORTH CAROLINA

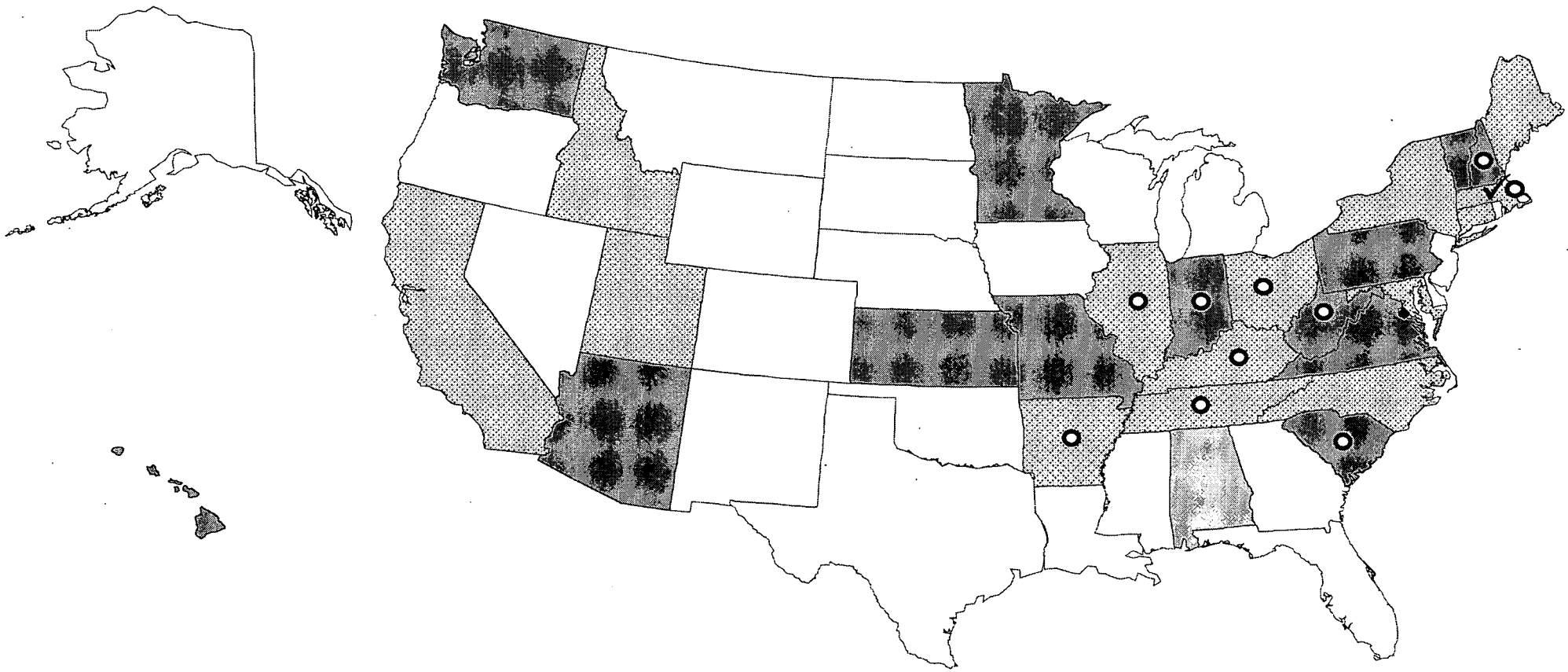
Twice a year, all facilities-based broadband providers are required to report to the Commission basic information about their service offerings and types of customers pursuant to the FCC's local telephone competition and broadband data gathering program (FCC Form 477).

- **Providers/Subscribers:** 65 unduplicated providers = 2,894,042 subscribers

	2001	2002	2003	2004	2005	2006	2007
Subscribers:	**205,100**	**461,368**	**680,828**	**965,761**	**1,222,648**	**1,914,822**	**2,894,042**
		125%	**71%**	**46%**	**33%**	**53%**	**54%**

Type of Service	Providers	Subscribers
ADSL	33	725,396
SDSL	18	24,100
Wireline	20	21,531
cable modem	13	1,134,075
fiber	11	5,683
satellite	Too few responders	Too few responders
fixed wireless	8	Too few responders
mobile wireless (CMRS)	5	750,000 + *(estimate)
Power line and other	0	0

StateStrategiesfor BroadbandGrowth



STATE BROADBAND FUNDING

Thirteen states have created a funding source for broadband to support public-private partnership initiatives, fund broadband deployment, or to provide funding for some combination of the two activities. Two states provide economic incentives for broadband deployment through the use of broadband tax credits or broadband equipment exemptions.

- **StateBroadband Funding / Economic Incentives**
- **1AR** Grants may be made by Science and Technology Authority to establish Connect Arkansas
- **2CA** Approx. $160M
- **3CT** General Sales Tax exemption specifically for Broadband Equipment
- **4ID** $ 5M ***and*** Income Tax Credit for Broadband Equipment
- **5IL** $ 4M
- **6KY** $ 7M
- **7MA** $ 25M
- **8MD** $ 2M from economic development assistance fund, plus additional $ 14M
- **9ME** up to $2.5M from 2.5% customer surcharge
- **10NC** $ 3M
- **11NY** $ 5M (addt'l $15M requested)
- **12OH** Est. $2.9M to Connect Ohio project during 2008-09 and $3.9 million during 2010-11
- **13TN** $ 4.17M for 2007-2008
- **14UT** $ 1M

States with Broadband Funding / Economic Incentives for Broadband

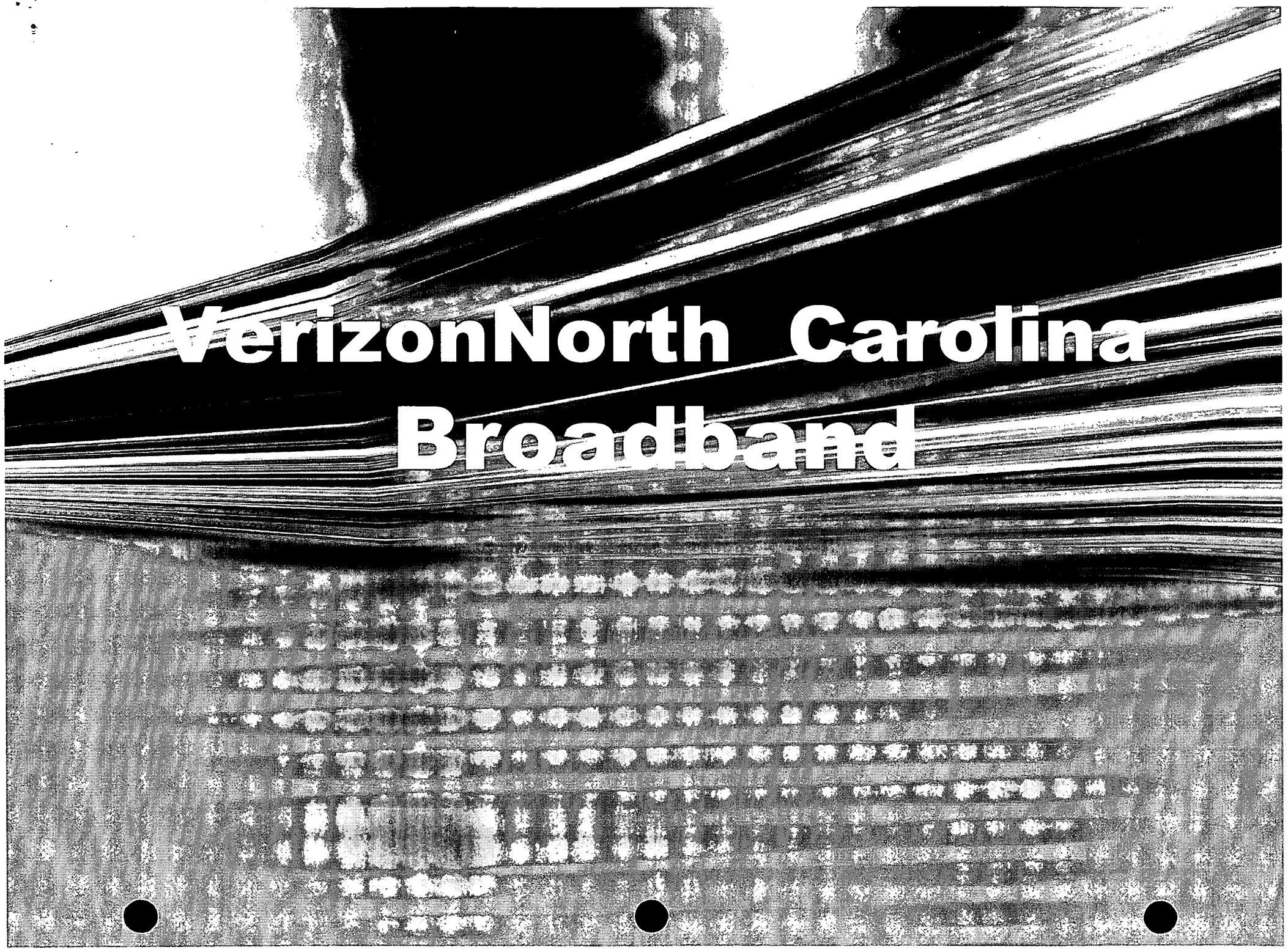
- **AR** – The Connect Arkansas Broadband Act, passed in 2007, authorizes the Arkansas Science and Technology Authority to make grants from funds available for the purpose of establishing Connect Arkansas.
- **CA** – The California Public Utilities Commission (PUC) has dedicated substantial funds (approximately $160 million) to support enhanced broadband deployment in California. As a condition of approving the mergers of SBC/AT&T and Verizon/MCI, the PUC ordered SBC/AT&T to commit $45 million and Verizon/MCI to commit $15 million ($60 million total) over five years to the California Emerging Technology Fund (CETF).
- **CT – In Connecticut, there is an exemption under the general sales tax for broadband equipment**.
- **ID – Idaho has a $5M Broadband Matching Fund established with monies from a state budget surplus. A Broadband Matching Fund was established during the 2006 legislative session with surplus state budget funds in the amount of $5M. These funds are earmarked for deployment of and penetration of broadband in rural areas of Idaho. The fund provides for a 50% match of the cost of deploying broadband in rural areas. Idaho also provides an income tax credit for broadband equipment to spur additional investment in the communications infrastructure in the State.**
- **IL** – Illinois passed a law in 2007 that set aside funding for the Department of Commerce and Economic Opportunity (DCEO) to distribute to a non profit to achieve the legislative goal for full deployment and affordable broadband. The act included $4 million for the DCEO to sponsor a statewide broadband expansion initiative through a public-private partnership. ***However, DCEO has not yet issued an RFP for the project because of a technical error that did not give DCEO the authority to actually spend the money. A technical correction will be handled by the legislature in 2008.***

States with Broadband Funding / Economic Incentives for Broadband

- **KY** –The Kentucky public-private partnership program, run by not-for-profit Connect Kentucky, has spent $7 million of federal and state money, and during the last three years broadband providers invested over $743million to upgrade their networks.
- **MA – Governor Patrick announced a broadband initiative to be funded with $25M capitalized by general obligation bonds. Gov. Patrick filed a bill that will establish and fund the Massachusetts Broadband Institute, which will make strategic and targeted public investments with the objective of providing broadband service to all 32 currently un-served communities (and 63 underserved – broadband only available in certain areas) by 2010.**
- **MD** – The Maryland Eastern Shore project/Rural Broadband Initiative is overseen by the Maryland Broadband Cooperative (MdBC), a public private partnership, which received $2 million in June 2007 from an economic development assistance fund and the 2009 state budget to expand broadband in the Eastern Shore and Southern Maryland. The first phase of the project was completed in October 2007 when NASA's Wallops Island Space Facility was linked to Salisbury State University. Additional funding was secured by US Senator Mikulski ($4M) and Maryland State Senator E.J. Pipkin ($10M).
- **ME** – ConnectME is an Authority created to spur economic development via the spread of wireless and broadband in unserved and underserved areas of ME via private-public partnerships. The final rule that will govern the Authority was enacted on 05/16/07, clearing the way for soliciting requests for funding via an application process. Funding will be raised by a .25% surcharge on industry provider bills that will generate nearly $2.5M. This law is scheduled to sunset in 2009.
- **NC** – In North Carolina, **e-NC** has received $3M in funding from the NC General Assembly for purposes of partnering with private enterprise providers for 50/50 funding of broadband projects in 5 counties with little broadband penetration.

States with Broadband Funding / Economic Incentives for Broadband

- **NY** – Gov. Eliot Spitzer proposed a universal broadband initiative to expand high-speed access in underserved areas by 2010. The 2007-08 New York State budget appropriated $5M to provide seed money through competitive grants to promote research, design and implementation of innovative solutions to affordable Internet access for underserved urban and rural communities. Grant applications will be accepted from eligible communities and organizations that create public/private partnerships to meet the strategic goals of the Council.
- **OH** – Connected Nation, along with Ohio Governor Ted Strickland, announced the launch of Connect Ohio on December 17, 2007. The initial contract, totaling $2.9 million, will enable a comprehensive initiative that will replicate the Connected Nation model in Ohio. With successful performance, the contract will be renewed for $3.9 million in July 2009 and will continue through June 2011.
- **TN - The state has set aside approximately $4M for broadband development. $4.17 million is included in the 2007-2008 state budget to enhance broadband access in Tennessee. On July 27, 2007, Connected Tennessee released the state's first broadband inventory map showing current levels of high-speed Internet availability across the state. On January 25, 2008, it released the nation's first county-by-county reading of average Internet speeds across Tennessee.**
- **UT** – The state has established a $1M restricted general fund account for broadband grants. A 2007 law establishes a restricted account within the General Fund to be used for grants to providers deploying broadband service in rural areas. The act appropriates $1M from the General Fund for fiscal year 2007-08 to the Rural Broadband Service Fund Restricted Account.


VerizonNorth Carolina
Broadband

ATTACHMENT 9

AT&T Rural Broadband Coverage in North Carolina

AT&T Services, Inc.
April 07, 2008

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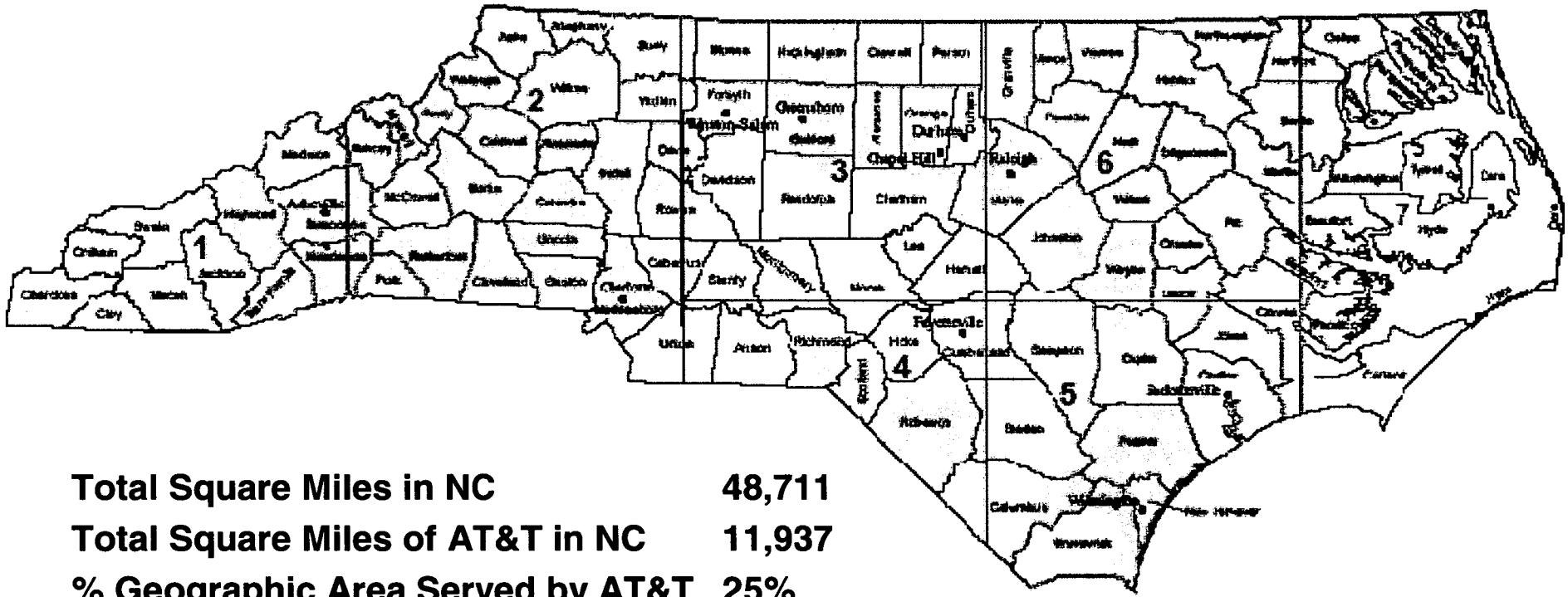
AT&T's Service Territory



Total Square Miles in NC	**48,711**
Total Square Miles of AT&T in NC	**11,937**
% Geographic Area Served by AT&T	**25%**
Total NC Switched Lines	**4.8M**
Total NC AT&T Switched Lines	**1.8M**
% of NC Lines served by AT&T	**38%**

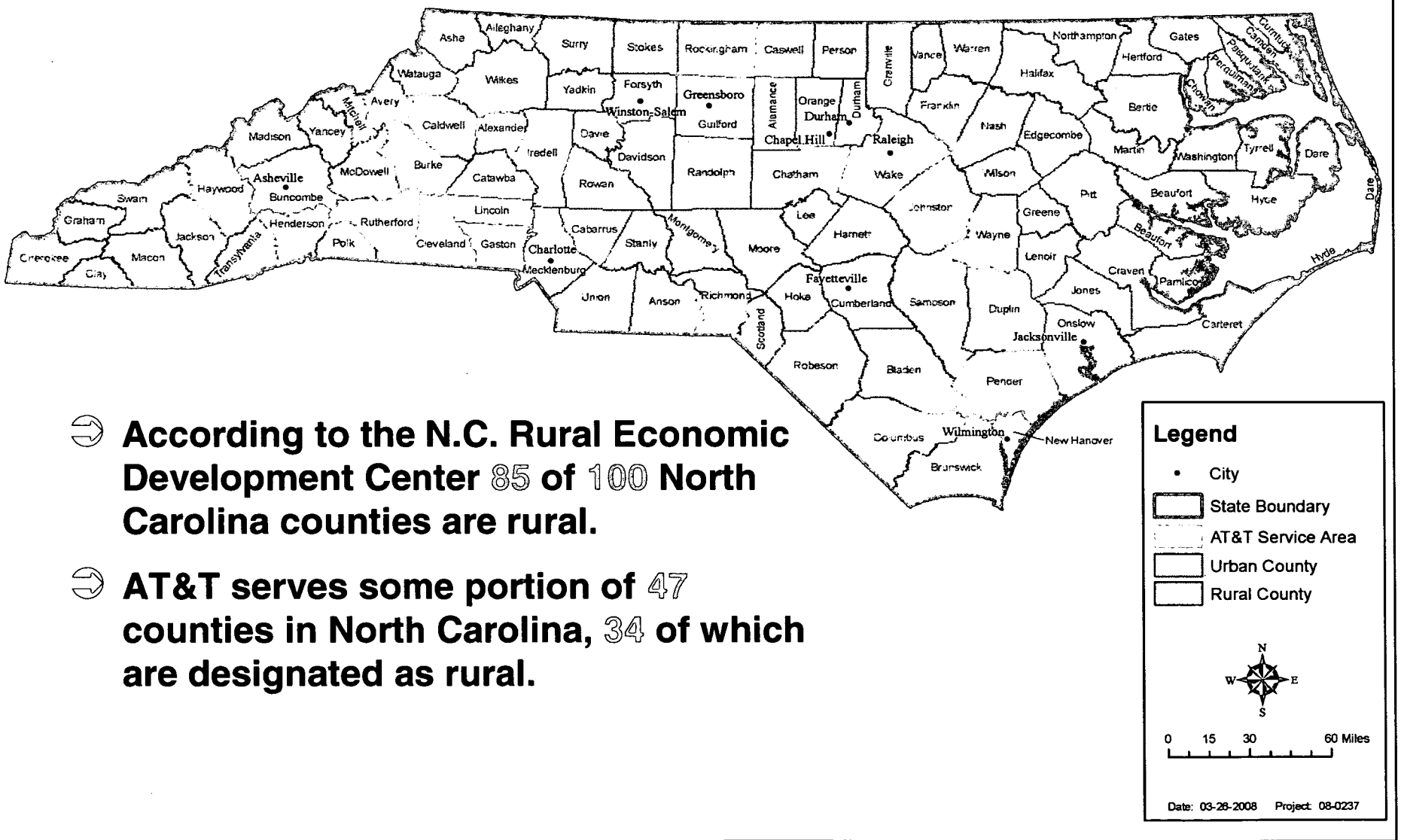
Legend

- City
- County Boundary
- Map Grid
- AT&T Service Area
- Non-AT&T Service Area

Dec. 06

at&t

AT&T Serves 21% of North Carolina's Rural Geography



- **According to the N.C. Rural Economic Development Center 85 of 100 North Carolina counties are rural.**
- **AT&T serves some portion of 47 counties in North Carolina, 34 of which are designated as rural.**

North Carolina Broadband Market Overview

- **North Carolina ranks 18th nationally in the number of residential and business broadband lines deployed**
- **In online population, North Carolina ranks only 42nd nationally – a measure of Internet users as a share of the population[1]**
- **NC had 2.4M broadband access lines in service as of December 2006**
- **84% of residential premises have access to DSL where ILECs offer local telephone service[2]**

[1] *The 2007 State New Economy Index: Benchmarking Economic Transformation in the States*, Robert D. Atkinson and Daniel K. Correa, February 2007.

[2] Unless noted, source: 10/2007 FCC report, "High Speed Services for Internet Access." xDSL includes both asymmetric and symmetric DSL. Each state-specific estimate is a weighted average of the availability percentages that ILECs or cable system operators report for the areas they serve. Reported xDSL availability is weighted by ILEC end-user switched access lines. Reported cable modem availability is weighted by cable TV subscribers. The weighted averages include ILECs or cable system operators that report no availability.

North Carolina Broadband Market Overview

- **The broadband market is highly competitive. The October 2007 FCC report shows more than 1,300 entities providing broadband service in the U.S, more than half using technologies other than DSL or cable.**
- **North Carolina and Florida rank 16th nationally in the number of high-speed Internet providers by state.**

Providers of High-Speed Lines by Technology as of December 31, 2006
(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total
North Carolina	33	19	17	10	8	*	8	5	0	60

* Indicates one to three providers. Source: 10/2007 FCC Local Competition and Broadband Report

North Carolina Broadband Market Overview

North Carolina ranks 11th in total active high-speed Internet lines nationally.

Active High-Speed Lines by Technology as of December 31, 2006

(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total
North Carolina	648,001	23,883	17,903	1,040,513	8,656	*	18,506	*	0	2,366,079

*Data withheld to maintain firm confidentiality. Source: 10/2007 FCC Local Competition and Broadband Report

NC has seen a tremendous increase in the number of high-speed lines.

High-Speed Line Growth December 1999 - 2006

(Over 200 kbps in at least one direction)

State	1999 Dec	2000 Dec	2001 Dec	2002 Dec	2003 Dec	2004 Dec	2005 Jun	2005 Dec	2006 Jun	2006 Dec
North Carolina	57,881	136,703	357,380	593,609	841,572	1,119,805	1,222,648	1,482,930	1,601,938	2,366,079

Some historical data have been revised. Source: 10/2007 FCC Local Competition and Broadband Report

High-Speed Lines by Type of End-User as of December 31, 2006

(Over 200 kbps in at least one direction)

State	Residential	Business	Total
North Carolina	1,659,657	706,422	2,366,079

Source: 10/2007 FCC Local Competition and Broadband Report

at&t

AT&T North Carolina DSL Coverage

Total DSL coverage - NC

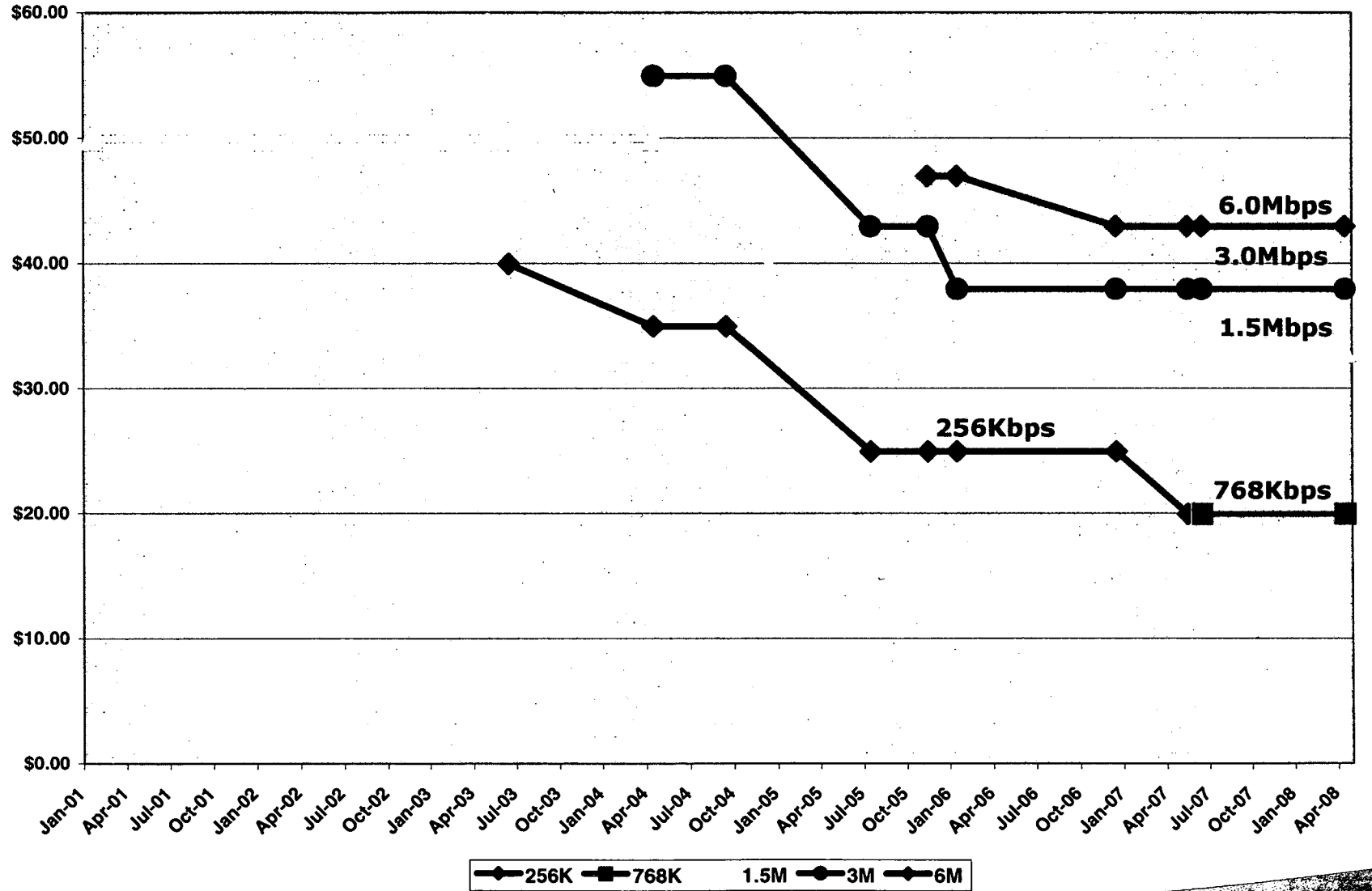
- 91% of all living units served by AT&T in NC are wireline DSL capable
- Alternative technologies are available including, but not limited to, satellite and Wi-max fixed wireless, to serve remaining living units, resulting in 100% broadband availability
- 16% overall penetration of AT&T Wireline DSL in NC

Rural DSL coverage - NC

- 87% of all rural living units served by AT&T in NC are wireline DSL capable
- Alternative technologies are available including, but not limited to, satellite and Wi-max fixed wireless, to serve remaining living units, resulting in 100% broadband availability
- 14% penetration of AT&T Wireline DSL in Rural Counties of NC

at&t

Broadband competition in North Carolina has resulted in lower prices and increased speeds for AT&T consumers!



AT&T Wireless and Satellite Solutions

- In May 2007, AT&T announced the expansion of AT&T Yahoo! Broadband via satellite (provided by WildBlue and Hughes Communications) across its 22-state wireline footprint, focusing on areas that otherwise have little or no access to a broadband connection – especially rural areas.
- WildBlue estimates that 10-15 million households do not have access to other forms of high-speed Internet providers.

Product	Speed Down/Up	Install/Equipment Fee	Monthly Fee
WildBlue Value	Up to 512K/ up to 128K	$299.99	$54.95
WildBlue Select	Up to 1M/ up to 200K	$299.99	$69.95
WildBlue Pro	Up to 1.5M/ up to 256K	$299.99	$79.95
Hughes Home	Up to 700K/ up to 128K	$399.98/$0*	$59.99/$79.99
Hughes Professional	Up to 1M/ up to 200K	$399.99/$0	$69.99/$89.99
Hughes ProPlus	Up to 1.5M/ up to 200K	$399.99/$0	$79.99/$99.99
Hughes Business Internet	Up to 2M/ up to 500K	$699.98/$299.99	$179.99/$199.99

Hughes allows customers to pay for equipment up-front and get a lower monthly rate, or avoid the up-front fees and pay a higher monthly rate.

at&t

How is AT&T Working to Stimulate Rural Broadband Access and Adoption?

Through its partnerships, broadband deployment proposals, philanthropy and capital investments, AT&T is committed to delivering the benefits of high-speed Internet access to rural America.

- Partnerships with the e-NC Authority and Connected Nation
- Federal funding for broadband deployment to unserved areas
- AT&T Foundation Programs
- Capital investments to support the scope and capability of AT&T's wireless network
- Capital investments to create and deliver next-generation services

AT&T State and National Partnerships

e-NC Authority

The e-NC Authority has been the catalyst for significant gains in broadband availability in North Carolina's rural areas since 2000.

- Offers "technology neutral" grants to incent providers to deploy broadband in rural areas
- Developed 7 self-sustaining Business and Technology Telecenters in rural counties to create jobs, provide free high-speed Internet access, and training
- Created public Internet access locations in all 100 NC counties to provide free access to high speed Internet connections
- Identified "e-champions" in each county to encourage Internet adoption
- Provides mapping and reporting of broadband deployment by county in North Carolina

Connected Nation

National non-profit organization, which facilitates market-based strategies for broadband expansion and adoption.

- Collaborates with all broadband providers to produce statewide household-level mapping of broadband gaps
- Simultaneous supply enhancement and demand creation
  - Community driven technology planning to create demand
  - Which in turn drives investment to extend supply
- Began with Connect Kentucky
  - From 60% broadband availability to 95% in 3 years
  - From 24% broadband adoption to 44% adoption in 2 years

AT&T's federal funding proposal for broadband deployment in unserved areas

- AT&T will propose new federal mechanisms to promote the deployment of fixed-location and mobile wireless broadband infrastructures in unserved areas.
- We believe that providers should file applications, effectively competing to obtain project-based funding for the deployment of fixed-location broadband and mobile wireless broadband services, respectively, in unserved areas.
- The challenge is how to transition the existing high-cost support mechanisms into incentives for broadband deployment. We plan to unveil our proposed transitional framework in the coming days.

AT&T Foundation Programs

- AT&T's collaboration with One Economy, Habitat for Humanity and other low-income housing providers delivers technology packages, including Internet access to low-income families and unserved areas.
- Since 2002, the AT&T technology grant program has provided more than 2,500 technology grants to get more people connected nationwide.
- AT&T provided over $340,000 in grants to NC organizations in 2007, for example:
  - Lutheran Retirement Center, Salisbury
    - Support collaborative effort to provide seniors training on basic computer and Internet use
  - Cleveland Community College Foundation, Shelby
    - Support wireless technology for Early College initiative to enhance education for low income students
  - NC A&T State University, Greensboro
    - Support development of wireless sensor networks course to teach engineering students how to use wireless technology to sense and respond to environmental events

AT&T Network Investments

North Carolina Network Investments

- AT&T is investing approximately $350M in fiber network upgrades, further broadband deployment and Internet-based technologies to bring new services, including cutting-edge television, to North Carolina over the next several years.
- AT&T invested almost $289 million in North Carolina networks for 2006 including:
  - Bringing high speed Internet and fiber-based data services
  - Upgrading and maintaining existing customer lines
  - Enabling competition through a variety of pro-competitive initiatives

National Network Investments

- AT&T has invested $18 billion over the last three years to build and support the scope and capability of its wireless network.
- AT&T's 3G and EDGE coverage areas combine to create the nation's most expansive high-speed voice and data network, covering 13,000 cities and towns and 40,000 miles of highway.
- For the period 2004-2008, AT&T is expected to have invested $6.5-$7 billion to develop Project Lightspeed – an IP network built to deliver next-generation services.

Broadband is a Powerful Economic Driver

- Increased broadband adoption adds revenue to the economy and brings jobs to local communities.
- A February 2008 report from Connected Nation on *"The Economic Impact of Stimulating Broadband Nationally"* estimates that the U.S. could realize an economic impact of $134 billion annually and create more than 1.6 million jobs by accelerating broadband availability and use across all states.
  - Estimated economic impact in North Carolina is $3.6 billion.
  - Estimated annual net job growth in North Carolina from the increase in broadband 69,432.

Broadband Policy Recommendations

Encourage investment in and deployment of next-generation broadband networks

Incentives include tax breaks and grant programs for broadband providers and other consumers

Federal broadband deployment incentives: FCC proposal to support deployment of broadband, in both fixed location and mobile wireless infrastructure, in unserved rural areas

Apply consistent policies to competing technologies and services

Encourage greater adoption of broadband services

Demand side analysis is key to success

Barriers to adoption include lack of a computer, perceived lack of need, price

Understand community broadband needs

Support adoption of applications to address challenges in healthcare, environment, education and public safety

Encourage public/private partnerships to unleash innovative responses to 21st century social and technological challenges

ATTACHMENT 10

Overview of Cable Broadband Deployment in North Carolina

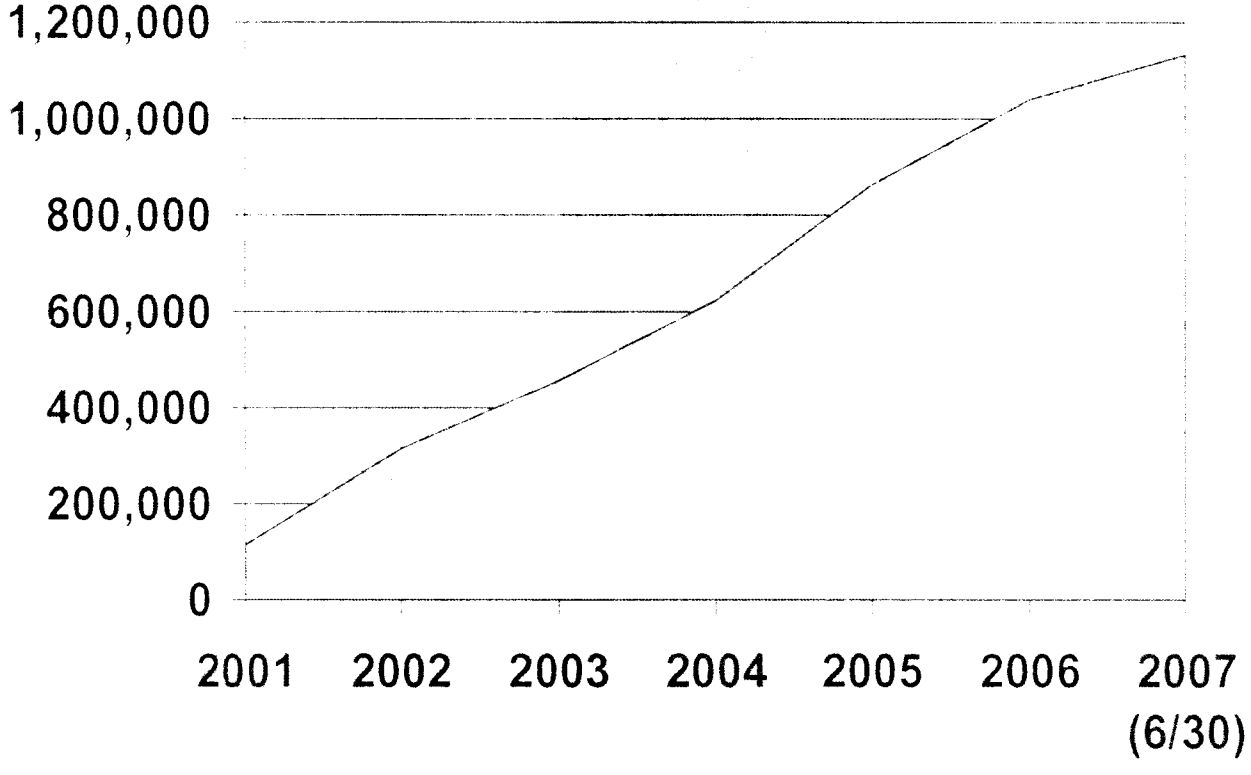
April 8, 2008

North Carolina Cable
Telecommunications Association

High-Speed Lines in NC

- Total cable modem lines in NC: 1,134,075 (bus/res)
- Total high-speed lines in NC: 2,894,042 (bus/res)
  - Cable = 39% of total
  - Wireless (satellite, fixed, mobile) = 34% of total

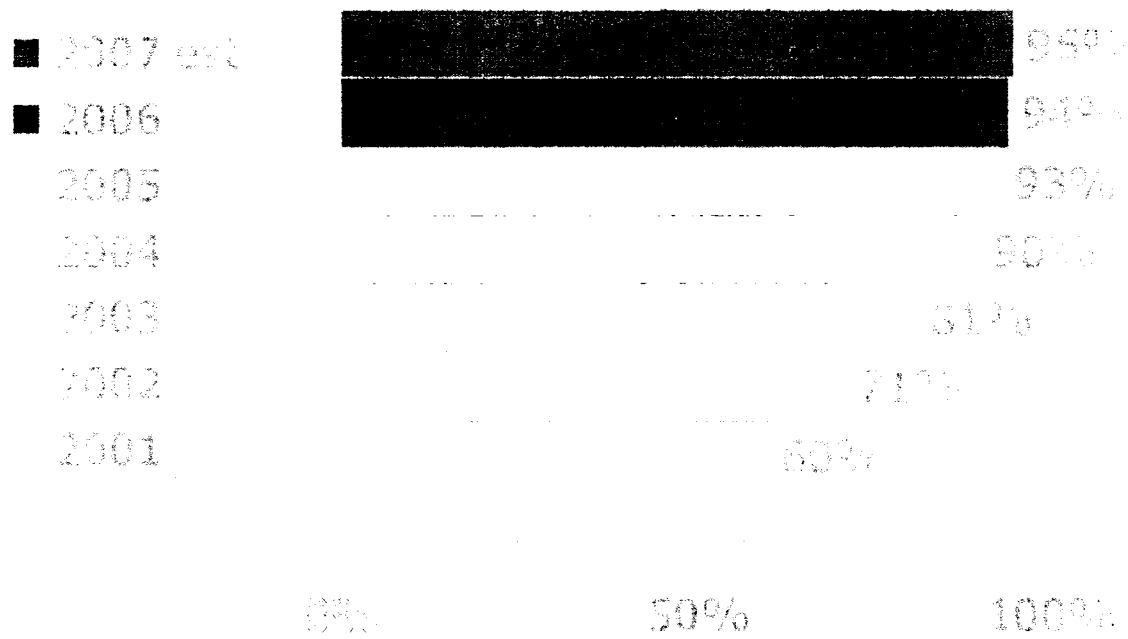
Figure 1: Cable Modem Lines – NC Trend Data



Source: High-Speed Services for Internet Access: Status as of June 30, 2007, FCC Wireline Competition Bureau, March 2008.

Figure 2: Cable Broadband Availability

Percentage of U.S. Cable Households Passed by Cable Broadband Service



Source: National Cable Telecommunications Association
Jupiter Research

Cable Broadband Availability in North Carolina

- Cable modem availability where cable system offers cable TV service -- 96%

  [source: FCC High-Speed Internet Access Report, March 2008]

NC Cable Homes – Broadband Availability

	Homes Passed	Homes Passed with Cable Modem	Percentage
Tier 1	544,339	520,728	96%
Tier 2	649,318	625,828	96%
Tier 3	1,715,548	1,715,387	99.99%
Total	2,909,205	2,861,943	98%

High-Speed Services for Internet Access: Status as of June 30, 2007

Industry Analysis and Technology Division
Wireline Competition Bureau
March 2008

This report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, SW, Washington, DC. Copies may be purchased by contacting Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-B402, Washington, DC 20554, telephone (800) 378-3160, or via their website at www.bcpiweb.com. The report can also be downloaded from the Wireline Competition Bureau Statistical Reports Internet site at www.fcc.gov/wcb/stats.

High-Speed Services for Internet Access: Status as of June 30, 2007

Congress directed the Commission and the states, in section 706 of the Telecommunications Act of 1996, to encourage deployment of advanced telecommunications capability in the United States on a reasonable and timely basis.[1] To assist in its evaluation of such deployment, the Commission instituted a formal data collection program (FCC Form 477) to gather standardized information about subscribership to high-speed services, including advanced services, from wireline telephone companies, cable system operators, terrestrial wireless service providers, satellite service providers, and any other facilities-based providers of advanced telecommunications capability.[2]

We summarize here information from the sixteenth semi-annual data collection, thereby presenting a snapshot of subscribership as of June 30, 2007.[3] High-speed lines connecting homes and businesses to the Internet increased by 22% during the first half of 2007, from 82.8 million to 100.9 million lines in service, following a 27% increase, from 65.3 million to 82.8 million lines, during the second half of 2006. For the full twelve-month period ending June 30, 2007, high-speed lines increased by 55% (or 35.7 million lines). The presence of high-speed service subscribers was reported in all 50 states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the Virgin Islands, and in over 99% of the Zip Codes in the United States.

Twice a year, all facilities-based providers of high-speed connections to end users are required to report to the Commission basic information about their service offerings and types of customers.[4] Prior to June 2005, providers with fewer than 250 high-speed lines (or wireless

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[1] *See* §706, Pub.L. 104-104, Title VII, Feb. 8, 1996, 110 Stat. 153, reproduced in the notes under 47 U.S.C. § 157. We use the term "high-speed" to describe services that provide the subscriber with transmissions at a speed in excess of 200 kilobits per second (kbps) in at least one direction. "Advanced services," which provide the subscriber with transmission speeds in excess of 200 kbps in each direction, are a subset of high-speed services.

[2] *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717 (2000); *Local Telephone Competition and Broadband Reporting,* WC Docket No. 04-141, Report and Order, 19 FCC Rcd 22340 (2004). During this data gathering program, qualifying entities file FCC Form 477 each year on March 1 (reporting data for the preceding December 31) and September 1 (reporting data for June 30 of the same year). The first data collected by Form 477 were data as of December 31, 1999. An updated Form 477, and instructions for that particular form, for each specific round of the data collection may be downloaded from the FCC Forms website at www.fcc.gov/formpage.html.

[3] Statistical summaries of the earlier Form 477 data collections appeared in *Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146, Second Report, 15 FCC Rcd 20913 (2000) (*Second 706 Report*), available at www.fcc.gov/broadband/706.html, and in previous releases of the *High-Speed Services for Internet Access* report, available at www.fcc.gov/wcb/stats.

[4] The terms "broadband connections" (which is used as a synonym for "high-speed connections" in the Form 477 program) and "facilities-based provider" are defined on the first page of the Form 477 instructions that are available at www.fcc.gov/formpage.html, and the term "end users" is defined on the third page. Facilities-based providers report information about high-speed connections they provide directly to their own end-user customers and also high-speed connections they provide to Internet Service Providers for resale to end users.

channels) in service in a particular state were not required to report data for that state.[5] Small providers of high-speed connections, many of whom serve rural areas with relatively small populations, were therefore underrepresented in the earlier data. Including these providers resulted in a substantial one-time increase in the number of holding companies and unaffiliated entities reporting information about high-speed connections from December 31, 2004 to June 30, 2005.[6]

The data reported for June 30, 2007 include detail about the information transfer rates ("speeds") of the reported connections and a breakdown of high-speed connections by type of technology.[7] The reported data also enable us to estimate, for individual states, the extent to which Digital Subscriber Line (DSL) high-speed connections provided by incumbent local exchange carriers (incumbent LECs), and cable modem high-speed service provided by cable system operators, are available to households residing in the areas these companies serve.

Readers can draw the following broad conclusions from the data summarized in this report:

- High-speed lines (or wireless channels) connecting homes and businesses to the Internet at speeds that exceed 200 kbps in *at least one* direction increased from 82.8 million lines to 100.9 million lines during the first half of 2007. For the full twelve-month period ending June 30, 2007, high-speed lines increased by 35.7 million, from 65.3 million lines to 100.9 million lines. See Table 1 and Chart 1.

- ADSL lines increased by 2.1 million lines during the first half of 2007, fiber connections increased by 0.4 million lines, and cable modem service increased by 2.4 million lines. For the full twelve-month period ending June 30, 2007, ADSL increased by 4.9 million lines, fiber connections increased by 0.7 million lines, and cable modem service increased by 5.2 million lines. See Table 1.

- Of the 100.9 million total high-speed lines, 34.1% were cable modem, 27.3% were ADSL, 1.0% were symmetric DSL (SDSL) or traditional wireline, 1.4% were fiber to the end user premises, and 36.2% used other technologies.[8] See Chart 2.

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[5] High-speed lines reported in voluntary submissions of data prior to June 2005 represented less than 0.05% of total reported high-speed lines. As of June 30, 2005, filers with fewer than 250 lines in a state (including some entities that previously made voluntary submissions) represented about 0.2% of total reported high-speed lines.

[6] The nationwide number of holding companies and unaffiliated entities reporting high-speed lines increased from 552 as of December 31, 2004 to 1,270 as of June 30, 2005. See Table 7.

[7] Some Internet-access connections that telephone companies, cable system operators, and wireless service providers offer do not meet the 200 kbps criterion for reporting high-speed connections to the Commission, but may nevertheless meet the needs of the subscribers who select them over a more expensive service option.

[8] Providers are instructed to report a high-speed connection in the (mutually exclusive) technology category that characterizes the last few feet of distribution plant to the subscriber's premises. In addition to cable modem, ADSL, SDSL, traditional wireline when used for Internet access, and optical carrier (fiber to the end user) connections, reporting entities specify satellite, terrestrial fixed wireless (licensed or unlicensed), terrestrial mobile wireless (licensed or unlicensed), electric power line, or "all other" technology. See additional notes following Chart 10.

- Lines connecting homes and businesses to the Internet at transmission speeds that exceed 200 kbps in *both* directions increased from 59.8 million lines to 69.6 million lines during the first half of 2007. For the full twelve-month period ending June 30, 2007, they increased by 18.5 million, from 51.1 million lines to 69.6 million lines. See Table 2 and Chart 3.

- Of the 69.6 million lines which were faster than 200 kbps in *both* directions, 48.8% were cable modem, 33.6% were ADSL, 1.5% were SDSL or traditional wireline, 2.0% were fiber to the end user premises, and 14.1% used other technologies. See Chart 4.

- Of the 100.9 million total high-speed lines, 65.9 million were designed to serve primarily residential end users. Cable modem represented 50.6% of these lines while 37.5% were ADSL, 0.2% were SDSL or traditional wireline connections, 1.7% were fiber to the end user premises, and 10.0% used other technologies. See Table 3 and Chart 6. For state-specific data, see Table 13.

- Of the 69.6 million lines that were faster than 200 kbps in *both* directions, 61.1 million lines were designed to serve primarily residential end users. Of these, cable modem represented 53.9% while 34.1% were ADSL, 0.2% were SDSL or traditional wireline, 1.9% were fiber to the end user premises, and 10.0% used other technologies. See Table 4 and Chart 8.

- Of the 69.6 million reported high-speed lines that were faster than 200 kbps in *both* directions as of June 30, 2007, 59.8% were at least 2.5 mbps in the faster direction and 40.2% were slower than 2.5 mbps in the faster direction. See Table 5.

- Incumbent LECs or their affiliates reported 97.0% of ADSL connections, 91.2% of fiber-to-the-premises connections, 81.5% of the mobile service subscribers whose wireless device is capable of operating on a high-speed mobile wireless network, and 49.2% of traditional wireline connections. When all technologies are considered, incumbent LECs reported 56.8% of total high-speed connections. See Table 6.

- High-speed lines were reported in all 50 states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the Virgin Islands. See Table 9 and, for historical data, Tables 10 - 12.

- As a nationwide average, we estimate that high-speed DSL connections were available to 82% of the households to whom incumbent LECs could provide local telephone service, and that high-speed cable modem service was available to 96% of the households to whom cable system operators could provide cable TV service. See Table 14.

- The Commission's data collection program requires providers to list the Zip Codes in which the provider has at least one high-speed connection in service to an end user, and over 99% of Zip Codes were listed by at least one provider.[9] The most widely reported technologies by this measure were high-speed mobile wireless (with at least some presence reported in 96% of Zip Codes), satellite (in 92% of Zip Codes), ADSL (in 85% of Zip Codes), and cable modem service (in 66% of Zip Codes). ADSL and/or cable modem connections were reported to be present in 90% of Zip Codes.[10] See Tables 15 and 16. For state-specific data, see Table 17.

- Our analysis indicates that more than 99% of the country's population lives in the more than 99% of Zip Codes where a provider reports having at least one high-speed service subscriber. Moreover, numerous competing providers report serving high-speed subscribers in the major population centers of the country. See the map that follows Table 16.

- High population density has a positive association with reports that high-speed subscribers are present, and low population density has an inverse association. For example, high-speed subscribers were reported to be present in more than 99% of the most densely populated Zip Codes and in 91% of Zip Codes with the lowest population densities.[11] The comparable figure for the lowest-density Zip Codes was 89% a year earlier. See Table 18.

- High median household income also has a positive association with reports that high-speed subscribers are present. In the top one-tenth of Zip Codes ranked by median household income, high-speed subscribers are reported in 99% of Zip Codes. By contrast, high-speed subscribers are reported in 92% of Zip Codes with the lowest median household income, compared to 91% a year earlier. See Table 19.

As other information from the Commission's data collection program (FCC Form 477) becomes available, it will be included in future reports on the deployment of advanced telecommunications capability and in publications such as this one.

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[9] Lists of Zip Codes with number of service providers as reported in the FCC Form 477 filings are made available at www.fcc.gov/wcb/stats in a format that honors requests for nondisclosure of information the reporting entities assert is competitively sensitive.

[10] The 90% figure (more precisely, 89.6%) includes ZIP codes with either ADSL subscribers reported, cable modem subscribers reported, or both. In 60.9% of ZIP codes, both ADSL and cable modem subscribers have been reported. In 23.7% of ZIP codes, there are ADSL subscribers reported but no cable modem subscribers, and in 5.0% of ZIP codes there are cable modem subscribers reported but no ADSL subscribers reported.

[11] For this comparison, we consider the most densely populated Zip Codes to be those with more than 3,147 persons per square mile (the top decile of Zip Codes) and the least densely populated Zip Codes to be those with fewer than 6 persons per square mile (the bottom decile).

We invite users of this information to provide suggestions for improved data collection and analysis by:

- Using the attached customer response form,
- E-mailing comments to James.Eisner@fcc.gov or Suzanne.Mendez@fcc.gov,
- Calling the Industry Analysis and Technology Division of the Wireline Competition Bureau at (202) 418-0940, or
- Participating in any formal proceedings undertaken by the Commission to solicit comments for improvement of FCC Form 477.

Table 1
High-Speed Lines [1]
(Over 200 kbps in at least one direction)

Technology [2]	2000	2001	2002	2003	2004	2005		2006		2007
	Jun	Jun	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun
ADSL	951,583	2,693,834	5,101,493	7,675,114	11,398,199	16,316,309	19,515,483	22,584,255	25,412,883	27,516,171
SDSL and Traditional Wireline	758,594	1,088,066	1,186,680	1,215,713	1,407,121	898,468	878,973	948,134	1,030,698	1,028,654
SDSL	-	-	-	-	-	411,731	368,782	337,412	344,759	319,932
Traditional Wireline	-	-	-	-	-	486,737	510,191	610,722	685,939	708,722
Cable Modem	2,284,491	5,184,141	9,172,895	13,684,225	18,592,636	24,017,442	26,558,206	29,174,494	31,981,705	34,408,553
Fiber [3]	46,635	81,248	105,991	111,386	130,928	315,651	448,257	685,823	1,035,677	1,402,652
Satellite and Wireless	65,615	194,707	220,588	309,006	421,690	965,068	3,812,655	11,872,998	23,344,106	36,560,197
Satellite	-	-	-	-	-	376,837	426,928	495,365	571,980	668,803
Fixed Wireless	-	-	-	-	-	208,695	257,431	361,113	484,277	586,141
Mobile Wireless	-	-	-	-	-	379,536	3,128,296	11,016,520	22,287,849	35,305,253
Power Line and Other	-	-	-	-	-	4,872	4,571	5,208	4,776	5,420
Total Lines	4,106,918	9,241,996	15,787,647	22,995,444	31,950,574	42,517,810	51,218,145	65,270,912	82,809,845	100,921,647

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Some historical data have been revised. See additional notes following Chart 10.

Chart 1
Total High-Speed Lines

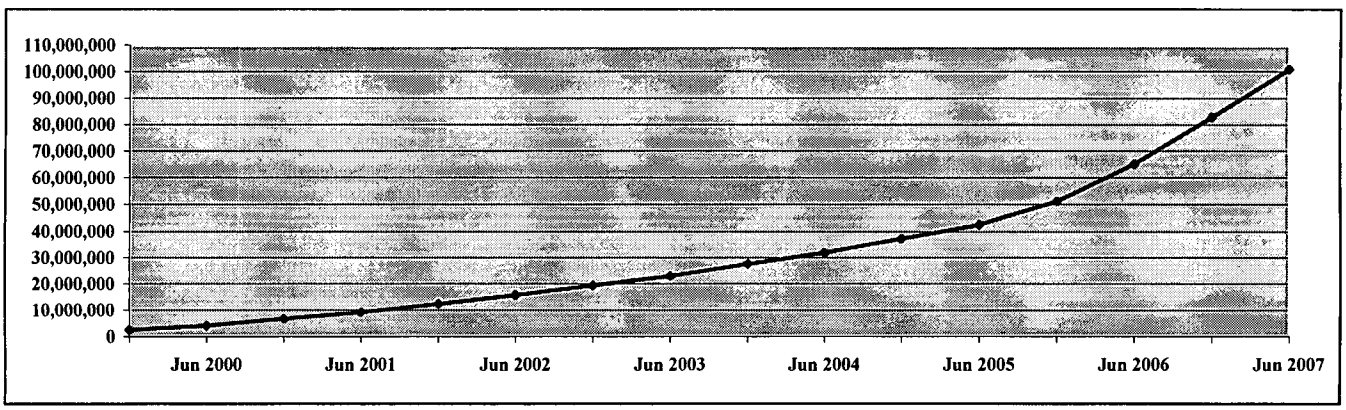


Chart 2
High-Speed Lines by Technology as of June 30, 2007

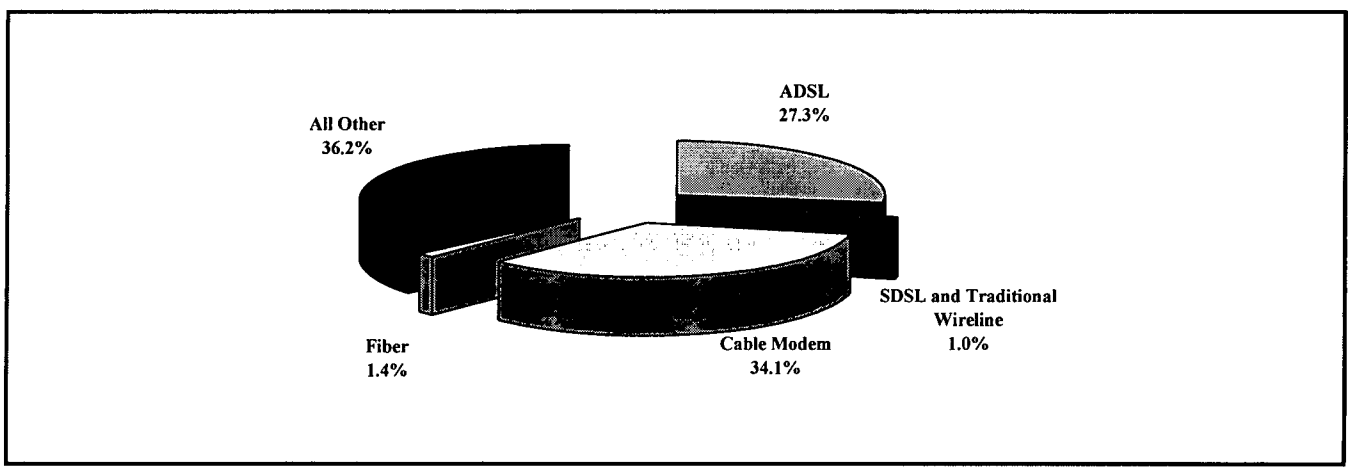


Table 2
Advanced Services Lines [1]
(Over 200 kbps in both directions)

Technology [2]	2000	2001	2002	2003	2004	2005		2006		2007
	Jun	Jun	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun
ADSL	326,816	998,883	1,852,879	2,536,368	3,768,019	13,176,095	15,921,336	18,310,957	21,144,159	23,381,289
SDSL and Traditional Wireline	758,594	1,088,066	1,186,680	1,215,713	1,407,121	869,772	874,261	946,874	1,029,782	1,027,937
SDSL	-	-	-	-	-	387,451	368,736	336,586	344,739	319,293
Traditional Wireline	-	-	-	-	-	482,321	505,525	610,288	685,043	708,644
Cable Modem	1,469,130	3,329,976	6,819,395	11,935,866	17,567,468	22,745,012	26,293,596	28,878,587	31,594,111	33,939,919
Fiber [3]	40,627	81,204	104,015	110,829	129,636	314,229	447,235	684,729	1,034,317	1,400,565
Satellite and Wireless	3,649	73,476	66,073	64,393	93,805	223,274	338,635	2,275,154	4,982,675	9,800,951
Satellite	-	-	-	-	-	10,966	36,331	27,489	36,026	57,202
Fixed Wireless	-	-	-	-	-	191,229	220,268	333,209	455,741	553,919
Mobile Wireless	-	-	-	-	-	21,079	82,036	1,914,456	4,490,908	9,189,830
Power Line and Other	-	-	-	-	-	4,174	4,501	5,209	4,776	5,420
Total Lines	2,598,816	5,571,605	10,029,042	15,863,169	22,966,048	37,332,557	43,879,564	51,101,510	59,789,820	69,556,081

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Some historical data have been revised. See additional notes following Chart 10.

Chart 3
Advanced Services Lines

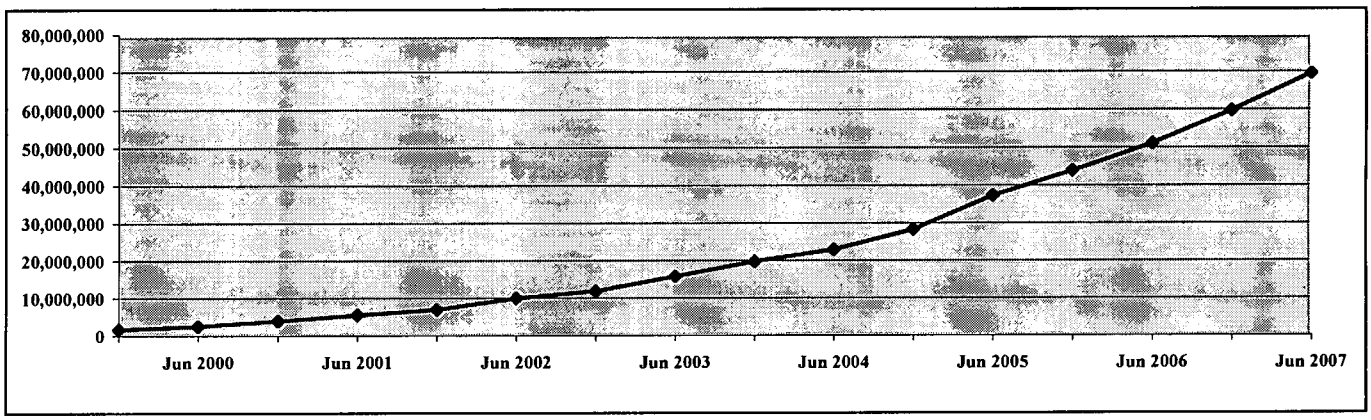


Chart 4
Advanced Services Lines by Technology as of June 30, 2007

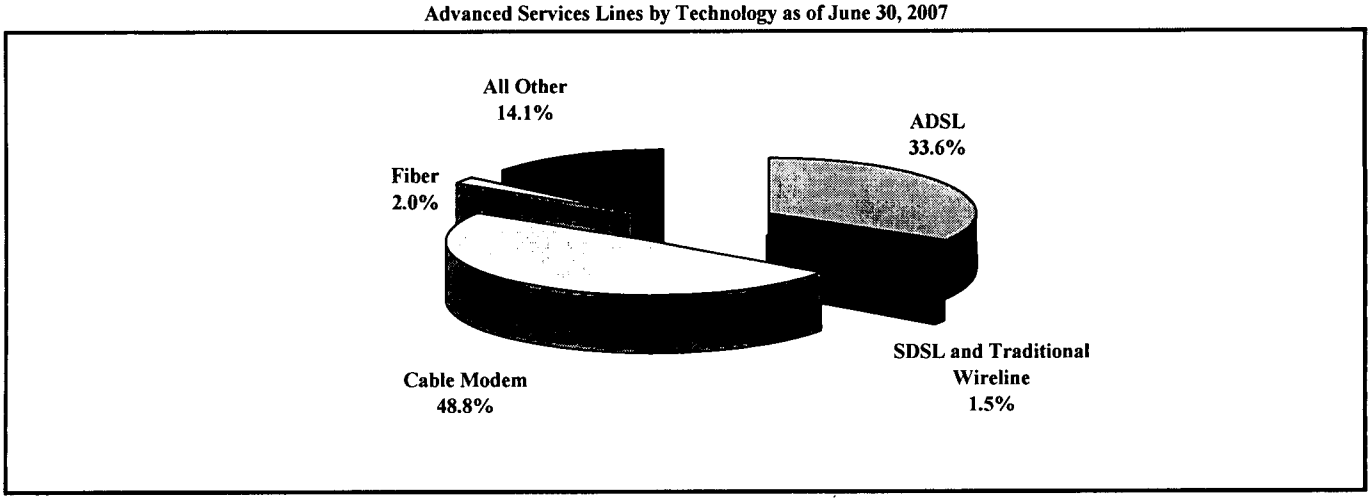


Table 3
Residential High-Speed Lines [1]
(Over 200 kbps in at least one direction)

Technology [2]	2000	2001	2002	2003	2004	2005		2006		2007
	Jun	Jun	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun
ADSL	772,272	2,490,740	4,395,033	6,429,938	10,759,495	14,442,823	17,370,508	20,152,290	22,768,500	24,690,513
SDSL and Traditional Wireline	111,490	138,307	223,599	250,372	393,049	159,489	129,444	112,017	117,708	117,437
SDSL	-	-	-	-	-	153,978	122,220	102,605	105,012	104,944
Traditional Wireline	-	-	-	-	-	5,511	7,224	9,412	12,696	12,493
Cable Modem	2,215,259	4,998,540	9,157,285	13,660,541	18,525,265	23,578,060	25,714,461	28,365,648	31,118,079	33,340,678
Fiber [3]	325	2,623	6,120	16,132	22,719	83,293	213,479	442,027	763,394	1,152,195
Satellite and Wireless	64,320	182,165	202,251	288,786	387,563	428,367	532,704	1,840,060	3,589,607	6,598,329
Satellite	-	-	-	-	-	265,017	320,142	382,047	455,936	530,357
Fixed Wireless	-	-	-	-	-	160,775	203,179	301,293	424,284	522,752
Mobile Wireless	-	-	-	-	-	2,574	9,384	1,156,720	2,709,387	5,545,220
Power Line and Other	-	-	-	-	-	4,447	4,550	5,093	4,711	5,347
Total Lines	3,163,666	7,812,375	13,984,287	20,645,769	30,088,091	38,696,480	43,965,147	50,917,135	58,361,999	65,904,499

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Small business lines were included in totals through December 2004.
Some historical data have been revised. See additional notes following Chart 10.

Chart 5
Residential High-Speed Lines

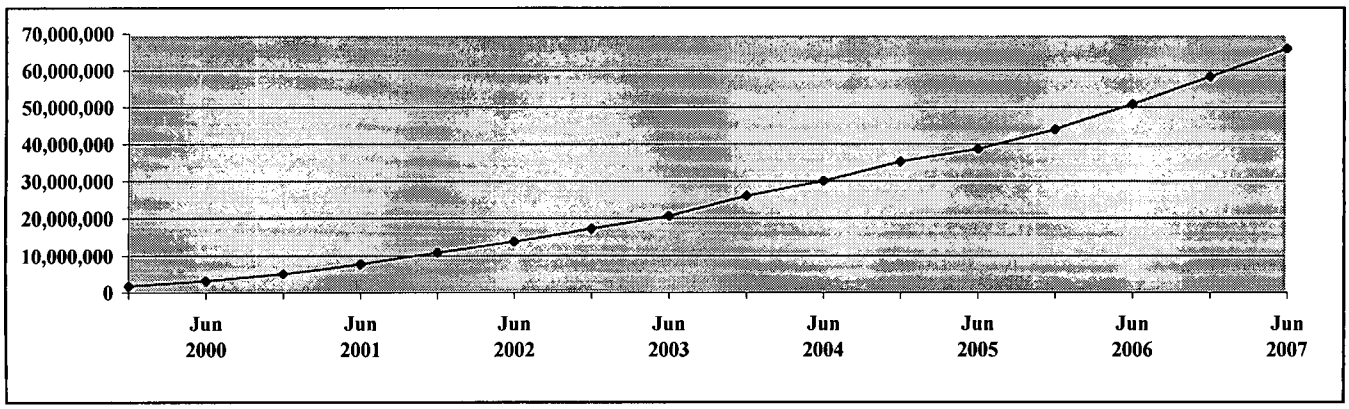


Chart 6
Residential High-Speed Lines by Technology as of June 30, 2007

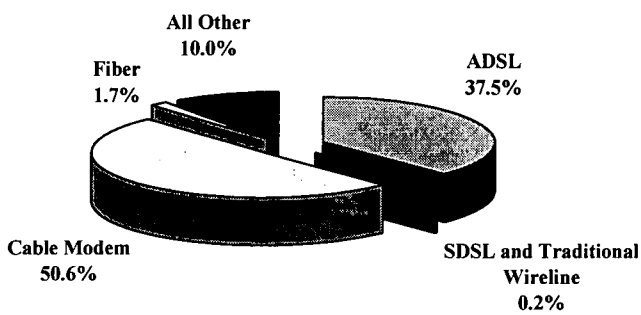


Table 4
Residential Advanced Services Lines [1]
(Over 200 kbps in both directions)

Technology [2]	2000	2001	2002	2003	2004	2005		2006		2007
	Jun	Jun	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun
ADSL	195,324	916,364	1,580,575	2,071,779	3,174,022	11,731,303	14,242,291	16,416,522	18,878,873	20,835,274
SDSL and Traditional Wireline	111,490	138,307	223,599	250,372	393,049	151,979	125,116	111,935	117,652	116,881
SDSL	-	-	-	-	-	149,862	122,220	102,580	105,002	104,432
Traditional Wireline	-	-	-	-	-	2,118	2,895	9,355	12,650	12,449
Cable Modem	1,401,434	3,146,953	6,809,170	11,920,207	17,505,907	22,324,471	25,533,423	28,121,912	30,770,517	32,920,397
Fiber [3]	325	2,617	5,118	15,751	21,866	82,831	212,862	441,128	762,083	1,150,246
Satellite and Wireless	2,916	60,988	47,787	46,407	72,485	150,893	204,703	1,449,299	3,114,987	6,074,665
Satellite	-	-	-	-	-	2,244	25,117	15,055	23,334	35,319
Fixed Wireless	-	-	-	-	-	146,074	170,515	277,524	399,732	494,144
Mobile Wireless	-	-	-	-	-	2,574	9,071	1,156,720	2,691,921	5,545,202
Power Line and Other	-	-	-	-	-	3,916	4,481	5,093	4,711	5,347
Total Lines	1,711,488	4,265,229	8,666,249	14,304,515	21,167,329	34,445,394	40,322,876	46,545,889	53,648,823	61,102,810

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Small business lines were included in totals through December 2004.
Some historical data have been revised. See additional notes following Chart 10.

Chart 7
Residential Advanced Services Lines

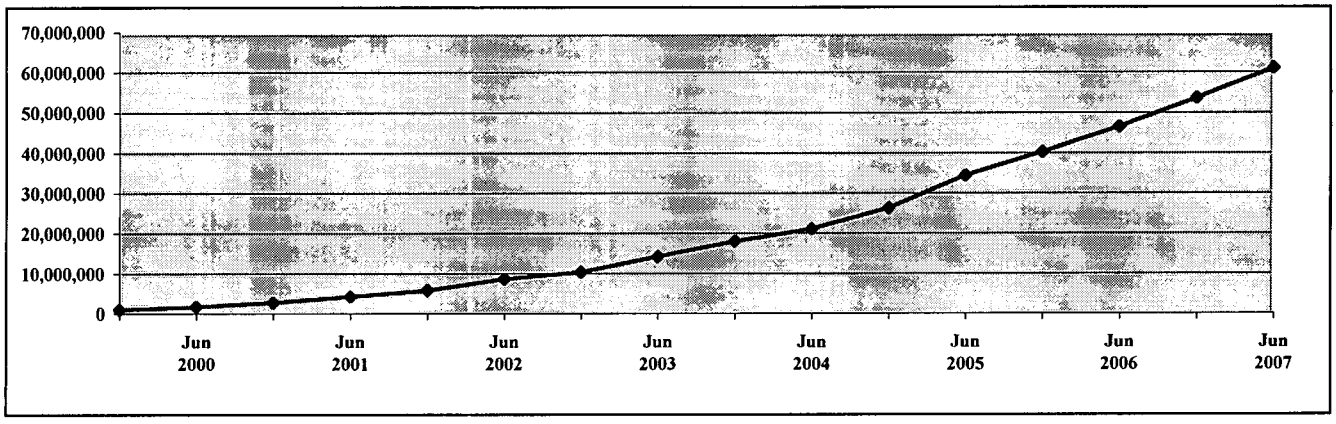


Chart 8
Residential Advanced Services Lines by Technology as of June 30, 2007

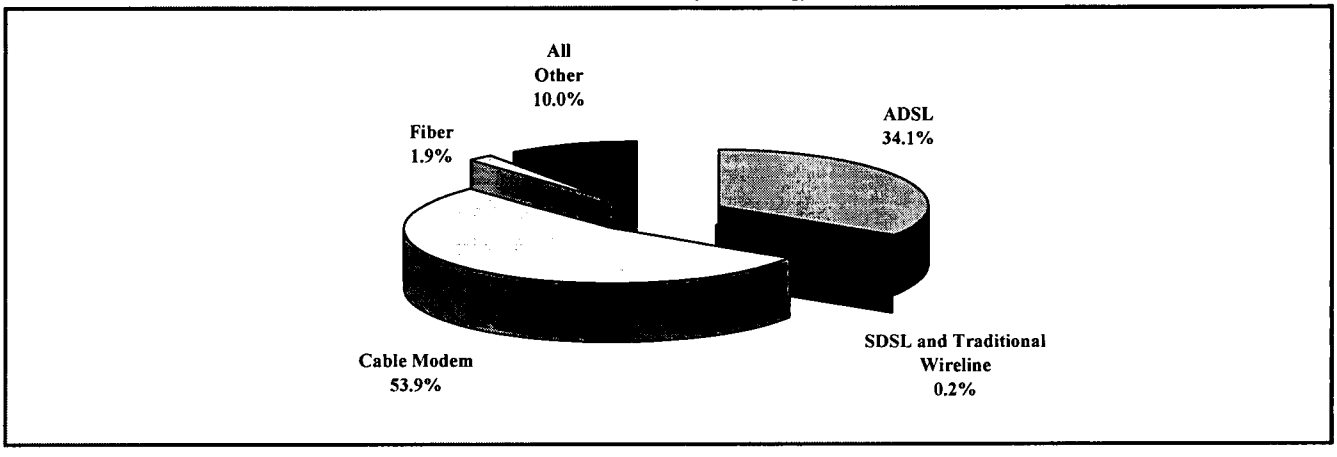


Table 5

High-Speed Lines by Information Transfer Rates [1]

As of June 30, 2007

Technology [2]	Exceeding 200 kbps in only one direction	Exceeding 200 kbps in both directions, and:				
		Greater than 200 kbps and less than 2.5 mbps in the faster direction	Greater than or equal to 2.5 mbps and less than 10 mbps in the faster direction	Greater than or equal to 10 mbps and less than 25 mbps in the faster direction	Greater than or equal to 25 mbps and less than 100 mbps in the faster direction	Greater than or equal to 100 mbps in the faster direction
ADSL	4,134,882	13,025,758	10,303,122	52,373	*	*
SDSL	639	317,401	1,805	*	*	0
Traditional Wireline	78	671,080	18,740	5,928	6,245	6,651
Cable Modem	468,634	3,941,006	26,682,038	3,246,906	*	*
Fiber	2,087	214,373	646,776	508,829	16,292	14,295
Satellite	611,601	57,202	0	0	0	0
Fixed Wireless	32,222	523,309	30,061	*	*	*
Mobile Wireless	26,115,423	*	*	0	0	0
Power Line and Other	0	*	*	0	*	0
Total Lines	31,365,566	27,944,008	37,683,911	3,814,471	91,983	21,708

* Data withheld to maintain firm confidentiality.

See notes following Chart 10.

Chart 9

Lines by Information Transfer Rates in the Faster Directions as of June 30, 2007

(Includes only lines exceeding 200 kbps in both directions)

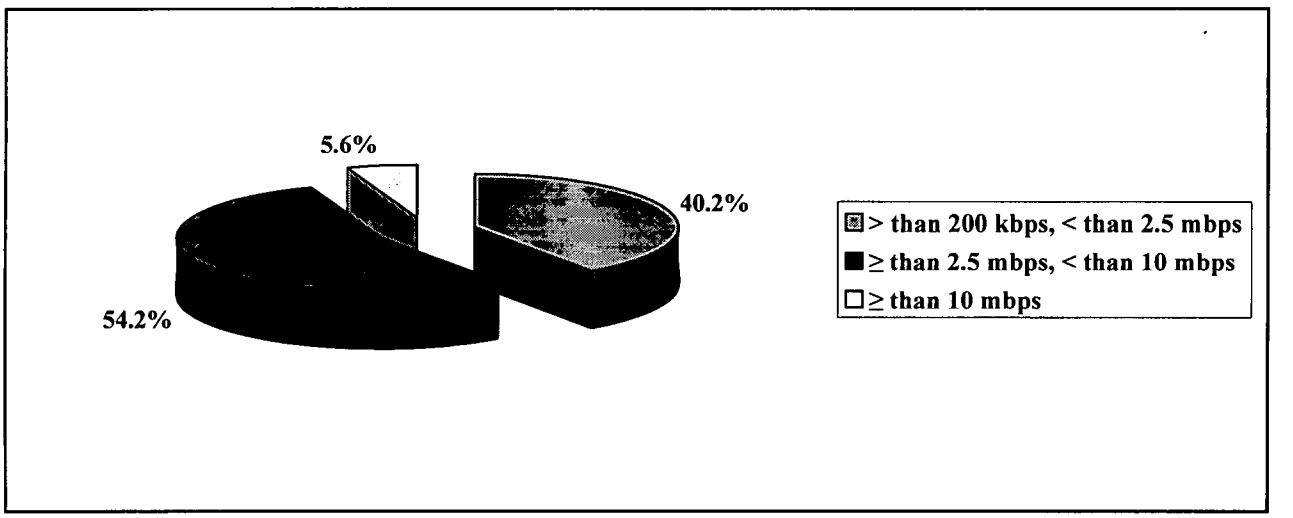


Table 6

High-Speed Lines by Type of Provider as of June 30, 2007 [1]

(Over 200 kbps in at least one direction)

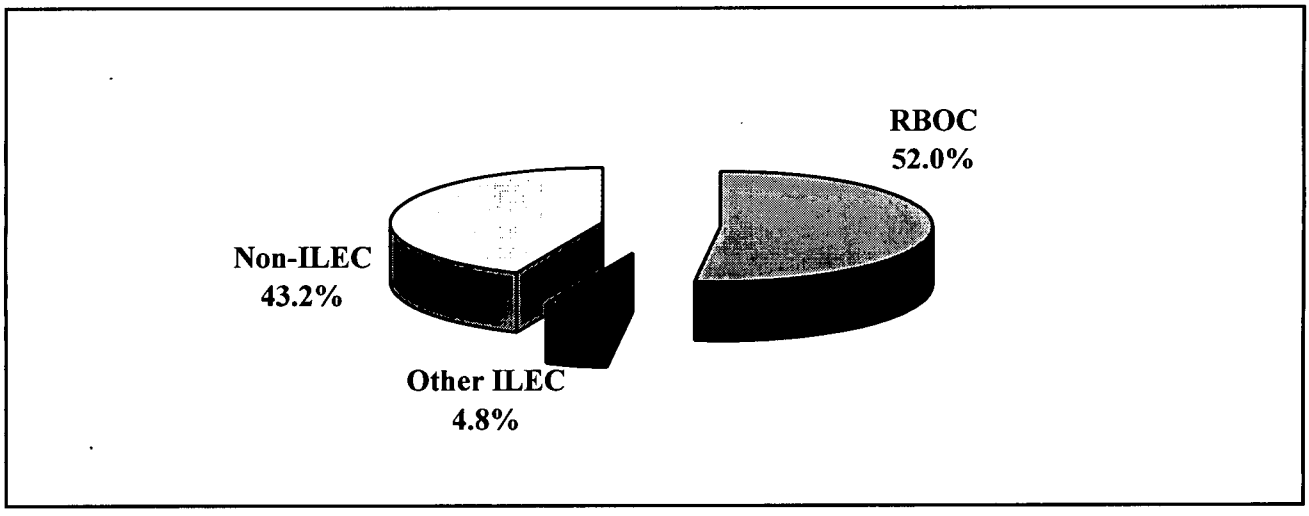
Technology [2]	Lines				Percent of Lines		
	RBOC [4]	Other ILEC	Non-ILEC [5]	Total	RBOC [4]	Other ILEC	Non-ILEC [5]
ADSL	22,121,630	4,554,463	840,078	27,516,171	80.4 %	16.6 %	3.1 %
SDSL	*	*	205,943	319,932	*	*	64.4
Traditional Wireline	334,730	13,455	360,537	708,722	47.3	1.9	50.9
Cable Modem	*	*	34,319,043	34,408,553	*	*	99.7
Fiber	1,233,079	45,249	124,324	1,402,652	87.9	3.2	8.9
Satellite	0	0	668,803	668,803	0.0	0.0	100.0
Fixed Wireless	*	*	564,588	586,141	*	*	96.3
Mobile Wireless	*	*	6,512,904	35,305,253	*	*	18.5
Power Line and Other	0	0	5,420	5,420	0.0	0.0	100.0
Total Lines	52,489,028	4,830,985	43,601,634	100,921,647	52.0 %	4.8 %	43.2 %

* Data withheld to maintain firm confidentiality.

See notes following Chart 10.

Chart 10

Share of High-Speed Lines by Type of Provider as of June 30, 2007



Revised on March 25, 2008.

Notes for Tables 1 - 6 and Charts 1 - 10.

Advanced services lines, residential high-speed lines, and residential advanced services lines are estimated based on data reported on FCC Form 477. Therefore, figures may not add to totals due to rounding.

[1] High-speed lines are connections to end-user locations that deliver services at speeds exceeding 200 kbps in at least one direction. Advanced services lines, which are a subset of high-speed lines, are connections that deliver services at speeds exceeding 200 kbps in both directions. In Tables 2 and 4, we enumerate those reported high-speed lines that also qualify as advanced services lines. More detailed information about connection speeds is presented in Table 5. Line counts presented in this report are not adjusted for the number of persons at a single end-user location who have access to, or who use, the Internet-access services that are delivered over the high-speed connection to that location.

[2] The mutually exclusive types of technology are, respectively: Asymmetric digital subscriber line (ADSL) technologies, which provide speeds in one direction greater than speeds in the other direction; symmetric digital subscriber line (SDSL) technologies; traditional wireline technologies when used to provide equivalent Internet access functionality, including Ethernet service if delivered to the subscriber's location over copper (as opposed to optical fiber) plant; cable modem, including the typical hybrid fiber-coax (HFC) architecture of upgraded cable TV systems; optical fiber to the subscriber's premises (e.g., Fiber-to-the-Home, or FTTH); satellite and fixed and mobile terrestrial wireless systems, which use radio spectrum to communicate with a radio transmitter; electric power line; and other.

[3] Fiber lines included electric power line through December 2004.

[4] RBOC lines include lines owned by AT&T, Qwest and Verizon, and their affiliates.

[5] High-speed lines reported by non-ILEC affiliates of RBOCs are reported in the column for RBOC lines and are excluded from the column for non-ILEC lines. Lines reported by non-ILEC affiliates of ILECs other than the RBOCs are reported in the column for non-ILEC lines.

Table 7
Nationwide Number of Providers of High-Speed Lines by Technology
(Over 200 kbps in at least one direction)

	ADSL	Cable Modem	All Other [1]	Total
Dec 1999	28	43	65	105
Jun 2000	47	36	75	116
Dec 2000	68	39	87	136
Jun 2001	86	47	98	160
Dec 2001	117	59	122	203
Jun 2002	142	68	138	237
Dec 2002	178	87	169	299
Jun 2003	235	98	217	378
Dec 2003	274	110	246	432
Jun 2004	298	129	281	485
Dec 2004	352	147	312	552
Jun 2005	758	227	779	1,270
Dec 2005	820	242	835	1,347
Jun 2006	833	254	814	1,326
Dec 2006	857	279	880	1,394
Jun 2007	857	282	860	1,360

For data through December 2004, only those providers with at least 250 lines per state were required to file. Some historical data have been revised.

[1] All other includes SDSL, traditional wireline, fiber, satellite, fixed and mobile wireless, and power line.

Chart 11
Historical Number of Reporting Providers of High-Speed Lines by Technology

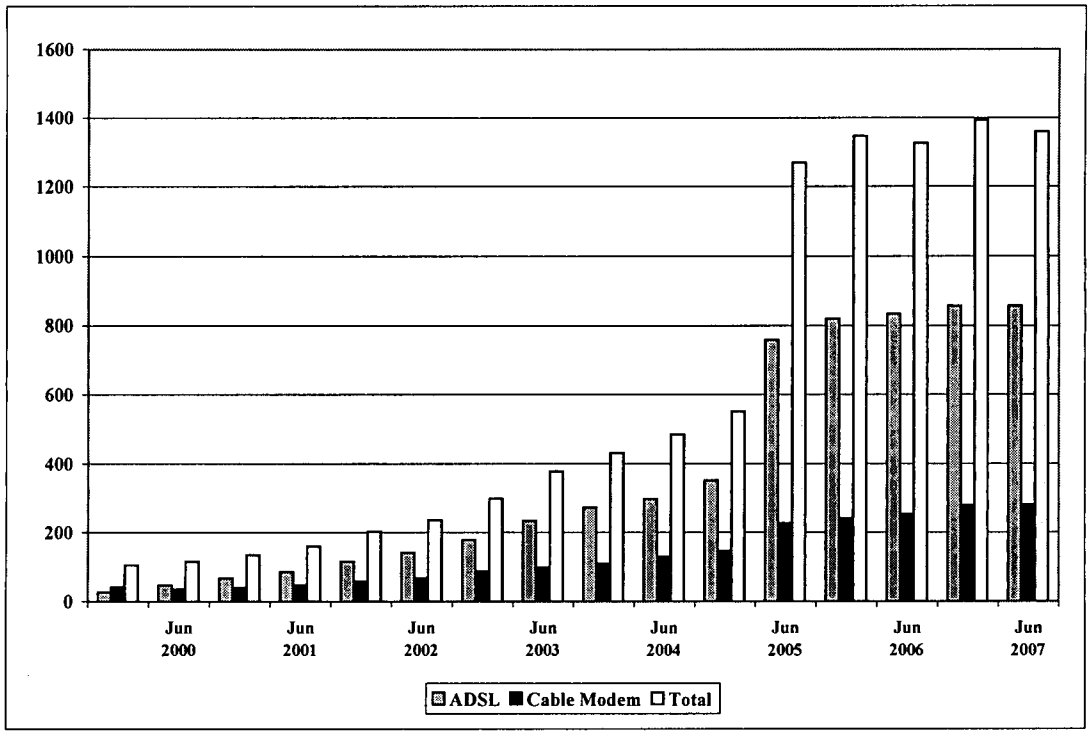


Table 8

Providers of High-Speed Lines by Technology as of June 30, 2007

(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total (Unduplicated)
Alabama	30	9	16	18	7	*	6	4	*	63
Alaska	9	4	4	*	*	*	7	*	0	18
American Samoa	*	*	0	0	0	0	0	0	0	*
Arizona	22	9	17	9	10	*	12	5	0	55
Arkansas	20	8	10	10	6	*	*	4	0	44
California	26	17	30	17	14	*	18	*	0	79
Colorado	28	12	15	11	9	*	18	5	0	62
Connecticut	6	8	10	6	6	*	0	4	0	27
Delaware	6	5	11	*	*	*	0	*	0	23
District of Columbia	9	8	14	*	5	*	*	*	0	28
Florida	26	14	28	11	12	*	8	4	0	65
Georgia	38	14	24	26	20	*	8	4	0	83
Guam	*	0	*	0	0	0	0	0	0	*
Hawaii	*	*	5	*	4	*	*	*	0	14
Idaho	23	5	13	7	11	*	12	*	0	45
Illinois	57	21	37	17	11	*	40	4	*	121
Indiana	42	13	24	12	17	*	25	*	*	84
Iowa	128	41	29	37	24	*	45	6	0	188
Kansas	38	19	12	24	13	*	24	4	0	81
Kentucky	30	9	12	18	11	*	10	4	0	67
Louisiana	22	8	13	10	10	*	6	5	*	50
Maine	14	8	9	5	6	*	*	*	0	27
Maryland	12	9	16	12	7	*	*	4	0	43
Massachusetts	14	10	17	7	6	*	*	*	0	38
Michigan	41	15	21	12	11	*	15	5	0	74
Minnesota	67	24	19	13	22	*	16	4	0	98
Mississippi	21	4	14	13	5	*	*	5	0	47
Missouri	40	20	17	17	11	4	24	4	*	88
Montana	17	7	9	4	5	*	10	*	0	36
Nebraska	34	15	11	15	4	*	21	4	0	65
Nevada	16	9	14	*	6	*	6	4	0	36
New Hampshire	15	9	12	5	5	*	*	*	0	31
New Jersey	15	11	22	7	8	*	*	4	0	41
New Mexico	22	6	7	6	4	*	6	4	0	38
New York	40	15	28	13	12	*	9	*	0	73
North Carolina	33	18	20	13	11	*	8	5	0	65
North Dakota	23	13	12	7	9	*	11	*	0	40
Northern Mariana Isl.	*	0	*	0	*	0	*	0	0	*
Ohio	40	18	24	19	17	*	16	4	*	86
Oklahoma	40	9	20	10	6	*	17	4	0	72
Oregon	38	9	15	8	12	*	11	*	0	61
Pennsylvania	44	17	30	19	16	*	8	4	0	78
Puerto Rico	4	0	7	*	*	*	*	*	0	14
Rhode Island	9	8	9	*	5	*	0	*	0	20
South Carolina	24	6	18	14	10	*	*	4	0	43
South Dakota	25	9	9	8	9	4	8	*	0	43
Tennessee	29	14	15	12	8	*	7	4	0	62
Texas	63	26	33	24	18	*	48	6	0	135
Utah	17	12	9	*	8	*	10	4	0	39
Vermont	12	6	10	*	*	*	*	*	0	24
Virgin Islands	*	*	*	0	0	*	*	*	0	7
Virginia	26	12	23	14	14	*	13	4	*	66
Washington	30	11	19	14	16	*	19	*	*	66
West Virginia	11	*	8	7	*	*	*	*	0	27
Wisconsin	54	17	16	14	11	*	18	4	0	83
Wyoming	12	6	7	*	5	*	8	*	0	30
Nationwide	857	239	244	282	247	5	479	19	6	1,360

* Indicates one to three providers.

Table 9
High-Speed Lines by Technology as of June 30, 2007
(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total
Alabama	356,732	5,483	10,528	374,029	1,050	*	662	*	*	1,117,951
Alaska	63,708	8,673	483	*	*	*	8,269	*	0	156,187
American Samoa	*	*	0	0	0	0	0	0	0	*
Arizona	405,724	1,491	12,630	850,307	1,996	*	17,122	*	0	2,192,644
Arkansas	226,842	1,406	3,018	205,349	2,254	*	*	*	0	528,653
California	4,582,000	32,731	145,031	3,410,983	194,514	*	60,899	*	0	14,446,700
Colorado	529,504	2,810	16,060	560,557	1,285	*	21,864	*	0	1,827,860
Connecticut	*	3,414	5,964	513,211	2,860	*	0	*	0	1,546,724
Delaware	*	151	1,901	*	*	*	0	*	0	353,763
District of Columbia	*	2,462	2,675	*	704	*	*	*	0	337,897
Florida	1,960,025	8,186	54,413	2,344,445	*	*	*	*	0	6,349,084
Georgia	1,218,885	6,472	33,415	802,047	2,793	*	3,797	*	0	3,091,055
Guam	*	0	*	0	0	0	0	0	0	*
Hawaii	*	*	813	*	329	*	*	*	0	486,337
Idaho	129,188	340	1,507	116,273	635	*	34,905	*	0	483,049
Illinois	1,299,358	11,815	35,976	1,465,869	21,020	*	28,822	*	*	4,305,351
Indiana	566,103	3,855	11,042	410,438	34,449	*	10,834	*	*	1,809,728
Iowa	270,101	4,244	3,151	267,712	5,633	*	14,802	*	0	826,096
Kansas	216,800	4,568	5,555	351,371	3,474	*	13,303	*	0	869,111
Kentucky	340,350	4,352	7,208	383,593	2,513	*	2,100	*	0	959,771
Louisiana	306,283	3,693	9,265	446,485	14,266	*	2,171	*	*	1,087,384
Maine	106,037	3,179	5,083	169,458	2,684	*	*	*	0	349,868
Maryland	512,156	9,180	16,776	829,473	*	*	*	*	0	2,172,295
Massachusetts	*	6,273	16,986	1,088,170	*	*	*	*	0	2,660,501
Michigan	668,725	4,408	22,575	1,197,105	9,033	*	6,655	*	0	2,966,289
Minnesota	449,452	21,562	7,114	570,448	6,961	*	27,403	*	0	1,578,290
Mississippi	180,281	184	4,645	151,539	623	*	*	*	0	399,571
Missouri	618,302	5,653	12,129	473,449	4,731	*	7,512	*	*	1,564,371
Montana	95,790	2,549	876	74,246	286	*	7,653	*	0	346,230
Nebraska	124,126	3,135	1,081	238,019	527	*	10,866	*	0	537,693
Nevada	207,051	1,565	6,422	*	1,810	*	10,997	*	0	1,059,761
New Hampshire	98,113	2,427	4,908	234,466	*	*	*	*	0	544,115
New Jersey	731,487	5,561	17,592	1,473,709	*	*	*	*	0	4,150,053
New Mexico	179,856	401	1,867	117,336	424	*	2,518	*	0	544,706
New York	1,178,637	22,270	26,764	3,164,178	*	*	507	*	0	6,797,126
North Carolina	725,396	24,100	21,531	1,134,075	5,683	*	*	*	0	2,894,042
North Dakota	51,096	3,288	382	76,353	5,508	*	4,873	*	0	144,994
Northern Mariana Isl.	*	0	*	0	*	0	*	0	0	*
Ohio	945,096	4,722	18,124	1,405,899	15,876	*	13,573	*	*	3,956,535
Oklahoma	301,523	3,109	4,637	347,813	4,241	*	3,324	*	0	780,533
Oregon	338,765	7,844	6,121	489,902	23,118	*	21,293	*	0	1,285,947
Pennsylvania	1,125,794	18,768	18,624	1,271,157	*	*	1,214	*	0	4,120,573
Puerto Rico	*	0	3,880	*	*	*	*	*	0	332,671
Rhode Island	*	1,078	1,799	*	*	*	0	*	0	416,053
South Carolina	322,858	92	12,527	459,110	7,684	*	*	*	0	1,308,281
South Dakota	45,772	3,895	252	100,903	2,724	*	4,878	*	0	164,627
Tennessee	446,551	912	24,648	662,520	9,890	*	354	*	0	2,036,625
Texas	2,180,827	13,629	37,066	2,081,963	169,821	*	72,403	*	0	6,855,680
Utah	249,683	5,454	3,947	*	1,907	*	21,252	*	0	818,665
Vermont	68,041	936	2,273	*	*	*	*	*	0	193,151
Virgin Islands	*	*	*	0	0	*	*	*	0	16,014
Virginia	547,941	5,052	18,940	906,252	100,609	*	9,507	*	*	2,689,907
Washington	569,397	7,688	10,799	862,049	19,849	*	45,664	*	*	2,481,537
West Virginia	123,645	*	2,193	155,867	*	*	*	*	0	306,449
Wisconsin	443,296	13,977	15,225	636,675	10,838	*	8,624	*	0	1,459,607
Wyoming	49,933	1,657	190	*	294	*	3,445	*	0	205,711
Nationwide	27,516,171	319,932	708,722	34,408,553	1,402,652	668,803	586,141	35,305,253	5,420	100,921,647

* Data withheld to maintain firm confidentiality.

Table 10
High-Speed Lines by State
(Over 200 kbps in at least one direction)

State	2001	2002	2003	2004	2005		2006		2007
	Jun	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun
Alabama	86,234	172,365	283,946	350,691	455,300	531,976	615,510	898,850	1,117,951
Alaska	20,906	46,791	61,121	88,076	95,761	109,484	125,005	145,008	156,187
American Samoa	0	0	0	*	*	*	*	*	*
Arizona	154,883	305,304	441,227	618,677	809,819	1,039,445	1,392,711	1,832,564	2,192,644
Arkansas	40,803	84,061	128,100	188,185	258,270	302,881	363,933	431,530	528,653
California	1,639,921	2,527,275	3,378,373	4,608,822	5,954,876	7,337,217	9,395,265	11,894,864	14,446,700
Colorado	142,295	238,702	338,083	515,081	688,189	882,669	1,165,853	1,489,091	1,827,860
Connecticut	146,266	233,277	364,371	516,039	679,891	807,796	1,024,053	1,262,569	1,546,724
Delaware	12,158	35,941	54,272	74,732	108,554	132,399	157,648	273,734	353,763
District of Columbia	28,861	44,266	58,800	83,213	113,086	139,594	200,221	268,008	337,897
Florida	634,703	1,103,236	1,634,552	2,236,963	2,958,350	3,537,720	4,408,427	5,346,321	6,349,084
Georgia	285,637	494,263	748,016	1,039,440	1,328,956	1,610,750	2,054,171	2,547,165	3,091,055
Guam	0	0	0	*	*	*	*	*	*
Hawaii	*	*	*	*	*	*	294,612	417,674	486,337
Idaho	20,233	43,119	64,353	99,845	149,023	167,926	202,521	381,283	483,049
Illinois	325,085	525,817	840,632	1,270,907	1,817,481	2,159,932	2,666,304	3,538,857	4,305,351
Indiana	77,617	156,375	233,679	515,812	742,667	922,569	1,191,752	1,417,112	1,809,728
Iowa	72,583	102,932	162,257	229,811	325,701	394,359	446,187	657,102	826,096
Kansas	101,478	149,415	248,405	322,742	419,384	470,287	595,979	728,569	869,111
Kentucky	39,297	90,284	121,594	300,704	408,184	508,198	629,538	774,736	959,771
Louisiana	121,685	207,257	315,682	420,917	536,934	508,009	730,203	892,835	1,087,384
Maine	37,888	61,069	85,212	123,739	176,396	214,599	248,440	306,006	349,868
Maryland	171,423	306,504	458,128	655,588	899,640	1,120,826	1,492,484	1,813,960	2,172,295
Massachusetts	342,643	566,796	802,423	1,004,229	1,213,640	1,431,925	1,811,845	2,243,742	2,660,501
Michigan	389,441	531,524	729,113	946,819	1,336,312	1,557,918	1,917,892	2,430,869	2,966,289
Minnesota	143,819	269,433	394,982	561,411	716,826	855,752	1,057,576	1,312,900	1,578,290
Mississippi	21,185	57,168	95,628	139,429	191,675	219,552	262,671	332,307	399,571
Missouri	120,863	220,477	362,040	537,343	704,273	811,837	1,016,732	1,275,123	1,564,371
Montana	10,446	17,969	28,023	57,650	90,583	112,662	139,946	264,121	346,230
Nebraska	55,188	92,849	141,172	199,282	253,968	305,120	355,013	470,118	537,693
Nevada	78,076	137,407	209,028	290,518	401,932	474,019	614,151	792,950	1,059,761
New Hampshire	55,241	85,697	118,304	168,000	236,817	268,128	302,957	443,207	544,115
New Jersey	394,198	654,235	924,835	1,194,557	1,605,301	1,989,803	2,654,674	3,392,607	4,150,053
New Mexico	20,099	44,462	71,355	115,147	174,534	204,054	252,361	422,964	544,706
New York	811,386	1,364,556	1,891,457	2,349,956	3,067,983	3,660,500	4,854,803	5,669,523	6,797,126
North Carolina	205,100	461,378	680,828	965,761	1,222,648	1,482,930	1,914,822	2,366,079	2,894,042
North Dakota	6,277	14,164	25,474	39,274	86,274	96,314	108,476	131,348	144,994
Northern Mariana Isl.	0	0	0	0	0	*	*	*	*
Ohio	354,258	575,756	817,020	1,152,300	1,601,981	1,932,269	2,461,379	3,200,543	3,956,535
Oklahoma	90,147	148,006	231,106	331,605	444,777	502,984	569,398	657,940	780,533
Oregon	91,457	197,778	316,300	437,040	558,489	688,487	860,385	1,060,386	1,285,947
Pennsylvania	249,119	501,950	755,947	1,123,876	1,578,981	1,999,118	2,646,898	3,374,313	4,120,573
Puerto Rico	*	*	32,063	43,091	66,484	118,268	169,917	251,163	332,671
Rhode Island	48,258	71,463	104,444	141,981	185,415	221,901	276,141	349,994	416,053
South Carolina	96,839	175,088	262,868	354,877	464,315	549,019	646,344	1,041,762	1,308,281
South Dakota	5,448	12,555	22,016	34,026	112,506	124,243	138,621	154,738	164,627
Tennessee	151,706	293,516	413,476	534,597	682,369	847,025	1,153,432	1,574,022	2,036,625
Texas	614,704	1,015,245	1,571,250	2,203,490	2,943,487	3,467,504	4,357,437	5,554,547	6,855,680
Utah	54,005	92,623	133,467	196,590	259,150	313,854	471,137	638,618	818,665
Vermont	16,230	29,990	39,773	56,033	82,279	95,901	108,622	170,245	193,151
Virgin Islands	*	*	*	*	2,183	2,967	7,226	11,139	16,014
Virginia	202,663	348,716	553,635	817,881	1,117,591	1,367,465	1,792,817	2,197,693	2,689,907
Washington	227,066	422,348	577,378	775,027	1,000,412	1,219,631	1,575,375	2,015,564	2,481,537
West Virginia	16,697	58,209	90,173	127,283	178,323	205,984	245,669	268,746	306,449
Wisconsin	127,172	256,735	401,565	564,670	731,934	859,114	1,034,646	1,253,335	1,459,607
Wyoming	*	10,990	17,507	35,464	55,905	70,574	83,086	156,940	205,711
Nationwide	9,241,996	15,787,647	22,995,444	31,950,574	42,517,810	51,218,145	65,270,912	82,809,845	100,921,647

* Data withheld to maintain firm confidentiality.
Some historical data have been revised.

Table 11
ADSL High-Speed Lines by State
(Over 200 kbps in at least one direction)

State	2001	2002	2003	2004	2005		2006		2007
	Jun	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun
Alabama	*	45,350	70,639	112,059	177,196	220,657	268,970	314,640	356,732
Alaska	*	11,337	14,013	20,686	38,530	43,249	53,687	60,055	63,708
American Samoa	0	0	0	0	*	*	*	*	*
Arizona	39,828	68,280	77,368	108,735	152,937	207,727	276,261	365,228	405,724
Arkansas	*	28,477	44,801	80,981	127,445	149,878	180,883	200,129	226,842
California	735,677	1,214,543	1,715,998	2,342,186	3,078,824	3,592,220	4,001,529	4,342,556	4,582,000
Colorado	52,617	100,197	126,189	201,523	268,114	333,313	404,989	473,148	529,504
Connecticut	30,142	61,093	124,742	204,034	*	*	*	*	*
Delaware	*	*	*	10,572	*	*	*	*	*
District of Columbia	16,313	28,723	39,471	44,231	*	*	*	*	*
Florida	170,702	391,188	644,621	928,402	1,284,507	1,509,104	1,722,888	1,873,271	1,960,025
Georgia	106,649	237,922	368,372	535,088	757,720	890,128	1,008,705	1,126,082	1,218,885
Guam	0	0	0	*	*	*	*	*	*
Hawaii	*	*	*	*	*	*	*	*	*
Idaho	*	16,108	19,382	35,166	62,691	81,520	97,662	113,001	129,188
Illinois	89,080	195,560	363,733	588,906	847,522	979,709	1,094,088	1,211,763	1,299,358
Indiana	2,375	36,685	85,968	179,942	304,800	379,465	443,473	515,054	566,103
Iowa	9,532	18,751	39,386	65,580	118,777	150,890	189,178	233,039	270,101
Kansas	*	28,713	50,839	88,246	136,402	159,996	179,430	202,751	216,800
Kentucky	20,256	55,454	75,316	119,709	180,324	213,131	250,715	303,296	340,350
Louisiana	37,444	73,120	100,919	136,406	190,603	207,488	235,750	270,811	306,283
Maine	6,877	*	11,052	31,577	52,032	72,709	89,964	104,780	106,037
Maryland	51,051	95,439	126,873	192,139	305,677	379,316	450,019	489,553	512,156
Massachusetts	82,699	147,139	207,344	253,576	*	*	*	*	*
Michigan	41,428	80,588	135,360	236,310	374,861	463,373	533,835	606,616	668,725
Minnesota	51,640	86,184	115,244	159,137	227,988	276,439	330,736	394,686	449,452
Mississippi	*	*	33,650	52,892	88,252	105,874	128,585	154,179	180,281
Missouri	53,250	84,642	138,046	233,916	341,618	398,671	468,334	545,679	618,302
Montana	2,842	7,108	13,119	28,238	46,786	57,300	70,471	82,876	95,790
Nebraska	9,293	11,547	18,285	35,180	66,268	81,188	95,404	112,032	124,126
Nevada	*	24,073	47,934	74,879	116,395	139,938	168,086	190,202	207,051
New Hampshire	5,651	11,781	17,823	31,843	54,233	71,689	85,247	93,589	98,113
New Jersey	102,430	172,472	211,540	301,789	443,808	540,382	638,293	703,950	731,487
New Mexico	7,578	18,224	26,948	51,375	82,062	105,210	130,998	156,620	179,856
New York	197,135	338,229	438,241	536,980	736,769	861,452	1,002,972	1,103,960	1,178,637
North Carolina	41,332	89,680	161,642	264,248	412,991	488,533	561,102	648,001	725,396
North Dakota	*	6,575	11,593	19,412	26,841	32,000	38,729	46,346	51,096
Northern Mariana Isl.					0	*	*	*	*
Ohio	87,567	151,612	243,689	369,386	555,749	663,011	752,633	858,846	945,096
Oklahoma	31,321	50,617	78,248	129,996	189,496	222,048	246,899	277,282	301,523
Oregon	25,877	68,747	95,654	142,483	197,927	244,694	280,286	311,604	338,765
Pennsylvania	89,595	162,258	230,322	346,720	541,274	692,079	871,164	1,012,845	1,125,794
Puerto Rico	*	*	*	*	*	*	*	*	*
Rhode Island	*	*	*	*	*	*	*	*	*
South Carolina	9,704	26,184	52,667	98,583	154,666	205,529	242,548	284,892	322,858
South Dakota	1,652	4,389	8,637	15,230	20,632	26,168	32,763	39,684	45,772
Tennessee	22,902	57,984	92,777	147,922	237,180	293,915	348,344	396,928	446,551
Texas	197,668	368,796	597,447	930,997	1,300,681	1,513,639	1,733,423	1,997,483	2,180,827
Utah	23,476	47,637	65,648	95,656	129,607	160,313	189,240	222,307	249,683
Vermont	*	9,409	15,072	22,519	35,281	43,934	51,382	61,441	68,041
Virgin Islands	*	*	*	*	*	*	*	*	*
Virginia	39,114	75,524	114,797	196,568	308,947	384,243	446,448	505,285	547,941
Washington	64,812	172,652	225,377	300,804	363,796	427,451	491,409	533,668	569,397
West Virginia	*	*	*	*	53,292	69,390	86,507	104,637	123,645
Wisconsin	17,800	42,052	84,100	159,167	243,370	298,111	359,530	417,510	443,296
Wyoming	*	*	5,503	13,510	23,769	33,030	38,541	44,347	49,933
Nationwide	2,693,834	5,101,493	7,675,114	11,398,199	16,316,309	19,515,483	22,584,255	25,412,883	27,516,171

* Data withheld to maintain firm confidentiality.
Some historical data have been revised.

Table 12

Coaxial Cable High-Speed Lines by State

(Over 200 kbps in at least one direction)

State	2001	2002	2003	2004	2005		2006		2007
	Jun	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun
Alabama	47,325	104,990	181,338	206,208	257,225	285,177	310,548	342,340	374,029
Alaska	0	*	*	*	*	*	*	*	*
American Samoa	0	0	0	0	0	0	0	0	0
Arizona	*	194,431	319,272	457,869	583,897	679,284	761,419	838,455	850,307
Arkansas	*	*	*	95,528	117,953	137,105	148,940	183,503	205,349
California	609,174	1,013,503	1,395,435	1,929,080	2,467,232	2,734,659	2,956,932	3,155,718	3,410,983
Colorado	*	*	181,766	280,909	383,154	433,184	476,463	523,159	560,557
Connecticut	106,019	160,913	227,658	299,176	372,346	403,723	441,092	454,348	513,211
Delaware	*	*	*	*	*	*	*	*	*
District of Columbia	*	*	*	*	*	*	*	*	*
Florida	372,190	595,806	867,513	1,171,641	1,559,592	1,757,875	1,939,409	2,178,484	2,344,445
Georgia	109,922	183,886	289,922	407,038	522,800	583,884	649,583	742,552	802,047
Guam	0	0	0	0	0	0	0	0	0
Hawaii	*	*	*	*	*	*	*	*	*
Idaho	*	*	*	*	78,185	73,528	75,185	108,595	116,273
Illinois	144,872	242,394	383,069	589,025	841,737	955,518	1,042,272	1,332,023	1,465,869
Indiana	56,441	98,414	122,338	304,866	397,481	445,420	490,020	370,200	410,438
Iowa	59,253	77,592	111,748	151,299	186,821	219,803	225,190	234,266	267,712
Kansas	74,337	111,615	181,437	209,233	258,856	272,660	316,866	320,638	351,371
Kentucky	*	12,867	23,672	154,567	217,302	269,274	306,487	333,339	383,593
Louisiana	64,219	115,198	189,920	257,405	328,675	254,819	378,613	419,735	446,485
Maine	*	*	*	*	116,203	132,075	145,831	152,291	169,458
Maryland	97,466	181,864	306,442	433,754	546,576	592,283	637,405	781,120	829,473
Massachusetts	243,670	391,391	564,961	704,956	826,351	885,578	954,812	1,044,333	1,088,170
Michigan	301,842	402,642	543,336	656,263	891,842	953,786	1,019,338	1,103,040	1,197,105
Minnesota	80,259	166,323	255,988	358,477	440,726	493,783	518,063	541,116	570,448
Mississippi	*	27,872	50,234	72,271	95,805	104,363	114,140	135,965	151,539
Missouri	51,733	110,026	191,658	266,493	323,270	353,331	400,808	444,118	473,449
Montana	*	*	*	22,856	35,625	45,442	54,056	65,238	74,246
Nebraska	37,168	73,306	111,903	142,555	177,074	200,600	218,335	239,465	238,019
Nevada	*	*	*	*	*	*	*	*	*
New Hampshire	*	*	95,612	129,024	176,033	188,212	201,873	209,781	234,466
New Jersey	*	454,750	690,620	862,834	1,107,751	1,205,182	1,312,433	1,385,953	1,473,709
New Mexico	*	*	38,004	56,369	78,035	89,003	100,157	108,906	117,336
New York	564,423	967,949	1,401,322	1,752,189	2,216,153	2,444,565	2,765,476	2,967,028	3,164,178
North Carolina	115,949	313,884	454,272	623,414	762,203	861,990	963,651	1,040,513	1,134,075
North Dakota	*	*	10,066	14,428	50,781	54,772	57,722	70,878	76,353
Northern Mariana Isl.					0	0	0	0	0
Ohio	213,606	363,675	508,458	709,145	961,119	1,064,948	1,184,924	1,303,470	1,405,899
Oklahoma	*	*	*	*	233,993	261,585	284,184	312,500	347,813
Oregon	*	*	197,794	262,513	335,847	375,351	407,195	452,517	489,902
Pennsylvania	131,119	300,840	482,471	724,101	962,149	1,074,912	1,164,080	1,255,720	1,271,157
Puerto Rico	0	0	*	*	*	*	*	*	*
Rhode Island	*	*	*	*	*	*	*	*	*
South Carolina	68,487	126,598	185,083	228,648	290,233	326,370	368,338	417,584	459,110
South Dakota	*	*	9,156	12,114	83,667	88,812	92,860	100,155	100,903
Tennessee	96,119	199,121	277,579	340,883	422,063	460,235	506,143	601,889	662,520
Texas	328,900	577,233	888,595	1,162,797	1,467,804	1,617,513	1,692,433	1,944,069	2,081,963
Utah	*	*	*	*	*	*	*	*	*
Vermont	*	*	*	*	*	*	*	*	*
Virgin Islands	0	0	0	0	0	0	0	0	0
Virginia	131,553	238,300	404,616	579,580	748,694	817,100	892,955	877,235	906,252
Washington	*	217,644	313,915	426,487	585,125	660,159	725,832	806,126	862,049
West Virginia	*	48,858	73,263	97,463	117,538	128,133	145,450	144,569	155,867
Wisconsin	*	189,585	287,519	371,106	446,840	497,262	542,881	591,981	636,675
Wyoming	*	*	*	*	*	*	*	*	*
Nationwide	5,184,141	9,172,895	13,684,225	18,592,636	24,017,442	26,558,206	29,174,494	31,981,705	34,408,553

* Data withheld to maintain firm confidentiality.

Some historical data have been revised.

Table 13
High-Speed Lines by Type of End User as of June 30, 2007
(Over 200 kbps in at least one direction)

State	Residential	Business	Total
Alabama	718,686	399,265	1,117,951
Alaska	132,870	23,317	156,187
American Samoa	*	*	*
Arizona	1,333,095	859,549	2,192,644
Arkansas	459,257	69,396	528,653
California	8,727,780	5,718,920	14,446,700
Colorado	1,162,337	665,523	1,827,860
Connecticut	974,624	572,100	1,546,724
Delaware	200,239	153,524	353,763
District of Columbia	163,968	173,929	337,897
Florida	4,548,288	1,800,796	6,349,084
Georgia	2,022,505	1,068,550	3,091,055
Guam	*	*	*
Hawaii	306,910	179,427	486,337
Idaho	275,666	207,383	483,049
Illinois	2,943,747	1,361,604	4,305,351
Indiana	1,054,016	755,712	1,809,728
Iowa	531,037	295,059	826,096
Kansas	642,058	227,053	869,111
Kentucky	722,888	236,883	959,771
Louisiana	810,519	276,865	1,087,384
Maine	270,313	79,555	349,868
Maryland	1,516,557	655,738	2,172,295
Massachusetts	1,705,007	955,494	2,660,501
Michigan	1,954,325	1,011,964	2,966,289
Minnesota	1,052,320	525,970	1,578,290
Mississippi	325,461	74,110	399,571
Missouri	1,195,717	368,654	1,564,371
Montana	166,819	179,411	346,230
Nebraska	370,930	166,763	537,693
Nevada	736,004	323,757	1,059,761
New Hampshire	342,189	201,926	544,115
New Jersey	2,361,052	1,789,001	4,150,053
New Mexico	307,519	237,187	544,706
New York	4,590,879	2,206,247	6,797,126
North Carolina	1,877,677	1,016,365	2,894,042
North Dakota	129,193	15,801	144,994
Northern Mariana Isl.	*	*	*
Ohio	2,409,776	1,546,759	3,956,535
Oklahoma	681,017	99,516	780,533
Oregon	886,110	399,837	1,285,947
Pennsylvania	2,505,015	1,615,558	4,120,573
Puerto Rico	275,840	56,831	332,671
Rhode Island	258,772	157,281	416,053
South Carolina	761,919	546,362	1,308,281
South Dakota	145,375	19,252	164,627
Tennessee	1,121,831	914,794	2,036,625
Texas	4,995,235	1,860,445	6,855,680
Utah	454,577	364,088	818,665
Vermont	118,146	75,005	193,151
Virgin Islands	14,697	1,317	16,014
Virginia	1,616,838	1,073,069	2,689,907
Washington	1,525,681	955,856	2,481,537
West Virginia	275,845	30,604	306,449
Wisconsin	1,119,172	340,435	1,459,607
Wyoming	101,092	104,619	205,711
Nationwide	65,904,499	35,017,148	100,921,647

* Data withheld to maintain firm confidentiality.

Table 14

Percentage of Residential End-User Premises with Access to High-Speed Services as of June 30, 2007

State	xDSL Availability Where ILECs Offer Local Telephone Service	Cable Modem Availability Where Cable Systems Offer Cable TV Service
Alabama	75%	92%
Alaska	76%	*
American Samoa	*	0%
Arizona	82%	99%
Arkansas	75%	73%
California	89%	98%
Colorado	87%	96%
Connecticut	*	100%
Delaware	*	*
District of Columbia	*	*
Florida	89%	97%
Georgia	91%	90%
Guam	*	0%
Hawaii	*	*
Idaho	76%	99%
Illinois	83%	98%
Indiana	79%	94%
Iowa	85%	89%
Kansas	83%	91%
Kentucky	87%	90%
Louisiana	79%	96%
Maine	68%	93%
Maryland	75%	99%
Massachusetts	*	99%
Michigan	72%	98%
Minnesota	85%	94%
Mississippi	72%	91%
Missouri	79%	97%
Montana	78%	88%
Nebraska	88%	94%
Nevada	90%	*
New Hampshire	61%	99%
New Jersey	87%	100%
New Mexico	78%	77%
New York	77%	99%
North Carolina	85%	96%
North Dakota	88%	83%
Northern Mariana Isl.	*	0%
Ohio	84%	98%
Oklahoma	80%	90%
Oregon	83%	95%
Pennsylvania	83%	94%
Puerto Rico	*	*
Rhode Island	*	*
South Carolina	79%	93%
South Dakota	78%	73%
Tennessee	81%	96%
Texas	79%	96%
Utah	87%	*
Vermont	66%	*
Virgin Islands	*	0%
Virginia	66%	95%
Washington	82%	96%
West Virginia	73%	85%
Wisconsin	81%	96%
Wyoming	80%	*
Nationwide	82%	96%

* Data withheld to maintain firm confidentiality.

xDSL includes both asymmetric and symmetric DSL. Each state-specific estimate is a weighted average of the availability percentages that ILECs or cable system operators report for the areas they serve. Reported xDSL availability is weighted by ILEC end-user switched access lines. Reported cable modem availability is weighted by cable TV subscribers. The weighted averages include ILECs or cable system operators that report no availability.

Revised on March 20, 2008

Table 15
Percentage of Zip Codes with High-Speed Lines in Service

Number of Providers	2000		2001		2002		2003		2004		2005		2006		2007
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Zero	33.0 %	26.8 %	22.2 %	20.6 %	16.1 %	12.0 %	9.0 %	6.8 %	5.7 %	4.6 %	2.0 %	1.0 %	0.7 %	0.4 %	0.1 %
One	25.9	22.7	20.3	19.3	18.4	17.3	16.4	14.9	13.8	12.5	9.3	5.6	3.7	2.4	0.9
Two	17.8	18.4	16.7	15.7	16.2	16.8	16.9	17.1	16.8	16.3	14.1	11.9	8.2	5.7	3.5
Three	9.2	10.9	13.2	13.1	13.3	14.4	14.0	14.9	14.9	15.1	15.0	14.8	11.3	8.9	7.0
Four	4.9	6.1	8.2	9.1	9.6	10.3	10.6	11.2	11.6	12.2	12.6	13.5	12.9	11.4	11.1
Five	3.4	4.0	4.9	6.1	6.9	7.3	7.7	7.8	8.4	8.9	9.7	10.3	12.2	12.5	13.6
Six	2.5	3.0	3.6	4.2	4.6	5.0	5.3	5.8	6.1	6.3	6.8	7.8	10.4	11.7	13.0
Seven	1.7	2.3	2.8	3.2	3.2	3.9	4.0	4.2	4.4	4.6	5.3	5.7	8.7	10.0	11.6
Eight	0.8	2.0	2.2	2.5	2.8	2.7	3.1	3.3	3.6	3.6	4.0	4.6	7.1	8.3	9.1
Nine	0.4	1.6	1.9	2.0	2.4	2.2	2.5	2.6	2.8	3.1	3.8	4.0	5.8	6.7	7.4
Ten or More	0.4	2.4	3.9	4.0	6.4	8.0	10.5	11.4	11.8	12.8	17.5	20.7	19.1	22.0	22.7

For data through December 2004, only those providers with at least 250 lines per state were required to file. Figures may not add up to 100% due to rounding.

Chart 12
Percent of Zip Codes with High-Speed Providers

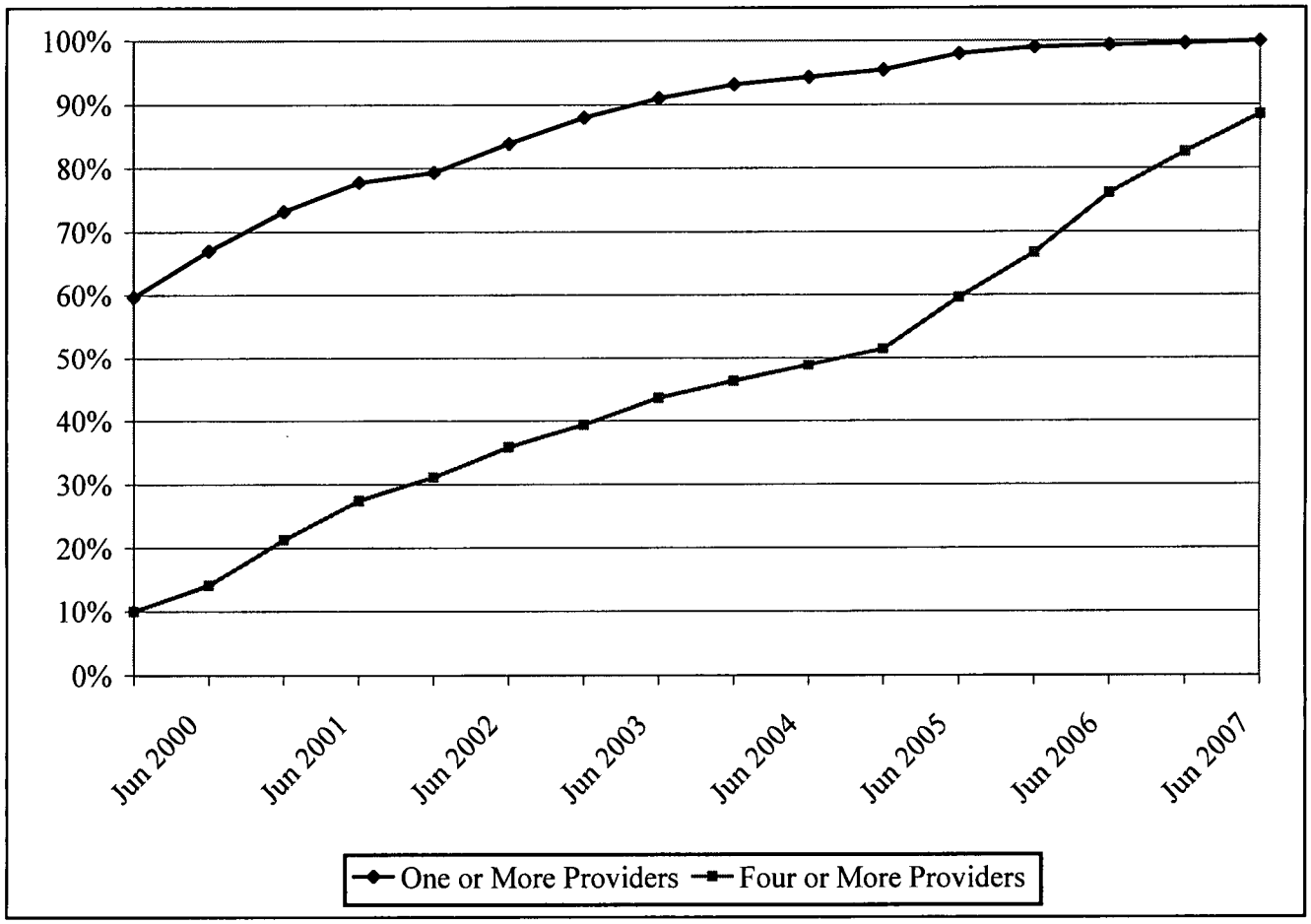


Table 16

Percentage of Zip Codes with High-Speed Lines in Service by Technology as of June 30, 2007

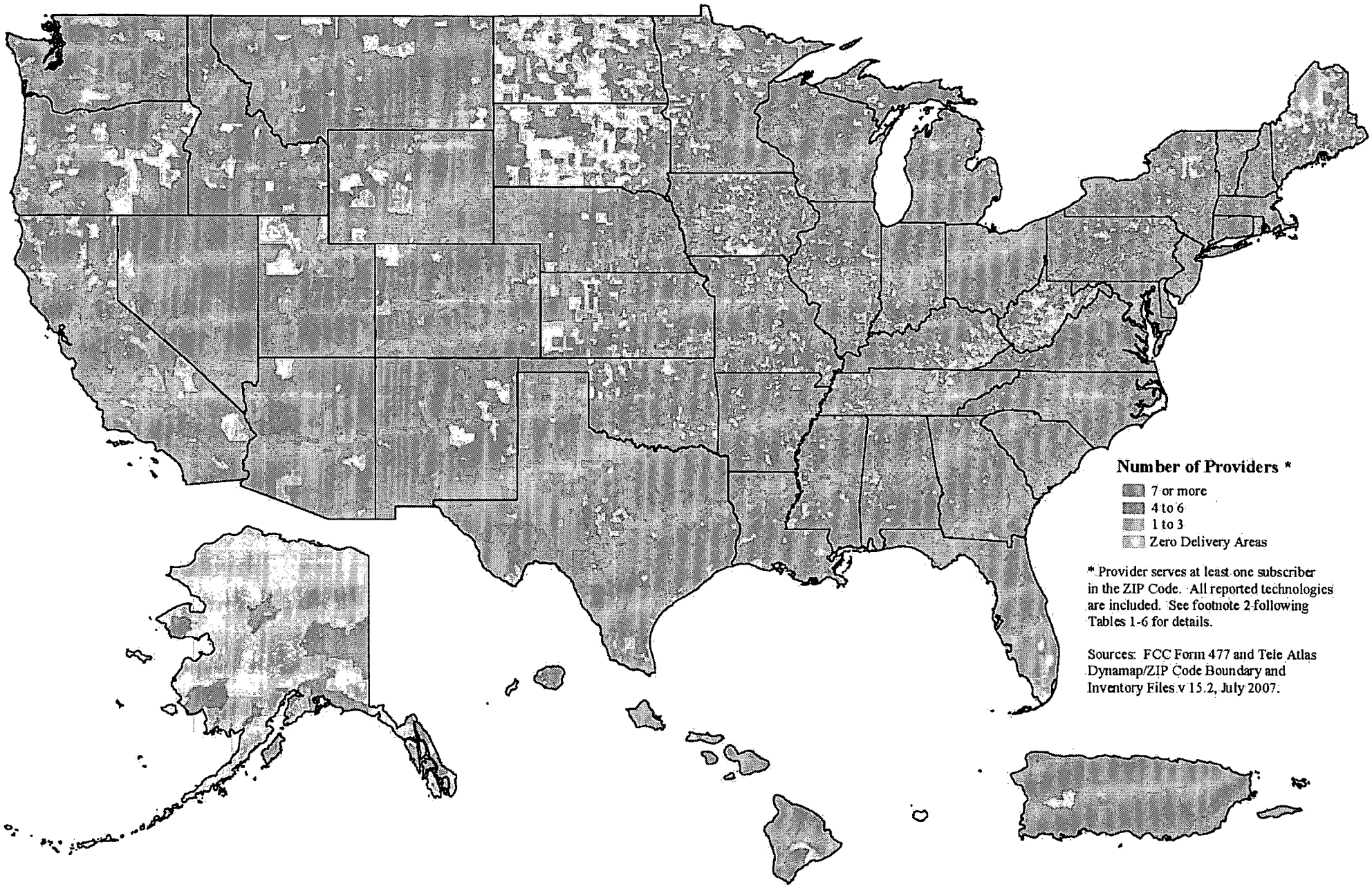
Technology	Number of Providers										
	Zero	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten or More
ADSL	15.4	37.7	19.9	10.9	7.2	4.4	2.3	1.4	0.7	0.2	0.1
SDSL	59.9	20.6	6.8	4.9	3.7	2.6	1.1	0.4	0.1	0.0	0.0
Cable Modem	34.1	56.6	8.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fiber	57.4	24.2	10.5	5.3	2.0	0.5	0.1	0.0	0.0	0.0	0.0
Satellite	8.0	26.8	42.8	22.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fixed Wireless	74.7	19.3	5.0	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Mobile Wireless	4.1	23.7	39.0	29.3	3.8	0.0	0.0	0.0	0.0	0.0	0.0
Power Line and/or Other [1]	80.3	16.3	2.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADSL and/or Cable Modem	10.4	23.7	22.0	15.8	10.3	7.3	4.8	2.7	1.7	0.8	0.4
All Technologies	0.1	0.9	3.5	7.0	11.1	13.6	13.0	11.6	9.1	7.4	22.7

Figures may not add up to 100% due to rounding.

[1] Other includes high-speed lines provided over traditional wireline facilities such as T-carrier and also lines provided over any technology that is not specified in the table.

High-Speed Providers by 5-Digit Geographical ZIP Code

(As of June 30, 2007)



Prepared by the Federal Communications Commission,
Wireline Competition Bureau, Industry Analysis and Technology Division

Table 17
Percentage of Zip Codes with High-Speed Lines in Service as of June 30, 2007
(Over 200 kbps in at least one direction)

	Number of Providers										
	Zero	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten or More
Alabama	0 %	0 %	2 %	6 %	10 %	15 %	15 %	13 %	10 %	10 %	18 %
Alaska	0	15	40	20	13	6	1	2	2	0	0
Arizona	0	0	0	1	5	12	10	9	10	8	46
Arkansas	0	0	3	9	20	24	18	8	6	6	5
California	0	0	1	5	10	10	7	7	8	8	44
Colorado	0	0	1	4	7	14	15	13	8	5	33
Connecticut	0	0	0	1	7	14	17	20	13	13	15
Delaware	0	0	0	3	10	10	26	19	10	9	12
District of Columbia	0	0	0	8	4	0	0	0	0	12	76
Florida	0	0	0	0	1	2	5	9	9	10	63
Georgia	0	0	1	3	8	13	15	13	7	7	33
Hawaii	0	0	2	10	10	17	13	17	19	10	2
Idaho	0	0	1	10	14	25	16	11	7	4	10
Illinois	0	0	2	9	13	17	15	10	8	7	19
Indiana	0	0	3	6	10	16	15	15	13	8	14
Iowa	0	3	10	14	16	17	12	10	7	3	8
Kansas	0	0	5	12	14	15	11	10	7	8	17
Kentucky	0	4	16	15	13	12	11	9	6	5	8
Louisiana	0	0	1	4	9	18	18	13	8	6	24
Maine	1	5	10	18	15	19	13	11	4	3	0
Maryland	0	0	2	4	12	18	10	9	6	4	34
Massachusetts	0	0	1	1	7	18	18	14	9	7	24
Michigan	0	0	0	3	6	11	15	15	13	9	28
Minnesota	0	0	3	12	16	15	10	10	8	5	21
Mississippi	0	0	3	6	14	20	15	9	8	7	18
Missouri	0	2	5	12	15	17	13	9	8	7	11
Montana	0	0	2	7	28	28	15	8	6	3	4
Nebraska	0	0	1	6	18	22	19	13	7	7	7
Nevada	0	0	0	3	10	16	10	13	5	9	34
New Hampshire	0	0	1	1	12	18	25	22	7	5	9
New Jersey	0	0	0	0	3	5	12	12	13	12	42
New Mexico	0	0	2	5	15	17	25	10	6	5	15
New York	0	0	2	6	13	14	15	12	9	7	20
North Carolina	0	0	0	3	6	10	12	15	11	11	32
North Dakota	0	4	26	31	24	8	3	1	1	0	1
Ohio	0	0	0	1	2	7	11	20	19	14	26
Oklahoma	0	1	4	8	17	17	13	11	10	8	11
Oregon	0	1	3	9	15	14	11	9	7	9	22
Pennsylvania	0	1	3	7	11	13	14	13	10	7	20
Puerto Rico	0	0	1	3	6	13	36	12	14	5	9
Rhode Island	0	0	1	7	7	15	12	15	14	14	16
South Carolina	0	0	0	2	6	9	12	13	12	12	33
South Dakota	0	4	23	24	19	12	8	4	2	2	2
Tennessee	0	1	4	6	9	14	11	11	9	8	27
Texas	0	0	1	2	5	8	12	14	13	10	35
Utah	0	0	3	2	9	16	15	13	7	2	33
Vermont	0	0	0	9	21	15	14	16	8	9	7
Virginia	0	0	1	5	11	15	14	14	10	7	22
Washington	0	0	1	4	12	12	11	10	8	6	36
West Virginia	2	11	18	20	17	12	9	4	3	3	1
Wisconsin	0	0	1	3	10	16	20	18	11	7	16
Wyoming	0	0	1	12	18	17	25	11	7	5	4
Nationwide	0 %	1 %	4 %	7 %	11 %	14 %	13 %	12 %	9 %	7 %	23 %

Table 18
High-Speed Subscribership
Ranked by Population Density

Persons per Square Mile [1]	Percentage of Zip Codes with at Least One High-Speed Subscriber							Percentage of Population that Resides in Zip Codes with High-Speed Service						
	Jun 2001	Jun 2002	Jun 2003	Jun 2004	Jun 2005	Jun 2006	Jun 2007	Jun 2001	Jun 2002	Jun 2003	Jun 2004	Jun 2005	Jun 2006	Jun 2007
More Than 3,147	98.1 %	98.7 %	98.9 %	98.9 %	99.3 %	99.4 %	99.7	99.9 %	99.8 %	100.0 %	99.9 %	100.0 %	99.9 %	99.9
947-3,147	97.1	98.2	98.2	98.5	99.0	99.5	99.6	99.8	99.9	99.9	99.9	99.9	99.9	99.9
268-947	95.6	97.5	98.4	98.5	99.2	99.4	99.7	99.5	99.9	99.9	99.9	100.0	100.0	100.0
118-268	92.3	95.2	96.9	97.7	98.8	99.2	99.3	98.8	99.5	99.7	99.8	99.9	99.8	99.9
67-118	87.5	93.0	96.4	97.6	98.6	98.8	99.0	96.8	98.5	99.4	99.6	99.8	99.8	99.7
41-67	80.9	88.0	93.8	96.4	98.2	98.9	99.4	93.0	96.3	98.5	99.1	99.4	99.5	99.6
25-41	72.8	81.0	90.4	94.3	97.6	98.4	99.0	87.3	92.2	96.9	98.2	99.2	99.4	99.5
15-25	58.9	70.0	83.3	88.5	95.7	97.1	98.1	78.4	86.5	93.3	95.6	98.6	98.9	99.2
6-15	51.1	60.9	77.3	83.5	93.7	96.5	97.7	74.6	81.9	90.3	93.8	97.7	98.5	98.9
Fewer Than 6	36.8	49.6	68.5	73.4	84.3	89.3	90.5	60.7	72.6	85.7	91.1	95.1	96.6	96.9

Table 19
High-Speed Subscribership
Ranked by Household Income

Median Household Income [1]	Percentage of Zip Codes with at Least One High-Speed Subscriber							Percentage of Population that Resides in Zip Codes with High-Speed Service						
	Jun 2001	Jun 2002	Jun 2003	Jun 2004	Jun 2005	Jun 2006	Jun 2007	Jun 2001	Jun 2002	Jun 2003	Jun 2004	Jun 2005	Jun 2006	Jun 2007
$53,494 to $291,938	96.4 %	97.9 %	98.5 %	98.7 %	99.0 %	99.3 %	99.4	99.8 %	99.9 %	99.9 %	99.8 %	99.8 %	99.8 %	99.8
$43,617 to $53,478	90.7	93.5	96.2	97.2	98.4	98.9	99.1	99.3	99.7	99.8	99.9	99.9	99.9	99.9
$38,396 to $43,614	83.8	89.0	94.0	95.9	98.1	98.9	99.1	98.5	99.0	99.6	99.8	99.9	99.9	99.9
$34,744 to $38,395	80.0	85.0	91.5	94.2	97.4	98.6	98.7	97.9	98.7	99.3	99.7	99.8	99.8	99.9
$32,122 to $34,743	77.3	83.3	90.2	93.0	97.2	98.4	98.8	97.4	98.4	99.2	99.5	99.8	99.9	99.9
$29,893 to $32,121	73.4	80.4	89.9	92.5	97.1	98.3	98.9	96.3	97.7	99.1	99.3	99.7	99.8	99.8
$27,542 to $29,892	73.5	79.7	89.2	92.5	96.7	97.9	98.6	95.9	97.5	98.9	99.3	99.7	99.7	99.8
$24,855 to $27,541	69.6	77.2	87.1	90.9	96.3	97.8	98.6	95.2	97.0	98.5	99.0	99.6	99.6	99.8
$21,645 to $24,855	67.4	76.9	87.4	91.2	95.9	97.8	98.5	93.9	96.5	98.5	99.1	99.6	99.7	99.7
$0 to $21,644	59.1	69.2	78.3	81.3	88.3	90.6	92.0	94.1	96.3	98.1	98.8	99.3	99.5	99.5

[1] Persons per square mile and median household income are presented in decile groups. Each decile group contains 10% of the reported geographic Zip Codes for which the demographic information, as of the year 2000, is available in Demographic Power Pack, Current Year Update (2000), MapInfo Corporation.

Customer Response

Publication: *High-Speed Services for Internet Access: Status as of June 30, 2007*

You can help us provide the best possible information to the public by completing this form and returning it to the Industry Analysis and Technology Division of the FCC's Wireline Competition Bureau.

1. Please check the category that best describes you:
   - ____ press
   - ____ current telecommunications carrier
   - ____ potential telecommunications carrier
   - ____ business customer evaluating vendors/service options
   - ____ consultant, law firm, lobbyist
   - ____ other business customer
   - ____ academic/student
   - ____ residential customer
   - ____ FCC employee
   - ____ other federal government employee
   - ____ state or local government employee
   - ____ Other (please specify)

2.

Please rate the report:	Excellent	Good	Satisfactory	Poor	No opinion
Data accuracy	○	○	○	○	○
Data presentation	○	○	○	○	○
Timeliness of data	○	○	○	○	○
Completeness of data	○	○	○	○	○
Text clarity	○	○	○	○	○
Completeness of text	○	○	○	○	○

3.

Overall, how do you rate this report?	Excellent	Good	Satisfactory	Poor	No opinion
	○	○	○	○	○

4. How can this report be improved?

5. May we contact you to discuss possible improvements?
   Name:
   Telephone #:

To discuss the information in this report, contact: 202-418-0940 or for users of TTY equipment, call 202-418-0484		
Fax this response to	or	Mail this response to
202-418-0520		FCC/WCB/IATD Mail Stop 1600 F Washington, DC 20554

MINUTES

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

Monday, May 12, 2008

The House Select Committee on High Speed Internet in Rural Areas met on Monday, May 12, 2008, in Room 421 of the Legislative Office Building at 2:00 P.M. The following members were present: Chairman Bill Faison; Representatives Angela Bryant, Jim Gully, Phillip Haire, Jim Harrell, and Joe Tolson. Staff in attendance: Brenda Carter, Barbara Riley, Karlynn O'Shaughnessy, Peter Capriglione and Heather Fennell. House Sergeant-at-Arms assisting: Frank Prevo, Dusty Rhodes, James Worth, Mike Martin and Judy Turner. The Agenda and Visitor Registration Sheet are attached. *(Attachment 1 and 2)*

The Chairman called the meeting to order. Chairman Faison introduced our speaker of the day Jim Baller who spoke about broadband technology.

Jim Baller (The Baller Herst Law Group) was recognized to present to the committee. Mr. Baller's presentation is attached. *(Attachment 3)* Below are some key points of his presentation:

- What would be at stake if the United States does not keep pace with 21st century broadband technology?
- Where the United States stands in comparison to leading nations in the world in its deployment of broadband.
- The direction being taken the United States and North Carolina for broadband deployment
- He made recommendations to foster the deployment of broadband technology.

The committee then reviewed and acted on proposed legislation (Attachment 4):

- A house resolution in support of the convening of the e-NC Authority's digital broadband summits passed the committee with a recommendation for enactment.
- An act to expand the authority of the North Carolina department of transportation to locate and acquire right-of-way for the location, above or below ground, of fiber optic cable passed the committee with a recommendation for enactment.
- An act requiring providers offering broadband internet services to annually provide reports and mapping information to the general assembly regarding service areas and availability of broadband services within those areas passed the committee with a recommendation for enactment.

Chairman Faison opened the floor for questions or comments.

With no further business to come before the committee Chairman Faison announced the adjournment of the meeting. The meeting adjourned at 3:34 p.m.

Respectfully submitted,

Representative Bill Faison
Chair

Lavada Vitalis
Committee Assistant

ATTACHMENT 1

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SESSION

AGENDA

Monday, May 12, 2008
2:00 PM
Room 421, L0B

1. **Welcome**

   Representative Bill Faison, Chairman

2. **Guest Speaker**

   - **The Baller Herst Law Group**
     Jim Baller, President

3. **Review of Proposed Legislation**

4. **Adjourn**

ATTACHMENT 2

VISITOR REGISTRATION SHEET

House Select Com. - High Speed Internet - Rural Areas
Name of Committee

Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Jon Hamm	EMBARQ
Dennis Rynders	NBS
Dana Sipe	SA
Kellye Roberson	TWC
Jack Stanley	TWC
Mary Trotter	Brooks Pierce
Tamas Rigg	Chamber
Bill Phillips	TWC
Herb Crenshaw	AT&T
Linda Andrews	NCFB

VISITOR REGISTRATION SHEET

Name of Committee | Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Joseph O'Brien	Citizen
Thomas Moore	Edwisten: Welch
Jack Cozort	Womble
Joy Pitts	HP Assoc

ATTACHMENT 3

The House Select Committee on High Speed Internet in Rural Areas

May 12, 2008

Testimony of

Jim Baller
The Baller Herbst Law Group
2014 P Street, NW
Washington, DC 20036
(202) 833-1144
Jim@Baller.com

Overview

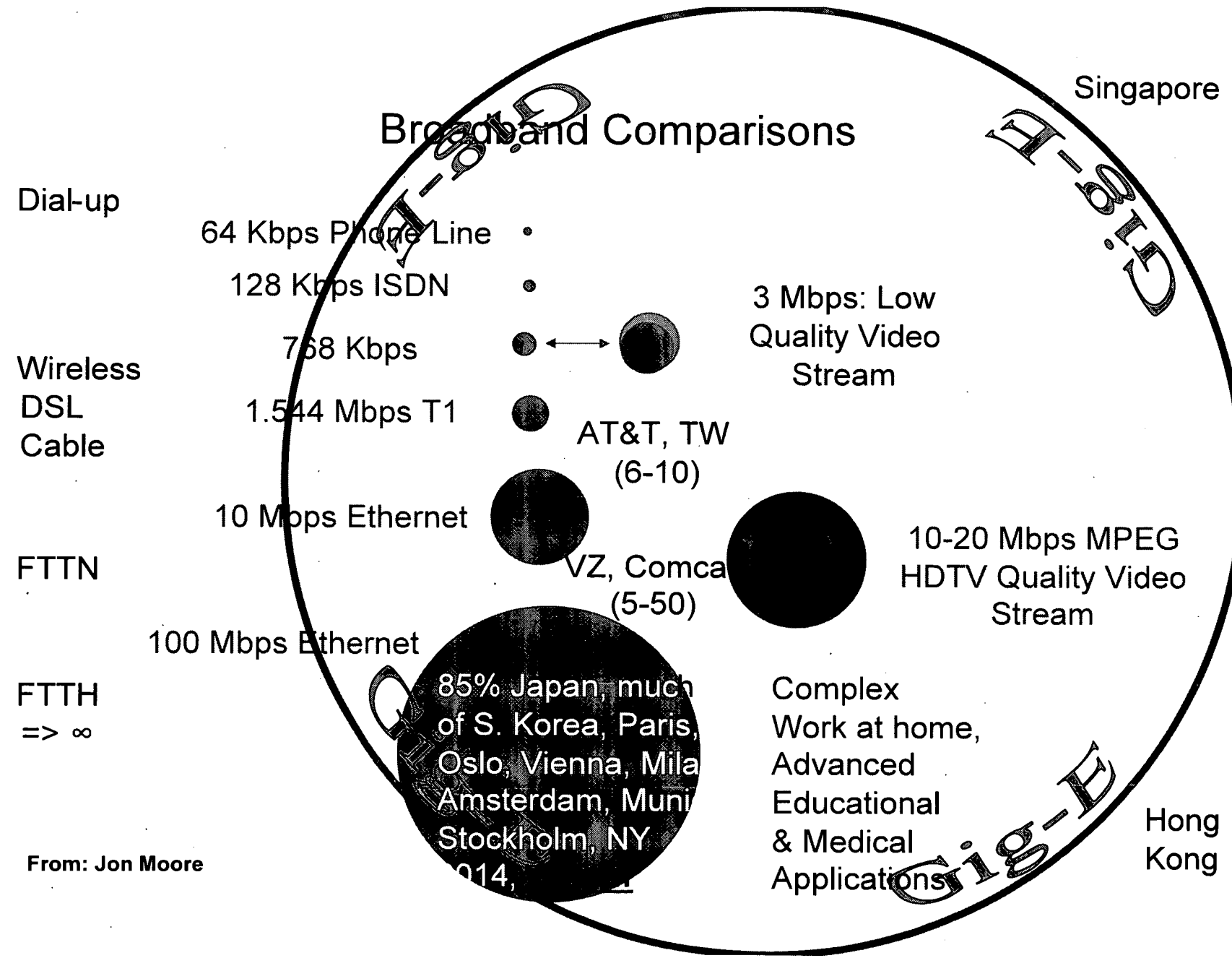
- The Basics
- What's at Stake
- Where the US is Today
- Where the Leading Nations are Heading
- Where the US is Heading
- Where North Carolina is Heading
- Recommendations

The Basics

- What is "Broadband"?
  - Service allows transmission of info over "Internet" at "high speed"
  - The "Internet" is a global "network of networks" of all kinds that use standardized rules called "Internet Protocol" (IP)
  - IP uses "digital" information" – "binary digits" (bits) of 1s and 0s
  - 8 "bits" = 1 "byte" e.g., 01101111
  - 1000 bits = 1 kilobit; 1 million bits = 1 Megabit; 1 trillion bits = Gigabit, etc.
  - Info carrying capacity = "data speed" = "bandwidth capacity" = kilobits/sec (kbps), megabits/sec (Mbps), gigabit/sec (Gbps) …

More Basics

- "Convergence" -- many technologies can now carry phone, video, data, and other digital information
  - Telephone systems –
    - Dial-up v. T1 v. DSL v. FTTN (ADSL2+)
  - Cable systems –
    - Cable Modem Service v. DOCSIS 3.0
  - Fiber to the Home/Business = Fiber to the User (FTTU)
  - Wireless
    - WiFi, WiMax, 3.650 GHz, etc.
  - Others: Satellite, BPL, etc.



From: Jon Moore

What's at Stake: America's Global Competitiveness and Quality of Life

- What we do at work, at home, and at play will increasingly be done through broadband, at much faster speeds than today
- World economy is growing interconnected and "flat"
- We are going to lose most of our traditional manufacturing jobs to China, India, Brazil, Mexico, and other low-cost nations
- Our best hope is to prepare our communities and population ASAP for high-tech, info-based jobs
- A critical need: prompt and affordable access to advanced communications networks

Vast Multiple Benefits of Broadband

- Robust economic development
- Lifelong education
- Public safety and homeland security
- Affordable modern healthcare
- Environmental sustainability
- Telework ($4+plus oil prices)
- Urban revitalization
- Cost-effective government services
- Entertainment and cultural enrichment
- Senior citizens, disabled individuals, young people

…

- Quality of life

Key Drivers

- Explosive growth of video – e.g. YouTube alone, over 100 million downloads and over 65 million uploads every day

"In three years' time, 20 typical households will generate more traffic than the entire Internet today. … We are going to be butting up against the physical capacity of the Internet by 2010."

-- Jim Cicconi, VP AT&T

"High-definition video is the Humvee of broadband, guzzling five times as much capacity as regular video. Once high definition video takes off, band-width consumption, now at a record high, could blow into the stratosphere."

-- Phillipe Morin, VP Nortel

More Key Drivers

"The Net Generation" -- 100 million Americans born after 1977

- Computer and gadget literate
- Grew up with Internet
- Multi-cultural, international
- Used to multi-tasking (homework + TV + music + "chatting" w/20 friends)
- Ethic of openness, collaboration, sharing
- High level of web-based interaction (e.g. MySpace, Facebook, Flickr, YouTube, Linkedin, etc.)
- Love to combine, remix media (e.g., Anime + music)
- Use Internet more than TV, particularly for news

Still More Key Drivers

- Current and new broadband-enabled uses are all expanding at the same time, becoming increasingly bandwidth-rich
- Ground-shifting global developments => e.g., $4/gallon gasoline (and climbing) breaking family budgets, lowering suburban property values, creating new urgency for telework
- Shift in corporate thinking, from rigid command-and-control to increasing "Web 2.0" collaboration
- Bottom line: Need for LOTS more bandwidth capacity

It is important to note here that the current generation of broadband technologies *(cable and DSL)* may prove *woefully insufficient* to carry many of the advanced applications driving future demand. *Today's broadband will be tomorrow's traffic jam*, and the need for speed will persist as new applications and services gobble up existing bandwidth.

U.S. Department of Commerce
Understanding Broadband Demand
(September 2002)

Where We Are Today

Broadband lines as percent of Population:	US 1st in '990s ↓ 4th in 2001 ↓↓ 10th in 2004 ↓↓↓
Ave. Advertised ↓ Speed (US 14th):	US: 8.9 Mbps Japan: 93.7 Mbps
Ave. Monthly Price (US 21th):	US: $ 53.06 Finland $ 31.18
Ave. Price/Mbps (US 11th):	US: $12.60 Japan $3.09
Ave. Price/Mbps Fastest (U.S. 18th):	US: $2.83 Japan $0.13
Growth new subscribers (U.S. 15th):	US: 4.21% Ireland 6.60%

Composite (ITIF): Penetration + Price + Speed: US 15th

Where the Leading Asian Nations Are Heading

- Japan
  - Fastest, cheapest broadband in the world today
  - Competition today at 1 Gbps, 10 Gbps by 2010
  - FTTH: 36% adoption, 85% availability today, 90% availability by 2010
  - "u-Japan" by 2010 – 2 meanings
- South Korea – right behind Japan
- China -- #1 in broadband users; ADSL to FTTH
- Hong Kong – already at 1 Gbps
- Singapore – 1Gbps to 50% by 2012, 100% by 2015
- Taiwan – rapidly heading to 100 Mbps

Where the Leading European Nations Are Heading

- European Union – Now exceeds US in broadband lines
- Sweden
  - Near 100% availability of broadband
  - Key to success so far: Huge investments in municipal networks, national backbone, tax incentives to employers to spur distribution of computers
  - FTTH: currently #1 in Europe at 7.1%; about to explode with TeliaSonera committing to FTTH
- France
  - Nat'l gov't offers 70% grants municipal networks; *plus* low interest loans available from government pension funds
  - Intense competition among three providers => can get 100 Mbps + phone + video in Paris for ~ $45/month
  - France spurring fiber rollout by opening wiring in apartments

More European Nations

- Netherlands
  - Several major city-wide FTTH projects under way, led primarily by municipalities, including Amsterdam
- Norway
  - The national utility company developing FTTH project for more than 2 million households
- Italy
  - Planning a massive € 6.5 billion modernization with goal of providing 65% of Italian households up to 100 Mbit/s by 2012
- United Kingdom
  - British Telecom's structurally-separated access provider, Openreach, has just completed its first FTTH project

Where US is Heading

- Verizon "FiOS"
  - FTTU (BPON => GPON) : Capacity 100 Mbps +
  - Goal: pass 18 million homes by 2010 (NYC by 2014)
  - Today: suburban donuts in parts of 16 states
  - Expensive higher tiers

- AT&T "U-Verse"
  - FTTN (ADSL2+) = Maximum ideal Mbps: 20-24 down/1-3 up
  - AT&T must allocate bandwidth, limits BB to 6-10 Mbps
  - Today: parts of 22 states
  - Goal: Pass 30 Million homes by 2010

Where the US is Heading (2)

- Qwest
  - FTTN (ADSL2+) = Capacity 20-24 Mbps down / 1-3 Mbps up
  - "Titanium Connect" -- 12 Mbps down / 768 up @ $46.99
  - "Quantum Connect" -- 20 Mbps down / 768 up @ $99.99
  - FTTN Today: negligible
  - Goal: 23 major cities in 10 states
- Comcast
  - "DOCSIS 3.0" = Max. Capacity 160 Mbps down / 120 Mbps up – BUT capacity must be shared; in US, 250-2000 homes/node
  - Today: Twin Cities 50 Mbps down / 5 Mbps up @ $149.50
  - Goal : "up to" 20% territory by 2008-09; 100% by 2010

Where the US is Heading (3)

- Other major cable companies, including Time Warner, in no hurry to deploy DOCSIS 3.0
  - If not competing against Verizon or another FTTH provider, little incentive to invest in DOCSIS 3.0
  - Risk of cannibalizing cableco revenue from TV and content
  - Cableco's don't benefit from socially beneficial uses – just more headaches, congestion for them
- *Wall Street Journal*: "For consumers not served by Comcast or Verizon, speeds [of 50 Mbps or more] may be a long time off."

Where the US is Heading (4)

- Independents and coops – about 400 FTTH systems
- Municipalities – about 44 FTTH systems
  - Paved the way for private sector
  - High take rates
  - Contribute to community well-being in many ways, particularly economic development
- Wireless technologies – WiFi, WiMAX, 3650 MHz, etc.
- Other technologies – satellite, BPL, etc.

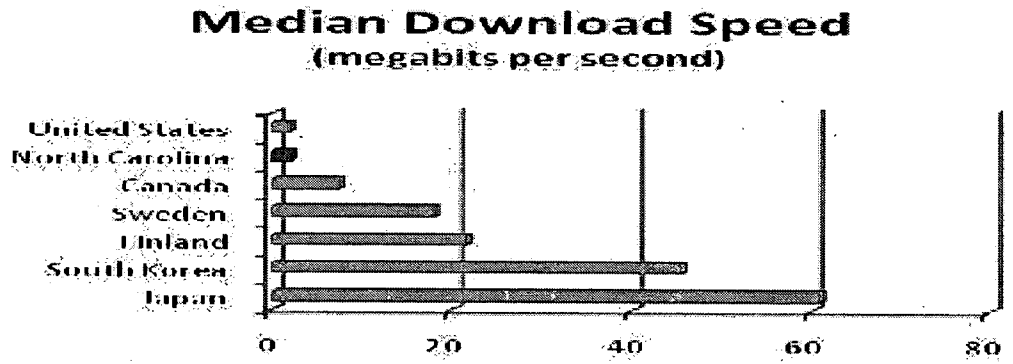
North Carolina

- 11th "high-speed" lines NC: 2.9 mm CA: 14.4 mm (FCC: 6/30/07)
- 15th in fiber lines NC: 5683 CA: 194,514 (FCC: 6/30/07)
- 16.46% households no access even to 200 kbps (eNC: 12/31/06)
- 21 counties < 70%, 4 counties < 50% (eNC: 12/31/06)
  (now only 17 counties below 70%)
- 67% rural counties have access to cable modems v. 82% urban counties (eNC: 12/31/06)
- Independents, coops build out 98-100%; majors stop at 80%
- Two coops developing FTTH in portions of service areas @ 80 Mbps
- Wilson and Salisbury developing city-wide FTTH networks

North Carolina Internet Speed Test

Location	Median Download Speed (megabits per second)
Japan	61.00
South Korea	45.60
Finland	21.70
Sweden	18.20
Canada	7.60
North Carolina	**2.23**
United States	**1.97**

International data from the Information Technology and Innovation Foundation. U.S. data from speedmatters.org test results. Most test participants had DSL or cable modem connections.



Source: Communications Workers of America

North Carolina in ITIF 2007 New Economy Index

- "New Economy" = "a global, entrepreneurial and knowledge-based economy in which the keys to success lie in the extent to which knowledge, technology, and innovation are imbedded in products and services"
- ITIF rates states on 26 indicators in 5 categories "that best capture what is new about the New Economy."
- North Carolina's rankings:
  - Knowledge Jobs – 31st
  - Globalization –17th
  - Economic Dynamism – 27th
  - Transition to a Digital Economy – 36th
  - Innovation Capacity – 21st
  - Overall rank – 26th
- Why so low? Outside high-tech areas, "old economy"

Recommendations

1. Think big, adopt high goals, act aggressively –
   By 2012, NC in top 5 states in adoption and bandwidth usage
2. Participate in development of a national broadband strategy
3. Conduct new round of inquiry to gather info, develop policies, recommendations to General Assembly
4. Continue connectivity programs for next year, with adjustments – RFI, stress cost-effective tech options, competition, collaboration
5. Obtain authority to compel production of data, allow confidentiality
6. Encourage cooperation by incumbents
7. Encourage community broadband initiatives
8. Create Wiki

ATTACHMENT 4

BILL DRAFT 2007-RFz-33 [v.2] (05/12)

A HOUSE RESOLUTION IN SUPPORT OF THE CONVENING OF THE E-NC AUTHORITY'S DIGITAL BROADBAND SUMMITS.

Whereas, the e-NC Authority is a State authority, established by the N.C. General Assembly in 2000, and the e-NC Authority has worked to bring high-speed Internet access to the rural areas of North Carolina as well as the distressed urban areas of the state; and

Whereas, on average, 83% of North Carolina households have the ability to access and purchase high-speed Internet services if they so desire; and

Whereas, almost 17% of households in North Carolina have no access to high-speed Internet; and

Whereas, a higher level of bandwidth and faster speeds of transmission will be needed in the future; and

Whereas, in fall 2008, the citizens of the state will have an opportunity through eight statewide Digital Broadband Summits to bring forth their ideas and desires for a new vision of digital broadband inclusion for North Carolina citizens and businesses; and,

Whereas, the findings from the eight summits may include digital inclusion metrics relative to broadband deployment, digital literacy of citizens, digital up-take rates, ways to provide the incentives for deployment of broadband, and new ideas for assisting in subscription up-take for citizens; and,

Whereas, the e-NC Authority will report back and provide recommendations to the House Select Committee on High-Speed Internet in Rural Areas and the N.C. General Assembly on the findings from the regional sessions to be held across North Carolina; Now therefore,

Be it resolved by the House of Representatives:

SECTION 1. The House of Representatives supports the efforts of the e-NC Authority to hold at least eight Digital Broadband Summits across North Carolina in the fall of 2008. The House of Representatives looks forward to the receipt of the findings and recommendations of the e-NC Authority resulting from these summits. The House Select Committee on High Speed Internet in Rural Areas shall give consideration to

these findings and to a proposed broadband Internet plan for the citizens and businesses of North Carolina in order to take full advantage of this 21st century economic development and knowledge tool.

SECTION 2. The members of the N.C. House of Representatives are encouraged to participate in the Digital Broadband Summits that will take place in their area.

SECTION 3. This resolution is effective upon adoption.

GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 2007

H D

BILL DRAFT 2007-RFz-32 [v.3] (05/08)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
5/9/2008 11:08:26 AM

Short Title:	DOT/Fiber Optic Cable .	(Public)
Sponsors:	Representative Faison.	
Referred to:		

A BILL TO BE ENTITLED

AN ACT TO EXPAND THE AUTHORITY OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TO LOCATE AND ACQUIRE RIGHT-OF-WAY FOR THE LOCATION, ABOVE OR BELOW GROUND, OF FIBER OPTIC CABLE..

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 136-18(2) reads as rewritten:

"**§ 136-18. Powers of Department of Transportation.**

The said Department of Transportation is vested with the following powers:

...

(2) To take over and assume exclusive control for the benefit of the State of any existing county or township roads, and to locate and acquire rights-of-way for any new roads that may be necessary for a State highway system, and subject to the provisions of G.S. 136-19.5(a) and (b) also locate and acquire such additional rights-of-way as may be necessary for the present or future relocation or initial location, above or below ground, of telephone, telegraph, broadband communications, electric and other lines, as well as gas, water, sewerage, oil and other pipelines, to be operated by public utilities as defined in G.S. 62-3(23) and which are regulated under Chapter 62 of the General Statutes, or by municipalities, counties, any entity created by one or more political subdivisions for the purpose of supplying any such utility services, electric membership corporations, telephone membership corporations, or any combination thereof, with full power to widen, relocate, change or alter the grade or location thereof and to change or relocate any existing roads that the Department of Transportation may now own or may acquire; to acquire by gift, purchase, or otherwise, any road or

highway, or tract of land or other property whatsoever that may be necessary for a State highway system and adjacent utility rights-of-way: Provided, all changes or alterations authorized by this subdivision shall be subject to the provisions of G.S. 136-54 to 136-63, to the extent that said sections are applicable: Provided, that nothing in this Chapter shall be construed to authorize or permit the Department of Transportation to allow or pay anything to any county, township, city or town, or to any board of commissioners or governing body thereof, for any existing road or part of any road heretofore constructed by any such county, township, city or town, unless a contract has already been entered into with the Department of Transportation."

...

SECTION 2. This act is effective when it becomes law.

GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 2007

S D

BILL DRAFT 2007-RVz-10 [v.3] (05/01)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
5/8/2008 5:23:35 PM

Short Title: Broadband Availability Reporting Required. (Public)

Sponsors:

Referred to:

A BILL TO BE ENTITLED

AN ACT REQUIRING COMPANIES OFFERING BROADBAND INTERNET SERVICES TO PROVIDE ANNUAL REPORTS TO THE E-NC AUTHORITY REGARDING SERVICE AREAS AND AVAILABILITY OF BROADBAND SERVICES WITHIN THOSE AREAS.

The General Assembly of North Carolina enacts:

SECTION 1. Article 10, Part 2F of Chapter 143B of the General Statutes is amended by adding a new section to read:

"**§ 143B-437.48. Broadband service providers; required reports.**

(a) Any company offering high-speed broadband Internet access to consumers in this State shall report annually to the e-NC Authority on its service areas and its equipment, speed levels, and offerings for broadband services within the service areas. The report shall also contain the following information:

(1) A description and map of the company's service area. The map of the service area shall be submitted in graphic form and shall also be submitted digitally in shapefile or coverage format for use with GIS applications. The digital file shall be in sufficient detail to allow a determination of the extent of broadband coverage for households, businesses, and institutions on each street within the company's service area.

(2) A copy of the company's most recent estimate of subscriber uptake, as provided to the Federal Communications Commission.

(3) A listing of latitude/longitude coordinates for wireless facilities and wireless support structures as defined in G.S. 153A-349.51, that the company owns, leases, or operates from to provide high-speed broadband Internet access to service areas within

this State. The report shall include the range of service for each wireless facility or structure, and an estimate of the number of subscribers within range.

(b) A telephone company or telephone cooperative subject to the reporting requirements of this section shall include in its annual report the following additional information:

(1) A listing of homes passed and a listing of the number of access lines for each wirecenter, listed both by wirecenter and by county. If a wirecenter is located in more than one county, the report shall list the homes passed in each of the counties covered by the wirecenter.

(2) A listing of the number of access lines that are DSL capable.

(3) Latitude/longitude coordinates for all pair gain DSL Access Multiplexor (DSLAM) remotes. For each remote, the report shall contain a list of which remotes are DSL capable, and which are not.

(c) A telecommunications service provider seeking an initial or revised state cable franchise shall submit a description and map of the service area. The map of the service area shall be submitted in the form and manner specified in subsection (a) of this section.

(d) Proprietary information filed with the e-NC Authority pursuant to this section is confidential, and is not subject to disclosure under Chapter 132 of the General Statutes. It may not be released to any person other than to the submitting service provider or the e-NC Authority, without the express permission of the submitting service provider. Proprietary information is considered a trade secret under the Trade Secrets Protection Act, Article 24 of Chapter 66 of the General Statutes. General information collected by the e-NC Authority may be released or published only in aggregate amounts that do not identify or allow identification of numbers of subscribers or revenues attributable to an individual service provider.

SECTION 2. This act is effective when it becomes law.

MINUTES

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

Wednesday, October 22, 2008

The House Select Committee on High Speed Internet in Rural Areas met on Wednesday, October 22, 2008, in Room 421 of the Legislative Office Building at 3:00 P.M. The following members were present: Chairman Bill Faison; Representatives Angela Bryant, Jim Gully, Phillip Haire, Jim Harrell, and Joe Tolson. Staff in attendance: Brenda Carter, Barbara Riley, and Peter Capriglione. House Sergeant-at-Arms assisting: Jerald Perry, Fred Hines, and Frank Prevo. The Agenda and Visitor Registration Sheet are attached. *(Attachment 1 and 2)*

The Chairman called the meeting to order. Chairman Faison introduced our first presenter of the day, Jane Patterson from E-NC Authority. Mrs. Patterson spoke about where we stand with high speed internet:

Jane Smith Patterson (Executive Director, E-NC Authority) was recognized to present to the committee. Mrs. Patterson's hand out is attached. *(Attachment 3)* Below are some key points of her presentation:

- *Broadband Summits* – Summits where held in eight places across the State. Caswell County, Pasquotank County, Jackson County, Edgecombe County, Bladen County, Mecklenburg County, Chatham County, and Alleghany County. The theme that was taken from all the meetings where "We want higher speed broadband". The lack of it affects the standard of living, education, business growth
- *2007 High-Speed Internet Report* – Is a survey in respect to the companies building out broadband. According to E-NC the state is where it was a year ago do to lines being lost. Lines are being lost do to people converting from dial-up to DSL and Cellular service.
- *2008 Citizen Survey* – In North Carolina there are approximately 3 million households. Approx. 2 million have internet access, and approx. 5 hundred thousand do not have internet access. According to the survey one quarter of Americans earning less that $20,000 subscribe to the internet, however, it is 49% in North Carolina, 60% of Americans in the middle class subscribe to the internet, however, it is 79% in North Carolina and 85% Americans earning over $100,000 a year subscribe to the internet, and that is 91% in North Carolina.

After Jane Patterson presentation Chairman Faison opened the floor for questions and then introduced our second speaker Joe Freddoso. Mr. Freddoso spoke about the North Carolina School Connectivity Program called K20 Connectivity Initiative.

Joe Freddoso (President and CEO, MCNC) was recognized to present to the committee. Below are some key points of his presentation *(Attachment 4)*:

- MCNC's three year plan – (I) 115 Local Education Agencies (LEA.'s) that were not connected to a common backbone and were using the commercial internet in most cases to deliver there connectivity there applications and tools and putting them on a common state run backbone. (II) To run services over the backbone once you have that platform in place to impact teaching and learning, impact the way student are tracked. (III) A platform for collaboration.
- The largest private sector acquisition of a piece of intellectual property in NC history it was the acquisition of Cronos by JDS Uniphase. The endowment has created paid for the backbone at no cost to the state. This high-end research and education network responses to cancer research that happens between E.C.U. and the Lineberger center and weather research between the NCDC and NC State.
- What has been done is the network has been taken off of a congested highway and put in onto a HOV lane that only runs NC education traffic. And that education traffic moves freely and you can do things simultaneously without constant interruption and clutter.
- MCNC started out with only 26 out of 115 school districts connected to the central backbone (NCREN) under a pilot phase, as of today only five remain unconnected.

Chairman Faison opened the floor for questions or comments.

With no further business to come before the committee Chairman Faison announced the adjournment of the meeting. The meeting adjourned at 4:24 p.m.

Respectfully submitted,

Representative Bill Faison
Chair

Lavada Vitalis
Committee Assistant

ATTACHMENT 1

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SHORT SESSION

AGENDA

Wednesday, October 22, 2008
3:00 PM
Room 421, LOB

1. **Welcome**

   Representative Bill Faison, Chairman

2. **Guest Speakers**

   - **The e-NC Authority**
     Jane Patterson, Executive Director

   - **MCNC**
     Joe Freddoso, President and CEO

3. **Adjourn**

ATTACHMENT 2

VISITOR REGISTRATION SHE

High Speed Internet in Rural Areas — 22 October 2008

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Cam Coven	BPM HL
Liz Hill	American Tower Corp. 400 Regency Forest Drive Suite 300 Cary NC 27518
Cary Edgar	The e-NC Authority
Phil Emer	Friday Institute, NC State University
Lee Sartain	Friday Institute, NCSU
Andrew Meehan	NCAEC
Dana Sipes	Smith Anderson
Angie Bailey	e-NC
Catharine Rice	Seaton & Architects
W Chris Jones	Verizon Wireless
Stan Pace	Verizon

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — 22 October 2008

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
CS Hollis	K & L Dates
Bill Craigle	ALLTEL
Karl Knapp	NCLM
Lori Ann Harrell	LHHA
Ivy Hoffman	NCAPT
Jack Stanley	TWC
Connie Wilson	BSI
Mary Tatten	BVM&L
Marty Bocock	EMBARQ
Joe Fruddoso	MCNC
Ed Lunsford	Brooks Pierce

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — 22 October 2008

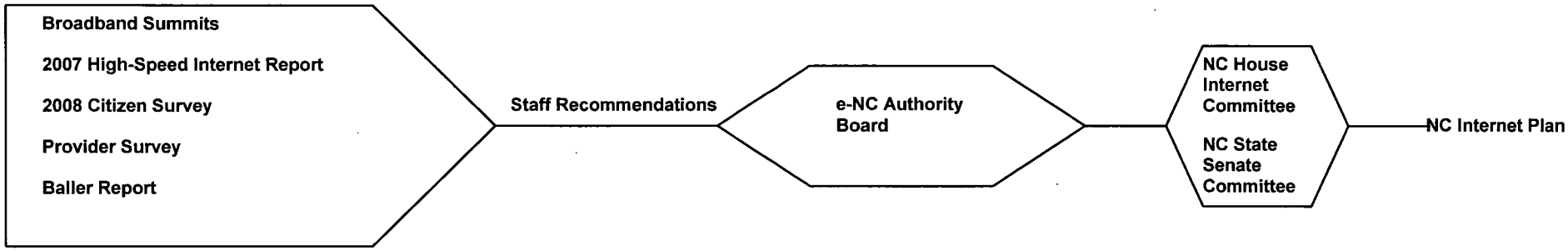
Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Mark Season	AT&T
Thomas Moore	Edmisten, Webb
Steve Brewer	EMBARQ
Herb Crenshaw	AT&T
Brad Phillips	TWC
Wendy Kelly	520 Wicker

ATTACHMENT 3

2009 NC Internet Plan Process



ATTACHMENT 4

North Car
Connectivity Program

K20 Connectivity Initiative

House Select Committee
High Speed Access in Rural Areas
October 22, 2008

North Carolina School Connectivity Program

Implementation Roadmap

Connectivity

Services

Collaboration

Organization

Funding

Communities and Backbone

Services

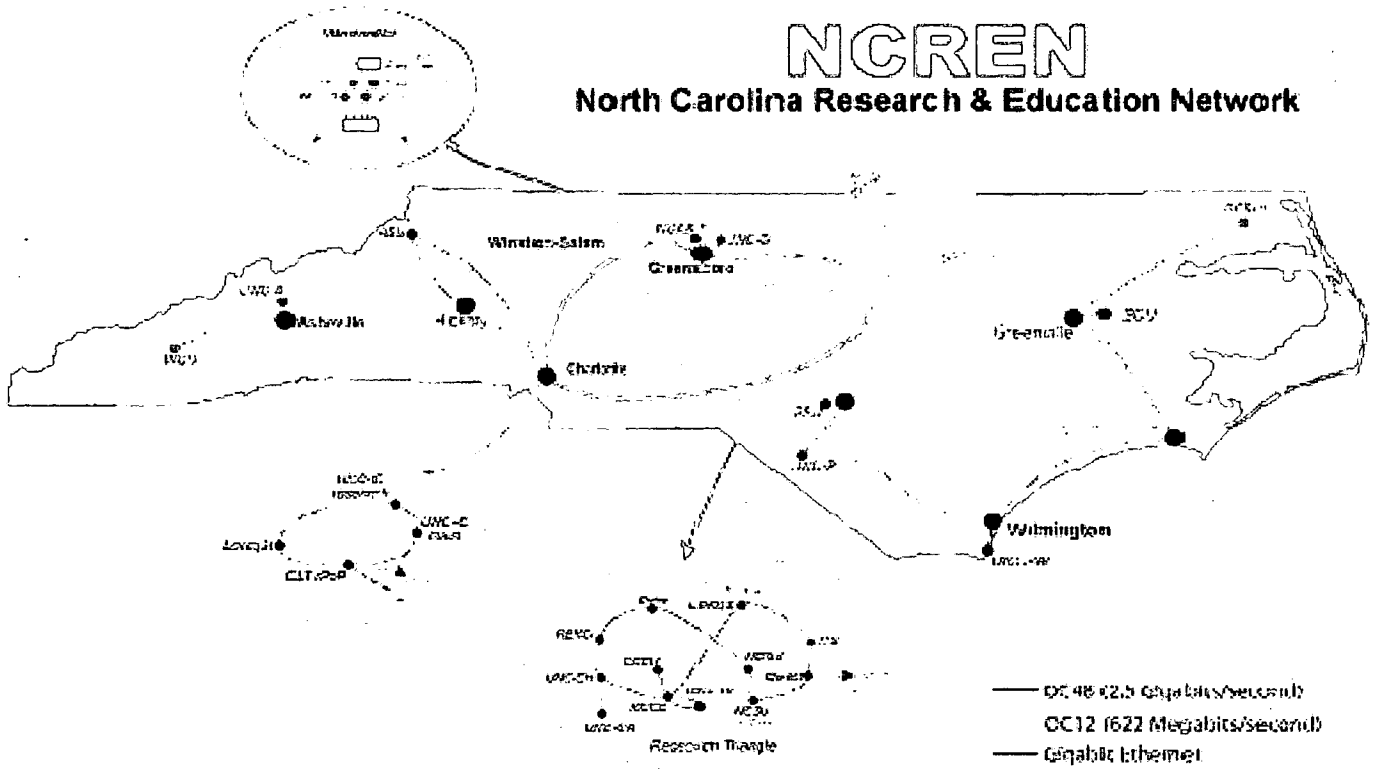
A Platform

FY08	FY09	FY10

North Carolina School Connectivity Program

NCREN

North Carolina Research & Education Network



October 6, 2008

North Carolina School Connectivity Program

Previous Connection –Delay causes applications and content to load slow perform poorly

Commodity Internet

Schools

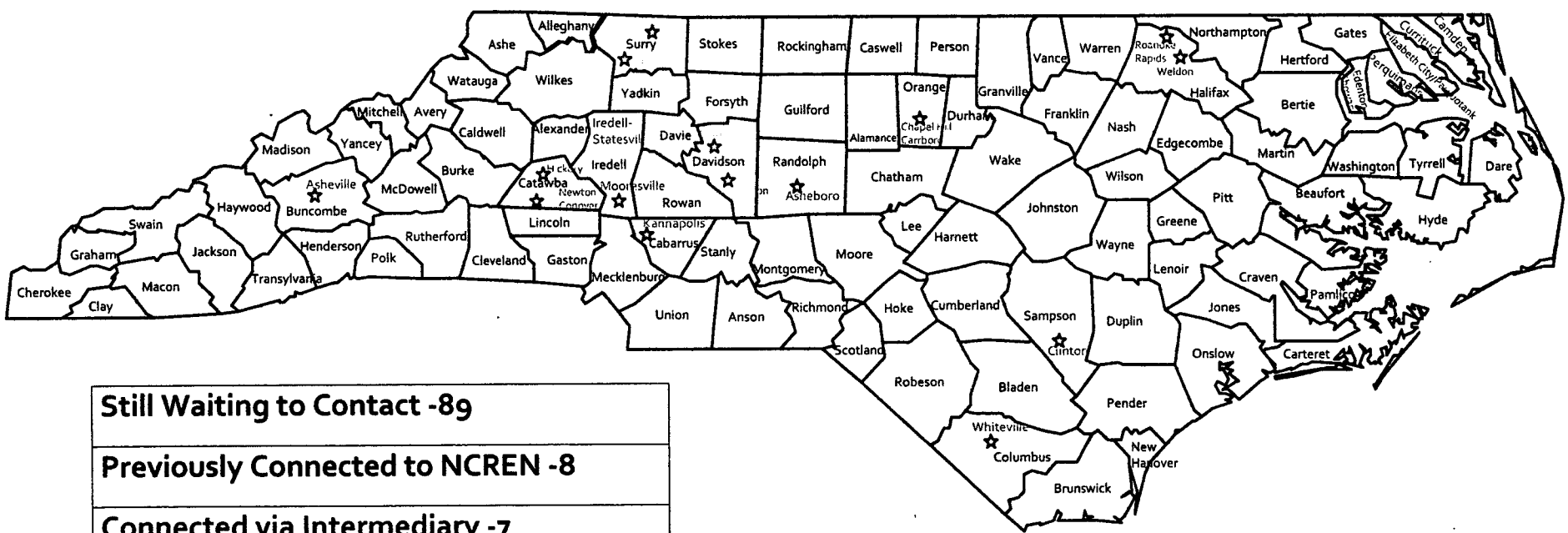
K20 Backbone (NCREN)

LEA

Higher Education (Univ. Of North Carolina (1990's); Community Colleges (2009-2010); Private Universities & Colleges (24 of 36))

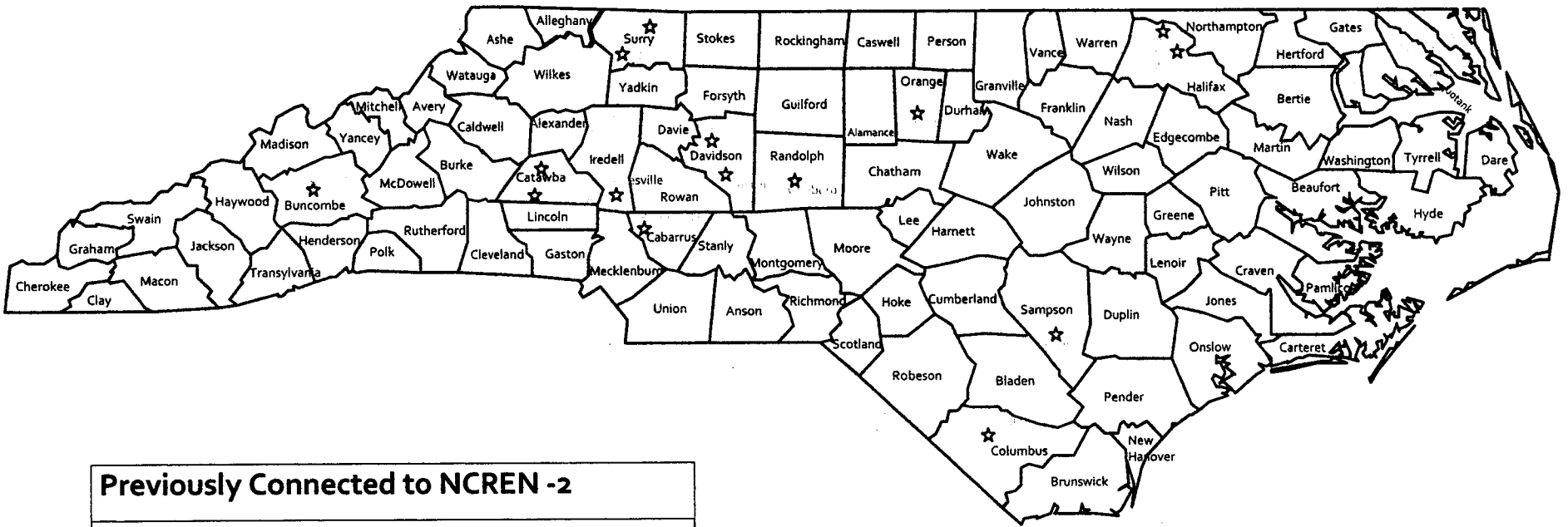
K20 Backbone-Little Delay-Applications and content perform as expected or better

North Carolina School Connectivity Program



Still Waiting to Contact -89
Previously Connected to NCREN -8
Connected via Intermediary -7
Fully Integrated per terms of SOW -5
Backbone Connections Completed, LAN integration required -6
Circuits Ordered, confirmed due dates -0
☆ **City or Combined City/County LEAs**

North Carolina School Connectivity Program



Previously Connected to NCREN -2
Connected via Intermediary -6
Fully Integrated per terms of SOW -61
Backbone Connections Completed, LAN integration required -28
Circuits Ordered, confirmed due dates -5
Circuits Ordered, awaiting due dates -8
Project Dialogue Occurring -5
City or Combined City/County LEAs

North Carolina School Connectivity Program

Value

- Reliable and Efficient
- Equity
- Collaborate/Community
- Customer Network Engineering (CNE) Services
- Investment: MCNC Endowment-Now and forever

North Carolina School Connectivity Program

Value Realized

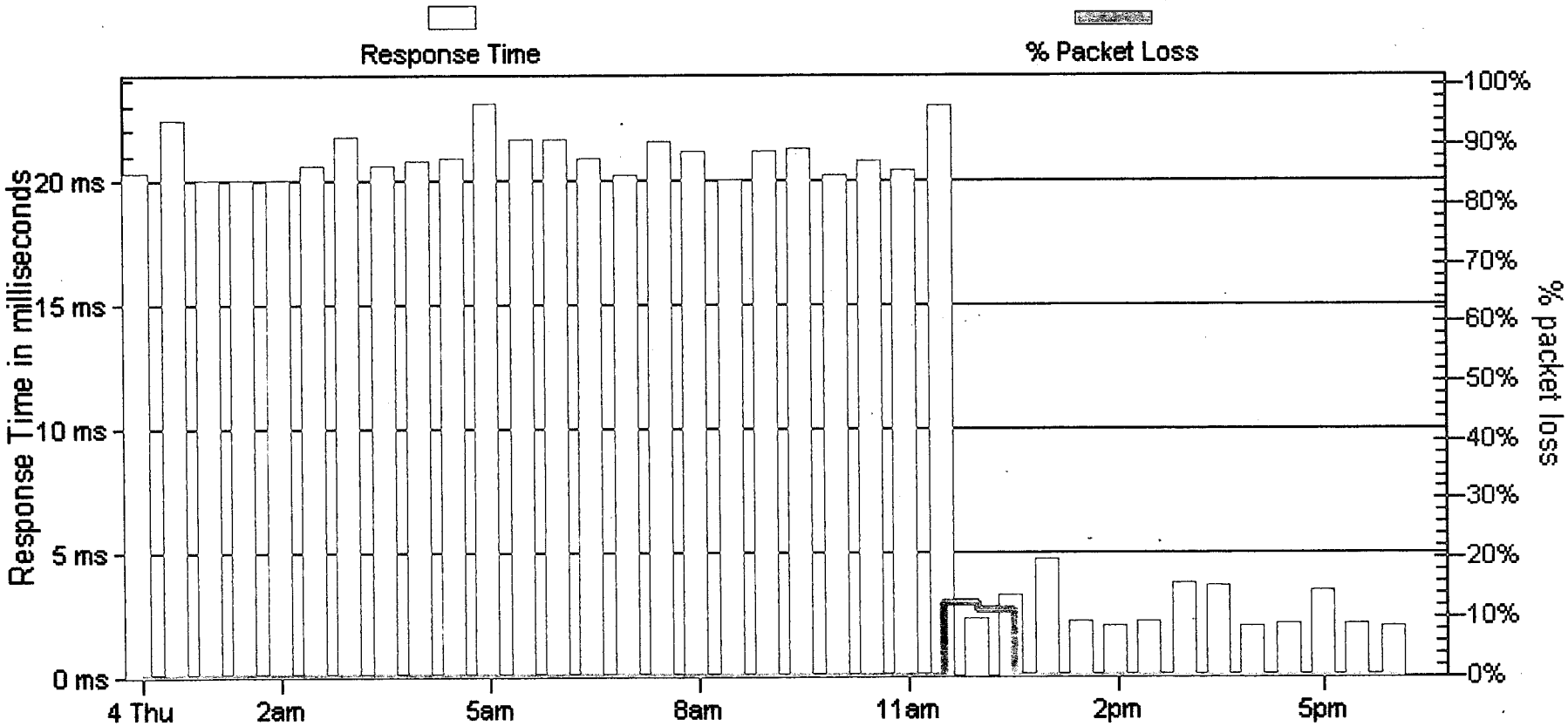
- Reliable and efficient
  - **Guilford County**
- Equity
  - **Science and Math School Expands Offerings**
- Community collaboration
  - **Mebane Masters Plan**

Guilford County

ATM-VPN-1811

Average Response Time & Packet Loss

Delay reduction due to NCREN Connection at noon



95th Percentile : Response Time is 26.00 ms

SolarWinds.Net Orion NPM Web Engine Version 8.5.1

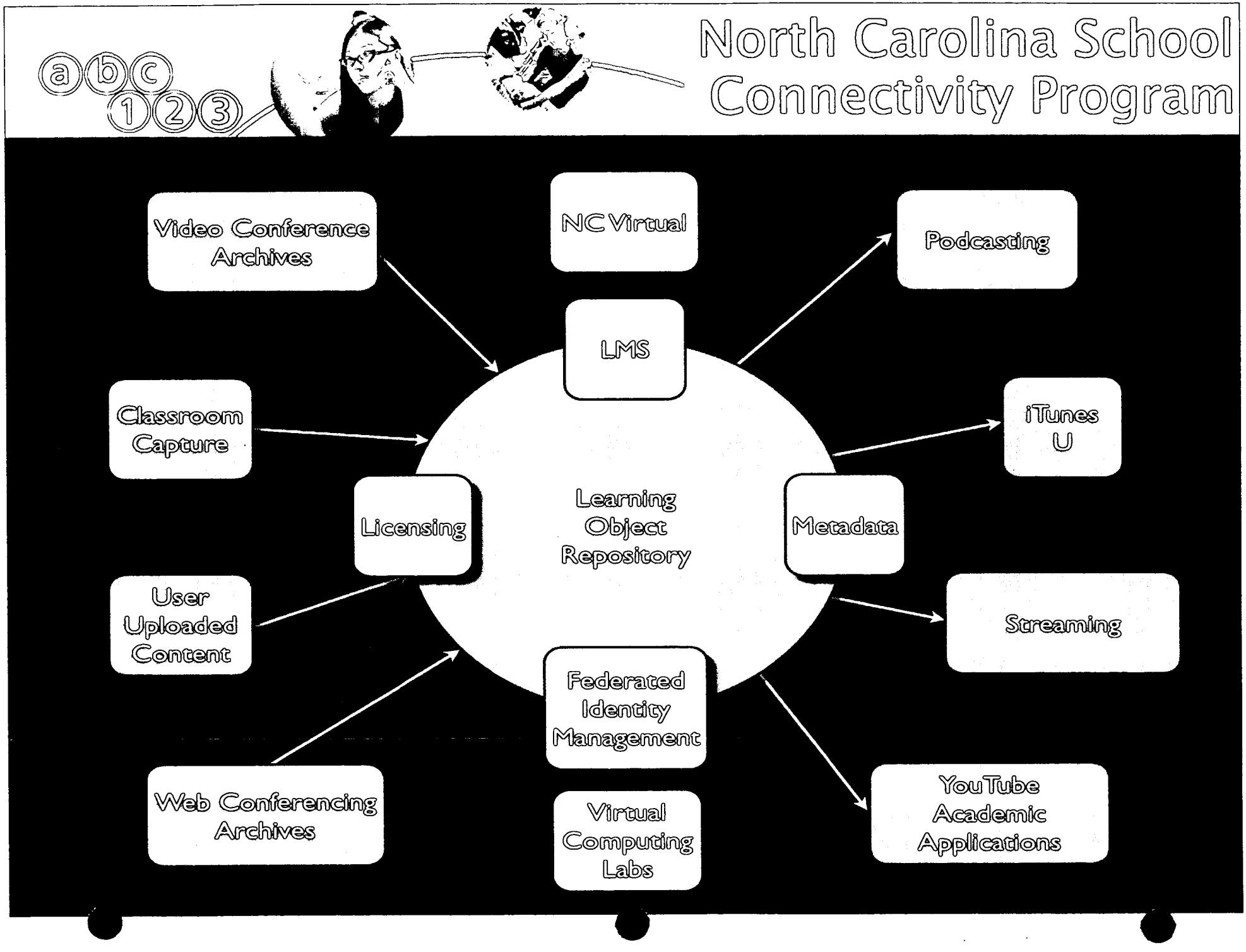
CNE Engagements

- What we do.....
  - Subject Matter Expertise
  - Advice to Self Sufficiency
  - Information Sharing/Efficient Practice
  - Reduce LEA consulting expenses
- Example engagements
  - Montgomery County Schools – Firewall configuration
  - Mitchell County Schools – WAN migration to fiber
  - Pamlico County Schools – District wide network assessment
  - Person County Schools – Fiber WAN and assessment
  - Dare County – Accelerated Connectivity

North Carolina School Connectivity Program

Endowment

- Endowment – one of 38
  - $8M + This year alone invested
- Management of Endowment
- Capital and Innovation


North Carolina School Connectivity Program
Video Conference Archives
NC Virtual
Podcasting
LMS
Classroom Capture
iTunes U
Licensing
Learning Object Repository
Metadata
User Uploaded Content
Streaming
Federated Identity Management
Web Conferencing Archives
Virtual Computing Labs
YouTube Academic Applications

North Carolina School Connectivity Program

- What School Connectivity Initiative could mean?
  - Build on eNC great efforts
    - Education
    - Demand creation
    - Public/Private Partnership
  - Want the best for your children?
  - Community center
  - State and MCNC-seed private investment
- Concerns
  - Research Demands on NCREN
  - State and MCNC work
  - Regulatory environment

North Carolina School Connectivity Program

School Connectivity Initiative

Questions and Comments

MINUTES

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

Friday, November 14, 2008

The House Select Committee on High Speed Internet in Rural Areas met on Friday, November 14, 2008, in Room 421 of the Legislative Office Building at 10:00 A.M. The following members were present: Chairman Bill Faison; Representatives Angela Bryant, Jim Gulley, Phillip Haire, Jim Harrell, Thom Tillis, Joe Tolson and Roger West. Staff in attendance: Brenda Carter, Barbara Riley, Heather Fennell and Peter Capriglione. House Sergeant-at-Arms assisting: Kenneth Burroughs, Martha Parrish, Marvin Lee, and James Worth. The Agenda and Visitor Registration sheet are attached. *(Attachment 1 and 2)*

The Chairman called the meeting to order. Chairman Faison introduced our first presenter, Joe Freddoso from MCNC. Mr. Freddoso spoke about bringing school connectivity home:

Joe Freddoso (President and CEO, MCNC) was recognized to present to the committee. Mr. Freddoso hand out is attached. *(Attachment 3)* Below are some key points of his presentation:

- By the end of this calendar year (2008) all 115 North Carolina K12 Local Education Agencies (LEA's) will be connected to the North Carolina Research and Education Network (NCREN).
- Many districts in the State are deploying one to one learning programs, in this program students are issued a personal laptop or other device that enables on-line learning.
- Broadband access availability continues to be limited in many rural communities across NC because: Last mile service providers cannot make a business case in sparsely populated areas, local government in these areas lack the tax base to provide a municipal broadband service and in some cases where providers have invested in infrastructure consumer demand is lacking.
- Mr. Freddoso's proposal is to use the impetus created by the increasing momentum for technology integrated learning in K-12 to promote broadband at home. Involving rural schools where one on one learning is being implemented, MCNC would provide financial support to offer broadband service from existing broadband providers in the region to students not yet signed up for home access.

After Mr. Freddoso's presentation Chairman Faison opened the floor for questions and then introduced our next speaker Herb Crenshaw. Mr. Crenshaw spoke about the presentation of where serve is currently.

Herb Crenshaw (Director, External Affairs, AT&T) was recognized to present to the committee. Below are some key points of his presentation *(Attachment 4)*:

- The providers are in the final stages of negotiating a contract with Connected Nations. Connected Nations will show where service is and where it is not available. They will provide access on-line, state maps, county maps and economic developing regions.
- The map will also go as far as consumers typing in there address and being able to pin point if broadband is in the area and who provides it.

After Herb Crenshaw's presentation Chairman Faison opened the floor for questions. After some discussion, Rep. Tolson has moved for a motion to endorse the efforts of Connected Nations. Rep. Harrell

seconds the motion. The Committee endorsed the efforts of the service providers and Connected Nation to more clearly identify where broadband services are available/not available in the State. Rep. Harrell seconds the motion. Chariman Faison acknowledged Bill Craigle to present to the group about wireless broadband.

Bill Craigle (Alltel Wireless) was recognized to present to the committee. Below are some key points of his presentation *(Attachment 5)*:

- Mobile broadband is one of 8 technologies available to North Carolinians. Allows internet Access with speeds up to 1.3 mbps averaging 500 to 800kbps. (Primarily on PDA's, laptop cards, and mobile routers).
- North Carolina ranks 10th in deployment. Mobile 3G would cost the state $321,226,500 with the growth of 107 new cell sites and 2,007 augmented cell sites.
- For clarification it was explained that Pre 3G is equivalent to dial-up, 3G is equivalent to 3x the amount of dial-up but less than DSL, and 4G will be close to DSL.

Prof. Kenneth Wilson (East Carolina University) was recognized to present to the committee. He spoke about tracking home computers and Internet access. Below are some key points of his presentation *(Attachment 6)*:

- Who doesn't have a home computer? Older citizens, Less advantaged families, People without children living at home.
- Why don't people have home computers? Planning to buy one, they did not want one, Too expensive, and some have public access.
- Most of the respondents who earned between $15,000 and $49,999 (54percent) reported that computers were too expensive.
- Why Don't You Subscribe to Home Internet Access?
  Home Internet is too expensive (35percent) and Public access is available somewhere.
  (These are just a few questions and answers, the full report is attached)

Jane Smith Patterson (Executive Director, E-NC Authority) was recognized to present to the committee. Below are some key points of her presentation *(Attachment 7)*:

- E-NC uses company deployment as well as actual subscribers to pin point internet access.
- North Carolina's progression of counties toward 100% High Speed internet has been good.
- 83.33% of composite households have some sort of access to the internet.

Chairman Faison opened the floor for questions or comments.

With no further business to come before the committee Chairman Faison announced the adjournment of the meeting. The meeting adjourned at 11:45 a.m.

Respectfully submitted,

Representative Bill Faison
Chair

Lavada Vitalis
Committee Assistant

ATTACHMENT 1

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

AGENDA

Friday, November 14, 2008 10:00 AM
Room 421, LOB

1. **Welcome**

   Representative Bill Faison, Chairman

2. **Guest Speakers**

   - **MCNC**
     Joseph Freddoso - President and CEO, MCNC
     Bringing School Connectivity Home – Draft Report

   - **The e-NC Authority**
     Jane Smith Patterson, Executive Director
     Infrastructure deployment from Companies Data Submissions

   - **East Carolina University**
     Professor Kenneth Wilson
     Citizen Surveys Report

   - **AT&T North Carolina**
     Herb Crenshaw, Director, External Affairs

   - **ALLTEL Wireless**
     Bill Craigle

3. **Adjourn**

ATTACHMENT 2

VISITOR REGISTRATION SHEET

NC Comm On High Speed Internet — 11-14-08

Name of Committee — Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Joe Freddoso	MCNC
Ken Wilson	East Carolina + e-NC
Angie Bailey	The e-NC Authority
Jane Patterson	The e-NC Authority
Marty Bocock	EMBARQ
Oppie Jordan	e-NC Authority
Steve Brewer	EMBARQ
Sandy Sands	WCSR
Sherry McCullen	Triangle Magnet Patents
Dana Simpson	Smith Anderson
Dennis Reynolds	Self-Employed

NC Comm on High Sped Internet VISITOR REGISTRATION SHEET

Name of Committee

11/14/08

Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Carole Woodward	NC Telecom Assoc.
Lyman Horne	STAR TMC
Dwight Allen	NC Telephone Cooperative
Pam Melton	EMBARQ
Carol Torian	The e-NC Authority
Catharine Rice	Action Analysis (Section)
Fran Wescott	NC APT
Wy Hoffman	NCAPT
Phil Emer	Friday Institute, NCSU
Lee Sartain	Friday Institute, NCSU

VISITOR REGISTRATION SHEET

NC Comm on High Speed Internet — 11/14/08

Name of Committee — Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Doris Weaver	Communications Workers
Ed Lubotz	BPMAC
Thomas Meeve	Edwards Wells
Stan Pace	Verizon
Wendy Kelly	SZD Wicker
Herb Crenshaw	AT+T
Mark Bauer	AT&T
Bill Phillips	TWC
Marcus Patton	Bost Price

VISITOR REGISTRATION SHEET

NC Comm. on High Speed Internet — 11/14/08

Name of Committee — Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Bob Wells	Alliance of NC Independent Telephone Cos
Debra Dew	AT+T

Bringing School Connectivity Home
Revised Concept
DRAFT PLAN as of 11/12/08

ATTACHMENT 3

Situation: The North Carolina School Connectivity Initiative has gained much momentum over the last 6 months. By the end of the calendar year all 115 North Carolina K12 Local Education Agencies (LEA's) will be connected to the North Carolina Research and Education Network (NCREN). The NCREN connection in essence places K12 education in the state on a dedicated information highway where teaching and learning on the Internet do not suffer from the past latency, reliability and bandwidth constraints.

In addition, many districts in the State are deploying one to one learning programs. In these programs students are issued a personal laptop or other device that enables on-line learning. Finally, due to on line learning centric programs like Learn and Earn on-line; the NC Virtual Public School and online.northcarolina.edu, the numbers of students using eLearning is burgeoning.

Problem Statement: Technology enabled learning, particularly at the K12 level, is impacted by the lack of demand for and availability of broadband access at home for many students across the state. Broadband access at home is a foundational requirement for students to gain true equity of access to on-line learning resources and to participate fully in technology enabled learning. The access to broadband issue is particularly acute in rural areas of the state.

Many North Carolina students lack broadband access at home for various reasons. One to one learning, Learn and Earn Online, the NC Virtual High School and the school connectivity initiative are all increasing the importance of technology enabled learning in K12 in North Carolina. Technology enabled learning is accelerated and deepened by 24/7 access including broadband access at home. Broadband access availability continues to be limited in many rural communities across North Carolina because:

- Last mile service providers cannot make a business case in sparsely populated areas (too much capital expense and too little revenue potential)
- Local governments in these same areas lack the tax base to provide a municipal broadband service or to provide subsidies to commercial providers

In addition, even in some places where providers have invested in infrastructure, consumer demand is lacking. This program outline lies at the intersection of educational use of technology, home broadband access and existing or planned infrastructure.

Proposal:

Use the impetus created by the increasing momentum for technology integrated learning in K12 to promote broadband service at home. The initial focus will be in rural counties where

broadband service is either currently widely available or lack of consumer demand is the only factor impeding availability.

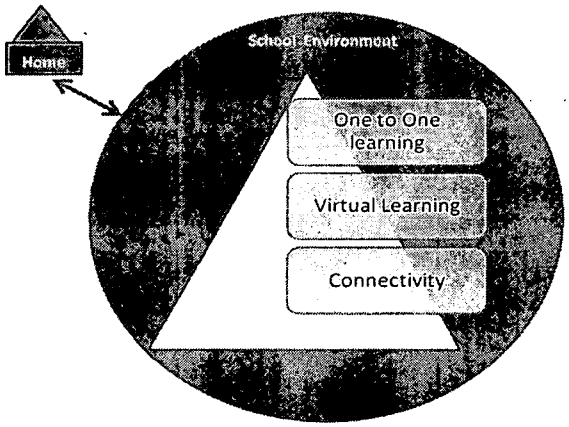
The concept/proposal involves focusing on two or three rural schools where one to one learning is being implemented. MCNC would provide financial support to offer broadband service from existing broadband providers in the region to students not yet signed up for home broadband access. The rural schools currently with one to on initiatives are:

* Rutherford Early College High School
* Sandhoke Early College High School at Sandhills Community College
* Wayne Early College High School
* Macon County Early College High School
* Davidson Early College High School
* Edgecombe Early College High School
* Nash-Rocky Mount Early College High School
* Greene County Schools
* Mooresville Graded Schools
* Stanly County Schools
* Hunt High School (Wilson County)
* Warren County Schools
* Wilson County Schools
* Davie County Schools

State Board and DPI leadership, District leadership, County government, commercial service providers operating, eNC representatives, MCNC will form the core of a planning group to determine the implementation of this program, but some foundational thoughts include:

DRAFT FOUNDATIONAL THOUGHTS:

1) District should be well into its one to one learning implementation, it should have a strong commitment to Virtual learning and finally should be connected to and integrated with NCREN—along the following continuum:



2) District leadership and local governments should be committed to technology integration in education

3) Commercial Service Providers should take an entrepreneurial outlook toward consumer demand in the county and collaborate with funding and assisting the planning team for this initiative.
4) Private and public entities should be committed to raising a reasonable amount of subsidy for the commercial providers to offer reduced rates to families of students. One Idea expressed is that if public funds were eventually used to support demand increases, a process by which service providers could bid to service the demand thereby increasing access could be formulated. This guaranteed funding would be a key element in potentially increasing service area.
5) eNC guidance should be sought and integrated into the program—eNC has a vast amount of data and experience in demand creation and planning for broadband deployment
    a. Should look for the best combination of current access by service providers and lowest uptake of home broadband by students. There is not enough funding to provide incentives for building infrastructure. The program needs to seed demand initially in areas where supply exists.

Next Steps:

1) General meeting with the providers will be held to judge receptivity to this program.
2) Secure funding for a program management organization for this program. Recommend eNC for this role.
3) eNC will gather data regarding broadband penetration in the one to one counties. Friday Institute will gather data regarding consumer broadband uptake in the existing one to one programs. MCNC will provide data regarding the districts and one to one school's connectivity to NCREN.
4) Once some priority districts are identified – providers will be work with MCNC and eNC to determine how to best leverage MCNC donation to offer incentives to students.
5) **Realistic implementation**: Early Spring 2009.

National Conference

ATTACHMENT 4

LEGISBRIEF

BRIEFING PAPERS ON THE IMPORTANT ISSUES OF THE DAY

NOVEMBER/DECEMBER 2008 VOL. 16, NO. 44

Bringing Broadband to Rural and Low-Income Families

By Christen Lara, Pam Greenberg and Robert D. Boerner

Broadband benefits rural communities.

In 2003, Greene County, N.C., was a rural community in crisis. Almost entirely dependent upon tobacco, its economy was crippled when the federal government discontinued tobacco crop subsidies. Faced with this devastating economic downturn, county officials decided to expand the broadband infrastructure. The county provided laptops to all middle and high school students, 75 percent of whom were in the free or reduced lunch program. As a condition of the program, parents were required to take weekly computer classes. After five years, the county has developed free Internet hotspots at schools and fire stations; broadband use has jumped dramatically; and the number of students applying to college has increased significantly.

During the past decade, a similarly dramatic increase has occurred in national broadband adoption—from less than 5 percent of the population in 2000 to more than 50 percent in 2008. Although Internet users still can email and search at slower speeds, newer web applications—such as telemedicine, telecommuting and online education—usually require higher bandwidths.

Public-private partnerships help expand infrastructure.

Changing the Focus of Broadband Initiatives. The striking economic growth potential of broadband has been felt not only in North Carolina, but across the nation. Federal, state and local governments and the private sector are attempting to ensure that broadband is universally available. States such as Kentucky have led the way by forming public-private partnerships to deploy broadband to underserved areas.

As access expands, the focus of broadband initiatives is changing. Attention currently is focused on the so-called "last mile" markets—underserved or rural areas where the per-customer cost of providing broadband service is extremely high. States also are addressing emerging socioeconomic gaps in broadband adoption rates, most noticeably among those who are older, less educated, earn less and live in rural areas.

The reasons for these gaps are fairly straightforward. Older people tend to have little experience with technology, and learning to use the Internet can be frustrating. Low-income people often cannot afford a monthly broadband subscription in addition to the minimum cost for a computer. These issues are compounded in rural areas, where accessibility often is limited.

Broadband initiatives help ensure availability.

State Action To narrow broadband gaps, states have begun to assess statewide service availability and expand infrastructure. Some states are attempting to make access truly universal, however, by devoting resources to public-private partnerships, funding programs and tax credits. Four common strategies states use to increase broadband use among rural, low-income families follow.

National Conference of State Legislatures

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William T. Pound

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Herb Cranston

State Aggregated Demand. Because service providers generally build costly broadband infrastructure only in viable markets, several states have worked to 1) assess the number of residences and businesses interested in broadband, 2) spark more interest through broadband demonstrations, and 3) combine local broadband needs and anticipated demand. Armed with this information, states then offer "aggregated demand" packages to service providers as proof of market potential. Pennsylvania and Washington, for example, have guaranteed providers a certain amount of state-purchased broadband to further reduce prices for residents.

States anticipate demand for broadband.

Computer Donation Programs. A recent Kentucky survey asked residents why they did not have access to the Internet at home. Slightly more than half cited as the main reason not having a computer. In response, Kentucky created No Child Left Offline as part of the Commonwealth's public-private partnership, ConnectKentucky. Through the program, underprivileged rural, urban and low-income students receive computers, printers and software. The initiative has provided 1,500 computers to students across Kentucky. Modeled after ConnectKentucky, Connected Tennessee recently began a similar program, Computers 4 Kids. Connected Tennessee began under the umbrella of Connected Nation, a nonprofit Washington, D.C., organization that specializes in increasing technology access and literacy.

Broadband Application Programs. A recent study by the Pew Internet and American Life Project found that one-third of those who do not use the Internet simply do not wish to give up their dial-up Internet for a higher speed broadband connection. To showcase the many relevant benefits of broadband, states are offering rural communities a wide variety of Internet applications, such as education and telehealth programs. The Missouri Telehealth Network has worked in rural Missouri since 1994 to increase access to medical care and education. The program, initially funded with federal and private money, is now supported by the state.

Direct Funding Programs. Many states fund programs to support local broadband initiatives. Pennsylvania's Broadband Outreach and Aggregation Fund, for example, provides grants to community organizations that identify aggregate demand in underserved areas. In North Carolina, the e-NC Authority supports business and technology telecenters located in the state's poor rural counties. Each grant-funded telecenter provides free Internet access and technical and business support. As of 2007, the authority had created nearly 1,500 jobs and provided support services to more than 20,000 people.

Direct funding supports local broadband adoption.

Resource

Horrigan, John. *Home Broadband Adoption 2008.* Washington, D.C.: Pew Internet and American Life Project, July 2008.

Contacts for More Information

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pam.greenberg@ncsl.org
bob.boerner@ncsl.org

Connecting America: Broadband Policy Issues and Options for State Legislatures
www.ncsl.org/programs/lis/ConnectAmerica.htm

Broadband Service Inventory
Franklin County Kentucky

Updated July 1, 2008

Submit questions or recommended changes to: maps@connectednation.org

This map does not depict satellite broadband service.

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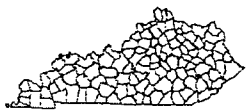

0 0.3 0.6 1.2 1.8 Miles

Symbology

- Incorporated City
- Rural Community
- Interstate
- Parkway
- US Road
- State Road
- Local Road
- Corporate Boundary
- County Boundary
- CCI Tower
- KEWS Tower
- WISP Tower
- SC Tower
- Water Tank
- Mobile Wireless Broadband Available
- Broadband Available
- Unserved Area

Kentucky

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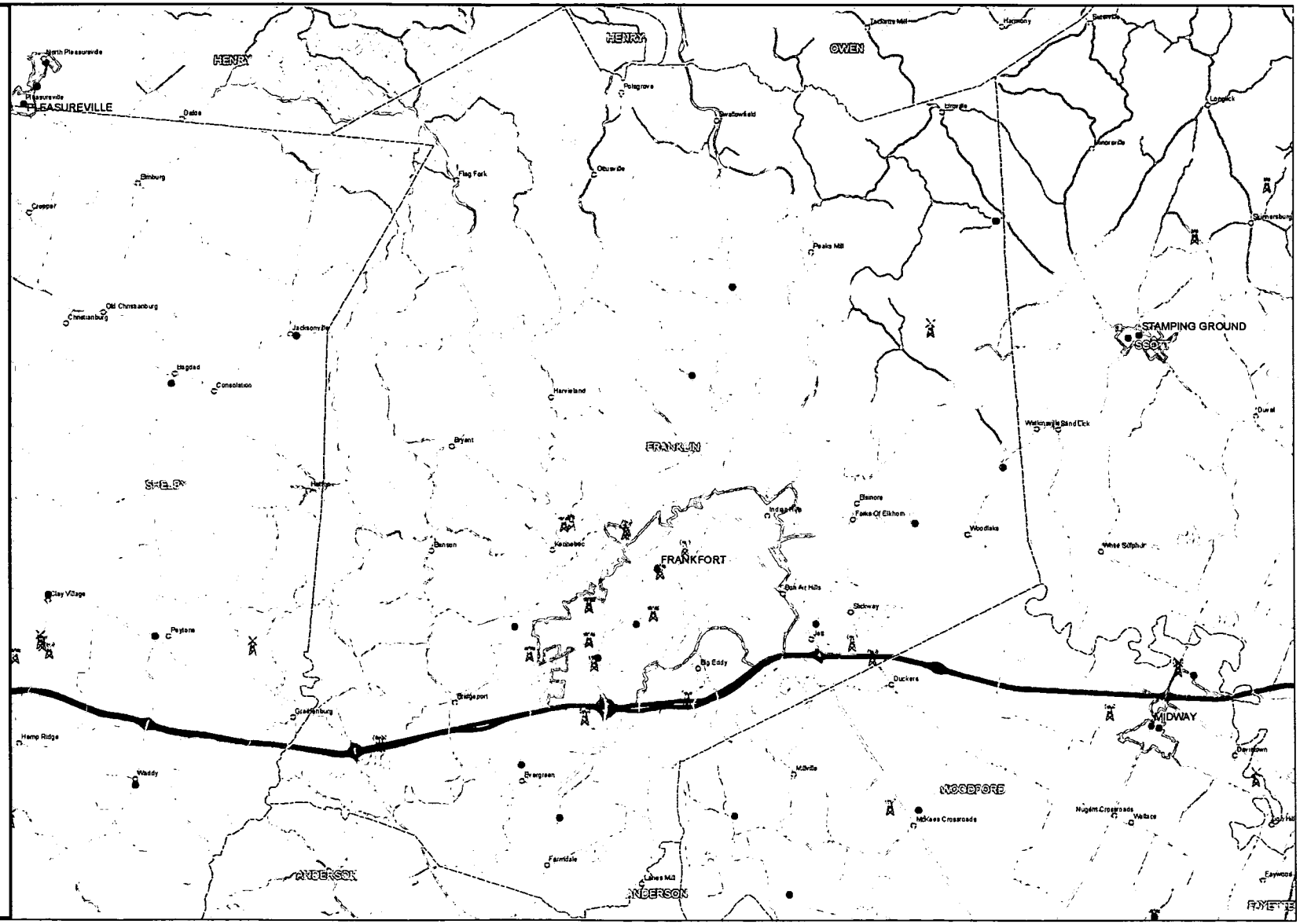
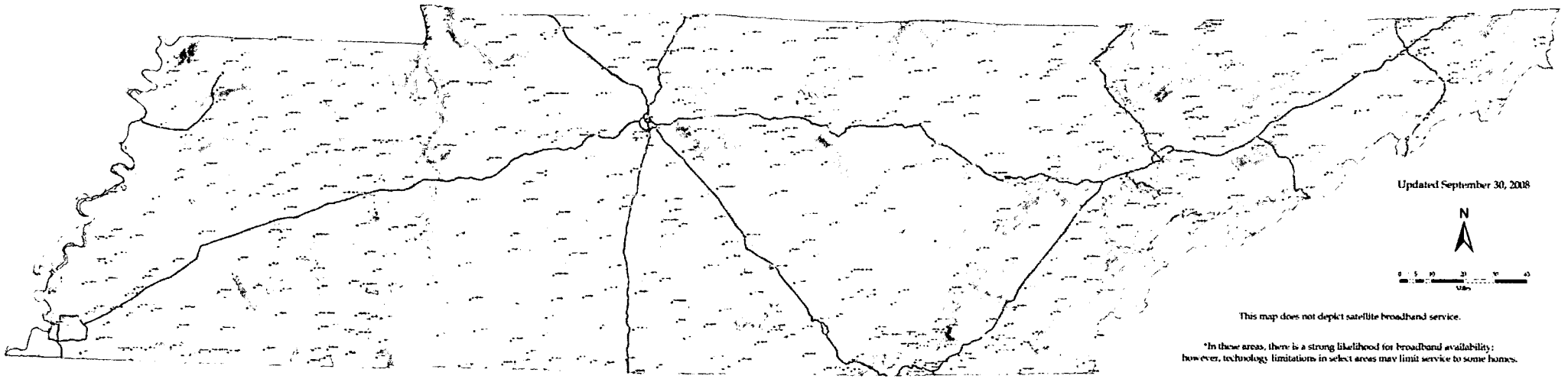


PLEASUREVILLE
FRANKLIN
SHELBY
FRANKFORT
64
64
WOODFORD

CONNECTED Tennessee
THE TRAIL TO INNOVATION

Broadband Service Inventory for the State of Tennessee

Submit questions or recommended changes to: maps@connectednation.org



Updated September 30, 2008

N

0 5 10 20 30 40
Miles

This map does not depict satellite broadband service.

*In these areas, there is a strong likelihood for broadband availability; however, technology limitations in select areas may limit service to some homes.

**This map is not a guarantee of coverage, contains areas with no service, and generally predicts where outdoor coverage is available. Equipment, topography and environment affect service.

With the support of Governor Bredesen, the Department of Economic and Community Development, the Office for Information Resources, and the Tennessee Broadband Task Force, Connected Tennessee has worked with broadband providers throughout the State to identify the gaps in broadband service - the first step in a statewide effort to "fill the gaps" for 100% broadband availability.

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Symbology

- City
- Interstate
- US Road
- County Boundary
- National and State Lands
- Water
- Broadband Available
- Broadband Likely Available*
- Mobile Wireless Broadband Available**
- Unserved Areas

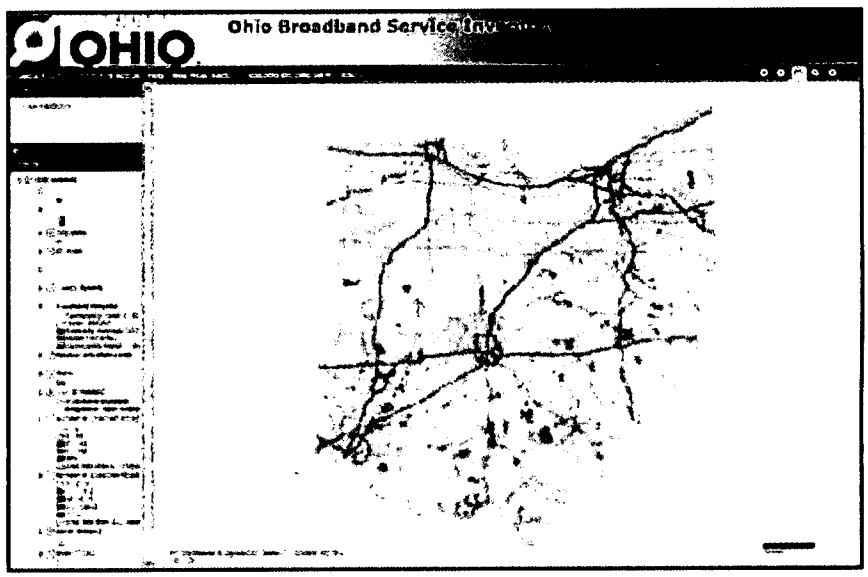
CONNECT OHIO℠

Connecting Communities.
Changing Lives.

Feedback

Connect Ohio relies on citizen feedback to perfect the accuracy of the broadband inventory maps. Please contact us to submit questions or recommendations for coverage area changes. We respond to all inquiries and incorporate relevant information.

Welcome to Connect Ohio's online, interactive Broadband Inventory Map for the State of Ohio. This map is intended to allow users to create completely customized views of broadband infrastructure across the state. The link below contains a very large amount of data, and a broadband connection is recommended for viewing. If a broadband connection is not available, PDF and JPEG images of the statewide broadband maps are available here.



- How to Map Your Address
- How to Identify Broadband Providers
- Learn How to Use Ohio's Interactive Broadband Inventory map
- View Ohio's Interactive Broadband Inventory Map

Connect Ohio 232 North 3rd Street | Suite 201 | Columbus, Ohio 43215 | 1-866-881-9424 | info@connectohio.org

ATTACHMENT 5

Mobile Broadband

A Tool For States & Communities

November 2008

Information About Mobile BB

- FCC Data Collection.
- Cellular Telephone & Internet Association (CTIA).
- CostQuest Associates' NARUC Study (July, 2008).
- Commercial Services
  - American Roamer

Mobile Broadband

- Mobile Broadband is one of 8 technologies available to North Carolina consumers.
  - At least 5 Wireless Providers serve over 750 K subscribers.
- What is it?
  - Internet Access with speeds up to 1.3 Mbps through PDAs, laptop cards, and mobile routers.
  - Average speeds 500 to 800 Kbps.
- Mobile BB is the fastest growing Broadband service.

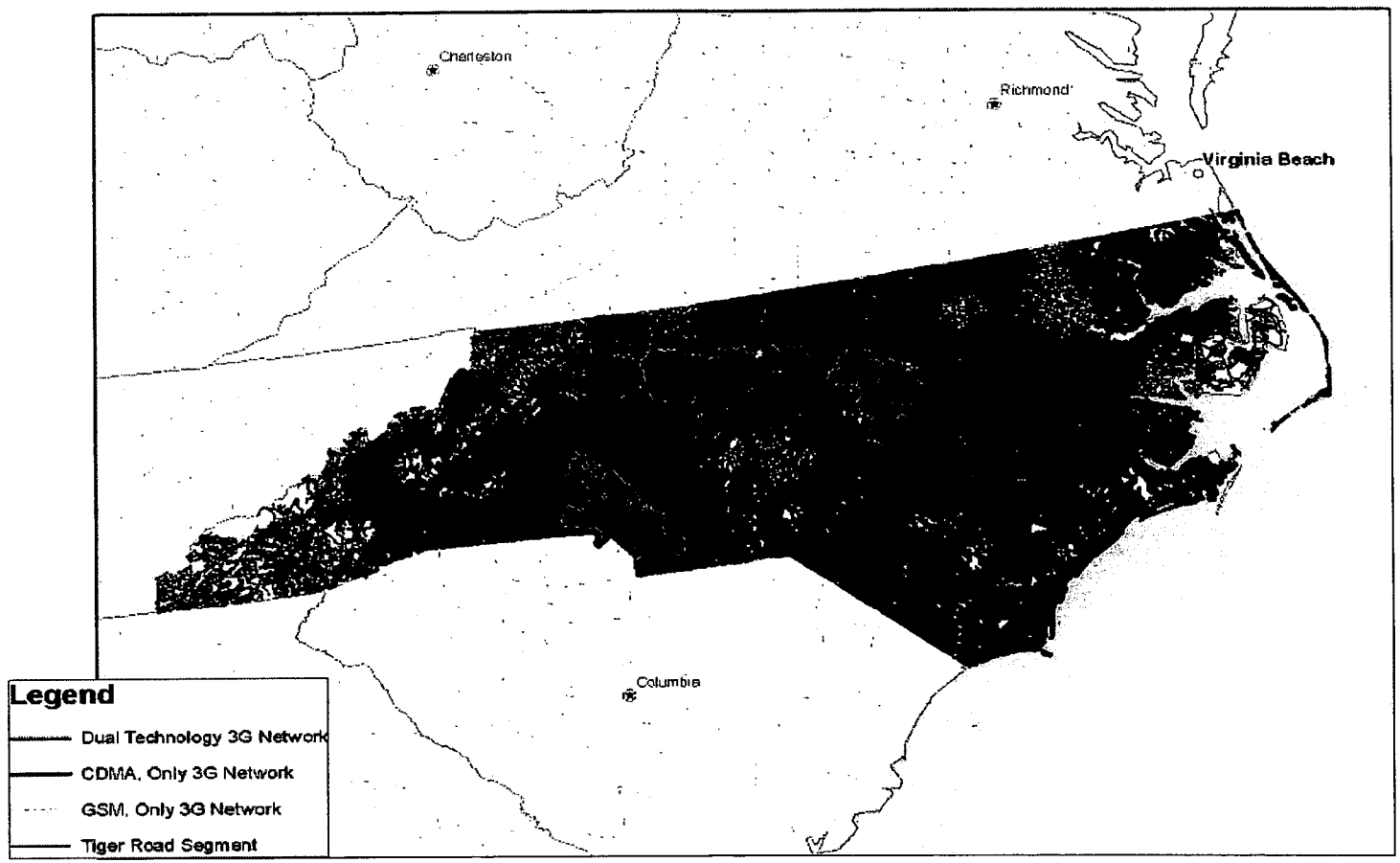
CostQuest Study

- NARUC Study of 3G Mobile Broadband in U.S. released July, 2008.

- Study Highlights:
  - North Carolina Ranks 10th in Deployment.
    - 80% of geography & 94% of population covered.
      - Remaining 20% of geography & 523,997 (6%) pops un-served.
      - 15% of road miles un-served.
  - 86% of population have choice of 2 or more providers.

- What would statewide ubiquitous Mobile 3G Cost ?
  - Estimated new cell sites required - 107.
  - Estimated augmented cell sites required – 2,007.
  - Estimated investment required - $321,226,500.

North Carolina's 3G Mobile Broadband



Coverage Data, American Roamer
Basemap Imagery Copyright ESRI 2006

COSTQUEST ASSOCIATES

4G Is Coming Soon

Auction 73 Results:

49/50 licenses sold
10 different companies purchased spectrum

Competition will drive deployment (2010-2012):

AT&T Mobility Spectrum
AWS Spectrum, LLC
Cavalier Wireless
Cellco Partnership dba Verizon Wireless
Comporium Wireless, LLC
Cox Wireless (Cox CATV)
Frontier Wireless (DISH Network)
Horry Telephone Cooperative, Inc
King Street Wireless, LP
Star Telephone Membership Cooperative

What will it do?

Spectrum characteristics: Better coverage; 3-10 mbps.
Services: personal; connectivity/integration; Video to handset.

How Can North Carolina Help?

- 3G Deployment will require?
  - 107 new sites.
  - 2,000+ augmented sites.
  - $320+ M.
- Remove barriers.
- Consider incentives.
  - Target for rural areas.
  - Equipment exemption.
- 4G will require similar effort in 2009.

COSTQUEST ASSOCIATES

U.S. Ubiquitous Mobility Study

Identification of and Estimated Initial Investments to Deploy Third Generation Mobile Broadband Networks in Unserved and Underserved Areas.

Submitted to:
CTIA – The Wireless Association®

Submitted by:
CostQuest Associates, Inc.

Submission date:
April 17, 2008

Prepared By:
CostQuest Associates
6261 Ashbourne Place
Cincinnati, OH 45233
U.S.

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Introduction

As communication evolves, our economy and our lifestyles are impacted. Transitioning from fixed to mobile services provides consumers greater safety, convenience, efficiency, and proximity. Transitioning from narrowband to broadband has brought access to information and services almost unimaginable a short time ago.

Clearly it isn't just our individual lives that are benefited by this transition. The growth of commerce and the economic well-being of the nation are improved. To maximize this economic impact all citizens should have the chance to participate. To accomplish this universal access, a key element is to promote ubiquitous wireless coverage and access to the kinds of advanced mobile wireless broadband services that most U.S. consumers now have available to them.

The two predominant third generation (3G) mobile wireless broadband technologies are Evolution Data Optimized ("EvDO") and High-Speed Downlink Packet Access ("HSDPA"). EvDO and HSDPA technologies provide consumers broadband quality connectivity to voice, data, and, increasingly, video services. CDMA carriers generally provide mobile wireless broadband access over EvDO networks, while GSM carriers provide mobile wireless broadband access over HSDPA networks. About half of America's mobile wireless subscribers receive service over CDMA networks and about 40% of America's mobile wireless subscribers receive service over GSM networks.

Unfortunately, these 3G mobile broadband technologies are not available to all U.S. consumers, especially those who reside, work, and travel in less dense, rural areas. The looming question then is: "what is the cost to provide ubiquitous 3G mobile broadband coverage"? The answer to this question will have considerable legal and policy implications – especially in the area of universal service.

To frame the concept of ubiquitous wireless and provide cost estimates, CostQuest Associates was commissioned by CTIA – The Wireless Association® - to study wireless coverage in the United States and to a) identify areas and population not served by 3G mobile broadband technologies, and b) estimate the up-front deployment costs to build a 3G wireless network to unserved and underserved areas.

To conduct the study, CostQuest collected coverage maps and tower locations. It then compared data to the road network where people live and commute. Partitioning up the country into cell site size lots, CostQuest was able to estimate the assets that would need to be deployed to achieve ubiquity.

CostQuest was not asked to estimate the substantial costs related to *maintaining* 3G networks or *providing* mobile wireless voice, data, and, increasingly, video *services*

on an on-going basis. Such operations and maintenance costs must be accounted for by carriers when they determine whether an area can be economically served on an ongoing basis.[1]

Below is a summary of the key findings of this study.

Summary of Findings

1) Approximately **23.2 Million U.S. residents** currently do not have access to 3G mobile broadband service at their primary place of residence.[2]

2) We estimate that approximately **42% of road miles** in the United States do not have access to 3G mobile broadband service.

3) The estimated investment needed to build out infrastructure to facilitate mobile broadband service ubiquitously is approximately **$22 billion.**

4) In order to achieve full 3G mobile broadband coverage, approximately **16,000 new towers** will need to be constructed and **55,000 existing towers** will need to be augmented with 3G technologies.

[1] The report also does not assess the cost of extending basic wireless voice networks.
[2] For this study residence is defined as the location of a census block in which a residence is enumerated according to the 2000 US Census. The population was then proportionally adjusted to equal the July 2006 county estimates.

Purpose and Uses

The purpose of this study is to frame a complicated factual question that underlies important universal service policy debates. This question is: what upfront investment is necessary to augment existing wireless infrastructure and / or build out new infrastructure to provide ubiquitous wireless broadband service?

This initial study frames the size of the deployment issue and sets out the next steps needed to address critical policy questions. Once these next steps are identified, it may be necessary to refine the cost, should there be a decision to publicly support the deployment. Further refinement would involve a more precise treatment of geographic and technological considerations, so that policy makers can be assured that policy and/or funding decisions are sound.

With this said, the assumptions included in our methodology present good high-level estimates of populations, roads, and total investment necessary to build-out meaningful Third Generation (3G) mobile wireless broadband capabilities.

This initial study is not an attempt at creating the actual final cost, the precise tower count or the bill of materials. Rather, the authors view this initial study as the first of many steps in accurately identifying locations investments and operating costs related to ubiquitous wireless broadband coverage. Policy makers, consumers, and carriers will determine, over time, the detailed input criteria for the development of the final costs and the resulting use of the values developed. Significantly, this study also does not include the cost of spectrum.

Equally important as developing the build out investment estimate, however, is developing a methodology to estimate the necessary costs to operate and maintain this ubiquitous network. These operations and maintenance costs are *not* included in this study. As such, the next logical step in this process would be to determine the costs associated with operations and maintenance of wireless networks in both existing areas and the areas identified in this study as requiring new plant. Much like the costs used in the current Universal Service mechanism (yet unique to the wireless industry), these costs would include the ongoing capital costs (depreciation, taxes, cost of money) associated with the network capital expenditures (land, buildings, radio/RF, switching and other accounts), spectrum costs, maintenance cost of the network, and the operating expenses related to serving the customer.

Methodology Fundamentals

As the purpose of this study was to understand the investment necessary to deploy ubiquitous wireless broadband services, several dimensions of data were necessary for every location within the United States. The section which follows will briefly discuss how these data were generated.

To study the cost of ubiquitous wireless broadband deployment, **two fundamental methodological definitions** had to be addressed:

1. **The goal of "ubiquitous 3G broadband service" had to be defined.** For the purpose of this analysis, ubiquitous broadband was defined in terms of the ability to receive both predominant types of 3G service at all studied locations. In other words, ubiquitous broadband service means the ability to receive 3G wireless broadband service in the technology evolution from both CDMA and GSM. If an area can now only receive one class of broadband technology, it was categorized as underserved and the network was augmented from existing infrastructure to allow the support of both technologies. If the area had neither 3G technology service, the area was categorized as unserved by 3G and the network was augmented with both technologies (and possibly a tower) to support the defined level of service.

2. **The geographic scope of coverage had to be defined.** In the case of a wireless network this is a particularly complicated question. Because mobility is a fundamental characteristic of wireless coverage we felt it was important to both identify where population resides as well as how that population could move (e.g., roads). In other words, some combination of populated areas and paths for movement were necessary coverage targets for the ubiquitous wireless networks. We felt that road paths would capture both attributes: populated areas and paths for movement. As such, our target for coverage is road paths[3].

Methodology Steps

Once ubiquity was defined and the geographic scope of coverage was established, a number of processes needed to be developed in order to estimate investment. Ultimately, six technical steps ranging from geospatial to cost analysis were used:

1. **Coverage Data Analysis** - Data regarding current wireless deployment was identified, filtered and combined with other data sources. Along with the coverage pattern, the technology providing service was evaluated.

2. **Technology Isolation** - Those areas served by each of the wireless technologies were isolated.

3. **Asset Data Analysis** - Existing wireless assets (tower locations) were filtered and categorized in terms of the existing broadband coverage patterns and network protocols. These towers were then overlaid with the wireless coverage areas.

[3] The reader is cautioned to not infer that this coverage guarantees a specific quality of service. In other words, there is no guarantee of uniform in building or in car standard with this definition. The mobile wireless coverage used in this study does not assume that signal propagation is spread perfectly or even uniformly throughout the covered area. That is, the networks in the covered areas are continually optimized and improved for capacity growth by the carriers who own and manage them.

4. **Road and Population Analysis** - Using the coverage and asset information, the basic requirements for a ubiquitous network could then be estimated using road paths as the coverage target for network build out and estimated coverage areas as the unit of analysis.

5. **Coverage Analysis** - The entire U.S. was divided into areas approximating the area that could be served by a single tower in lower density areas. These cells were superimposed over the coverage and asset data. Those cells without any roads were dropped from any further analysis since there was no need for coverage. It was assumed that a new tower was needed in each of the remaining cells (those without any coverage), providing an estimated count of new tower sites that will be needed to fill out service coverage. In those cells with coverage from only one 3G technology (or only with voice coverage), the assumption was made that the existing towers within the grid cell would require augmentation.

6. **Investment Development** - Given the count of new sties and the count of towers requiring augmentation, both from the previous step, the investment required to deploy the wireless assets was developed.

Coverage Data Analysis

Coverage Basis Determination

In order to identify uncovered or unserved areas within the U.S., the study first identified the areas currently *covered* by a mobile wireless signal.

As a result of the complexities inherent in carrier coverage maps and in obtaining standard maps from each carrier, we elected to use a commercial coverage database which has been introduced in several regulatory proceedings[4]. For this study, American Roamer[5] provided coverage data for the top 5 wireless carriers by subscribership and 5 of the largest regional carriers[6]. The carriers included in this study represent over 97% of the wireless market share[7] and cover all 50 states, and the District of Columbia. Coverage for 3G services was derived from American

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[4] See uses including http://www.psc.state.fl.us/utilities/telecomm/ETCWorkshop/Alltel.pdf - Showing multiple carrier coverage in Montana and South Dakota, see also Re: In the matter of the Federal-State Joint Board on Long-Term High-Cost Universal Service Reform, WC Docket 05-337, and CC Docket 96-45 (http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6519534113)

[5] http://www.americanroamer.com/ - 5909 Shelby Oaks Drive, Suite 105 – Memphis, TN 38134

[6] Due to time and data acquisition constraints, coverage areas of smaller regional carriers were not included in the study. However, the coverage from these small regional carriers should not materially impact the results of the study.

[7] Market share was determined by using CTIA's estimate of total subscribership in the US, and applying market share numbers by carrier from Forrester Research (AT&T - 27.1%, Verizon – 26.3%, Sprint Nextel – 23.6%, T-Mobile – 11.1%). Alltel, Dobson, RCC, US Cellular, Alaska DigiTel, and Centennial Communications represent roughly a combined 9% market share. For purposes of completeness, we included in this analysis ACS's EvDO coverage in the State of Alaska.

Roamer's Coverage Right Advanced Services (2/2008)[8]. The geographic extent of non-3G coverage was based upon American Roamer's *Coverage Right (9/2007)* data product.

Technology Isolation

Coverage Protocol and Generation Scenarios

Given that both CDMA and GSM technologies are prevalent in the U.S. today and that the two platforms are not interoperable, coverage by the 3G evolution platforms for both types of networks will be necessary in order for all consumers to retain coverage in all areas.[9] Figure 1 below shows the generational technology protocols and research standards used for the two technologies.

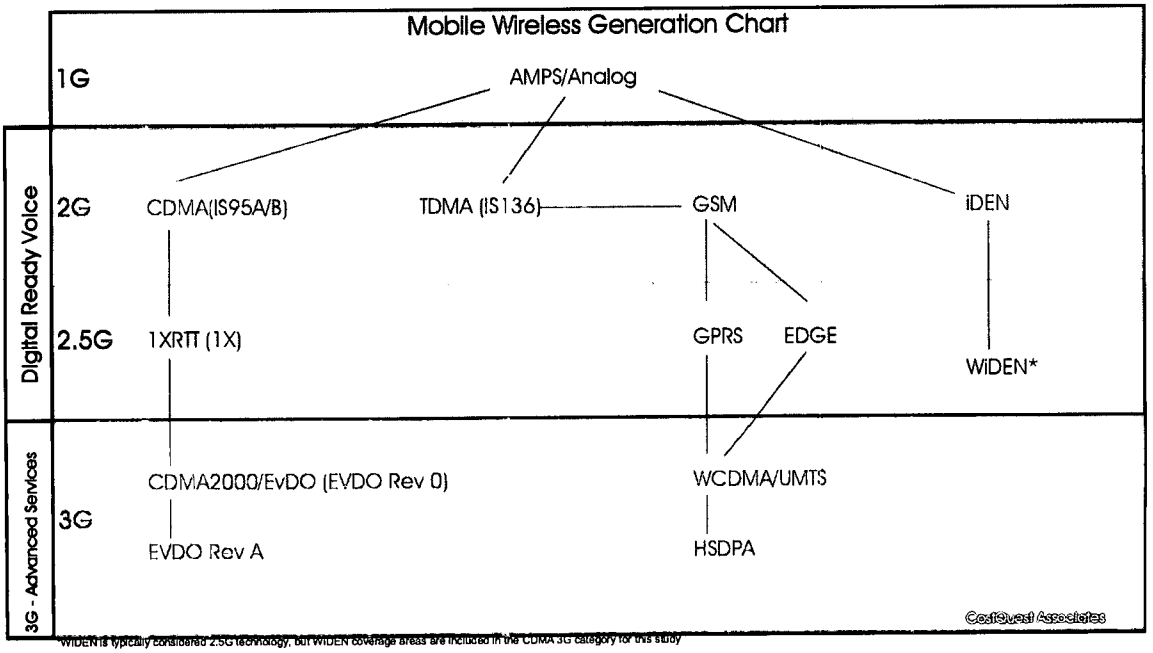


Figure 1—Mobile Wireless Technology Generation

Nationwide Build Out to 3G

As noted above, the study estimates the cost of building out the two predominant 3G evolution platforms to cover each eligible road segment in the US. In Figure 2 below, an example is provided showing the overlay of coverage on roads. Although not shown on this figure, 3G was further classed into areas with dual network providers or only a single provider.

[8] Coverage for ACS was digitized based upon marketing material available at http://www.acsalaska.com/NR/rdonlyres/64686B8E-9B6D-48B0-A365-CCF9E954EC4D/0/2007MobileBroadbandMaps.pdf

[9] This study utilizes current FCC broadband definitions.

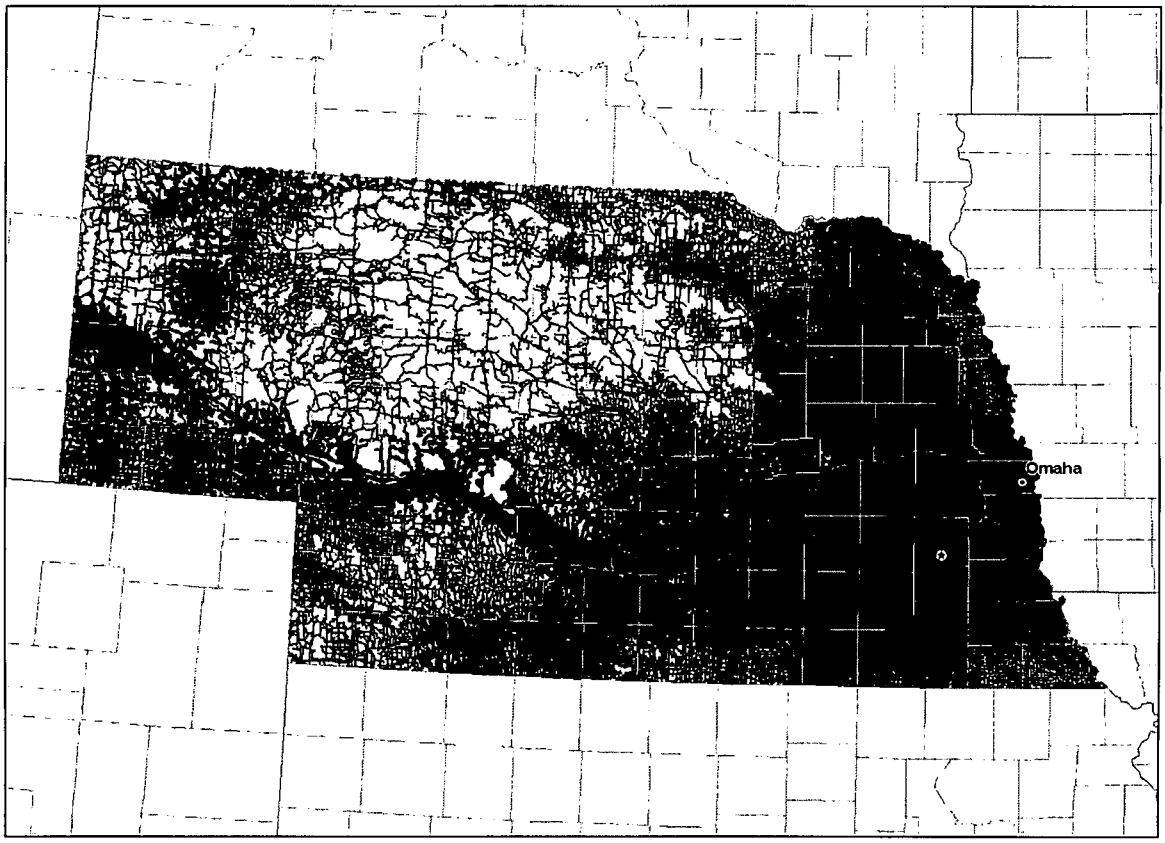


Figure 2—Overlay of 3G Coverage Maps on Road Network - Green-3G, Black-Uncovered by 3G

For those areas only receiving voice services, the study augments each cell with appropriate investment to provide ubiquitous 3G coverage. For those areas currently with no wireless service, the study augments each serving area with appropriate investment to build towers, antennas and backhaul to provide ubiquitous 3G coverage. Finally, in those areas where only one 3G technology is deployed, the study augments these serving areas with the appropriate investment to provide both 3G technologies.

Asset Data Analysis

Towers and Sites

For cells within 3G served areas, existing tower sites were used as the augmentation target. In these underserved areas it was reasoned that existing tower location information provides a better indicator of serving area engineering than does the 6mi tower radius. [10] Tower location information was obtained from Towersource.com[11].

[10] In some extremely high density cells, the number of towers considered for augmentations was capped at 16, since the tower records may capture repeaters. This cap of 16 provides a cell radius of ~0.8miles with roughly a 4 mi sub grid cell coverage area.

[11] Extracted April 2008.

Broadcast towers were removed from the data as well as duplicates and records outside of the area under study.

Road and Population Analysis

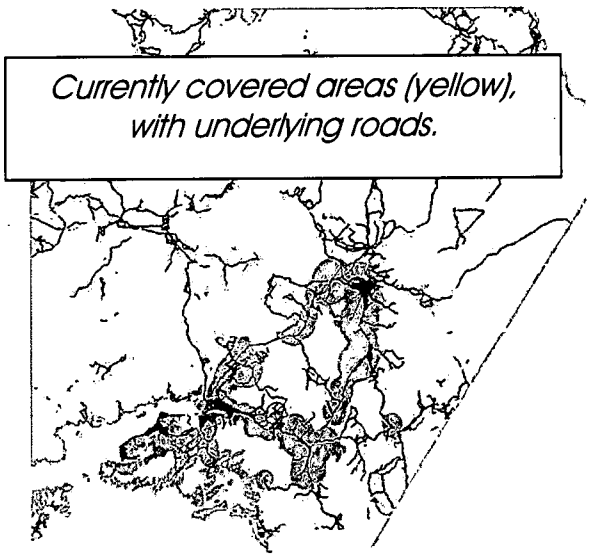
Coverage Demand Identification

Population

While not a direct unit of analysis for the development of augmentation costs, population was studied to determine the counts of potential subscribers who are in 3G unserved areas. Population data were derived from US Census 2000, SF1 population counts at the census block level. The population was then proportionally adjusted to the July 2006 county estimates. Population was allocated based upon the amount of livable road side[12] feet in that census block within each covered service territory.

Roads

TIGER 2006 First Edition roads were used as targets for where the population lives and routes for mobility. Roads were also used to allocate the census population data into the appropriate grid cells. Eligible road types were determined based upon the Census Feature Classification Code (CFCC). Vehicular trails, forest service roads, Ferry Crossings and other special paths and trails were excluded from the study[13].



Currently covered areas (yellow), with underlying roads.

To allocate population a subset of the eligible road segments were used to establish where people likely live. In other words, certain road classes such as limited access interstate highways were included in the coverage analysis portion of this study, but were excluded from calculations which allocated population within a census block.

Identifying Features of Interest

For this study isolating the population, roads, existing tower assets and extent of coverage by technology was necessary. This was accomplished by using a Geographic Information System (GIS)[14].

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[12] As a road may represent a different census block on its left side and right side, the side feet of roads were used as the population allocators—not the centerline distance.

[13] If any of these additional roads and trails were included in the analysis, there would be considerably more road miles to cover.

[14] ESRI, ArcView, 9.2 Build 1420

A geoprocessing model was used to identify road segments which were not covered by a 3G technology. The geoprocessing model effectively analyzed each eligible road segment and recorded the amount of that segment intersecting each 3G covered area.

Using the geoprocessing model, five classes of eligible roads were developed. The first class was all possible eligible road segments. The second segment class included roads covered by only voice technology. The third class was road segments covered by both a CDMA (EvDO) and GSM (HSDPA) class of 3G broadband service. The fourth class was a segment covered by only GSM (HSDPA) based 3G. The fifth class was a segment covered only by CDMA (EvDO) based 3G.

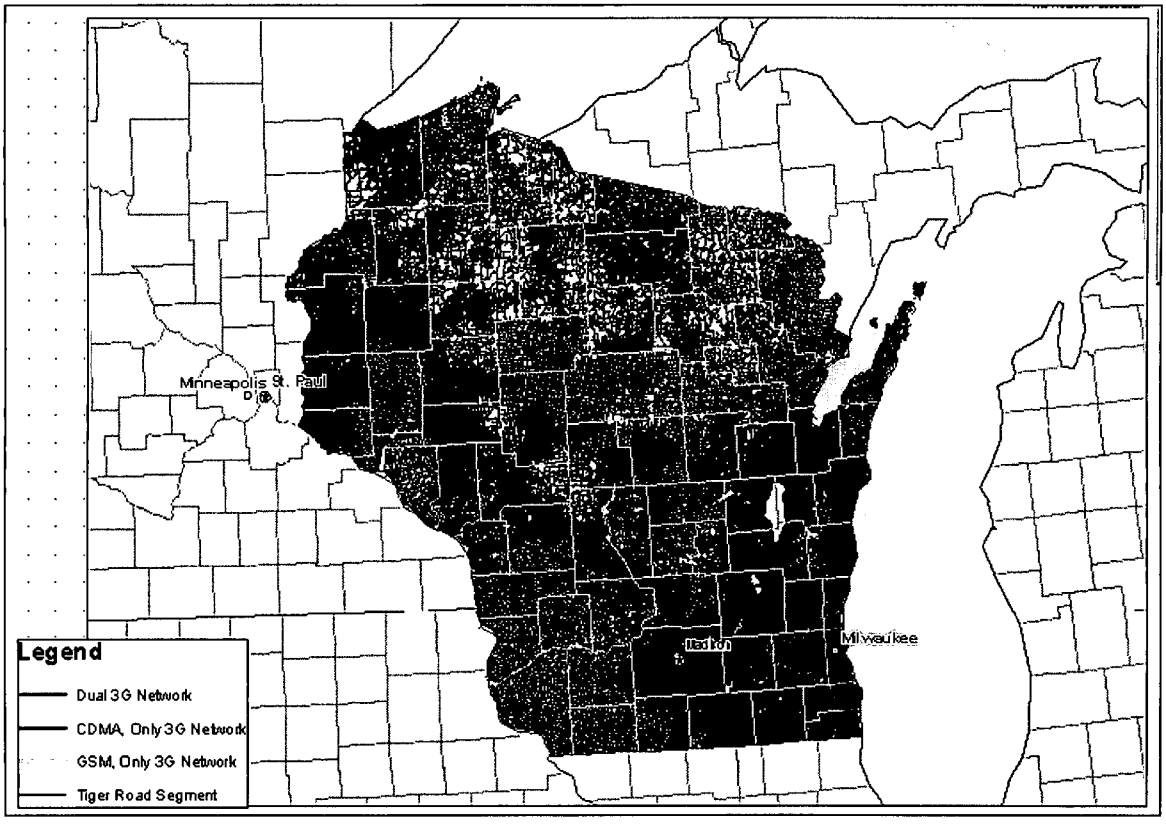

Figure 3–Categories of Road Segments: Green- Only CDMA based 3G, Black-Uncovered by 3G, Red-Covered by both a GSM and CDMA based 3G network.

Coverage Analysis

Cells and Coverage

As described in the Assumptions and Calculations discussion at the end of this section, a 6 mile serving radius was used to represent the reach of a tower site in

lower density areas[15]. This 6 mile serving radius equated to a 8.48 x 8.48 grid cell[16]. Once the road segments were classed by the served network technology, they were then classed within each cell[17].

The amount of road centerline feet covered by each network protocol within a grid cell was then used to determine whether 3G augmentation would be required[18] and the type of augmentation. Grid cells with no road feet covered by an existing 3G or voice technology required a full site deployment (e.g., tower, antenna, backhaul, etc.). In these areas, a single site was assumed sufficient to serve the entire cell.

Grid cells covered by only voice based technologies (i.e., no current 3G deployment) were identified as areas that required upgrades to both 3G technologies. In contrast to the unserved areas, these grid cells only required upgrade equipment – augmentation - rather than the equipment needed to fit out a full tower site. In these areas, it was also assumed that a single tower site could be deployed with 3G equipment to serve the entire area.

The final types of areas analyzed were those that were partially covered with 3G services.[19] In those grid cells where both technologies were deployed, no investment was necessary. However, in those grids with only one 3G technology, the underserved area was augmented so that existing tower sites within that area were augmented to make both 3G technologies available. Unlike the unserved 3G areas, we augmented a percentage of the actual tower count within the grid cell[20], since the actual tower count provided the actual cell sizing criteria in higher density areas – rather than our estimated 6 mile based grid cell.

Investment Development

As mentioned in the introduction, this study was commissioned to identify only the initial capital investment of deploying ubiquitous wireless broadband coverage across the nation. As such, these estimates are not comparable to other Universal Service cost estimates, since such mechanisms represent the average monthly or annual costs of providing service, including capital costs and operations and maintenance costs. This study also did not attempt to include the costs of spectrum, which are often significant.

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15 We assumed that in lower density areas, distance from the tower was the key limitation on design. As density increases (i.e., users), both traffic and distance can limit the service area of a tower.

16 This size cell was used as it is the smallest square which can bound a 6mi radius tower serving area.

17 There we approximately 50,000 grid cells in the study covering more than 39 million road segments.

18 For purposes of the study, augmentation was triggered when more than ½ mile of roads within a grid cell was found to be uncovered.

19 As a conservative approach, a cell partially covered by a 3G technology was considered fully served by the specific 3G technology.

20 For purposes of the study, we assumed that 40% of the towers (minimum of 1) within a 3G grid would need to be augmented to provide service for the currently non-deployed 3G technology. The 40% was derived from an assumption that ½ of the towers were required for each technology. We reduced our ½ assumption to account for concerns that the tower data may contain non-tower sites such as repeaters.

Direct and Indirect Capital Investment Estimates

For those areas already served by both a CDMA (EvDO) and GSM (HSDPA) based 3G technologies, no additional investment was needed. By-in-large, fully deployed 3G areas reside in counties with population density greater than 100 people per square mile. To put that into perspective, the FCC has reported that 79% of the U.S. population lives in non-rural counties representing no more than 14% of the geographic area of the United States.[21]

For those areas that are currently unserved by any wireless service, the grid cell analysis provided the total counts of tower sites that need to be deployed. This count of tower sites was multiplied by the costs for a full site deployment for both technologies. This full site deployment cost includes the base station, tower, antenna, site acquisition, microwave backhaul, etc.

For those areas where a tower exists but service coverage has to be augmented to provide full 3G level service, the grid cell analysis provides the count of towers where the technologies need to be deployed. Based on the deployment requirements, the tower count was then multiplied by the required augmentation costs, which include all upgrade components required at the site.

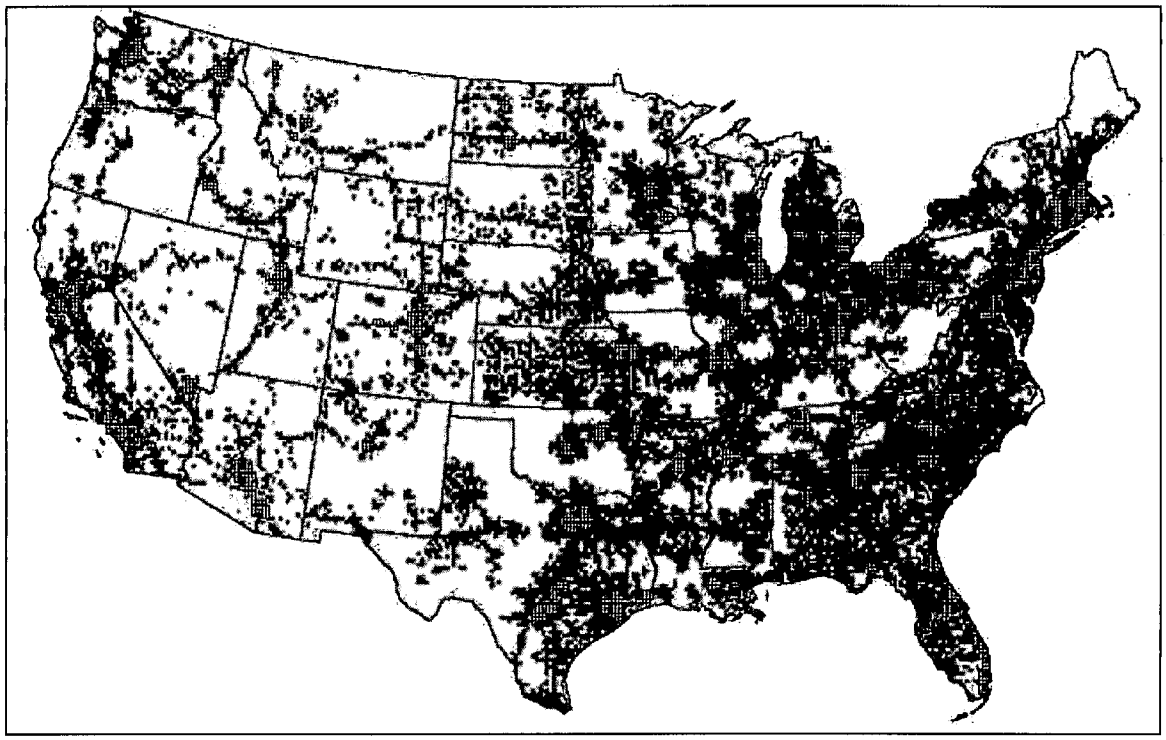

Figure 4-Areas needing augmentation to dual 3G networks (green requires only GSM based 3G, yellow requires only CDMA based 3G)

[21] See Annual Report and Analysis on the Competitive Market Conditions With Respect to Commercial Mobile Services, WT Docket No. 07-71, FCC 08-28 (rel. Feb. 4, 2008), at para 37.

Costs used in the study were based on input from 4 wireless carriers. The cost inputs reflect the various buying power of providers, ranging in size from national carriers to smaller regional carriers.

Estimates on secondary capital were also included in the study by multiplying the tower and augmentation costs by a factor. These secondary investments include switching, motor vehicles, furniture, tools, etc. The factor applied only represents the secondary capital investment related to the initial build-out for unserved and underserved areas.

Spectrum costs were not included in this study. The substantial costs associated with acquiring spectrum should be considered for further studies.

Assumptions and Inputs

Engineering Parameters

Given that this is an exercise in determining a national cost estimate to provide ubiquitous 3G wireless broadband coverage as opposed to specific site by site engineering, standard GSM/HSDPA and CDMA/EvDO deployment parameters, engineering, and costs were considered sufficient.

If site specific costs are of interest (as we recommend in the next steps to refine this study), details related to network deployment at each site, such as tower height, topography, frequency and handsets used would be required.

Signal Propagation Radius

Notwithstanding all the variables that go into planning a broadband wireless network, reasonable averages were determined so that the study could estimate total network assets needed to cover a given area. Depending on the frequency and technology used, between 4 and 7 miles of propagation radius will give a customer in-car and in-building signal in an average deployment.[22] As such, we selected 6 miles as the signal radius used to determine the reach of a tower or site in this study.

Other Engineering Parameters

- Maximum customers per site/tower were assumed to fall between 2,000 and 2,500 customers based on 60 mErlang per subscriber.
- Maximum propagation radius for any deployment would be no more than 22 miles. However, given our grid cells and their assumed signal radius, no main road was greater than roughly 6 miles from a tower.
- The analysis assumes the use of existing, deployed spectrum including Cellular, PCS, SMR, and AWS-1 bands.

Cost Development Assumptions

Cost estimates for direct (e.g., tower) and secondary (e.g., motor vehicles) capital investment were derived from requests to providers and from CostQuest's work in the wireless industry and are meant to serve as a broad average for deployment of new network equipment.

Tower/Site Cost Estimates

Full site deployment, which includes the base station, tower, antenna, site acquisition, microwave backhaul, etc., are estimated to be $650,000 per site for either CDMA/EvDO or GSM/HSDPA based 3G deployments. For dual mode sites, the cost of the site was $865,000.

[22] Dr. Shawn Ziglari, President and CEO, eXpert Wireless Solutions, Inc. (http://www.expertwireless.com)

For those areas where a tower exists but service has to be augmented to provide 3G level service, augmentation costs including all upgrade components required at the site are estimated to be $105,000 for GSM/HSDPA augmentation, $80,000 for CDMA/EvDO augmentation, and $185,000 for dual mode augmentation.

Spectrum

Spectrum costs were **not** included in this study. The substantial costs associated with acquiring spectrum should be considered for further studies.

Secondary Capital Estimates

Secondary capital, including switching, motor vehicles, furniture, tools, etc., is estimated to be 5% of the direct site investment. This represents only the secondary capital investment related to the initial build-out for unserved and underserved areas.

Up Front Capital Study Limitation

This study does not estimate costs related to maintaining the networks or providing service. Additional analysis would need to be performed to identify capital and operating costs related to maintenance, optimization (coverage and capacity adjustments for changing market conditions), and the general service and administrative costs associated with such networks.

Ubiquitous Wireless Broadband Study Results
3G Coverage

Population and Roads

Based on our study methodology for 3G coverage and the data that was used, roughly 23.2 Million U.S. residents currently have no access to advanced wireless broadband service at their place of residence. While roughly 2.5 million road miles do not fall within any 3G coverage area.

The map below (Figure 5) shows areas currently served by 3G services. There is no distinction at this scale for underserved 3G areas.

The map in Figure 6 shows the road coverage within the state of Washington broken out by: Dual Technology 3G network, CDMA/EvDO only, GSM/HSDPA only and unserved. Figure 7 is a table showing unserved roads, geographic area, and population by state.

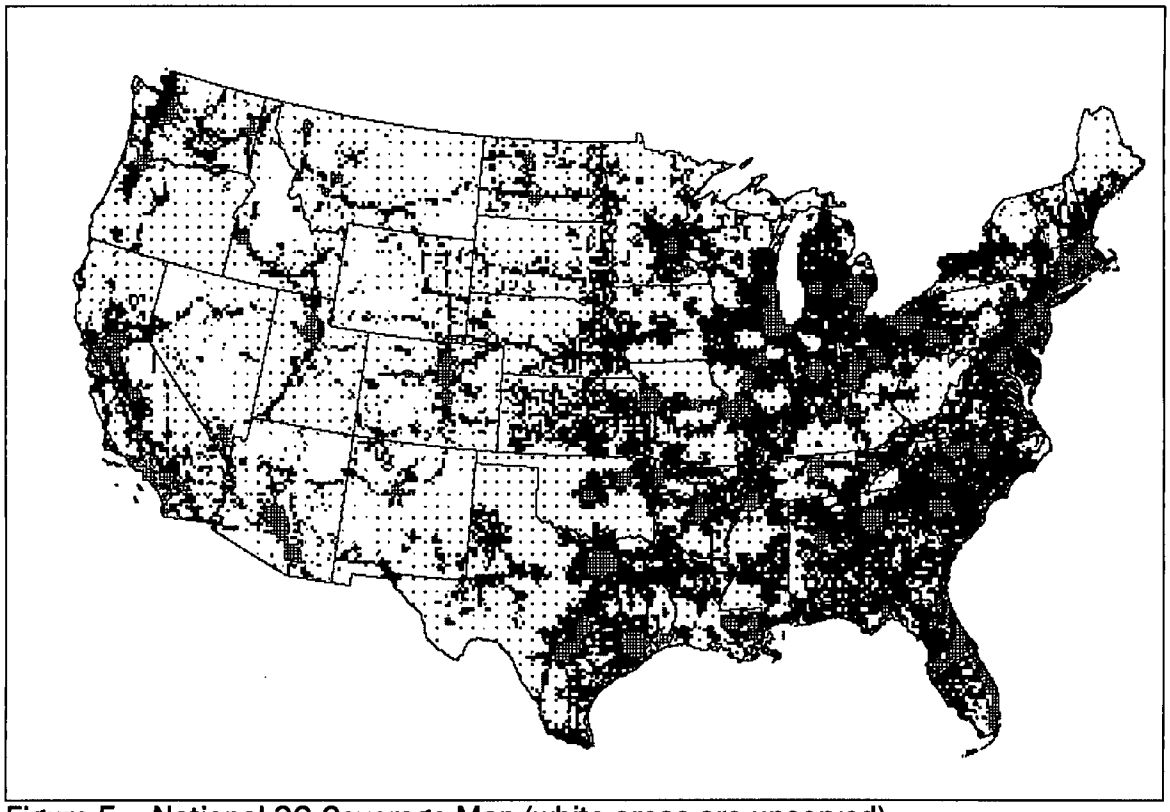

Figure 5 – National 3G Coverage Map (white areas are unserved)

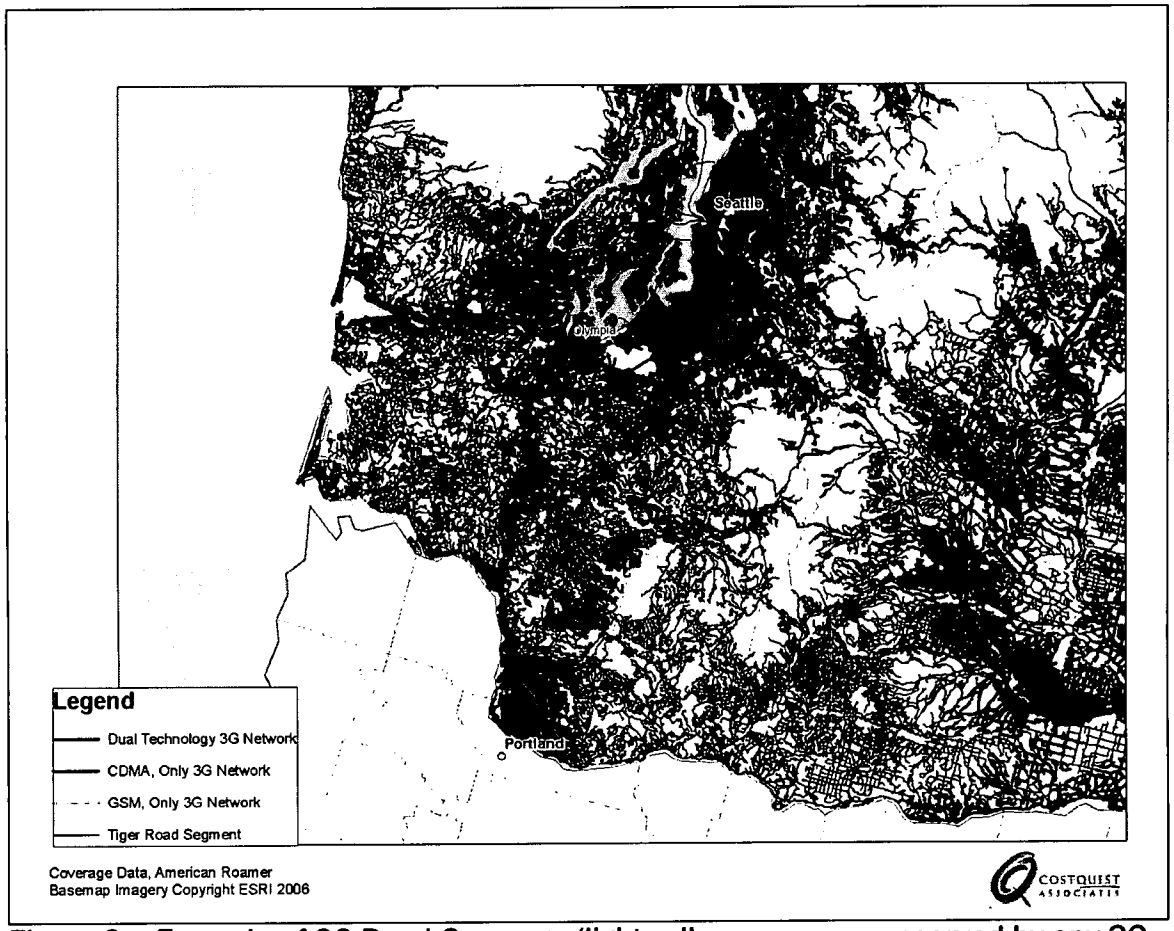

Figure 6 – Example of 3G Road Coverage (light-yellow areas are unserved by any 3G technology)

Note: In a second, accompanying document to this study is a map for each of the States and the District of Columbia.

State	Population Unserved by Mobile 3G	Percent Road Miles Unserved by Mobile 3G	Percent Geographic Area Unserved by Mobile 3G
Alabama	535,125	21%	30%
Alaska	315,189	87%	98%
Arizona	214,013	62%	80%
Arkansas	225,894	27%	35%
California	715,985	36%	61%
Colorado	258,632	59%	76%
Connecticut	87,180	3%	5%
Delaware	7,438	2%	6%
District of Columbia	-	0%	0%
Florida	198,026	8%	22%
Georgia	334,086	15%	21%
Hawaii	128,830	27%	57%
Idaho	132,337	67%	83%
Illinois	705,239	22%	29%
Indiana	546,519	13%	16%
Iowa	1,082,406	59%	63%
Kansas	169,390	38%	45%
Kentucky	1,318,302	53%	60%
Louisiana	725,254	31%	44%
Maine	467,162	65%	83%
Maryland	229,120	10%	18%
Massachusetts	123,016	5%	10%
Michigan	404,429	21%	58%
Minnesota	777,478	53%	67%
Mississippi	887,855	47%	50%
Missouri	993,593	45%	56%
Montana	185,195	82%	90%
Nebraska	149,068	47%	65%
Nevada	61,956	76%	90%
New Hampshire	295,936	23%	39%
New Jersey	90,975	1%	3%
New Mexico	260,473	74%	86%
New York	978,061	24%	44%
North Carolina	523,997	15%	20%
North Dakota	88,808	66%	71%
Ohio	578,357	11%	21%
Oklahoma	1,101,262	66%	73%
Oregon	537,055	74%	86%
Pennsylvania	1,354,928	25%	36%
Rhode Island	14,234	1%	1%
South Carolina	42,678	3%	5%
South Dakota	82,086	64%	76%
Tennessee	840,015	28%	37%
Texas	1,427,567	46%	59%
Utah	47,821	66%	84%
Vermont	112,006	52%	60%
Virginia	421,832	16%	22%
Washington	285,138	47%	65%
West Virginia	1,083,017	77%	84%
Wisconsin	912,652	41%	58%
Wyoming	96,006	80%	86%
Total	23,153,618	42%	68%

Figure 7 – Unserved 3G Population, Roads, and Area by State[23]

[23] Due to rounding Washington DC shows as entirely covered area but there is a small amount of uncovered population.

Initial 3G Investment Estimate

We estimate that it will require roughly $22 Billion of upfront capital to deploy ubiquitous wireless broadband coverage, via 3G technologies, in the U.S. Below is a summary of findings related to the investment estimates.

- Nearly a third of the investment necessary for bringing 3G broadband ubiquity to the U.S. is for augmentation of existing site locations

- States with lower population density require more new site investment rather than augmentation of existing network assets. More than 90% of the estimated investment for Alaska, Idaho, Montana, Nevada, and Wyoming is Greenfield or new site investment.

- Ten states represent nearly 50% of the estimated investment needed for ubiquitous 3G wireless service in the U.S.

Below is a table (Figure 8) showing total estimated investment needed and a count of estimated sites and augmentations.

State	Est. Count of New Sites	Est. Count of Augmentation of Existing Sites	Est. Investment
Alabama	130	2,068	$ 351,445,500
Alaska	1,678	440	$ 1,602,373,500
Arizona	913	640	$ 919,842,000
Arkansas	176	1,151	$ 291,201,750
California	769	2,182	$ 975,969,750
Colorado	815	620	$ 821,598,750
Connecticut	4	201	$ 25,793,250
Delaware	3	110	$ 14,852,250
District of Columbia	-	-	$ -
Florida	151	2,010	$ 361,100,250
Georgia	135	2,467	$ 396,448,500
Hawaii	51	135	$ 63,388,500
Idaho	726	473	$ 720,189,750
Illinois	87	1,565	$ 260,442,000
Indiana	52	1,477	$ 211,664,250
Iowa	103	1,282	$ 263,282,250
Kansas	327	1,355	$ 457,558,500
Kentucky	117	791	$ 209,013,000
Louisiana	94	1,543	$ 267,671,250
Maine	151	542	$ 216,305,250
Maryland	18	411	$ 62,921,250
Massachusetts	19	282	$ 48,683,250
Michigan	187	1,762	$ 377,711,250
Minnesota	341	1,211	$ 473,550,000
Mississippi	125	1,348	$ 276,512,250
Missouri	147	1,484	$ 324,350,250
Montana	1,252	691	$ 1,245,147,750
Nebraska	344	1,113	$ 457,742,250
Nevada	1,012	463	$ 986,658,750
New Hampshire	31	264	$ 58,605,750
New Jersey	10	265	$ 38,298,750
New Mexico	890	824	$ 934,048,500
New York	205	1,555	$ 363,090,000
North Carolina	107	2,007	$ 321,226,500
North Dakota	509	498	$ 528,207,750
Ohio	50	1,557	$ 220,095,750
Oklahoma	121	1,260	$ 290,865,750
Oregon	373	1,159	$ 522,501,000
Pennsylvania	148	1,427	$ 295,695,750
Rhode Island	1	7	$ 1,680,000
South Carolina	26	1,801	$ 222,174,750
South Dakota	553	541	$ 575,851,500
Tennessee	94	1,374	$ 244,823,250
Texas	930	5,719	$ 1,567,933,500
Utah	626	476	$ 639,103,500
Vermont	66	85	$ 69,987,750
Virginia	105	1,609	$ 274,018,500
Washington	387	937	$ 468,825,000
West Virginia	142	387	$ 180,180,000
Wisconsin	171	1,314	$ 317,651,250
Wyoming	929	309	$ 882,703,500
Total	16,413	55,275	$ 21,721,680,750

Figure 8 – Estimated 3G Investment by State

About CostQuest

CostQuest Associates develops solutions related to costs, pricing, business management, and regulatory analysis. CostQuest's recent projects include Broadband Network Modeling, Forward Looking Cost Models, Profitability Analysis, Regulatory Compliance Consultation and Regulatory Advocacy Support.

CostQuest is a world-wide leader in Universal Service Fund modeling and policy analysis. CostQuest developed models to support USF with the FCC (US) and for foreign governments including Australia, New Zealand, and Hong Kong. CostQuest has written policy analysis papers on modeling, reverse auctions, 10th circuit issues, and various other USF related issues.

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ATTACHMENT 6

NORTH CAROLINIANS ONLINE

Tracking Home Computers and Internet Access in North Carolina

Citizens Surveys 1999 to 2008

November 2008

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Tracking Home Computers and Internet Access in North Carolina 1999 to 2008

Kenneth Wilson, Ph.D.
East Carolina University
November 2008

Executive Summary

Digital technology creates new opportunities but it can also reinforce old social divisions. Unequal access to the Internet can hamper economic development and undermine the general quality of life in under-served areas. Four surveys conducted between 1999 and 2008 document the progress made by North Carolina. Interviews for the most recent survey were conducted Sept. 14 – Oct. 8, 2008.

In the past decade, North Carolina has experienced an amazing transformation. In 1999, only 53 percent of North Carolina households had home computers. In 2008 that figure has risen to 80 percent. In just nine years, the proportion of homes without a computer has dropped 57 percent. In 1999, the proportion of all homes with Internet access was 36 percent but this has risen to 70 percent in 2008. In just nine years, the proportion of homes without Internet access has dropped 53 percent. In 1999 the proportion of North Carolinians who used the Internet anywhere (at home, work, public access, etc.) was 62 percent. Today it has climbed to 82 percent. In less than a decade, North Carolina has been transformed from a place where a lot of people use the Internet, but only the elite have it in their homes, to a place where almost everyone uses the Internet and most people have it in their homes.

These facts suggest a fundamental change – in 1999, knowledge of the Internet was an advantage but today, lack of Internet knowledge is a handicap. While they are making some progress, poor families, minorities, older citizens and high school drop-outs lag behind the rest of North Carolina in these skills. African-American respondents present an interesting case – in the last four years the proportion of African-American households with home computers has remained constant while the proportion of home computers in African-American households connected to the Internet has grown dramatically (from 68 percent to 95 percent). In 1999, North Carolina was struggling with the idea of a digital society that has now become commonplace.

In 1999, only about half (57 percent) of the rural households with home computers had Internet access. By 2004, this figure had climbed to 91 percent (almost equal to telephone penetration) and in 2008 it was 90 percent. In rural North Carolina, one-third of those who do not have home Internet access use the Internet somewhere else. Between 2002 and 2004, the proportion of rural North Carolinians who reported using public access facilities increased from 3 percent to 10 percent. By 2008, 16 percent of rural North Carolina residents who did not have home Internet access had used a public access facility.

Rural access is only one challenge to universal digital literacy. Low-income families face special challenges. In the last four years, the poorest families seem to have made remarkable strides. Families with incomes under $15,000 more than doubled their home computer ownership (31 percent to 65 percent) and almost doubled their home Internet access (25 percent to 49 percent).

Families making slightly more made almost no progress during these four years (43-to-45 percent and 32-to-33 percent). If there is some program to help the poorest families in North Carolina, this would be evidence of its success.

During the past four years, awareness of county government Web sites has increased dramatically from 39 percent in 2004 to 62 percent in 2008. Urban residents were more likely to be aware of county government Web sites (67 percent versus 57 percent) and more likely to express an interest in such a Web site if they were not aware of one (28 percent versus 8 percent). About one-third of those who knew that a Web site existed had visited it during the past month. The proportion using the county Web site was roughly the same in urban and rural areas of North Carolina.

The attitude questions show that the attitudes of North Carolinians have not changed very much during the past four years. Most recognize that the Internet is necessary to maintain a decent standing of living and that young children must master these skills. They support state subsidies for both home and businesses. However, they continue to be concerned about possible threats to privacy and the availability of obscene material.

Introduction

Since 1999, four citizen surveys have documented the level of home computer ownership and Internet access in North Carolina.

STUDY 1: In 1999, the North Carolina Board of Science and Technology included a set of questions concerning computer and Internet usage in a more general study of public perceptions of the role and importance of science and technology in the North Carolina economy. A general population telephone survey employed random digit dialing. A total of 522 respondents completed the interview. The complete report is available on the e-NC Authority's Web site (www.e-nc.org).

STUDY 2: After viewing the results of the 1999 survey, many local decision makers wanted to see the results for their counties. Unfortunately, the sample size (N=500) made it impossible to provide reliable information at the county level. In 2001, the Rural Internet Access Authority (the organization that preceded the e-NC Authority) planned to extend the work started by Vision 2030 as it related to computer and Internet access of North Carolina citizens, and to make it more relevant to local decision makers in every part of the state. In order to facilitate planning for improved Internet access in all 100 North Carolina counties, independent random samples were drawn from each county. A sample of 12,904 interviews of North Carolinians was completed in June 2002. So that the results could be generalized to the entire state, the data were weighted by the county's population and the respondent's education.

STUDY 3: The third study continued to track computer and Internet use in North Carolina. Interviewing began on Jan. 14, 2004 and was completed on Feb. 11, 2004. A total of 20 interviewers were chosen and trained for the project. The interviewer corps was predominantly female (four males). Interviewers ranged in age from 19-72. There were 1,197 completed interviews. Quotas were used to ensure that there was an adequate representation of rural counties. The sample of telephone numbers was purchased from Survey Sampling, Inc., a Connecticut firm with an excellent reputation that has provided samples for many years to East Carolina University and other universities with very satisfactory results. A significant number of interviews were conducted in Spanish using a bilingual interviewer. This is important to remember when the results for Hispanic respondents are compared to other studies that only interview English-speaking Hispanics. So that the results can be generalized to the entire state, the data were weighted by the county's population and the respondent's education.

STUDY 4: The fourth study tracking computer and Internet use in North Carolina was conducted this year. Interviewing began on Sept. 14, 2008 and was completed on Oct. 8, 2008. A total of 26 interviewers were chosen and trained for the project. The interviewer corps was predominantly female (four males). There were 1,244 completed interviews. Quotas were used to ensure that there was an adequate representation of rural counties. The sample of telephone numbers was purchased from Survey Sampling, Inc., a Connecticut firm with an excellent reputation that has provided samples for many years to East Carolina University and other universities with very satisfactory results. This year, households without landlines were contacted and 5 percent of the final sample consists of households with cell phones but no landlines.

Changing Levels of Home Computer Ownership

Over the past five years, the level of home computer ownership has been steadily increasing. Table 1 presents the results of the four surveys in a format that supports easy comparison. These results show that home computer ownership in North Carolina has increased from 53 percent in 1999 to 80 percent in 2008. During this period of nine years, the rate of home computer ownership in North Carolina has increased 51 percent.

Table 1: Computer Penetration Demographics				
Percentage of North Carolina Households that Have a Home Computer				
	1999	2002	2004	2008
Overall	53%	60%	67%	80%
Gender				
Men	59%	65%	68%	88%
Women	53%	57%	63%	78%
Generations				
Ages 18-27	55%	68%	76%	96%
Ages 28-39	60%	71%	79%	95%
Ages 40-49	60%	72%	70%	90%
Ages 50-58	66%	58%	73%	86%
Ages 59-68	44%	43%	50%	81%
Age 69+	24%	28%	35%	47%
Race and ethnicity				
White	61%	65%	68%	84%
African-American	31%	44%	63%	63%
Native American		50%	39%	55%
Hispanic		37%	31%	67%
Other		65%	74%	77%
County Type				
Urban	58%	64%	71%	83%
Rural	46%	55%	59%	76%
Household Income				
Less than $15,000	35%	34%	31%	65%
$15,000 to $24,999	25%	43%	43%	45%
$25,000 to $29,999	37%	60%	64%	82%
$30,000 to $49,999	43%	71%	78%	84%
$50,000 to $74,999	49%	79%	88%	97%
$75,000 to $99,999	50%	86%	92%	100%
$100,000 and above	66%	91%	97%	96%
Educational Attainment				
Less than High School	20%	33%	36%	55%
High School Graduates	47%	60%	65%	81%
Community College Degree	65%	75%	78%	90%
College Degree	76%	84%	87%	96%
Graduate Degree	78%	87%	93%	87%
Children Living at Home				
Yes	64%	69%	81%	93%
No	49%	54%	55%	75%

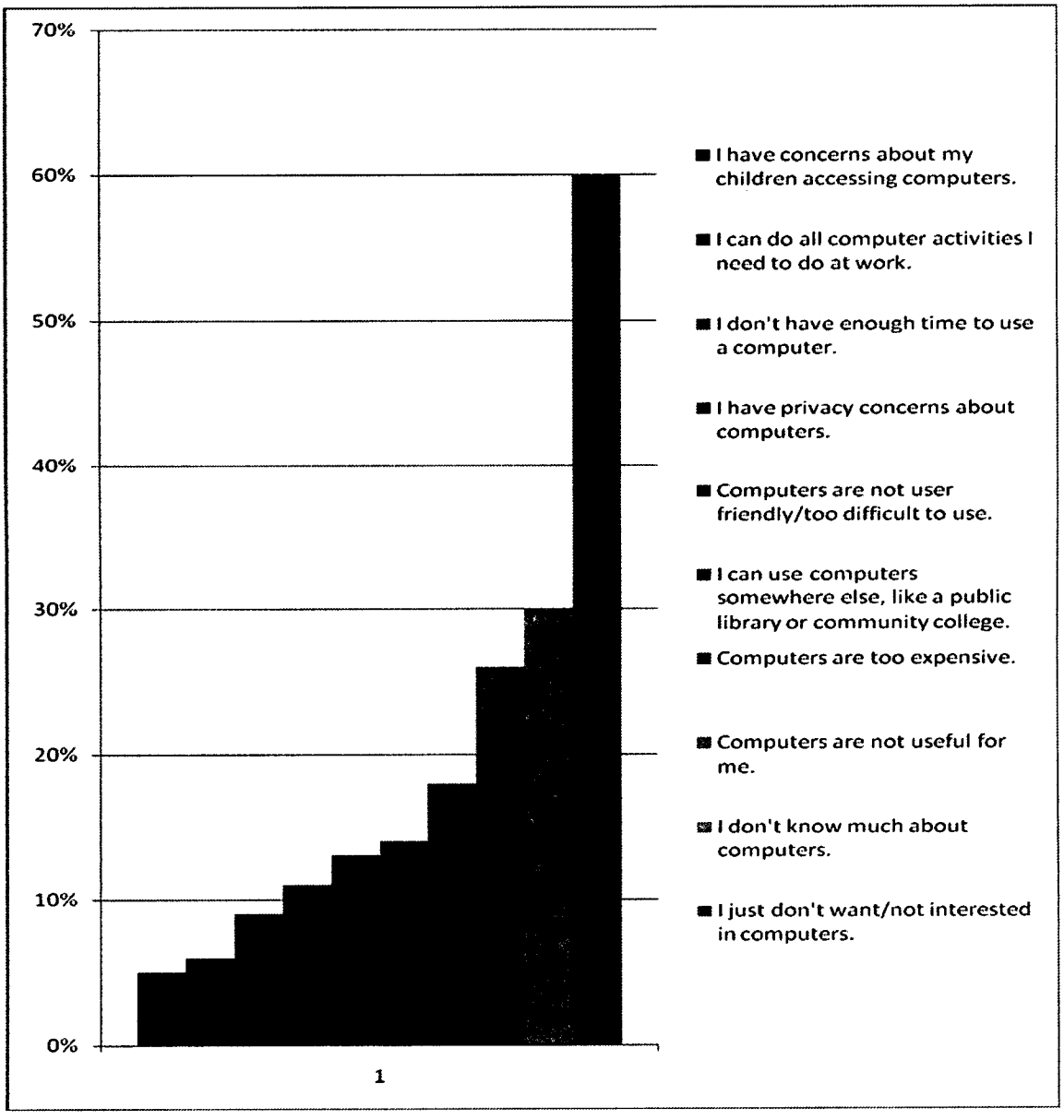
When examining Table 1, be sure to notice:

- Home computer ownership has continued to rise.
- In 1999, middle aged respondents were most likely to own computers but that has changed. Younger households are now most likely to own computers. The elderly remain the least likely to own a home computer.
- White households have continued to increase their home computer ownership. In African-American households, home computer ownership has not increased during the past four years. In the past four years, Hispanic and Native American households have caught up with African-American households.
- During the past four years, home computer ownership has increased faster in rural counties than in urban counties. This has decreased the gap between these regions of the state.
- Almost every household with an income of over $50,000 per year now has a home computer but many low income households do not have a home computer.
- During the past four years, the rate of home computer ownership has increased sharply (31 percent to 65 percent) among North Carolina families making less than $15,000 a year – but not among families making between $15,000 and $24,999 (43 percent to 45 percent). If a program to increase computer and Internet access for North Carolina's poorest families exists, then this is clear evidence of success.
- High school drop-outs are least likely to own a home computer.
- Almost all households with children have home computers but during the past four years there has been a dramatic increase in the proportion of households without children that own home computers.

Why Don't People Have a Home Computer?

People who reported that their household did not have a home computer were asked if they were planning to buy a home computer within the next year. Only 9 percent of the respondents who did not have a home computer were planning to buy one within the next year. Over half (60 percent) of the respondents reported that they did not have a home computer because they did not want one. Eighteen percent reported that computers were too expensive and another 15 percent reported that they used a computer at a public access point like a library or community college.

Most of the respondents who earned between $15,000 and $49,999 (54 percent) reported that computers were too expensive compared to 7 percent who earned less, and none of the respondents who earned more than $50,000.



Internet Access: Introduction

There are three ways of looking at Internet access. The first two stress home Internet access. Both approaches are important but they produce very different numbers so you need to be careful when you read the following tables. The third approach stresses more general access to resources and assesses the use of the Internet anywhere – at home, work or school.

Proportion of All North Carolina Households: Many people are interested in the proportion of households that subscribe to home Internet access. In these households, people can do private research and children can do their homework with help from their parents. Today, about 70 percent of all North Carolina households subscribe to home Internet access.

Proportion of North Carolina Households with a Computer: At the beginning of this century, many North Carolina households could not get home Internet access. That barrier has been eliminated and today almost every North Carolina household can get home Internet access with a local telephone call. The biggest remaining barrier to home Internet access is that it requires a home computer. This proportion indicates the extent of the barriers remaining after a home computer has been purchased. Today, about 91 percent of the homes with computers subscribe to home Internet access.

Proportion of North Carolinians Who Use the Internet Anywhere: Some people don't subscribe to home Internet access because they can use the Internet at work or somewhere else. This proportion indicates the full extent to which North Carolinians are involved with the Internet. About 82 percent of North Carolinians use the Internet somewhere.

Home Internet Access: Proportion of All North Carolina Households

In the 9 years between these studies, the proportion of all North Carolina homes subscribing to Internet access has increased from 36 percent to 70 percent. While it is still far from universal, in less than a decade, the proportion of homes with Internet has almost doubled as the Internet has become a common part of our everyday lives.

Table 2: Internet Penetration Demographic
Percentage of ALL North Carolina Households
That Have Home Internet Access

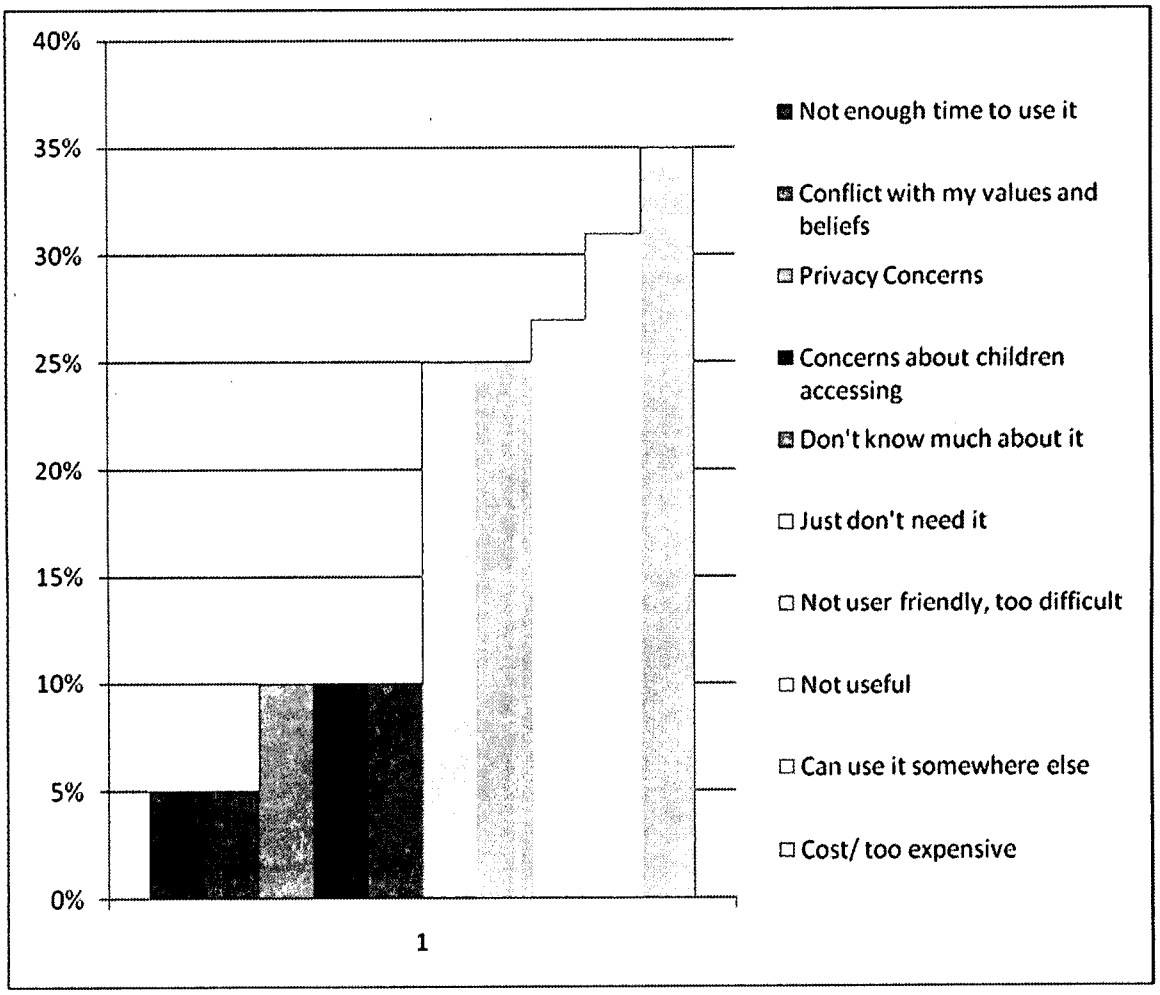
	1999	2002	2004	2008
Overall	36%	52%	59%	70%
Gender				
Men	41%	58%	61%	77%
Women	35%	49%	55%	69%
Generations				
Ages 18-27	40%	59%	65%	81%
Ages 28-39	40%	63%	72%	85%
Ages 40-49	42%	64%	67%	90%
Ages 50-58	49%	50%	65%	80%
Ages 59-68	23%	34%	43%	73%
Age 69+	12%	24%	29%	37%
Race and ethnicity				
White	43%	57%	62%	74%
African-American	19%	34%	49%	60%
Native American		37%	38%	43%
Hispanic		35%	22%	52%
Other		57%	67%	61%
County Type				
Urban	43%	57%	62%	74%
Rural	26%	46%	51%	66%
Household Income				
Less than $15,000	9%	25%	25%	49%
$15,000 to $24,999	4%	33%	32%	33%
$25,000 to $29,999	27%	52%	55%	72%
$30,000 to $49,999	23%	62%	68%	79%
$50,000 to $74,999	34%	73%	83%	92%
$75,000 to $99,999	31%	81%	87%	97%
$100,000 and above	43%	85%	94%	91%
Educational Attainment				
Less than High School	2%	26%	28%	48%
High School Graduates	30%	51%	57%	72%
Community College Degree	45%	65%	69%	83%
College Degree	58%	78%	83%	91%
Graduate Degree	64%	83%	88%	84%
Children Living at Home				
Yes	43%	61%	74%	88%
No	34%	46%	48%	65%

When examining Table 2, be sure to notice:

- The proportion of homes subscribing to Internet access has increased almost 20 percent in the last 4 years and almost doubled since 1999 (36 percent to 70 percent).
- In 1999, most urban residents did not subscribe to home Internet access and residents of rural counties were much less likely to subscribe to home Internet access (26 percent versus 43 percent). By 2008, that gap had decreased significantly (66 percent versus 74 percent) and most people in both regions of the state subscribed to home Internet.
- While home Internet access was most common among middle aged respondents, it has become common in all age groups except those 69 or older.
- Internet access continues to increase among all races and ethnic groups.
- The proportion of Hispanics probably decreased in the 2004 survey because it included families that did not speak English. In the earlier surveys, only English speaking Hispanics were included. In the 2008 survey, only English speaking Hispanics were interviewed.
- Economically-advantaged families continue to increase their home Internet access. Almost all households reporting income of $50,000 or more subscribe to home Internet access. Progress was made by families earning between $25,000 and $49,999. Progress for families earning between $15,000 and $24,999 has stopped. However, there is a sharp jump in the proportion of poor families (earning less than $15,000) that have home Internet access.
- While more educated families are most likely to have home Internet access, there is significant progress being made by less educated households. Almost half of high school drop-outs subscribe to home Internet access.
- Families with children continue to increase their home Internet access, but there has also been a sharp increase in home Internet access among families without children.

Why Don't You Subscribe to Home Internet Access?

Respondents who did not subscribe to home Internet access were asked a series of questions to access why this was the case. The following chart shows that their most common answer was that that subscribing to home Internet was too expensive (35 percent). This is consistent with the fact that almost all households earning more than $50,000 per year subscribe while lower income households are less willing to pay the monthly subscription fee (e.g., 73 percent of households earning less than $15,000 indicated that the cost was a reason they did not have a home Internet subscription). The second most common reason was that they could use the Internet somewhere else (31 percent). Public access provides an alternative for families on a tight budget (e.g., over half [53 percent] of families earning less than $15,000 give this as a reason for not having a home Internet subscription).



Home Internet Access: Proportion of North Carolina Households with a Computer

In the 9 years spanned by these studies, the proportion of homes with computers that also subscribe to home Internet access has increased 68 percent to 91 percent. While it has not quite caught up with landline telephone access (about 95 percent in North Carolina), Internet access among homes with a computer is almost as common.

Table 3: Internet Penetration Demographic
Percentage of North Carolina Households
With Home Computers
That Have Home Internet Access

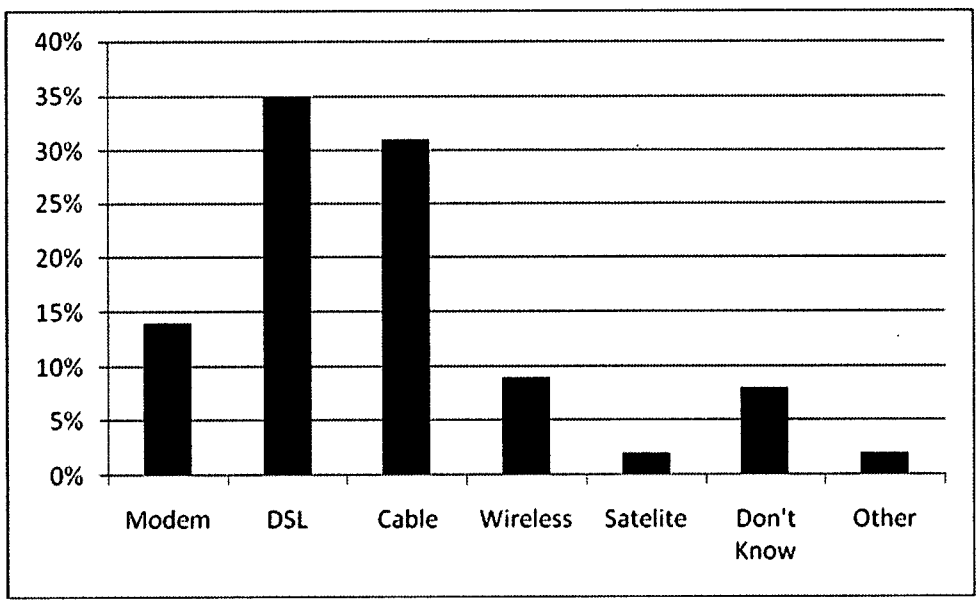
	1999	2002	2004	2008
Overall	68%	87%	89%	91%
Gender				
Men	68%	88%	90%	92%
Women	67%	86%	89%	90%
Generations				
Ages 18-27	72%	87%	85%	85%
Ages 28-39	69%	89%	91%	90%
Ages 40-49	70%	88%	96%	100%
Ages 50-58	74%	87%	89%	93%
Ages 59-68	52%	80%	84%	90%
Age 69+	50%	85%	81%	77%
Race and ethnicity				
White	69%	88%	91%	91%
African-American	61%	70%	78%	95%
Native American		75%	100%	81%
Hispanic		95%	74%	78%
Other		89%	90%	82%
County Type				
Urban	73%	84%	89%	92%
Rural	57%	88%	91%	90%
Household Income				
Less than $15,000	29%	72%	82%	76%
$15,000 to $24,999	17%	78%	76%	88%
$25,000 to $29,999	73%	87%	87%	95%
$30,000 to $49,999	53%	88%	87%	99%
$50,000 to $74,999	70%	93%	94%	95%
$75,000 to $99,999	62%	94%	95%	99%
$100,000 and above	64%	94%	98%	95%
Educational Attainment				
Less than High School	8%	79%	78%	87%
High School Graduates	64%	85%	88%	89%
Community College Degree	67%	86%	89%	93%
College Degree	76%	92%	96%	96%
Graduate Degree	82%	95%	95%	97%
Children Living at Home				
Yes	70%	88%	92%	95%
No	66%	85%	87%	88%

This is a particularly impressive achievement because it includes an increase from 57 percent to 90 percent in rural counties. The e-NC Authority, supported by the state of North Carolina and the work of citizens at the local level, should be proud that this work promoting computer and Internet literacy has paid off in this unusually strong growth in rural counties. The public-private partnerships led by the e-NC Authority have created a foundation for the transformation that is bringing rural North Carolinians into the digital age.

When examining Table 3, be sure to notice that these results clearly seem to indicate that the major factor creating gaps in home Internet access is the lack of a home computer. This may be because the cost of buying a computer and adding Internet service is too great for certain households. On the other hand, it may be that one of the biggest values derived from home computers is the ability to access the Internet.

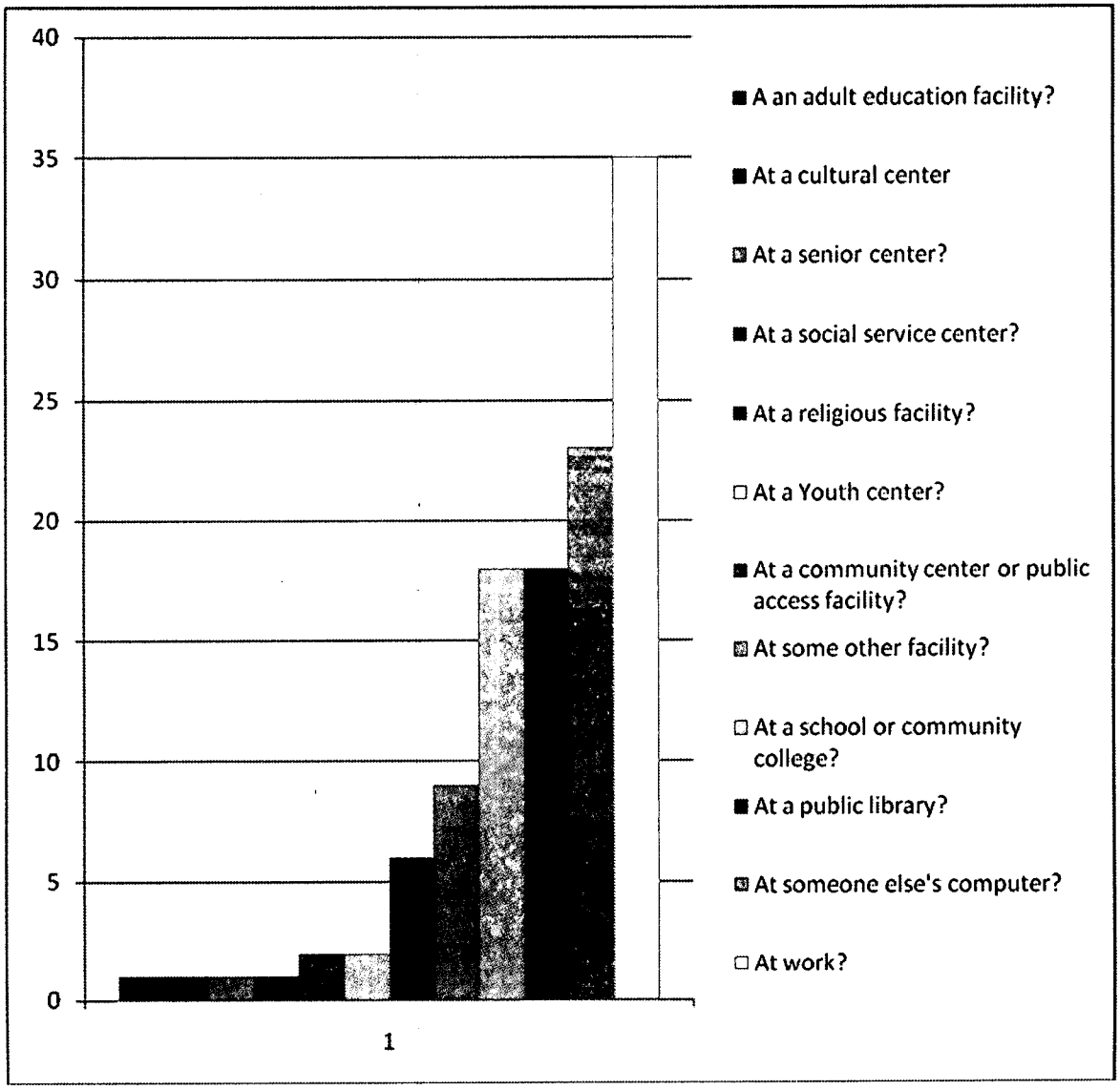
What Kind of Internet Connection Do People Have?

Telephone modems are no longer the most popular way to connect to the Internet in North Carolina. Their dominance has dropped from 56 percent to 14 percent over the last 4 years. DSL and cable have both increased their share of the home Internet market. Over half of the respondents with home Internet access report that they subscribe to a high-speed connection (54 percent) while another 25 percent report that they subscribe to a broadband connection. Two-thirds of the respondents are not willing to pay more for a faster connection. Interestingly, 1.5 percent reported that they still make a long-distance phone call to connect to the Internet.



The respondents were also asked about their use of devices other than a computer to access the Internet. Seventeen percent reported using a cell phone to access the Internet and 6 percent reported using some type of pocket organizer (Palm Pilot, Blackberry, etc.). Two percent reported using some other type of device to access the Internet. Over one-fourth (28 percent) of our respondents access the Internet using some device other than a computer. All of these respondents also had a home computer and home Internet access.

Respondents were also asked if they used the Internet anywhere outside their home. Over one-third (35 percent) reported that they used the Internet at work and 23 percent reported using the Internet on someone else's computer. Eighteen percent reported using the Internet at public access facilities at school, community colleges or libraries. Public libraries were used by almost half (43 percent) of our poorest (incomes less than $15,000) respondents.


40
35
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1
A an adult education facility?
At a cultural center
At a senior center?
At a social service center?
At a religious facility?
At a Youth center?
At a community center or public access facility?
At some other facility?
At a school or community college?
At a public library?
At someone else's computer?
At work?

Internet Access:
Proportion of North Carolinians Who Use the Internet Anywhere

Table 4: Internet Penetration Demographic: Percentage of ALL Respondents Who Use the Internet Anywhere

	2002	2004	2008
Overall	65%	71%	82%
Gender			
Men	71%	75%	90%
Women	62%	68%	79%
Generations			
Ages 18-27	86%	89%	96%
Ages 28-39	79%	87%	100%
Ages 40-49	73%	84%	98%
Ages 50-58	59%	75%	89%
Ages 59-68	39%	53%	84%
Ages 69+	26%	31%	38%
Race and ethnicity			
White	69%	75%	84%
African-American	55%	62%	79%
Native American	53%	42%	48%
Hispanic	57%	46%	58%
Other	66%	82%	61%
County Type			
Urban	69%	73%	84%
Rural	60%	67%	79%
Household Income			
Less than $15,000	44%	34%	60%
$15,000 to $24,999	53%	61%	46%
$25,000 to $29,999	66%	77%	91%
$30,000 to $49,999	75%	81%	85%
$50,000 to $74,999	84%	90%	96%
$75,000 to $99,999	92%	95%	100%
$100,000 and above	88%	99%	96%
Educational Attainment			
Less than High School	36%	43%	58%
High School Graduates	66%	72%	83%
Community College Degree	82%	79%	92%
College Degree	89%	91%	96%
Graduate Degree	92%	96%	82%

When examining Table 4, be sure to notice:

- Most (82 percent) people in North Carolina use the Internet somewhere. This indicates that the Internet has become part of the everyday culture of North Carolina.
- There is an important gap between older respondents, Native American and Hispanic respondents, poorer respondents and high school drop-outs and the prevailing Internet culture of North Carolina.

County Government Web site:

- All respondents were asked if their county had a Web site and 62 percent reported that they knew that their county government had a Web site. This is a sharp increase from 39 percent in 2004. Urban respondents are more aware of county Web sites than rural respondents (67 percent versus 57 percent).
- Only 17 percent of the remaining respondents (answering "No" or "Don't Know" if county has a Web site) reported that they would be interested in a county government Web site. Urban respondents were much more likely than rural respondents to express an interest (28 percent versus 8 percent).
- Of those who knew that a county Web site existed (62 percent), roughly one-third had visited the county government Web site during the past month. Urban and rural respondents are equally likely to visit their county's Web site.

City Government Web sites

- Respondents were asked if they lived in a town or city. Of those who live in towns or cities, 65 percent knew that their local government had a Web site. This is an increase from 43 percent in 2004.
- One third (35 percent) of the remaining respondents (responding "No" or "Don't Know" if the town has a Web site) expressed an interest in a city government Web site.
- Of those respondents who were aware of the government Web site (65 percent), less than one-third (29 percent) had visited their local government's Web site during the past month. This is roughly the same as in 2004.

Attitudes, Beliefs and Opinions

Obscene Material

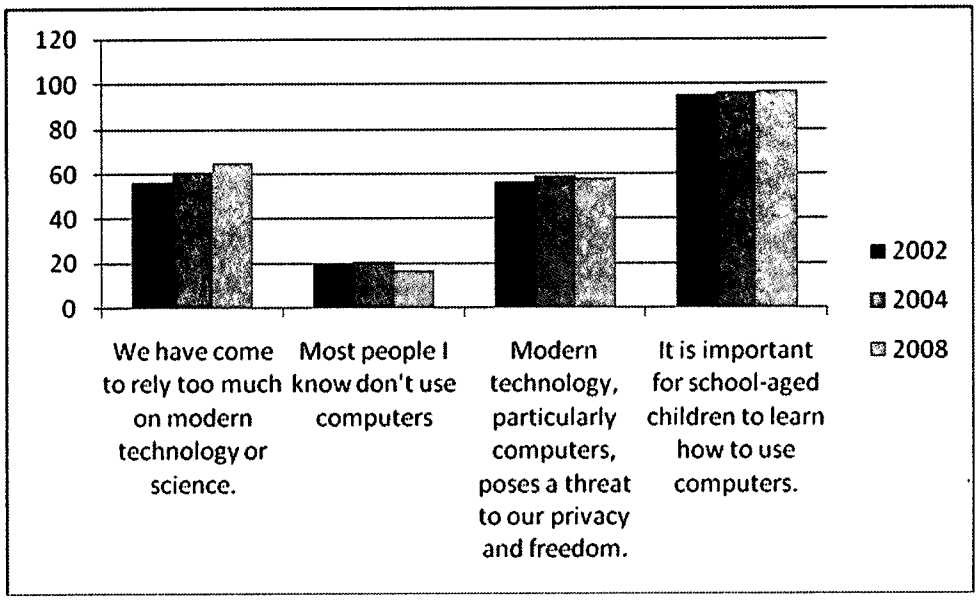
- Do you support the use of constitutionally-valid protective actions to limit the distribution of obscene material to children via the Internet?
  - 90 percent say of all respondents say "Yes." (unchanged from 2004)
  - 86 percent of those respondents with children living at home say "Yes." This is a small decrease compared with 92 percent in 2004.

- Have you ever had a problem with your children accessing obscene material on the Internet?
  - 14 percent of all respondents say "Yes." (unchanged from 2004)
  - 23 percent of those respondents with children living at home say "Yes." (compared with 24 percent in 2004)

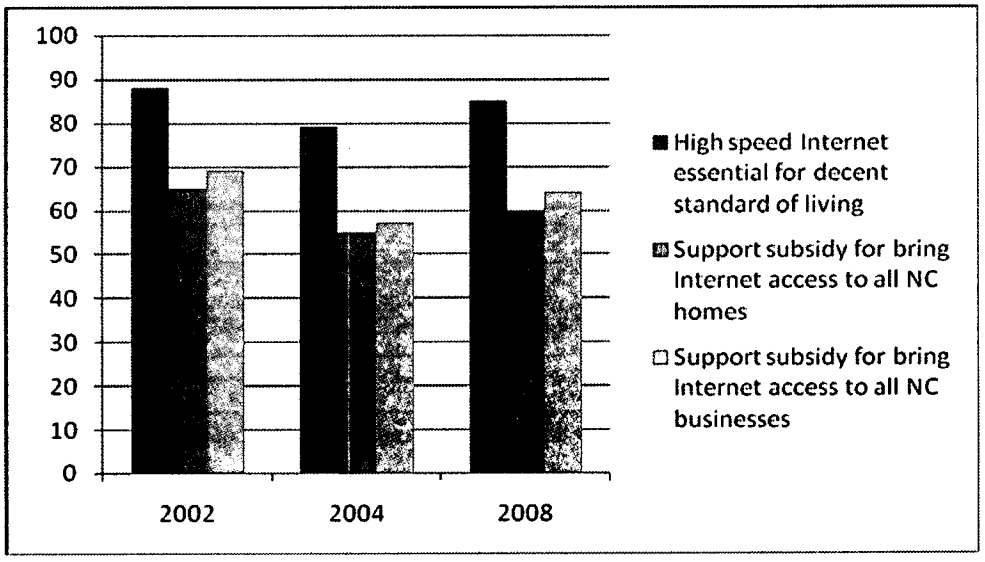
Attitudes about the Importance of Technology

The attitude questions show that:

- People are concerned about obscene material on the Internet that children can access.
- Almost everyone recognizes that it is important for school-aged children to learn to use the computer and that Internet access is essential for a decent standard of living.
- Over half of North Carolinians worry that the new technology invades our privacy and that we rely on it too much.
- Few people live in groups or communities where most people don't use a computer.



- Most North Carolinians continue to believe that Internet access is essential for a decent standard of living. They believe also that the state should support programs to bring Internet access to everyone's home who wants it and to bring high-speed access to all North Carolina businesses that need it.



Acknowledgements

The e-NC Authority would like to thank Dr. Ken Wilson for his outstanding work on this and the three previous surveys tracking the use of computers and the Internet in North Carolina. The e-NC Authority believes that this body of work is unique in the country and that it represents a rich resource that can be used to intelligently guide the investment of public efforts that will optimize the use of this imporant technology in improving economic prospects and quality of life for our state's citizens.

The e-NC Authority also wishes to join Dr. Wilson in acknowledging the hard work of East Carolina University graduate students Jessama Allender, Sean Aube, Tabitha Dantzler, Amanda Drozdowski, Jonathan Harris, Heather Sheffield and Tahira Sneed-West, and administrative assistants Betty Lou White and Becky Williammee. Their efforts allowed this project to be completed in a timely manner despite the many obstacles that needed to be overcome.

① Handout

ECU

Professor Kenneth Wilson

② Get Pres.

Self Administered Digital Divide 2008

Thank you for taking the time to share you experiences and opinions on computers and the Internet so the North Carolina Rural Internet Access Authority can learn more about how people access the Internet and how it affects their lives. Would you **please** take less than 10 sharing your views?

Gender. Are you male or female?]

- O Male
- O Female

Zipcode. What is your Zipcode? _____

Landline. Does your house have a regular telephone landline?

- O Yes
- O No
- O Don't Know

Cellphone. Does anyone in your household have a cell phone?

- O Yes
- O No
- O Don't Know

1. Is there a personal computer or laptop in your household?

- O Yes (skip to Question 3)
- O No
- O Don't Know

2. Which of the following are reasons why you do not have a computer at home?

- ❑ I can do all computer activities I need to do at work.
- ❑ I can use computers somewhere else, like a public library or community college.
- ❑ Computers are too expensive.
- ❑ I don't have enough time to use a computer.
- ❑ Computers are not useful for me.
- ❑ Computers are not user friendly/too difficult to use.
- ❑ I have privacy concerns about computers.
- ❑ I have concerns about my children accessing computers.
- ❑ I don't know much about computers.
- ❑ I just don't want/not interested in computers.

[SKIP TO QUESTION 6]

3. How many computers or laptops are there in this household?
Number of computers or laptops _____

3a. How many occupants of the household use the computer?
(ENTER SINGLE DIGIT NUMBER)
Number of people _____

3b. Are you the primary user of the computer?
- ○ Yes
- ○ No
- ○ Don't Know

4.
What year did you get your newest computer?
(ENTER 4 DIDIT NUMBER--1997,2001)
Year _____

5. What do you use the computer for?
- ☐ Word processing
- ☐ Email and communications
- ☐ Other Internet activities
- ☐ Games
- ☐ Graphic and design
- ☐ School assignments for children in the household
- ☐ Learning to use the computer
- ☐ Education for Adults in the household
- ☐ Work for employer
- ☐ Home Business

5a. How did you learn to use the computer? (CHECK ALL THAT APPLY)

	Yes	No	Don't Know
Classes	○	○	○
Trial and error	○	○	○
Learned from another family member	○	○	○
Learned at work	○	○	○
Learned at school	○	○	○
E-NC Public Access Center	○	○	○

6. Do you have Internet access from your home?

- ❍ Yes
- ❍ No **[SKIP TO QUESTION 11]**
- ❍ Don't Know **[SKIP TO QUESTION 11]**

7a. Is your home Internet connection "always on" or does your computer have to use the telephone line to connect to the Internet?

- ❍ ALWAYS ON
- ❍ USES TELEPHONE LINE
- ❍ Don't Know

7. Which of the following best describes your home Internet connection.

- ❍ Modem
- ❍ DSL
- ❍ Cable
- ❍ ISDN
- ❍ Wireless
- ❍ Satelite
- ❍ Don't Know
- ❍ Other _____

7new. What speed do you connect to the Internet?

- ❍ Dial-up
- ❍ Highspeed (up to 384 kb)
- ❍ Broadband (more than 1.5 megs)
- ❍ Above 10 megs
- ❍ More than T1
- ❍ Don't know

7b. How much would you be willing to pay for faster Internet access at home?

- ❍ NOTHING
- ❍ LESS THAN $10 PER MONTH
- ❍ $11 TO $25 PER MONTH
- ❍ $26 TO $35 PER MONTH
- ❍ $36 TO $45 PER MONTH
- ❍ $46 TO $55 PER MONTH
- ❍ $56 TO $75 PER MONTH
- ❍ $76 TO $100 PER MONTH
- ❍ OVER $100 PER MONTH
- ❍ DON'T KNOW

8. Who is your Internet provider?

- ❍ A phone company
- ❍ A cable TV company
- ❍ A wireless company
- ❍ A LOCAL Internet service provider
- ❍ Another type of Internet service provider such as AOL, MSN, or Earthlink
- ❍ A satellite TV company
- ❍ Other _____

9. Do you need to make a long distance call to log onto the Internet?

- ❍ Yes
- ❍ No
- ❍ Don't Know

q9a. Do you use any of the following devices to access the Internet?
(SELECK ALL THAT APPLY)

- ❑ Cell phone
- ❑ Palm pilot or other pocket organizer
- ❑ Web TV
- ❑ Another type of machine to check email machine
- ❑ None

10. Now I would like to ask how you use the Internet at home? Do you use the internet to: (CHECK ALL THAT APPLY)

- ❑ check email?
- ❑ for children's school assignments?
- ❑ take adult educational courses or to do research for school?
- ❑ check news, weather, or sports?
- ❑ search for information such as government, business, etc.
- ❑ search for jobs?
- ❑ do job-related tasks?
- ❑ shop, pay bills, or other commercial activities?
- ❑ plan travel or make travel arrangements?
- ❑ search for information from local government departments
- ❑ conduct business with a city or county government department (e.g., pay a tax bill, apply for a permit, etc)?
- ❑ Find medical or health information
- ❑ Internet phone service
- ❑ Social Networking
- ❑ Wikipedia
- ❑ Please specify any other ways you use the Internet _____

_____

10new1. Does anyone in your family use:

- ❑ Myspace
- ❑ Facebook
- ❑ Blogs
- ❑ Utube
- ❑ Online gaming site
- ❑ Other social networking site

10new2. Who do you use for email? [CHECK ALL THAT APPLY]

- ❑ My Internet provider
- ❑ Google (gmail)
- ❑ Yahoo
- ❑ AOL
- ❑ Netscape
- ❑ My email account at work
- ❑ Other _____

[SKIP TO QUESTION 12]

11. What is the main reason you do not have Internet service at home? (CHECK ALL THAT APPLY)

- ❑ Can use it somewhere else
- ❑ Cost/ too expensive
- ❑ Not enough time to use it
- ❑ Not useful
- ❑ Not user friendly, too difficult
- ❑ Privacy Concerns
- ❑ Concerns about children accessing
- ❑ Don't know much about it
- ❑ Just don't need it
- ❑ Conflict with my values and beliefs

12ALT. Do you use the Internet outside of your home?

- ○ Yes **[SKIP TO QUESTION 12b]**
- ○ No **[SKIP TO QUESTION 17]**
- ○ Don't Know **[SKIP TO QUESTION 17]**

12. Do you use the Internet outside of your home?

- ○ Yes
- ○ No
- ○ Don't Know

12a. How did you learn to use the Internet?

- ☐ Classes
- ☐ Trial and error
- ☐ Learned from a family member
- ☐ Learned at work
- ☐ Learned in high school
- ☐ e-NC public access center
- ☐ DON'T KNOW

13. Do you use the Internet:
[CHECK ALL THAT APPLY]

- ☐ at work?
- ☐ at a school or community college?
- ☐ at a public library?
- ☐ at someone else's computer?
- ☐ a community center or public access facility?

14. At what type of community center or facility do you use the Internet?
[CHECK ALL THAT APPLY]

- ☐ Adult education
- ☐ Cultural center
- ☐ Religious facility
- ☐ Senior center
- ☐ Social service center
- ☐ Youth center
- ☐ Other _____

16. How much time does your household spend on the Internet during a week?

- ○ 0 TO 3 HOURS
- ○ 4 TO 7 HOURS
- ○ 8 OR MORE HOURS
- ○ DON'T KNOW

17. How much would you be willing to pay for a computer?

- ❍ LESS THAN $300
- ❍ $300 TO $750
- ❍ $750 TO $1000
- ❍ $1000 OR MORE
- ❍ DON'T KNOW

18. Do you plan to buy a computer for your household within the next year?

- ❍ Yes
- ❍ No
- ❍ Don't Know

19a. you know if your county government has a website?

- ❍ I KNOW THAT IT HAS A WEBSITE [SKIP TO QUESTION 19b]
- ❍ I KNOW THAT IT DOES NOT HAVE A WEBSITE
- ❍ I DON'T KNOW WHETHER IT HAS A WEBSITE

19a1. Would you be definitely interested, interested, unsure, not interested or definitely not interested in a county government website where you could conduct business, pay taxes, or get information?

- ❍ DEFINITELY INTERESTED
- ❍ INTERESTED
- ❍ UNSURE
- ❍ NOT INTERESTED
- ❍ DEFINITELY NOT UNINTERESTED

[SKIP TO QUESTION 19g]

19b. About how many times have you visited your county government's website in the past **month**?

- ❍ NONE
- ❍ BETWEEN 1-3 TIMES
- ❍ BETWEEN 4-6 TIMES
- ❍ MORE THAN 6 TIMES
- ❍ DON'T KNOW

19e. Has your county government's website helped you save time in obtaining information or conducting business with the county? Would you say that it saved you a lot of time, some time or no time?

- ❍ YES, A LOT OF TIME SAVED
- ❍ YES, SAVED SOME TIME
- ❍ NO TIME SAVED
- ❍ DON'T KNOW

19g. Do you live in an incorporated town or city? [INTERVIEWER: IF THE RESPONDENT SAYS THEY LIVE IN A TOWN OR A CITY, YOU MAY USE THE SINGLE WORD IN PLACE OF THE PHRASE "TOWN OR CITY" IN THE FOLLOWING QUESTIONS]

- ❍ Yes
- ❍ No **[SKIP TO QUESTION 20]**
- ❍ Don't Know **[SKIP TO QUESTION 20]**

19h. Do you know if your town or city government has a website?

- ❍ I KNOW THAT IT HAS A WEBSITE **[SKIP TO 19i]**
- ❍ I KNOW THAT IT DOES NOT HAVE A WEBSITE
- ❍ I DON'T KNOW WHETHER IT HAS A WEBSITE

19h1. Would you be definitely interested, interested, unsure, not interested or definitely not interested in a town or city government website where you could conduct business, pay taxes, or get information?

- ❍ DEFINITELY INTERESTED
- ❍ INTERESTED
- ❍ UNSURE
- ❍ NOT INTERESTED
- ❍ DEFINITELY NOT UNINTERESTED

[SKIP TO QUESTION 20]

19i. About how many times have you visited your town or city government's website in the past **month**?

- ❍ NONE
- ❍ BETWEEN 1-3 TIMES
- ❍ BETWEEN 4-6 TIMES
- ❍ MORE THAN 6 TIMES
- ❍ DON'T KNOW

19l. Has your town or city government's website helped you save time in obtaining information or conducting business with the county? Would you say that it saved you a lot of time, some time or no time?

- ❍ YES, A LOT OF TIME SAVED
- ❍ YES, SAVED SOME TIME
- ❍ NO TIME SAVED
- ❍ DON'T KNOW

20. Now, I am going to read you a list of statements about computers and technology. Please tell me if you agree or disagree with each statement.

	Agree	Disagree	Don't Know
We have come to rely too much on modern technology or science.	❍	❍	❍
Most people I know don't use computers.	❍	❍	❍
Modern technology, particularly computers, poses a threat to our privacy and freedom.	❍	❍	❍
It is important for school-aged children to learn how to use computers.	❍	❍	❍

20x.

	Yes	No	Don't Know
Today, access to a telephone is widely considered to be essential for a decent standard of living. Do you believe that Internet access is now - or someday will become - as essential as the telephone for achieving a decent standard of living?	❍	❍	❍
In order to extend reasonably priced telephone service to everyone, the government subsidizes local telephone service. Should there be a similar government program to extend reasonably priced high speed Internet access to the homes of all North Carolina citizens?	❍	❍	❍
Many economists are talking about how a knowledge-based economy is becoming more important to North Carolina's economy. Since high speed Internet access is important for knowledge-based businesses, would you support a program to bring high speed Internet access to North Carolina businesses?	❍	❍	❍
Many people are worried about the availability of obscene material on the Internet. Do you support the use of constitutionally valid protective actions to limit the distribution of obscene material to children via the Internet?	❍	❍	❍
Have you ever had a problem with your children accessing obscene material on the Internet?	❍	❍	❍

Finally, a couple questions about you. this will allow us to see how our sample compares to the Census data on your community.

23. What is the highest degree in school that you have completed?

- ❍ DID NOT GRADUATE FROM HIGH SCHOOL
- ❍ HIGH SCHOOL GRADUATE
- ❍ COMMUNITY COLLEGE DEGREE OR CERTIFICATE
- ❍ 4-YEAR COLLEGE DEGREE
- ❍ ADVANCED DEGREE
- ❍ DON'T KNOW

24. In what year were you born? Year (e.g., 1952, 1965) _____

25. What is you ethnicity?

- ❍ WHITE
- ❍ BLACK OR AFRICAN AMERICAN
- ❍ ASIAN
- ❍ NATIVE-AMERICAN
- ❍ HISPANIC OR LATINO
- ❍ A MIXTURE OF TWO OR MORE RACES
- ❍ OTHER, PLEASE SPECIFY _____

26. Do you **also** consider yourself to be Hispanic or Latino?

- ❍ Yes
- ❍ No
- ❍ Don't Know

27. What is your employment status?

- ❍ EMPLOYED FULL-TIME
- ❍ EMPLOYED PART-TIME
- ❍ KEEING HOUSE
- ❍ RETIRED
- ❍ UNABLE TO WORK BECAUSE OF HEALTH
- ❍ TEMPORARILY UMEMPLOYED OR LAID OFF
- ❍ GOING TO SCHOOL
- ❍ GOING TO SCHOOL AND WORKING

28. To do statistical comparisons, we need to get your approximate house-hold income. This information is confidential. If you don't know exactly we will accept your best estimate. I will read a list of categories. Please stop me when I get to the category that includes your annual household income level...

- ❍ Less than $15,000
- ❍ $15,000 to $24,999
- ❍ $25,000 to $34,999
- ❍ $35,000 to $49,999
- ❍ $50,000 to $74,999
- ❍ $75,000 to $99,999
- ❍ $100,000 or more
- ❍ DON'T KNOW
- ❍ REFUSAL

29. Are you currently...

- ❍ MARRIED
- ❍ UNMARRIED. LIVING WITH A PARTNER
- ❍ WIDOWED
- ❍ DIVORCED
- ❍ SEPARATED
- ❍ NEVER MARRIED

30. Do you have children living at home?

- ❍ Yes
- ❍ No
- ❍ Don't Know

31. How many are 5 years of age or younger? Number _____

32. How many are 6 to 13 years of age? Number _____

33. How many are 14 to 18 years of age? Number _____

34. How many are over the age of 18? Number _____

36. Do you have any other views that you would like to share with us?

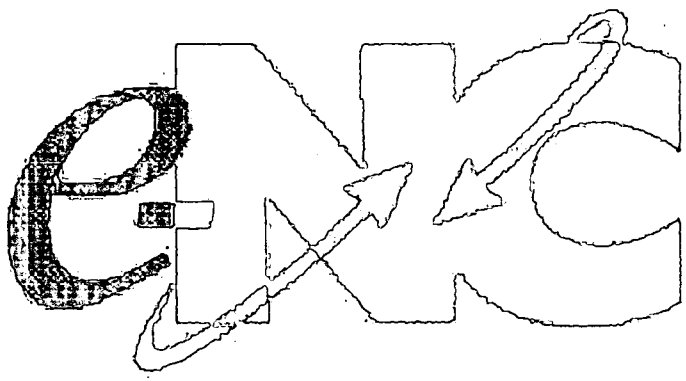
_____

_____

_____

Thank you so much for your time. Have a Great Day!!!

ATTACHMENT 7

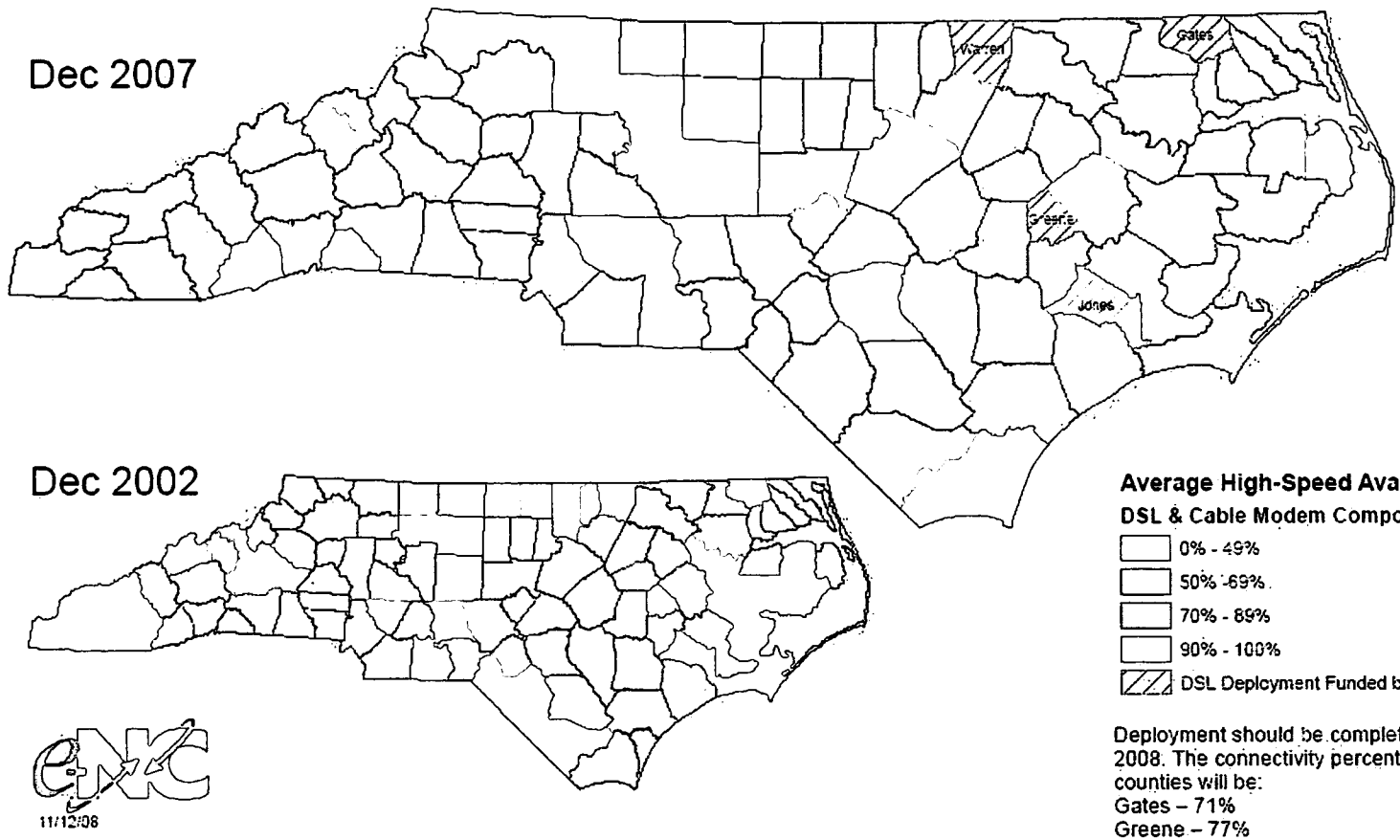


Connecting North Carolina to a Better Future

The e-NC Authority
November 14, 2008

Jane Smith Patterson
Executive Director
www.e-nc.org

Progression of Counties Toward 100% High-Speed Availability



Average High-Speed Availability
DSL & Cable Modem Composite

- 0% - 49%
- 50% - 69%
- 70% - 89%
- 90% - 100%
- DSL Deployment Funded by Legislature

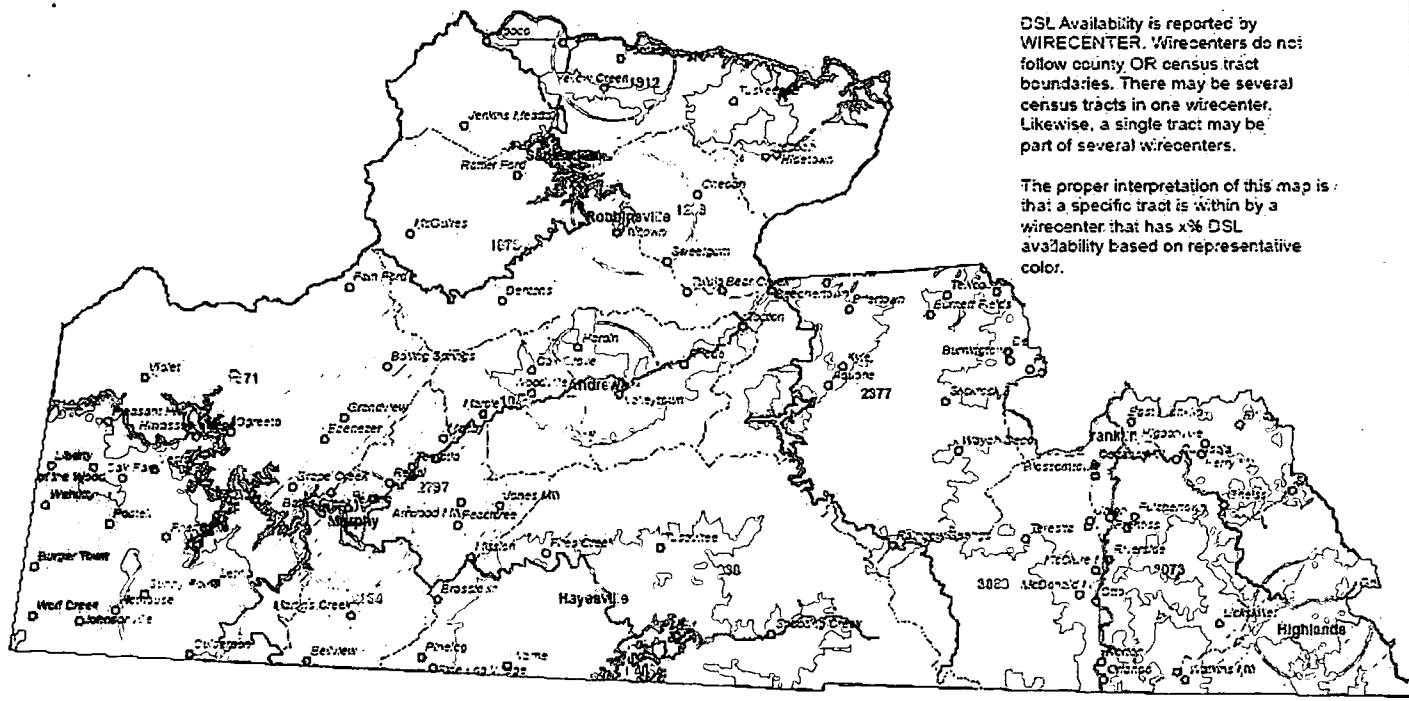
Deployment should be completed in November 2008. The connectivity percentages for the four counties will be:
Gates – 71%
Greene – 77%
Jones – 71%
Warren – 86%

Source: Based on data supplied by Service Providers.
Data current as of December 31, 2007.

www.e-nc.org

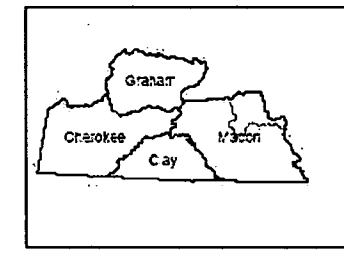
District 120: Western North Carolina

District 120: Cherokee, Clay, Graham and Macon Counties
High Speed Internet Focus on Census Tracts



DSL Availability is reported by WIRECENTER. Wirecenters do not follow county OR census tract boundaries. There may be several census tracts in one wirecenter. Likewise, a single tract may be part of several wirecenters.

The proper interpretation of this map is that a specific tract is within by a wirecenter that has x% DSL availability based on representative color.



Wirecenters

DSL % Availability 2007

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile DSL Range
- Cable Modem Service
- Municipal Boundaries
- Combined Restricted Land

Numbers in BLUE indicate the number of housing units in the entire Census Tract.

0 5 10 20 Miles

Source: DSL data and Central Office data supplied by Service Providers.

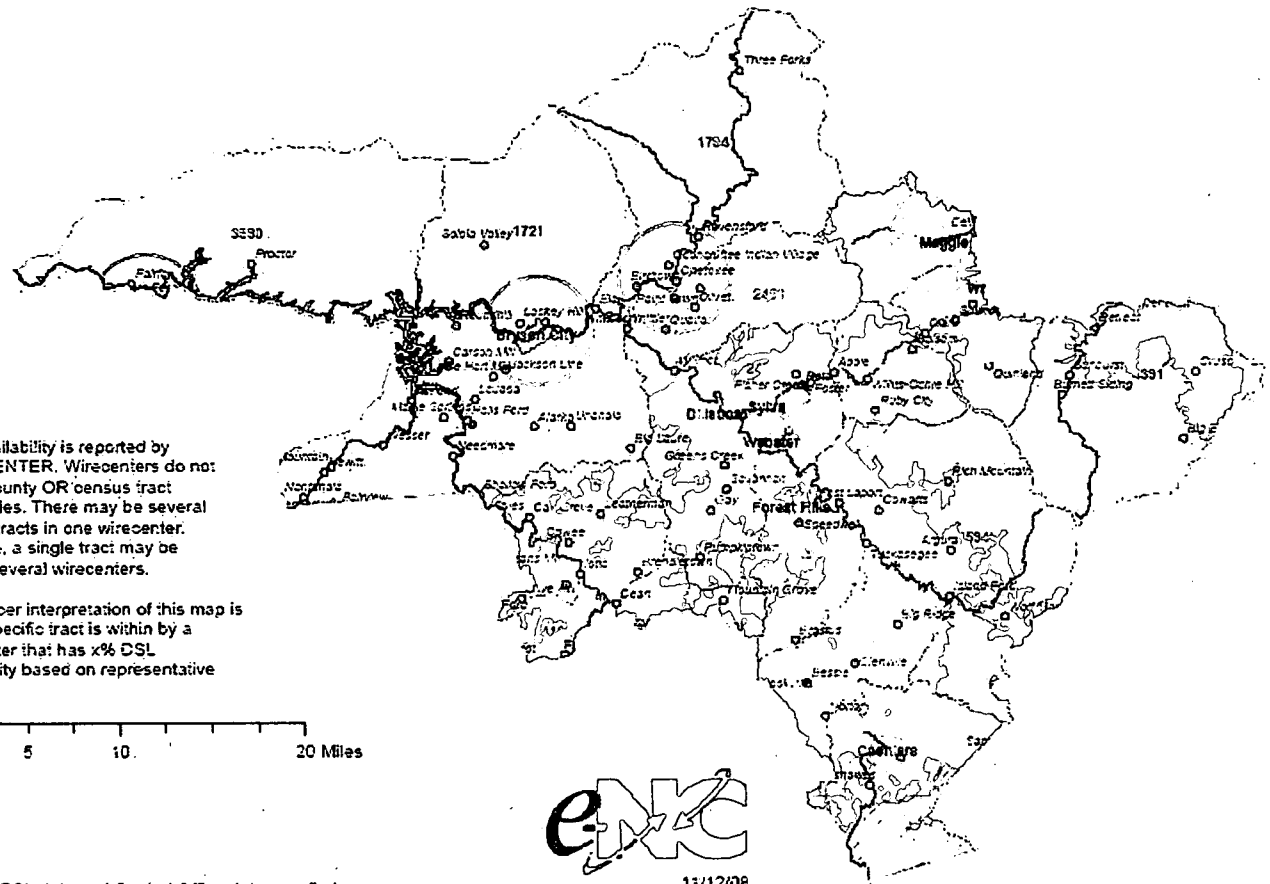
e-NC

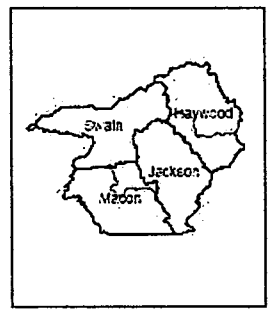
11/122/08

www.e-nc.org

District 119: Western North Carolina

District 119: Haywood, Jackson, Macon and Swain Counties
High Speed Internet Focus on Census Tracts





Wirecenters

DSL % Availability 2007

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile DSL Range
- Cable Modem Service
- Municipal Boundaries
- Combined Restricted Land

Numbers in BLUE indicate the number of housing units in the entire Census Tract.

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0 5 10 20 Miles

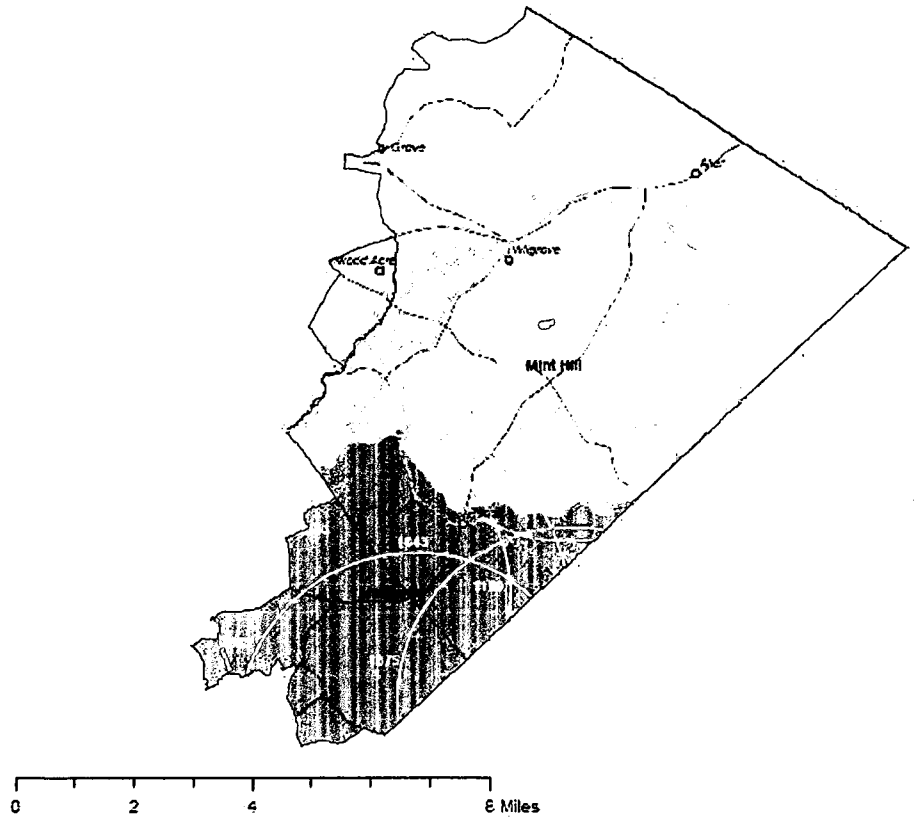
e-NC

11/12/08

Source: DSL data and Central Office data supplied by Service Providers.

District 103: Mecklenburg County

District 103: Mecklenburg County
High Speed Internet Focus on Census Tracts



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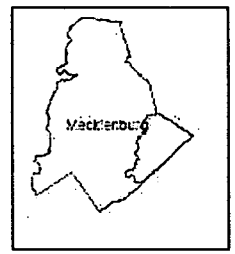


Wirecenters

DSL % Availability 2007

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile DSL Range
- Cable Modem Service
- Municipal Boundaries
- Combined Restricted Land

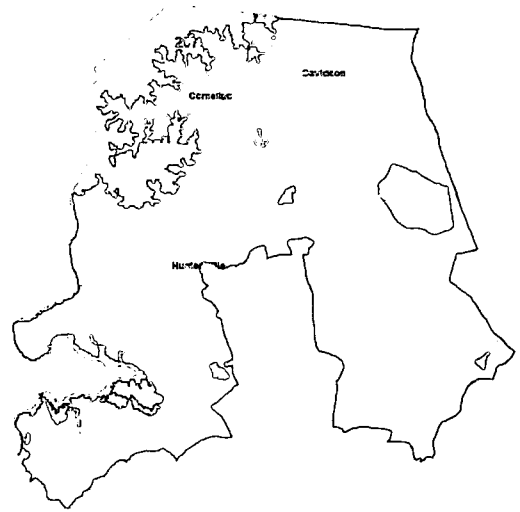
Numbers in BLUE indicate the number of housing units in the entire Census Tract.

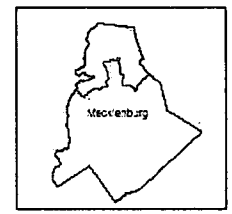
Source: DSL data and Central Office data supplied by Service Providers.

11/12/08

District 98: Mecklenburg County

District 98: Mecklenburg County
High Speed Internet Focus on Census Tracts





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0 1.5 3 6 Miles

Wirecenters

DSL % Availability 2007

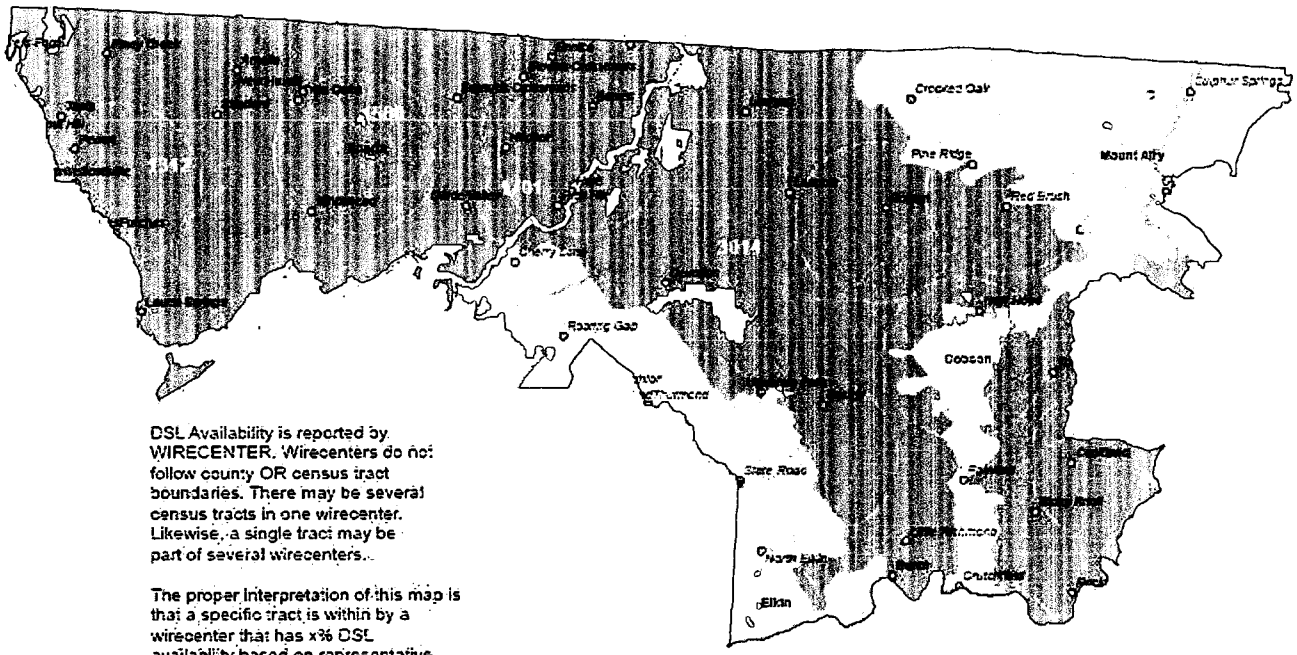
- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile Range for DSL
- Cable Modem Service Area
- Municipal Boundaries
- Combined Restricted Land

Numbers in BLUE indicate the number of housing units in the entire Census Tract.

11/12/08

District 90: Western North Carolina

District 90: Alleghany and Surry Counties
High Speed Internet Focus on Census Tracts



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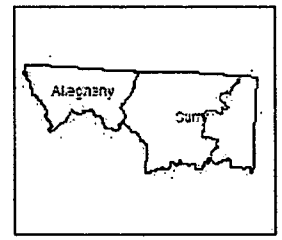
0 3 6 12 Miles

Source: DSL data and Central Office data supplied by Service Providers.

e-NC

11/12/08



Wirecenters

DSL % Availability 2007

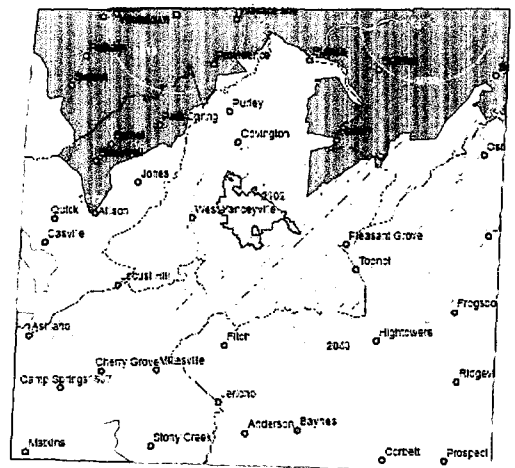
- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile Range for DSL
- Cable Modem Service Area
- Municipal Boundaries
- Combined Restricted Land

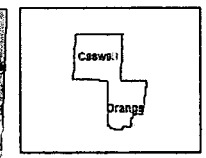
Numbers in BLUE indicate the number of housing units in the entire Census Tract.

www.e-nc.org

District 50: Central North Carolina

District 50: Caswell and Orange Counties High Speed Internet Focus on Census Tracts





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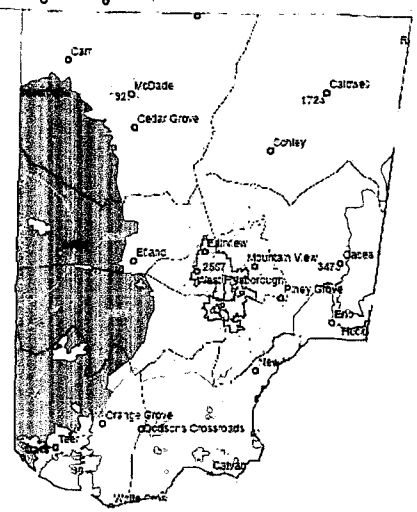
Wirecenters

DSL % Availability 2007

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile DSL Buffer
- Cable Modem Service
- Combined Restricted Land
- Municipal_boundaries

Numbers in BLUE indicate the number of housing units in the entire Census Tract.



0 2 4 8 Miles

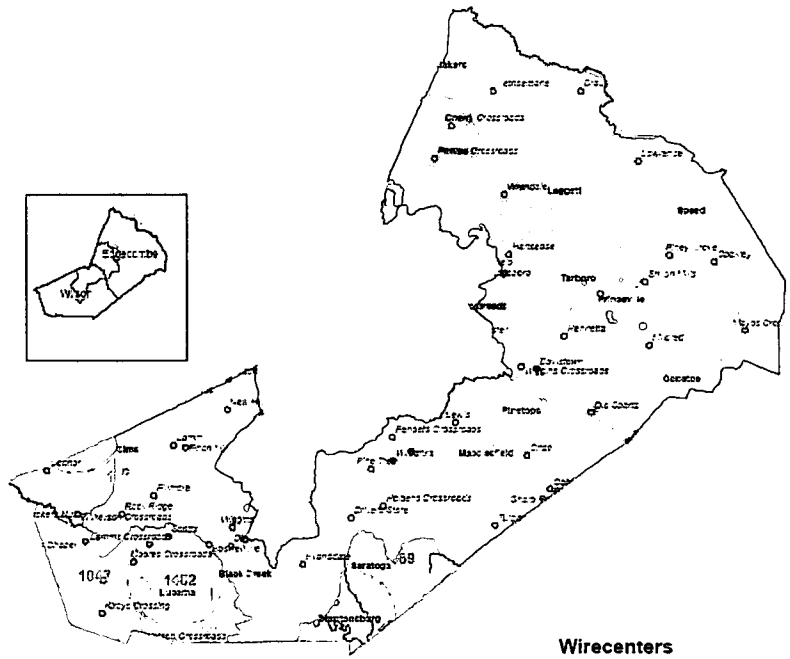
Source: DSL data and Central Office data supplied by Service Providers.

11/12/08

www.e-nc.org

District 23: Eastern North Carolina

District 23: Edgecombe and Wilson Counties High Speed Internet Focus on Census Tracts



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0 3.75 7.5 15 Miles

Wirecenters

DSL % Availability 2007

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile Range for DSL
- Cable Modem Service Area
- Municipal Boundaries
- Combined Restricted Land

Numbers in BLUE indicate the number of housing units in the entire Census Tract.

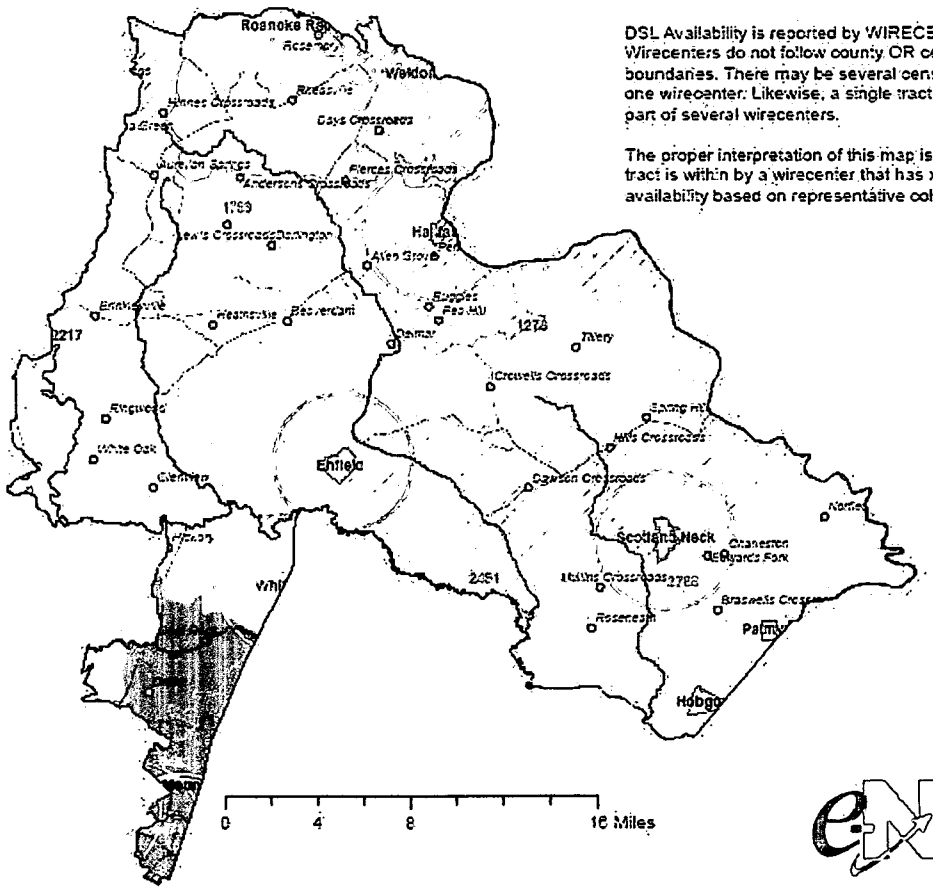
Source: DSL data and Central Office data supplied by Service Providers.

11/12/08

www.e-nc.org

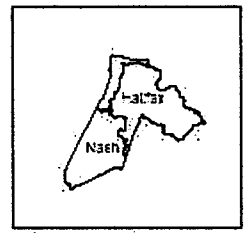
District 7: Eastern North Carolina

District 7: Halifax and Nash Counties
High Speed Internet Focus on Census Tracts



DSL Availability is reported by WIRECENTER. Wirecenters do not follow county OR census tract boundaries. There may be several census tracts in one wirecenter. Likewise, a single tract may be part of several wirecenters.

The proper interpretation of this map is that a specific tract is within by a wirecenter that has x% DSL availability based on representative color.



Wirecenters

DSL % Availability 2007

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 3-Mile DSL Range
- Cable Modem Service
- Municipal Boundaries
- Combined Restricted Land

Numbers in BLUE indicate the number of housing units in the entire Census Tract.

Source: DSL data and Central Office data supplied by Service Providers.

11/12/08

To Reach Us ....

The e-NC Authority
4021 Carya Drive,
Raleigh NC 27610
919-250-4314
1-866-627-8725
www.e-nc.org

2007 Connectivity Rankings

		County	Composite Hholds	CM % Hholds	DSL% Hholds			County	Composite Hholds	CM % Hholds	DSL% Hholds
		State	**83.33%**	**73.98%**	**81.00%**						
				67.16%	**76.67%**						
				80.73%	**85.28%**						
	1	**Alamance**	**75.98%**	**75.98%**	**75.58%**		51	Johnston	78.63%	70.10%	78.63%
	2	Alexander	71.96%	68.26%	71.96%	**Note 1**	52	Jones	41.83%	36.47%	41.83%
	3	Alleghany	95.28%	23.90%	95.28%		53	Lee	93.25%	86.94%	93.25%
	4	Anson	91.28%	50.56%	91.28%		54	Lenoir	83.28%	60.06%	83.28%
	5	Ashe	93.65%	2.00%	93.65%		55	Lincoln	73.64%	63.66%	73.64%
	6	Avery	77.80%	62.08%	77.80%		56	McDowell	72.44%	69.11%	52.18%
	7	Beaufort	86.78%	56.58%	86.78%		57	Macon	71.82%	64.73%	71.82%
	8	Bertie	73.37%	55.41%	54.06%		58	Madison	67.86%	39.02%	58.40%
	9	Bladen	85.47%	68.82%	85.47%		59	Martin	68.86%	50.24%	68.86%
	10	Brunswick	95.30%	78.48%	95.30%		60	**Mecklenburg**	**85.57%**	**79.99%**	**86.57%**
	11	**Buncombe**	**81.78%**	**72.86%**	**81.50%**		61	Mitchell	68.13%	68.13%	64.62%
	12	Burke	70.49%	55.21%	70.49%		62	Montgomery	73.59%	8.79%	73.59%
	13	**Cabarrus**	**95.43%**	**95.28%**	**95.43%**		63	Moore	82.37%	72.40%	82.37%
	14	Caldwell	76.61%	63.84%	76.61%		64	Nash	78.57%	63.35%	78.57%
	15	Camden	76.26%	76.26%	60.99%		65	**New Hanover**	**90.64%**	**85.15%**	**90.64%**
	16	Carteret	88.72%	81.64%	88.72%		66	Northampton	62.97%	55.50%	46.04%
	17	Caswell	56.76%	36.99%	56.76%		67	Onslow	78.71%	78.71%	75.51%
	18	**Catawba**	**81.55%**	**62.63%**	**81.55%**		68	**Orange**	**81.86%**	**69.09%**	**81.86%**
	19	Chatham	62.17%	46.89%	62.17%		69	Pamlico	54.69%	0.00%	54.69%
	20	Cherokee	51.29%	42.00%	51.29%		70	Pasquotank	75.65%	74.59%	75.65%
	21	Chowan	82.80%	82.00%	59.01%		71	Pender	73.99%	56.47%	65.23%
	22	Clay	71.10%	0.00%	71.10%		72	Perquimans	71.73%	71.73%	64.28%
	23	Cleveland	71.51%	69.49%	65.81%		73	Person	60.39%	52.44%	60.39%
	24	Columbus	61.85%	19.15%	61.85%		74	Pitt	92.00%	85.66%	92.00%
	25	Craven	88.86%	85.49%	86.49%		75	Polk	90.05%	61.08%	90.05%
	26	**Cumberland**	**91.58%**	**86.80%**	**91.58%**		76	Randolph	93.09%	69.68%	93.09%
	27	Currituck	81.22%	81.22%	63.36%		77	Richmond	87.99%	87.29%	62.37%
	28	Dare	96.88%	91.18%	96.88%		78	Robeson	59.45%	53.74%	59.45%
	29	**Davidson**	**92.58%**	**64.46%**	**92.58%**		79	Rockingham	78.22%	78.22%	67.56%
	30	Davie	87.43%	68.68%	87.43%		80	**Rowan**	**79.23%**	**62.09%**	**79.23%**
	31	Duplin	54.89%	37.02%	54.89%		81	Rutherford	75.25%	73.78%	75.25%
	32	**Durham**	**87.77%**	**86.92%**	**87.77%**		82	Sampson	84.25%	47.31%	84.25%
	33	Edgecombe	85.13%	59.75%	85.13%		83	Scotland	82.22%	82.22%	68.68%
	34	**Forsyth**	**92.40%**	**85.40%**	**92.40%**		84	Stanly	98.82%	96.19%	98.82%
	35	Franklin	61.33%	26.96%	61.33%		85	Stokes	70.91%	56.95%	70.91%
	36	**Gaston**	**83.45%**	**83.45%**	**81.41%**		86	Surry	92.66%	89.14%	92.66%
Note 1	37	Gates	54.47%	0.00%	54.47%		87	Swain	76.46%	76.46%	54.58%
	38	Graham	52.43%	0.00%	52.43%		88	Transylvania	98.00%	6.56%	98.00%
	39	Granville	63.55%	63.55%	60.66%		89	Tyrrell	55.64%	55.64%	53.91%
Note 1	40	Greene	56.68%	0.00%	56.68%		90	Union	82.27%	78.62%	56.91%
	41	**Guilford**	**81.17%**	**76.46%**	**76.83%**		91	Vance	79.25%	78.66%	79.25%
	42	Halifax	81.77%	73.15%	81.77%		92	**Wake**	**90.60%**	**88.41%**	**85.02%**
	43	Harnett	87.58%	63.55%	87.58%	**Note 1**	93	Warren	50.65%	44.57%	50.65%
	44	Haywood	80.89%	80.32%	80.89%		94	Washington	73.30%	73.09%	73.30%
	45	Henderson	78.80%	78.17%	78.80%		95	Watauga	88.53%	82.66%	88.53%
	46	Hertford	82.34%	81.77%	75.87%		96	Wayne	76.53%	75.10%	74.60%
	47	Hoke	89.08%	87.06%	89.08%		97	Wilkes	79.37%	58.63%	79.37%
	48	Hyde	68.80%	30.43%	68.83%		98	Wilson	84.68%	79.46%	80.08%
	49	Iredell	88.20%	87.09%	88.20%		99	Yadkin	97.29%	81.98%	97.29%
	50	Jackson	72.92%	59.65%	72.92%		100	Yancey	93.58%	85.76%	54.08%
		Bold	Urban Counties								
			Connectivity challenged <70% access								
		Note 1	07 e-NC Authority grant brought all above 70%								

2007 Connectivity Challenged

	County	Composite Hholds	CM % Hholds	DSL% Hholds			County	Composite Hholds	CM % Hholds	DSL% Hholds
	State	**83.33%**	**73.98%**	**81.00%**						
	Rural		**67.16%**	**76.67%**						
	Urban		**80.73%**	**85.28%**						
	Jones **Note 1**	41.83%	36.47%	41.83%			Wilkes	79.37%	58.63%	79.37%
	Warren **Note 1**	50.65%	44.57%	50.65%			Haywood	80.89%	80.32%	80.89%
1	Cherokee	51.29%	42.00%	51.29%			**Guilford**	**81.17%**	**76.46%**	**76.83%**
2	Graham	52.43%	0.00%	52.43%			Currituck	81.22%	81.22%	63.36%
	Gates **Note 1**	54.47%	0.00%	54.47%			**Catawba**	**81.55%**	**62.63%**	**81.55%**
3	Pamlico	54.69%	0.00%	54.69%			Halifax	81.77%	73.15%	81.77%
4	Duplin	54.89%	37.02%	54.89%			**Buncombe**	**81.78%**	**72.86%**	**81.50%**
5	Tyrrell	55.64%	55.64%	53.91%			**Orange**	**81.86%**	**69.09%**	**81.86%**
	Greene **Note 1**	56.68%	0.00%	56.68%			Scotland	82.22%	82.22%	68.68%
6	Caswell	56.76%	36.99%	56.76%			Union	82.27%	78.62%	56.91%
7	Robeson	59.45%	53.74%	59.45%			Hertford	82.34%	81.77%	75.87%
8	Person	60.39%	52.44%	60.39%			Moore	82.37%	72.40%	82.37%
9	Franklin	61.33%	26.96%	61.33%			Chowan	82.80%	82.00%	59.01%
10	Columbus	61.85%	19.15%	61.85%			Lenoir	83.28%	60.06%	83.28%
11	Chatham	62.17%	46.89%	62.17%			**Gaston**	**83.45%**	**83.45%**	**81.41%**
12	Northampton	62.97%	55.50%	46.04%			Sampson	84.25%	47.31%	84.25%
13	Granville	63.55%	63.55%	60.66%			Wilson	84.68%	79.46%	80.08%
14	Madison	67.86%	39.02%	58.40%			Edgecombe	85.13%	59.75%	85.13%
15	Mitchell	68.13%	68.13%	64.62%			Bladen	85.47%	68.82%	85.47%
16	Hyde	68.80%	30.43%	68.83%			**Mecklenburg**	**85.57%**	**79.99%**	**86.57%**
17	Martin	68.86%	50.24%	68.86%			Beaufort	86.78%	56.58%	86.78%
	Burke	70.49%	55.21%	70.49%			Davie	87.43%	68.68%	87.43%
	Stokes	70.91%	56.95%	70.91%			Harnett	87.58%	63.55%	87.58%
	Clay	71.10%	0.00%	71.10%			**Durham**	**87.77%**	**86.92%**	**87.77%**
	Cleveland	71.51%	69.49%	65.81%			Richmond	87.99%	87.29%	62.37%
	Perquimans	71.73%	71.73%	64.28%			Iredell	88.20%	87.09%	88.20%
	Macon	71.82%	64.73%	71.82%			Watauga	88.53%	82.66%	88.53%
	Alexander	71.96%	68.26%	71.96%			Carteret	88.72%	81.64%	88.72%
	McDowell	72.44%	69.11%	52.18%			Craven	88.86%	85.49%	86.49%
	Jackson	72.92%	59.65%	72.92%			Hoke	89.08%	87.06%	89.08%
	Washington	73.30%	73.09%	73.30%			Polk	90.05%	61.08%	90.05%
	Bertie	73.37%	55.41%	54.06%			**Wake**	**90.60%**	**88.41%**	**85.02%**
	Montgomery	73.59%	8.79%	73.59%			**New Hanover**	**90.64%**	**85.15%**	**90.64%**
	Lincoln	73.64%	63.66%	73.64%			Anson	91.28%	50.56%	91.28%
	Pender	73.99%	56.47%	65.23%			**Cumberland**	**91.58%**	**86.80%**	**91.58%**
	Rutherford	75.25%	73.78%	75.25%			Pitt	92.00%	85.66%	92.00%
	Pasquotank	75.65%	74.59%	75.65%			**Forsyth**	**92.40%**	**85.40%**	**92.40%**
	Alamance	**75.98%**	**75.98%**	**75.58%**			**Davidson**	**92.58%**	**64.46%**	**92.58%**
	Camden	76.26%	76.26%	60.99%			Surry	92.66%	89.14%	92.66%
	Swain	76.46%	76.46%	54.58%			Randolph	93.09%	69.68%	93.09%
	Wayne	76.53%	75.10%	74.60%			Lee	93.25%	86.94%	93.25%
	Caldwell	76.61%	63.84%	76.61%			Yancey	93.58%	85.76%	54.08%
	Avery	77.80%	62.08%	77.80%			Ashe	93.65%	2.00%	93.65%
	Rockingham	78.22%	78.22%	67.56%			Alleghany	95.28%	23.90%	95.28%
	Nash	78.57%	63.35%	78.57%			Brunswick	95.30%	78.48%	95.30%
	Johnston	78.63%	70.10%	78.63%			**Cabarrus**	**95.43%**	**95.28%**	**95.43%**
	Onslow	78.71%	78.71%	75.51%			Dare	96.88%	91.18%	96.88%
	Henderson	78.80%	78.17%	78.80%			Yadkin	97.29%	81.98%	97.29%
	Rowan	**79.23%**	**62.09%**	**79.23%**			Transylvania	98.00%	6.56%	98.00%
	Vance	79.25%	78.66%	79.25%			Stanly	98.82%	96.19%	98.82%
	Note 1	07 e-NC Authority grant brought all above 70%								
	Bold	Urban County								
		Connectivity challenged <70% access								

MINUTES

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

Thursday, December 18, 2008

The House Select Committee on High Speed Internet in Rural Areas met on Thursday, December 18, 2008, in Room 544 of the Legislative Office Building at 10:00 A.M. The following members were present: Chairman Bill Faison; Representatives Angela Bryant, Jim Gully, Phillip Haire and Joe Tolson. Staff in attendance: Brenda Carter, Barbra Riley, Karlynn O'Shaughnessy, and Peter Capriglione. House Sergeant-at-Arms assisting: Charles Williams, Earl Coker, and Rodney Finger. The Agenda and Visitor Registration Sheet are attached. *(Attachment 1 and 2)*

The Chairman called the meeting to order, gave a brief overview of what was expected and introduced our first presenter of the day, Jane Patterson.

Jane Smith Patterson (Executive Director, E-NC Authority) was recognized to present to the committee. Below are some key points of her presentation, her full presentation is attached: *(Attachment 3)*

- *Broadband Summits* – Summits where held in eight places across the State. Caswell County, Pasquotank County, Jackson County, Edgecombe County, Bladen County, Mecklenburg County, Chatham County, and Alleghany County, with over 260 participants.
- *Goal of Summits* – educate North Carolinians on where we stands as far as broadband connectivity, talk about technical and political/policy issues surrounding internet infrastructure deployment, discuss potential solutions for increasing levels of telecommunications infrastructure in all NC communities and to receive input from participants on ideas for what should be done to increase availability.
- *Summit Conclusions* – participants tie internet connectivity and the global economy directly to their ability to create jobs, infrastructure deployed that could handle future bandwidth needs, did not like idea of matching requirement for state-funds, rural communities want connectivity speeds that are higher, would like fiber connection but are willing to consider alternatives, support the need for a national broadband policy, clear understanding of the importance of connectivity, impatient with deployment efforts of their local companies, and participants spoke of a critical need for digital literacy.

After Jane Patterson's presentation Chairman Faison introduced our next speaker Representative Winkie Wilkins.

Winkie Wilkins (House of Representatives) was recognized to present to the committee. Below are some key points of his presentation:

- With the floor Rep. Wilkins submitted two articles, two emails and introduced his constituents from Person County. (Attachment 4)
- *Karen Walker*: Wants to help expand High Speed internet to all of Person county, she doesn't have High Speed Internet, Cell, or cable at her home. Mrs. Walker's husband owns his own business and works frequently on the internet, but has no access at home. She has made several calls to no avail.
- *Benson Nelson*: Lives in the southern part of Person County about 2 ½ miles from the Highway Patrol station and doesn't have High Speed Access. Mr. Nelson can easy name 100 people in this eye range that would appreciate High Speed internet. He also has made inquires about getting sufficient access in his neighborhood and still nothing.
- *Cherri Hobgood*: Representing Bushy fork community. She is a Professor with children that is watching them fall behind academicals, intellectually, and in there ability to acquire basic skills. Skill that are going to connect them to the world in which we live in now and in which they need to function in the future.

After Representative Wilkins' presentation Chairman Faison introduced our next speaker Mark Ellington.

Mark Ellington (MIS Director, Chatham County) was recognized to present to the committee. Mark also submitted to the members a formal letter from Chatham County Commissioners (*Attachment 5*). Below are some key points of his presentation:

- One of the major problems is Chatham a combination of affordability and availability.
- 45% of the house holds and business in Chatham County do not have access to high speed internet in any form.
- Chatham County is looking at a combination of efforts (DSL, wireless, etc.) to bridge the gap in the County.
- Kevin Russell of Chatham – FCC vote about free wireless broadband was denied by the White House for free wireless broadband.
- Randy Voller, Mayor of Pittsboro - Lack of availability for many of the elected official's constituents is very frustrating.

After Mark Ellington's presentation Chairman Faison introduced our next speaker Bunny Sanders.

Mayor Bunny Sanders (Mayor of the town of Roper, Advocate for Windows on the World) was recognized to present to the committee. Below are some key points of her presentation and her hand out is attached. (*Attachment 6*):

- Believes Broadband is not accessible unless it is affordable.
- The State has not developed policy to guide the process.
- E-NC can not verify the data it receives, because it is provided by carriers. Carriers data is misleading, because in the town of Roper where a wire center sites 1 mile for the town, does not provide service and it is suppose to provide service for 3 miles.
- Mayor Sanders believes if the State is serious about broadband; it needs to have a transparent, verifiable, broadband accessibility study for the State, which is independent of the incumbent carriers.
- Provided to the members where FCC filings on Connect the Nations and Mayor Sanders expressed her disapproval of any General Assembly involvement with this organization.

After Mayor Sanders' presentation Chairman Faison introduced our next speaker Mary Boone.

Mary Boone (State Librarian, NC State Library) was recognized to present to the committee. Below are some key points of her presentation, full Presentation is attached (*Attachment 7*):

- Across the State of North Carolina we have 77 Systems (386 library building).
- The public library uses the internet for everything from child education, to Adult job searches and Small business support.
- Broadband in a major issue for economic growth, because even local jobs such as McDonald's are doing away with paper applications and moving toward online applications.
- Public libraries are used for communications portals between deployed soldiers and there families, E-government and the citizens.
- The State Library has teamed with Bill & Melinda Gates foundation to receive grant monies aimed to ensure public libraries have a minimum standard of public access.

After Mary Boone's presentation Chairman Faison introduced our next speaker Brent Legg in the place of Joe Mefford.

Brent Legg (Vice-President of State and Local Initiatives, Connected Nations) was recognized to present to the committee his presentation is attached (*Attachment 8*). Below are some key points of his presentation:

- National Non-profit 501c3 organization facilitates market based strategies for doing two things expanding broadband availability and in increasing broadband adoption rates across the US through public private partnerships.
- Connected Kentucky's accomplishments:
  - Since 2004 approx. 96% of the households have access to broadband which is up from 60% in 2004. That number represents about 546,000 new household that have received broadband.
  - One hundred growth rate in home broadband adoption and a 24% growth rate in home computer ownership (which is 6x the national average).

There are 4 key components to the connected nation model and broadband mapping is the first of those components, it is a comprehensive street level broadband infrastructure map for the State. In addition to mapping there is survey research, planning effort at the grass root levels in each county, and a program called No Child Left Offline for the underprivileged. The purpose of the Connect North Carolina broadband mapping initiative is to complement the work that E-NC is doing by creating the States first accurate street level picture of where broadband service exists and where it doesn't exist. There is a contract in place with the providers to produce this mapping system at their expense. There will not be any appropriations for this initiative.

After Brent Legg presentation Chairman Faison introduced our final speaker Dwight Allen.

Dwight Allen (Executive Vice President, NC Telephone Cooperatives Coalition/Carolina Link) was recognized to present to the committee. Below are some key points of his presentation and his handout is attached *(Attachment 9)*:

- Virginia legislature has passed a statue that basically said traditional telephone companies if they wanted to can provide telephone service in areas outside of there traditional areas.

- In alignment to this committee he proposed that if you provide broadband to an area and when you provide that broadband as an incident you can also provide voice grade telephone service.

Chairman Faison opened the floor for questions or comments.

With no further business to come before the committee Chairman Faison announced the adjournment of the meeting. The meeting adjourned at 12:11 p.m.

Respectfully submitted,

Representative Bill Faison
Chair

Lavada Vitalis
Committee Assistant

ATTACHMENT 1

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SHORT SESSION

AGENDA

Thursday, December 18, 2008
10:00 AM
Room 544, LB

1. **Welcome**

   Representative Bill Faison, Chairman

2. **Guest Speakers**

   - **E-NC**
   - **Rep. Winkie Wilkins**
     High Speed Internet concerns in Person County
   - **Empty space**
     High Speed Internet concerns in Chatham County
   - **Windows on the World**
     Bunny Sanders
   - **State Library**
     Mary Boone, State Librarian
   - **Connected Nations**
     Joe Mefford, Senior Broadband Consultant
   - **NC Telephone Cooperatives Coalition/Carolina Link**
     Dwight Allen, Executive Vice President

3. **Adjourn**

ATTACHMENT 2

VISITOR REGISTRATION SHE

High Speed Internet in Rural Areas — **Name of Committee**

18 December 2008 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Bill Craigle	alltel
Brett Allen	Allen Law
Lyman Horne	STAR.TMC Clinton, N.C.
Carole Woodward	NC Telecom Association
Stan Pace	Verizon
Dana Sykes	Sixth Anders
Deborah Watts	e-NC Authority
Richard Kelly	e-NC Authority
Steve Brewer	EMBARQ
Marty Bocock	EMBARQ
TOM VANDERBECK	CHATHAM CO. COMMISSIONER

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — **Name of Committee**

18 December 2008 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Karen & John Walker	residents - Person County 1171 Rougemont Road Rougemont NC 27572
Scott Gardner	Duke Energy
Herb Crenshaw	AT&T
Brent Legg	Connected Nation
Jack Gossett	Womble
Dorenda Gatling	e-NC Board
John A. Short	Sazz Com Group
Sherry McCollar	Peregrine Mngmnt Partners
Randolph Voller	Mayor of Pittsboro
Mark Ellington	Chatham County IT Director
Kevin Russell	Pittsboro / Chatham County Citizen

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — **Name of Committee**

18 December 2008 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Ed Chase	NC DOT
Crystal Jennings	Windows On the World
Bunny Sanders	Mayor Town of Ropen, NCWTC

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — 18 December 2008

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Marcia McNally	citizen, Person County
Cherri Hobgood	citizen, Person County
Vincent Nelson	citizen, Person County
Debra Dew	AT&T
Brad Phillips	TWC
[illegible]	[illegible]
Marcy Tratten	BPMH&L
Donna Roosfield	DCR
Mary Boone	DCR - State Library
Karl Knapp	NCLM
Dwight Allen	Allen Law

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — 18 December 2008

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Carol Torian	The e-NC Authority
IVY HOFFMAN	NCAPT
Fran Wescott	OPEN/net, APT
DANIEL BAUM	K&L GATES
Cary Edgar	The e-NC Authority
Fiona Morgan	Independent Weekly reporter
Connie Wilson	SSI
Angie Bailey	e-NC
CHARLES PITTMAN	CITIZEN
BRENT LEGG	CONNECTED NATION

Executive Summary – 2008 Broadband Summits, The e-NC Authority

In follow-up to the Baller Herbst report, *Bigger Vision, Bolder Action, Brighter Future; Capturing the Promise of Broadband for North Carolina and America*, the e-NC Authority held a series of eight community summits across the state in September 2008. This initiative was supported by passage of House Resolution 2411. Groups of citizens convened at regional levels to work with the e-NC Authority on providing local-level feedback about access to technology and what considerations should be implemented to a statewide strategic Internet plan. The recommendations from these summits will be compiled to present to the N.C. General Assembly and the House Select Committee on High-Speed Internet in Rural Areas during the 2009-2011 legislative session.

Summits were held in the following locations:

Thursday, Sept. 4 – Yanceyville, Caswell County
Friday, Sept. 5 – Elizabeth City, Pasquotank County
Monday, Sept. 8 – Tarboro, Edgecombe County
Tuesday, Sept. 9 – Elizabethtown, Bladen County
Monday, Sept. 15 – Charlotte, Mecklenburg County
Tuesday, Sept. 16 – Cullowhee, Jackson County
Monday, Sept. 22 – Sparta, Alleghany County
Tuesday, Sept. 23 – Pittsboro, Chatham County

The over 260 participants included citizens, small business owners, educators (k-20), librarians, local government officials, state government officials, and service providers, among others.

The goals of the summits included:

- Provide an educational opportunity to citizens, business owners and state and local leaders on where North Carolina stands in terms of broadband connectivity
- Talk about technical and political/policy issues surrounding Internet infrastructure deployment
- Discuss potential solutions for increasing levels of telecommunications infrastructure in all North Carolina communities
- Receive input from participants on their ideas for what should be done to increase the availability of high-speed Internet services, or broadband, and how to address issues around digital inclusion

Some conclusions from the summits include:

Participants expressed strong support for continuation of an entity like the e-NC Authority in order to have a central focus on broadband and emerging technologies.

Participants declared that information about broadband is critical to the state, and their local communities.

Participants tie Internet connectivity and the global economy directly to their ability to create jobs in the community, maintain their current employment, and access the education need to gain new skills for a knowledge-based economy.

Participants wanted to see infrastructure deployed that could handle future bandwidth needs. Some participants did not like the idea of a match requirement for state-funded deployment in rural areas since it would be difficult for some companies to find the required match. Regardless, they thought that all communities needed to be involved in supporting local deployment, not just by communities that are unserved.

Participants from rural communities want connectivity speeds that are higher than what they have available now. Many would like a fiber connection but are willing to consider alternatives.

Participants supported the need for a national broadband policy even though many were unclear on how the policy would look or how its directives might be financed. Participants expressed that the state should track federal policy issues that affect state and local communities relating to broadband access and communication technologies.

Participants have a clear understanding of the importance of connectivity for all aspects of their lives – civic engagement, education, employment, job creation, social networking, information gathering, health care and governmental interaction.

Participants are impatient with the deployment efforts of their local companies, but they are unsure of how to bring about change.

Participants spoke of the critical need for digital literacy for all populations in rural and urban communities.

Participants expressed real concern that our children will be at an increasing disadvantage if North Carolina and the United States do not keep pace in broadband deployment with the rest of the world.

Participants expressed a great deal of concern about digital inclusion. How will people access the Internet and how can they afford home computers? What about citizens who are on the economic margins of society? Participants felt the Lifeline Link-Up program could be considered as a model for Internet access for households that cannot afford Internet access. Lifeline Link-Up is a federal-state program that offers a telephone and a subsidized monthly subscription price for consumers that meet certain baseline requirements.

Participants would like to see the establishment of regional councils on connectivity, supported by the e-NC Authority.

Participants agreed that accurate data is essential in mapping the existence of telecommunications infrastructure in the state – and that data should be made available to the state to assist in policy-making decisions about broadband deployment and uptake.

Participants would like to see usage of public (state) financial incentives for broadband deployment in North Carolina's unserved communities.

Here are some additional comments given directly from participants on the event feedback form. The comments below were given in response to the question "**Why is broadband needed and how does it impact your community?**"

- Access is needed to help facilitate training for the workforce.
- Nonprofits need broadband to carry out their work and their missions.
- It is needed to help extinguish the digital divide.
- Broadband is needed in the community to attract technology companies, but it is also needed for the whole community and for schools.
- It is needed for small businesses and for various software and Web applications.
- You have to have "big" broadband to be competitive.
- You need high speeds for home care applications and services for the elderly.
- It is needed for citizen participation in government (for example for town council meetings over the Web).
- You have to have the needed infrastructure to keep up with current trends.
- The culture of today is high-speed and fast-paced. Broadband is required to keep up with the rest of the world which is adopting this culture.
- "Ten seconds is an eternity on a computer."
- We have to be able to run the software and applications being used around the world. If we wait to do something, we won't have time to get the needed infrastructure in place.
- Look at connectivity in terms of productivity. If we are not connected, we are not productive.
- My business is Web-based, and 95 percent of my orders are online. With more broadband, I can grow my business and increase my number of employees.
- Without question, kids without access are at a disadvantage.
- The divide between the "haves" and the "have-nots" in the state will expand exponentially with those that are not online.
- Money is being spent on education programs (such as Learn and Earn), but people can't get online to participate. Funding should be spent on the infrastructure first.
- Online learning is not just for young students, but also for retired people.
- You have to have access to participate in online degree programs for bachelor and master degrees.
- Almost all transcription companies require workers to have high-speed Internet.
- Parents can communicate with their children's schools online.
- At Piedmont Community College, many students have to take online classes on campus because they don't have access at home.
- I commute one hour a day to work from Chatham County, but could work at home some if I had high-speed Internet.
- The trend in education is more online participation. People need high-speed Internet to participate.

Video footage was taken at all summit gatherings, and participants were given an opportunity to speak individually about their particular experiences. The individual citizen stories were unscripted and are now being edited into short vignettes for public consumption. All videos can be seen on the e-NC Authority YouTube Channel:

http://www.youtube.com/user/ConnectingNC

GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 2007

H

Simple Resolution Adopted

HOUSE RESOLUTION 2411
Adopted 7/2/08

Sponsors:	Representatives Faison and Bryant (Primary Sponsors).
Referred to:	Public Utilities, if favorable, Rules, Calendar, and Operations of the House.

May 26, 2008

A HOUSE RESOLUTION IN SUPPORT OF THE CONVENING OF THE E-NC AUTHORITY'S DIGITAL BROADBAND SUMMITS.

Whereas, the e-NC Authority is a State authority, established by the N.C. General Assembly in 2000, and the e-NC Authority has worked to bring high-speed Internet access to the rural areas of North Carolina as well as the distressed urban areas of the State; and

Whereas, on average, 83% of North Carolina households have the ability to access and purchase high-speed Internet services if they so desire; and

Whereas, almost 17% of households in North Carolina have no access to high-speed Internet; and

Whereas, a higher level of bandwidth and faster speeds of transmission will be needed in the future; and

Whereas, in fall 2008, the citizens of the State will have an opportunity through eight statewide Digital Broadband Summits to bring forth their ideas and desires for a new vision of digital broadband inclusion for North Carolina citizens and businesses; and

Whereas, the findings from the eight summits may include digital inclusion metrics relative to broadband deployment, digital literacy of citizens, digital uptake rates, ways to provide the incentives for deployment of broadband, and new ideas for assisting in subscription up-take for citizens; and

Whereas, the e-NC Authority will report back and provide recommendations to the House Select Committee on High-Speed Internet in Rural Areas and the General Assembly on the findings from the regional sessions to be held across North Carolina; Now, therefore,

Be it resolved by the House of Representatives:

SECTION 1. The House of Representatives supports the efforts of the e-NC Authority to hold at least eight Digital Broadband Summits across North Carolina in the fall of 2008. The House of Representatives looks forward to the receipt of the findings and recommendations of the e-NC Authority resulting from these summits. The House Select Committee on High-Speed Internet in Rural Areas shall give consideration to these findings and to a proposed broadband Internet plan for the citizens and businesses of North Carolina in order to take full advantage of this 21st century economic development and knowledge tool.

SECTION 2. The members of the N.C. House of Representatives are encouraged to participate in the Digital Broadband Summits that will take place in their area.

SECTION 3. This resolution is effective upon adoption.

Jane Patterson (1)

A Broadband Future: Your Community, Your Voice
Discussion
Where Should We Be Headed?
& What Can We Do To Get There?

Discussion Questions and Topics:

DOES YOUR COMMUNITY NEED MORE BROADBAND?

Do you think your community needs more broadband?
Do you believe broadband impacts your community in terms of economic development, health, government, or learning?

BROADBAND INFRASTRUCTURE

Ways to Increase Access in Low Population Areas
For areas with low population density, there may not be enough potential customers to warrant a "business case" for providers to step in and build out the infrastructure to provide service.

Where the market forces are not bringing in the service, what do you think should be done?
Possible Options:
Wait on the market and focus on demand-building activities _____
Rely on the market and wait for the population to grow _____
Seek out emerging technology trends which may require less investment for areas with low population densities _____
Try to increase demand to at least ensure a good take rate to increase the chance of providers offering service to the area _____
Have state and/or local communities step in to provide broadband incentives _____
Other: _____

When should the state or local communities step in and try to increase service in these areas?
Should deployment costs be subsidized?

- If so, by who – the state, federal government, local dollars, foundations?
- Should funding be considered as deployment grants, tax incentives, state bonds? Other?
- The following should be eligible:
  big providers___, co-ops___, start-ups___, local community networks (government-owned, non-profit or private) ___?
- For non-profits or start-up companies receiving funding, should we require evidence of being in business for 3 years or also allow start-ups to be considered? Start-Ups _____ 3yrs in Business/positive cash flow _____ Other _____

Is there enough capital to ensure on-going upgrades and maintenance?

- Should community networks (either non-profit or government-driven) be undertaken? If so, when _____.
- If public money is to be invested in North Carolina for broadband deployment (whether it be state, local or federal), what areas should receive priority for last-mile deployment efforts? (the most rural areas____, the most urban areas___, areas of high-growth___, areas with the least connectivity____, areas where communities are willing to become involved and develop a local plan_____ etc.)
- What other solutions do you see? Please write response.

Input on Technologies and Bandwidth

Do you have any input regarding the various types of technologies (such as Digital Subscriber Line (DSL), cable modem service, wireless, PCS, fiber-to-the-home or fiber-to-the-node, satellite, Broadband over Power Line (BPL), etc.)**?** Note: the e-NC Authority is technology neutral.

How much bandwidth do you believe is needed for citizens and businesses?

- Should the state be focusing on "baby" broadband such as DSL and cable modem service, to ensure that everyone at least has high-speed Internet service?
- Should the state be focusing on "big" broadband (such as fiber), to ensure that we have the bandwidth needed to compete with other states and countries?

Policy

Do you believe it is important for the state to continue to map (using GIS-based mapping) the location of telecommunications infrastructure and the availability of last-mile service as a tool to determine where broadband is available, in order to inform policy and planning efforts?

What should we expect in terms of state policy or support, for North Carolina deployment efforts?

Would you continue to support state policies to increase broadband or to increase monetary incentives for broadband deployment? And to increase funding for digital literacy____?

Would you support federal policies to increase broadband or increased monetary incentives from the federal government?

Do you have any other input regarding broadband infrastructure and deployment issues?

DEMAND-BUILDING AND DIGITAL INCLUSION

Should there be additional state or local efforts to increase demand for high-speed Internet access or broadband? Should there be additional state or local efforts to increase digital inclusion?

If so, what types of state or local efforts should be the focus for increasing demand or digital inclusion? Do you believe that the following efforts are important? List on a scale of one to four in the blanks beside the bullets.

- Public awareness of the benefits of broadband _____
- Digital Literacy Training _____
- Computer/laptop programs for citizens that don't have computers _____
- Public Internet Access Centers_____

Who should pay for these programs? _____

What are your thoughts on affordability?

The e-NC Authority believes that the monthly subscription rates for high-speed or broadband Internet service are similar for customers in urban and rural areas (where the service is available for wire line companies). Cable companies, wireless and satellite companies differ in their rates.

- Do you believe that Internet subscription rates should be subsidized for anyone or should everyone be expected to pay market rates? Subsidized_____ Market rates paid____
- If you believe in subsidizing, how would you envision this being set up? Have you heard of Life Line/Link up Service?
- If you do not believe in subsidizing this cost, do you have other suggestions for helping lower income families to be able to access the Internet?

LEADERSHIP

Do you believe that we need to better educate state and local leaders on broadband (such as: what it is, why it's important, the current state of deployment in North Carolina, digital inclusion challenges, and key state and federal policies)? If you believe this is needed, how would you suggest this be done?

Do you believe that more technical resources relating to broadband and broadband policies should be available to state and local leaders? If yes, what suggestions do you have for how additional resources could be provided?

The state established the e-NC Authority to work to gain increased connectivity for North Carolina citizens and businesses (under Session Law 2003-425). The e-NC Authority has served as a grant-making organization, a research organization (including tracking the availability of high-speed Internet), and has worked on policy and advocacy issues related to both increasing the availability of service and on demand-focused issues. It has also worked to assist citizens to approach companies for broadband service. As of now, our sunset date is December 31, 2011.

Do you believe that North Carolina needs to continue a state broadband organization such as the e-NC Authority?

- What changes would you make?
- What should the focus be: supply (availability), demand, programs/grants, policy, research, rural/urban?
- How should such work be funded? Appropriations _____? Money from Utilities Commission _____? Other _____?

Do you believe that local or regional broadband councils are needed and would be beneficial (to look at regional connectivity needs and efforts, to track policy, and to work with any state level organizations working on broadband)?

- If so, do you think that the state regional economic development partnerships should play a role in these councils _____?
- Should there be funds available to the e-NC Authority to support these efforts _____?

Do you believe the state should be tracking federal broadband policy and offering ideas to the FCC and other federal bodies on broadband deployment, policies and digital inclusion, as they affect the states and local communities' _____?

ATTACHMENT 4

Residents push for high-speed Internet service for Bushy Fork, Hurdle Mills

Plan to speak at Dec. 18 Raleigh meeting

By PHYLISS BOATWRIGHT
C-T Book Editor
pboatwright@roxboro-courier.com

A group of residents in the Bushy Fork and Hurdle Mills areas of Person County want high speed Internet and plan to go to Raleigh this month to voice their wishes.

Marcia McNally said she had talked with neighbors who, like her, were unable to get high-speed access through phone lines and must either live with slow dial-up or pay the high cost of satellite access.

While doing research on the possibility of getting high-speed access to the rural areas of the county, McNally said she discovered that the state had held regional summit meetings to collect testimony from people like her and her neighbors.

She said she had spoken with a representative of the e-NC Authority, who suggested that residents write letters to their elected officials, especially Rep. Bill Faison, D-Orange, who chairs the House Select Committee on High Speed Internet in Rural Areas.

Faison has scheduled a meeting at the Legislative Office Building, room 421, at 10 a.m. on Thursday, Dec. 18, to address the issue of high-speed Internet in rural North Carolina. According to his office, the public is invited and welcome to attend.

McNally and friends drafted a letter for anyone interested to send to Rep. W.A. (Winkie) Wilkins, D-Person, and to Faison outlining their wishes and concerns:

See **RESIDENTS** back page

Residents push for high-speed Internet expansion

Continued from page 1

"We need access to affordable high speed Internet for our children to do their homework, to run our home-based businesses, to take college classes remotely, to get information, and to participate in 21st century life," the letter states.

It explains that the group "started by calling Embarq to request service but have been told repeatedly that the lines do not extend to our roads and that the company has no future plans to correct this problem. In one case we were told to get in our car and find the nearest Internet café. These answers have come from local Embarq staff, Embarq sales representatives, and Embarq's Office of Regulatory Affairs."

In the letter, McNally said, "in the most recent 100 Counties Report published by the e-NC Authority . . . only 54 percent of Person County has high speed access. This is in stark contrast to the 84 percent of North Carolina households who do have it. By being on the wrong side of the digital divide we worry that our community will suffer in a number of ways, including [p]utting our children at a disadvantage in their education and ultimately in their employment prospects; [c]reating more barriers to economic retooling of our agricultural community, and [s]uffering from income, class, and mobility discrimination."

The letter explains that some Bushy Fork and Hurdle Mills residents "have found alternatives through cable companies which require costly equipment and additional services that have nothing to do with the Internet. But the fact remains that Person County is being left behind. Our question is what is the State of North Carolina doing to remedy this situation quickly?"

The group states that it understands "that the e-NC Authority held regional summits and we want this letter to be included in support in the legislature when the special subcommittee addressing this issue makes recommendations.

"The new school year is well underway and our kids are schlepping around to find ways to do their homework on the Internet, again," the letter says.

McNally said she would encourage anyone interested to attend the Dec. 18 meeting and to speak out to their elected officials.

Charles Pittman of the e-NC Authority told *The Courier-Times* this week that he would advise anyone interested in gaining high-speed Internet service in rural Person or Orange counties to attend the meeting and let their concerns be known.

According to the e-NC Web site, in 2007, the e-NC Authority awarded $1.21 million from the General Assembly in connectivity incentives grants. The intent of the funding was to expand the availability of high-speed Internet services in the North Carolina counties that are most critically underserved. Funds were available to qualified service providers through a structured and competitive process, and as specified by the e-NC Authority, all awards required a minimum of a dollar-for-dollar match from the grantee. After a thorough review of the applications for funding, the e-NC Authority's governing commission voted to award the connectivity grant funding to EMBARQ Corp.

According to the e-NC Authority's 2006 100 County Report, only 83.54 percent of North Carolina households have the ability to access a high-speed Internet connection. This figure reflects the availability of high-speed Internet services by DSL or cable modem to households, and does not account for proprietary information about the number of households that are actually subscribing to services.

Statewide, over 20 individual counties still remain critically underserved with less than 70 percent of households having the ability to access a high-speed Internet

Expand high-speed

WE ARE IMPRESSED by the spunk of the Person County residents who — upset with their slow dial-up Internet service and/or their inability to get reliable high-speed Internet service — are taking the bull by the horns and attempting to do something about it.

Many of them, if not all, already have gone through the most obvious channels — Embarq, the phone company, that offers DSL service in some sections of the county but not others — and apparently been disappointed, rebuffed or both, yet ultimately without success or at least some indication of when high-speed service might be extended to their areas.

And that's not good enough for residents of Bushy Fork and Hurdle Mills in Person County's southwestern corner, who admirably are taking their appeals to a higher level. Next week they plan to attend a meeting in Raleigh being conducted by state Rep. Bill Faison, D-Orange — who, by the way, has some Person County ties. Rep. Faison chairs the state House Select Committee on High Speed Internet in Rural Areas.

The meeting is open to the public, and Mr. Charles Pittman, chair of the e-NC Authority, which is promoting expansion of high-speed Internet in to rural North Carolina, has urged residents of Person and Orange counties with an interest in this subject to try to attend the Thursday, Dec. 18, meeting. It will be held in the Legislative Office Building, room 421, at 10 a.m.

According to an e-NC Authority report two years ago, 84 percent of North Carolina had access to high-speed Internet, but in Person County the figure was but 54 percent. Moreover, last year the authority offered $1.21 million in dollar-for-dollar matching grants to providers interested in helping expand high-speed connectivity in under-served areas. A grant was awarded to Embarq. Hmm.

Like it or not, the world, more and more, virtually runs on the Internet. But if you're still on dial-up, the world is passing you by as you await a connection.

Marcia McNally, a spokesperson for the Bushy Fork-Hurdle Mills group, made a great argument for the need for high-speed Internet in Person and all of rural North Carolina when she wrote in a letter:

"We need access to affordable high speed Internet for our children to do their homework, to run our home-based businesses, to take college classes remotely, to get information, and to participate in 21st century life."

Well said.

We're rooting for our Bushy Fork and Hurdle Mills friends. We're behind you!

Nancy Brantley (Rep. Wilkins)

From: Michael Brockwell [mycool88@gmail.com]
Sent: Wednesday, December 10, 2008 2:50 PM
To: Rep. Winkie Wilkins
Subject: Concerned Person County citizen requesting your help!

Good day Representative Wilkins and greetings from Hurdle Mills in Person County. I am writing to extend my wishes and concerns for the need of availability and affordability of high-speed internet in our Hurdle Mills and Bushy Fork Township areas. I have continuously called many communication services, weekly, to inquire about the future availability of high-speed internet availability in out area and have been told n, seemingly, a thousand times with no projection of these companies providing high-speed services in our area in the near future. We need access to affordable high speed Internet for our children to do their homework, to run our home-based businesses, to take college classes remotely, to get information, and to participate in 21st century life.
In the most recent 100 Counties Report published by the e-NC Authority . . . only 54 percent of Person County has high speed access. This is in stark contrast to the 84 percent of North Carolina households who do have it. By being on the wrong side of the digital divide we worry that our community will suffer in a number of ways, including p]utting our children at a disadvantage in their education and ultimately in their employment prospects; creating more barriers to economic retooling of our agricultural community, and suffering from income, class, and mobility discrimination.

I paid ridiculous satellite prices for internet equipment and service fees to enable our home school to access the internet for research, testing and downloading curriculum documents. In addition, there was a fair access policy in which we couldn't download but so much within a 24 hour period. We have since had to suspend and then cancel that service due to outrageous price increases and restrictional access policies.

In closing, the fact remains that Person County is being left behind. My question is what is the State of North Carolina doing to remedy this situation quickly? Please let me know the results of the FCC voting on free broadband internet on the 18th of this month.

Thank you for your dedicated service and I look forward to hearing from you.

Sincerely,

Michael Brockwell

Nancy Brantley (Rep. Wilkins)

From: Karen Walker [handymam43@gmail.com]
Sent: Tuesday, December 16, 2008 4:43 PM
To: Rep. Bill Faison
Cc: Charlie Pittman; Rep. Winkie Wilkins
Subject: High-Speed Internet for Person County

1171 Rougemont Road
Rougemont, NC 27572
December 16, 2008

Via Email
Rep. Bill Faison
NC House of Representatives

Dear Mr. Faison:

An article in the December 10 Courier-Times for Person County noted the effort of local citizens to secure high-speed Internet (DSL) for residents of Bushy Fork and Hurdle Mills. This effort should be expanded to include ALL residents of Person County.

We live in the southeast tip of Person County, about 1 mile from the Durham County line. We have no DSL, no cell service, and no cable service. Like many other residents, I've called Embarq numerous times to inquire about a time table for installing DSL in this area. Finally, last summer, I got through to the office of the President of Embarq. Their response was that they had no plans for this area, at least through 2008.

While this is still a rural area, there is a recent 34-home subdivision adjacent to our property. Other subdivisions are going up nearby. The lack of modern services in this area makes tasks such as managing our small business and on-line classes difficult at best with dial-up. Accessing many websites is time-consuming, or at times, aborted, because the large content of the sites takes too long to download. And, the regular phone line is tied up while on dial-up.

Because of the dial-up issues, we recently subscribed to a satellite Internet service, Wild Blue, through DirecTV. The phone is freed up, now. But, whenever it is rainy, we have no service! (Unlike the satellite TV, which rarely loses its signal.) We are also finding that the service is very slow in the evenings, when, apparently, too many people are on board. And it is costly. If DSL were available, we would subscribe.

Months ago, I read that grants were available to help the local phone companies install the switches necessary for DSL. Recently, I read that Embarq is a recipient of funding in this area. Where is the grant money being spent? Phone companies, such as Verizon, who provide DSL in Rougemont, cannot provide the service to, say, Embarq until Embarq upgrades its equipment. How do we get this service, when it is not in the FCC's domain ("not a required service"), and the company doesn't plan to upgrade?

Thanks for your efforts to help us secure this much-needed service.

Karen A. Walker (Mrs. John P.)

CC: Rep. W.A. Wilkins
Charlie Pittman, e-NC Authority

ATTACHMENT 5

CHATHAM COUNTY
NORTH CAROLINA

Established 1771

• COUNTY COMMISSIONERS
George Lucier, Chair
Sally Kost, Vice Chair
Mike Cross
Carl Thompson
Tom Vanderbeck

• COUNTY MANAGER
Charlie Horne

P. O. Box 1809, Pittsboro, NC 27312-1809 • Phone: (919) 542-8200 • Fax: (919) 542-8272

To: Members, House Select Committee on High-Speed Internet Access in Rural Areas

From: Chatham County Board of Commissioners

Date: December 15, 2008

Chatham County is pleased that the NC House of Representatives has made high-speed broadband in rural areas a top priority. We share your concerns that this is a critical issue for North Carolina to address because it directly relates to our ability to compete in a global economy and to reduce the growing education and information gap among our residents.

We want to emphasize several points to the committee, based on our experiences as a rural county facing an array of barriers to providing high-speed access in remote areas.

Access & Affordability: We believe that at least 45% of our households and businesses do not have access to high-speed internet in any form. Even if all of our residents did have access to broadband, about 25% of them would not be able to afford it. The affordability issue is so severe in the western part of the county that our school system is exploring options to provide free or low-cost wireless access in the Siler City area so that high school students in can complete assignments at home.

DSL Progress: Embarq is making commendable progress in getting DSL service to major portions of their telephone coverage area (they serve about 70% of Chatham County). They appear to have DSL already available to about half of their Chatham customers and are have been expanding at a good pace, so far. They are reaching some lower-income, remote areas, but certainly not all at this point. However, reliable speeds vary widely in the areas currently served by Embarq DSL, with service at or near the minimum speed levels on some roads and neighborhoods in the county.

Cable Service Challenges: We have two cable providers, Time Warner & Charter, which we estimate are serving 25-30% of our population. AT&T has recently filed to serve some of the same area that Time Warner serves, but it does not plan to reach unserved areas of the county. Neither Time Warner nor Charter Cable is expected to expand much further beyond their existing service areas.

Related to this issue, some unintended consequences of the state's **Video Service Competition Act** are working against us and many communities across the state.

- As soon as AT&T filed notice on Dec. 2, 2008 to serve a small part of our county, it meant that Time Warner has the option to end our local franchise in the near future and convert to the state franchise, even if AT&T only serves one household in our county. This means that we can no longer require cable broadband build outs in unserved areas. We also are in **great need** of the local franchise funds that Time Warner currently collects for us through the **PEG Capital Fee** to help cover the cost of equipment for our new PEG channel, but we understand that our right to collect these funds will end as soon as our local Time Warner franchise is terminated under the new state law.
- Under the state franchise, the only remaining revenues that could help fund our PEG channel startup and expansion are the PEG Supplemental Fees provided by the state. This static pot of money is divided among more and more entities, so that it no longer generates enough revenue to support PEG channel

equipment and upgrades. We expect to receive less than $20,000 from that fund next year, which will only cover **a small portion of our capital costs.**

- Under the new revenue distribution system, Chatham County received less money (down 6.34% or $9,237) than for the same period in 2006, even though the phone and cable industry raised rates in 2007. This drop in revenue is consistent with other localities across the state, according to a survey by the League of Municipalities.
- Many service providers are not producing useful service area mapping data that they are required to provide, which deters our ability to monitor whether or not qualified areas are being served.

The key recommendations for the Video Service Competition Act are:

- **Ensure that there are ample revenues for local governments and educational institutions to initiate and continue PEG channel operations.** Without these funds, some communities will have limited access to important information and content about government and education offered through PEG channels.
- **Include reasonable, sustainable "build out" requirements and/or incentives for current and new cable providers** (including telephone and cable operators) instead of just providing a penalty-free opportunity for existing cable providers to drop their local franchise agreements. This would foster real competition and would provide more leverage to extend high-speed access to areas not currently served.
- **Define the type of GIS-based maps (based on government-defined standards) that service providers must produce to identify their service areas.** This must apply to the state franchise as well as local franchises. Even if these are not publicly accessible, local governments, e-NC and relevant state agencies should have access to this information, preferably through a secured online access point.

Other Technologies: We believe that addressing the high-speed access challenge in Chatham County will require a partnership with our towns, schools and the private sector. This will be difficult given North Carolina cable laws, which provide challenges to forming public-private partnerships. We also believe that it will not be a "single" source solution. We will have to use a creative approach involving several technologies, including some that are in the testing phase and not widely available. What we do know is that we need your help in ensuring that there are funds through state and/or federal grants for:

- Planning initiatives that bring together the best and brightest to help us design a phased approach for meeting priority high-speed access needs.
- Pilot programs in counties with under-served residents and businesses with limited population density. This is the only way to identity strategies that work and should be replicated.

Federal Funds: We understand that President-Elect Obama has proposed that federal economic stimulus funds include rural high-speed access. When you have the opportunity to provide feedback to his Administration, we hope that you will keep these recommendations in mind.

Related to this, the USDA's current funding for Rural Broadband needs to be increased, but, just as important, their guidelines must be revised to allow more North Carolina communities to qualify. For example, you cannot apply for USDA funds to serve a low-income area that meets all the qualifications if there are just a few homes getting DSL service through a phone coop with a limited service area. We have already communicated with the USDA about these problematic guidelines, but we ask the committee to also communicate these concerns.

Final Thoughts: We conclude by highlighting two primary goals that we know you share with us.

- First, we need widespread broadband access to help our county, the state and its all of its residents, not just those who are already successful, compete in a global economy.
- Second, access to broadband can play a key role in informing and engaging citizens in their governments, especially at the local level. In Chatham County, we do not have a single broadband provider or news organization that reaches even a majority of our residents. This scattered accessibility provides a major barrier to governmental effectiveness and efficiency, because communicating with our residents is a costly, time-consuming effort. Any assistance in helping us resolve this challenge will help many local governments across the state.

We appreciate your hard work on these complex issues. Let us know if we can be of assistance. You may contact the County Manager's Office at 919-542-8200 and ask to speak with Mark Ellington or Debra Henzey.

ATTACHMENT 6

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Development of Nationwide Broadband Data to	)	
Evaluate Reasonable and Timely Deployment of	)	WC Docket No. 07-38
Advanced Services to All Americans, Improvement	)	
of Wireless Broadband Subscribership Data, and	)	
Development of Data on Interconnected Voice over	)	
Internet Protocol (VoIP) Subscribership	)	

COMMENTS AND REPLY COMMENTS OF THE KENTUCKY MUNICIPAL UTILITIES ASSOCIATION, BARBOURVILLE UTILITY COMMISSION, BARDSTOWN MUNICIPAL UTILITIES, FRANKFORT PLANT BOARD, FRANKLIN ELECTRIC PLANT BOARD, GLASGOW ELECTRIC PLANT BOARD, HOPKINSVILLE ELECTRIC SYSTEM, MAYFIELD ELECTRIC AND WATER SYSTEM, MURRAY ELECTRIC SYSTEM, OWENSBORO MUNICIPAL UTILITIES, PADUCAH POWER SYSTEM, PRINCETON ELECTRIC PLANT BOARD, RUSSELLVILLE ELECTRIC PLANT BOARD, AND CITY OF WILLIAMSTOWN, KY

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August 1, 2008

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Before the
FEDERAL COMMUNICATIONS COMMISSION
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COMMENTS AND REPLY COMMENTS OF
THE KENTUCKY MUNICIPAL UTILITIES ASSOCIATION,
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MURRAY ELECTRIC SYSTEM,
OWENSBORO MUNICIPAL UTILITIES,
PADUCAH POWER SYSTEM,
PRINCETON ELECTRIC PLANT BOARD,
RUSSELLVILLE ELECTRIC PLANT BOARD,
AND CITY OF WILLIAMSTOWN, KY

The Kentucky Municipal Utilities Association ("KMUA"), Barbourville Utility Commission, Bardstown Municipal Utilities, Frankfort Plant Board, Franklin Electric Plant Board, Glasgow Electric Plant Board, Hopkinsville Electric System, Mayfield Electric and Water System, Murray Electric System, Owensboro Municipal Utilities, Paducah Power System, Princeton Electric Plant Board, Russellville Electric Plant Board, and City of Williamstown, KY (collectively, "Kentucky Municipal Utilities"), submit these reply comments in response to the opening comments with respect to Part IV(B) of the Further Notice of Proposed Rulemaking

("*FNPRM*"), released June 12, 2008, in this proceeding, and opening comments in response to the balance of the *FNPRM*.

INTRODUCTION AND SUMMARY

As we note in Part I, many commenters agreed with our opening comments ("APPA Comments") that (1) the Commission should proceed with a granular broadband data collection and mapping program, (2) such a program must be verifiable and transparent and not controlled by private entities, such as Connected Nation ("CN") or ConnectKentucky ("CK"), and (3) underlying broadband deployment and mapping data should not be shielded by claims of confidentiality. Not surprisingly, CN and its industry allies disagreed, but as we show in Part II, their arguments do not withstand scrutiny.

In Part III, we address the claims made by CN in its July 11, 2008, *ex parte* letter[1] in this docket. Many of those claims are misleading, and some are simply untrue. Neither CN nor CK is nearly as transparent as CN claims, its underlying data is not available to the public and not independently verifiable, CN's board is in fact dominated by incumbent broadband provider interests, and many of CN's claims about the accuracy of CK's broadband mapping and the assistance it has allegedly provided to Kentucky municipal broadband service providers are incorrect.

[1] Letter to Chairman Martin from Brian Medford, CEO of CN, dated July 11, 2008 ("July 11 *ex parte*").

I. A DIVERSITY OF COMMENTERS AGREED THAT THE COMMISSION SHOULD PROCEED WITH A GRANULAR BROADBAND MAPPING PROGRAM, THAT THE PROGRAM MUST BE TRANSPARENT AND VERIFIABLE, AND THAT INDUSTRY'S CONFIDENTIALITY CONCERNS ARE EXAGGERATED.

Most commenters agreed with the *FNPRM*'s proposal to collected broadband availability data at the Census Tract level and to create a national broadband availability map.[2] As Consumers Union noted (at 9), "the Commission, as the expert agency," has unsurpassed "authority and efficiency" in broadband "availability-mapping" that "state-level mapping efforts" cannot match. CWA likewise noted (at 3) that "[w]ithout reliable, standardized national data, it is difficult to craft appropriate [broadband] policy solutions." Similarly, CPUC observed (at 3) that, while "various states in addition to California may be engaged in broadband mapping efforts," a "national broadband mapping program would . . . provide the uniformity necessary for making state-to-state comparisons."

Several commenters also agreed with our position in stressing the need to assure that broadband mapping is transparent and verifiable. BroadbandCensus.com correctly stressed (at 3) "the value of transparency, both as a means to oversee the government, and to provide consumers with recourse vis-à-vis their broadband carriers." NATOA (at 4) pointed to the same flaw as we in the CN/CK model: "it relies upon information voluntarily provided by self-interested providers." And the Kentucky PSC (at 20), much like our comments, persuasively argued that "[t]he accuracy and reliability of any mapping system is a function of the accuracy and reliability of the underlying data," and thus the "data must be readily verifiable and subject to independent scrutiny and analysis." That means the mapping system and the data on which it is based "should be transparent and open for public review and analysis" (*id.* at 3).

[2] *E.g.*, Consumers Union Comments at 2, 8-10, 13-20; CWA Comments at 3; CPUC Comments at 2-3; NATOA Comments at 1-8; Illinois Comments at 3-10; Kentucky PSC Comments at 3; ALA Comments at 2; New Jersey Comments at 4-9.

Otherwise, "the data can easily be misused or misconstrued to the detriment of the public interest being served" (*id.*). The Kentucky PSC went on to state what should be obvious: "Merely labeling an initiative as a public-private partnership does not ensure impartiality." *Id.*

A substantial number of commenters also agreed with us that the *FNPRM*'s tentative interest in protecting underlying broadband availability data from public disclosure was misguided.[3] Commenters noted that much of the data is already available at providers' websites and thus there is no reason not to make it more readily available, and aggregated across the nation, at a single source.[4] Furthermore, keeping the information confidential deprives both the public and other organizations of the information they need to obtain broadband service in the most cost-effective way possible and to seek recourse from providers or the government to overcome obstacles to obtaining that service.[5] And as the Kentucky PSC observed (at 4), public disclosure of the data provides the only effective "checks and balances" to verify the accuracy of the data.

In sum, the opening comments support the positions in our opening comments: The Commission should proceed with broadband deployment information gathering and mapping at the most granular level possible, the Commission's broadband data and mapping program should be transparent and verifiable, and underlying availability, speed and pricing data should not be shielded from public disclosure. *See* APPA Comments at 1-7.

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[3] *E.g.*, BroadbandCensus.com Comments at 6-10; Consumers Union Comments at 3, 8; NATOA Comments at 2, 7-9; Illinois Comments at 2, 10-11; Kentucky PSC at 4; ALA Comments at 2; New Jersey Comments at 13.
[4] *See* Consumers Union Comments at 3 & 8; New Jersey Comments at 13; NATOA Comments at 2.
[5] *See, e.g.*, ALA Comments at 2; BroadbandCensus.com Comments at 3; NATOA Comments at 7; Illinois Comments at 11.

II. CONNECTED NATION'S AND INDUSTRY'S EFFORTS TO LIMIT COMMISSION BROADBAND DATA COLLECTION AND TO LIMIT PUBLIC DISCLOSURE ARE MISGUIDED.

In both its July 14 *ex parte*[6] and its opening comments, CN was critical of the *FNPRM*'s proposed broadband mapping program, asserting that it would be inferior to the CN/CK mapping program, could undermine state support for programs like CN/CK, would impose additional burdens on broadband service providers, and lacks the confidentiality protections afforded by CN/CK's non-governmental, non-profit status.[7] CN proposes instead that the Commission serve only as a passive "clearinghouse" for data supplied to it by public-private partnerships like itself.[8]

As if on cue, industry largely took the same position as CN.[9] And some industry commenters went further, claiming that broadband service is already widely available and questioning whether there really is much of a need for broadband data gathering and mapping at all, except perhaps for areas where "the small minority of people lacking access to broadband" are.[10]

But CN's and industry's assertions do not withstand scrutiny.

A. The Claim That the CN/CK Data-Gathering and Mapping Model Is Superior to Any the Commission Could Devise Is Nothing But Self-Aggrandizing Say-So.

CN (at 3, 9-15, 23-31) expends considerable energy claiming that its broadband mapping program is superior to anything the Commission could devise and thus that the Commission

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[6] Attachment to July 14, 2008, letter to Marlene Dortch from Raquel Noriega ("July 14 CN *ex parte*").
[7] CN Comments at 24-40; July 14 CN *ex parte* at 2-8.
[8] CN Comments at 31-38.
[9] *See, e.g.*, CTIA Comments at 2-7; Verizon Comments at 5-12; Qwest Comments at 5; AT&T Comments at 2-12; Frontier Comments at 1-3; Sprint Comments at 2-5; Independent Telephone & Telecommunications Alliance Comments at 3-6; NCTA Comments at 3-7; U.S. Chamber of Commence Comments at 1-3.
As noted in Part III below, executives of several industry commenters – CTIA, Verizon, AT&T and NCTA, to name but a few – are board members of CN, so this synchronization in position should not be surprising.
[10] Verizon Comments at 2. *Accord* NCTA Comments at 2 ("broadband is nearly ubiquitous," and "the market is working to meet the needs of consumers").

should stay out of the matter, except to serve as a passive clearinghouse for state-level data supplied to it by organizations like CN/CK. Aside from their obviously self-serving and self-promoting nature, these claims suffer from serious factual and logical flaws.

At the most basic level, CN's assertions rest on a factual claim – that its mapping is superior to and more readily updated and updatable than anything the Commission could do – that is unproven, and unprovable by any objective, independent authority, because of the structural flaw pointed out in our opening comments: The underlying data, and CN/CK's synthesization of it, is inherently unverified and unverifiable. APPA Comments at 4-6. CN actually confirms this complete lack of transparency when it later tries to turn this vice into a virtue by touting the inherent confidentiality of CN's "legal construct": data is supplied by providers to a Section 501(c)(3) non-profit like itself, rather than the government. CN Comments at 9 & 12-13. The only "verification" and "accuracy" is the say-so of CN itself, because its "legal construct" renders it unanswerable to a government agency as a broadband provider regulatee would be, and to the checks and balances, due process and open records obligations of a government agency.

There are also questions about the accuracies of CN's claims about CK. As noted in Part III below, there are several individual instances of inaccuracies in CK's map. More generally, CN's claims about broadband adoption and availability in Kentucky (CN Comments at 6-7) appear inconsistent with NTIA and FCC data. According to NTIA, in 2007 Kentucky ranked 45th out of the 50 states and the District of Columbia in households with broadband access, with 40% of Kentucky households having such access.[11] That is an appreciably lower level of

[11] NTIA, "Networked Nation: Broadband in American 2007," at App. B, Table B-3 (Jan. 2008), *available at* http://www.ntia.doc.gov/reports/2008/NetworkedNationBroadbandinAmerica2007.pdf.

broadband availability, either in terms of homes passed (60%) or subscribership (44%), than CN reports (CN Comments at 6).

Likewise, CN's claims about the pace of broadband growth in Kentucky relative to other states "[s]ince 2005, when [CK] launched its mapping and demand-stimulation program" (CN Comments at 5-6) seem exaggerated. According to the FCC's most recent report on high-speed Internet access, Kentucky actually *dropped* from 27th to 29th among the states in terms of number of high-speed lines between June 2006 and 2007.[12] While the drop in Kentucky's ranking may or may not itself be significant, it is certainly at odds with the picture CN tries to convey in its comments.

Moreover, as Consumers Union points out (at 6-7 n.4), many of CN's claims about the percentage growth rate in broadband adoption in Kentucky are an artifact of the mathematical truism that "improvement by a subject with a low-performing metric almost always results in greater percentage gains when compared to improvement by a subject with a higher performing metric." In fact, Montana, which has no state mapping program at all, based on the CN/CK model or otherwise, showed a significantly greater percentage growth in broadband penetration than Kentucky in the same time period. *Id.*

We do not intend by these arguments to demean CK or its efforts. What we do mean to point out, however, is that (1) CN's representations about broadband growth in Kentucky are not verifiably accurate, and (2) there is nothing remotely suggesting even a correlation, much less any causation, between CK's efforts and broadband development in Kentucky. Again, that does not necessarily mean that CK's programs have no value or that Kentucky has not made strides in broadband deployment and penetration, but it does mean that CN's representations about CK's

[12] *See* Industry Analysis and Technology Division, Wireline Competition Bureau, "High-Speed Services of Internet Access: Status as of June 30, 2007," at Table 10 (FCC March 2008), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280906A1.pdf.

role in securing any such benefit in CN's comments here are both exaggerated and not based on any verifiable facts.

Equally misguided are CN's criticisms of any Commission mapping program being inherently more "static" and "inaccurate" than CN/CK's (CN Comments 25-31). In Part III, we note that CK's own map contains several inaccuracies that have remained uncorrected despite updated information available to it. Further, as Consumers Union notes (at 9-12), most state-level mapping programs are quite "static" themselves, suffering from file size, limited functions and lack of interactivity. These are data formatting and dissemination issues, the solution to which does not uniquely belong to CN/CK.

In fact, other than its "legal construct" to preserve provider confidentiality, CN points to nothing inherent in CN, as opposed to the Commission, that would make it superior to the Commission. For all practical purposes, CN claims that its advantage boils down to the fact that, collectively, each state (or its designee like CN) has more resources to devote to broadband mapping than the Commission. While that may be true, it does not lead to the conclusion CN seeks to draw. First, that shortcoming suggests no reason why a state, rather than a "legal construct" like CK, could not play the role of working with the Commission. Second, the resource problem could just as easily – and more transparently and verifiably – be resolved through contracts with private contractors that, unlike the CN/CK model, have built-in and enforceable accountability, oversight and public disclosure requirements. *See* APPA Comments at 6.

B. CN's Worry That A Commission Mapping Program Might Undermine CN/CK's Program Is Irrelevant and, In Any Event, Overstated.

Perhaps the most curious argument against an independent Commission mapping program that CN offers is that such an FCC program "might displace" programs like CK and

"could make funding for [such] programs difficult."[13] This argument suggests that CN either has remarkably little faith in the value of its model or has no confidence that the states that fund it will continue to see such value. It is difficult to see, however, how this self-preservation concern is one that should be of interest to the Commission.

Moreover, assuming that CN/CK's mapping and broadband stimulation programs genuinely do have value, an independent Commission mapping program should pose no threat to them. To the contrary, as the California PUC points out (at 12), a federal mapping program could supplement, rather than replace, state and public-private partnership mapping programs, with the federal program "provid[ing] base data upon which the states could add layers of data of particular interest to state policymakers." A federal mapping program would also "provide the uniformity necessary for making state-to-state comparisons" (*id.* at 3) and, we might add, enable federal and state broadband policymakers to make better informed decisions based on consistent and comparable data.[14]

Contrary to CN's assertion, the Commission's adoption of its own broadband mapping program would in no way prevent CN/CK from continuing to do what they are doing now. A Commission broadband data-gathering and mapping program would, however, provide the added, and vital, benefit of serving as an independent, and more open and verifiable, check on the accuracy of the inherently less-transparent mapping work of entities such as CN/CK. As for CN's concern that, if a federal mapping programming were implemented, states might be less inclined to fund CN/CK, that would only occur if states did not see that CN/CK provided

[13] CN Comments at 36. Some industry members, especially those holding memberships on CN's board, shared this concern. *See* Verizon Comments at 5 & 10-11; AT&T Comments at 1 & 6; NCTA Comments at 5-6.

[14] Strangely, CTIA (at 2) argues *against* "[s]tandarization of mapping information," apparently believing that federal and state policymakers, as well as broadband providers and the public, will be better off if they have only apples-and-oranges data that makes meaningful comparison and analysis impossible.

sufficient added value. But if that were true, that would be quite revealing in itself about CN/CK's alleged virtues.

C. Having A Single Grant-Receiving Entity Carry Out Both the Mapping Process and The Demand Stimulation Process Creates A Conflict of Interest.

CN also claims (at 23-24) that its performance of both mapping and broadband demand stimulation activities provides unique synergies that would be unavailable in a Commission mapping program. Even if that were true, however, CN overlooks that having a single private entity relying on government grants perform both mapping and demand stimulation activities also creates a troubling conflict of interest: To ensure it will continue to receive grants, the private entity has a powerful interest in having its mapping data show that its demand stimulation activities are effective. If the mapping data showed otherwise, the government might well decide that the entity's grants for demand stimulation activities were not a worthwhile expenditure. This is yet another inherent structural shortcoming of the CN/CK model that CN does not, and cannot, address or cure.

D. Industry's Complaint About The Burden of Providing Broadband Data Ring Hollow.

As one might expect, many industry members complain that furnishing the underlying data for a Commission mapping program would be burdensome.[15] And CN sees its model as a solution for this problem. CN Comments at 35.

The flaw in these claims is that they prove too much. The threshold policy question is whether, in order to make informed and sound broadband policy decisions, the Commission and other governmental policymaking bodies need accurate and complete data about the status of

[15] *E.g.*, Verizon Comments at 4 & 13-14; AT&T Comments at 1 & 4; CTIA Comments at 5-6; NCTA Comments at 6; ACA Comments at 1-6; Windstream Comments at 2; Hughes Network Systems Comments at 6; Frontier Comments at 3; Sprint Nextel Comments at 2-3.

broadband deployment and subscribership across the nation. If such data are needed (and we fully agree with the *FNPRM*'s tentative conclusion that it is), then some burden on providers is unavoidable. It is no answer to say, as CN (at 35) and some others do, that the burden could be lessened if the Commission were to rely instead on information supplied by private entities such as CN/CK, the underlying data of which and the synthesization of which by that entity are shielded from independent review, verification or enforceable sanction for inaccuracy. Unreliable and unverifiable information frustrates the entire purpose of the broadband mapping process, and could only lead to poor broadband policy decisions.

This is not to say that minimizing data collecting burdens on providers, especially small ones, is not a legitimate concern. But the solution is to tailor the broadband data reporting requirements that the Commission imposes accordingly, not to privatize the entire process, as occurs under the CN/CK model.

E. Data on Broadband Availability, Speeds and Price Should Be Made Public and Not Kept Confidential.

As noted above, numerous commenters argue that data generated by the Commission on broadband geographic availability, speeds and price should not be confidential, but be publicly available. CN and industry argued otherwise, but their arguments do not ring true.

By claiming that information about where a provider's broadband services are available, and at what speeds and at what prices, should not be available to the public, industry is essentially arguing that a market performs better with imperfect information. That is, to say the least, a peculiar notion. As NATOA points out (at 7), one of the fundamental assumptions underlying the proposition that competition maximizes consumer welfare is that "perfect information is required for perfect competition." Imperfect information, in contrast, results in market distortions and inefficient consumer decisions.

NCTA candidly admits (at 6), for example, that if information about broadband availability and the like were made public, "it undoubtedly would be used by competitors in developing their own strategies to compete with other broadband providers." The obvious question is: What is wrong with that? Wouldn't consumers benefit from the increased competition? Or is ignorance preferable?

We do not mean to suggest that certain types of information are not truly proprietary and should remain confidential. A firm's marketing plans, the precise location and specifications of some of its facilities, can and would receive protection under FOIA and similar state laws. But where a provider's service is available, and at what speeds and at what prices, is not truly proprietary at all. It is in fact available to the consumer or competitor who wishes to take the considerable time and expense to piece together the relevant information. All government collecting of that data and making it publicly available would do is to reduce those considerable transaction costs. And reducing transaction costs would be a very good thing, not a bad thing.

By privatizing data collection, the CN/CK model would lock in those transaction costs and make them permanent. It would also deprive policymakers like the Commission of the sunshine and verification that only public review and input on the data can provide.

F. CN's Proposal To Reduce The FCC To A Clearinghouse For CK-Type Data Is Dangerous.

CN (as well as some of its industry allies) proposes that rather than developing its own more granular broadband data gathering and mapping system, the Commission should instead serve only as some sort of passive "clearinghouse" for information furnished to it by "state and local public-private partnerships" like CN/CK.[16]

[16] CN Comments at 31. *Accord* Windstream Comments at 4; U.S. Chamber of Commerce Comments at 2-3; Verizon Comment at 5-11; AT&T Comments at 6-7; Frontier Comments at 1-4; NCTA Comments at 5-6.

This would merely expand to a nationwide level the inherent structural defects of the CN/CK model that the record has revealed.[17] It would mean that all broadband data would be non-transparently-generated and not independently verifiable. And it also would mean that there would be no meaningful checks and balances at all. (Given CN's expressed concern that an independent Commission mapping program poses a risk that states might defund CN/CK, CN's "clearinghouse" proposal would also have the remarkably convenient opposite effect of expanding and entrenching the funding of CN/CK.)

Privatized, unverifiable data is an unsound foundation on which to build federal broadband policy. Developing sound broadband policy is simply too important to our nation's future growth and success to privatize it.

III. CONNECTED NATION'S JULY 11 *EX PARTE* IS INACCURATE AND MISLEADING IN SEVERAL RESPECTS.

On July 11, CN submitted its lengthy July 11 *ex parte* seeking to rebut the contentions of the Kentucky Municipal Utilities' July 1 *ex parte* submission in this docket. In its July 11 *ex parte*, CN claims that our July 1 *ex parte*'s "critiques" of CN/CK are "wholly inaccurate." But as we now show, it is CN, not we, whose claims are not fully accurate.

A. Neither CN/CK, Nor the Data It Collects, Are Transparent, Accurate or Verifiable.

1. The Operation, Influences and Funding of CN/CK Are Opaque, Not Transparent.

At the outset, we note that CN/CK ignores the lack of transparency inherent in its structure as a private non-profit rather than a government agency or a regulatee subject to direct regulatory oversight. That it is a non-profit Section 501(c)(3) corporation does not change those facts.

[17] *See* APPA Comments at 1-7; Consumers Union Comments at 6-7 & n.4; Kentucky PSC Comments at 2-4; NATOA Comments at 4.

Moreover, Section 501(c)(3) corporations, and CN/CK in particular, are not nearly as "transparent" as CN suggests. In the case of both CN and CK, their websites (www.connectkentucky.org and www.connectednation.org, respectively) reveal little or no information at all about either organization's funding sources, nor do they disclose the composition and ties of their board of directors.

CK's website, however, does reveal its "partners," *see* http://www.connectkentucky.org/partners/, by posting logos of each at its website. In addition to several Kentucky state educational institutions and departments, among those partners are AT&T, KCTA (the Kentucky state version of NCTA), the Kentucky Telephone Association (the state version of USTA), the Kentucky Wireless Association (the state version of CTIA), and Windstream. It should be noted that AT&T, NCTA, CTIA and Windstream all filed comments supportive of CN/CK in this proceeding.

Although unrevealed by CN or CK at their websites, there is also another significant connection between CK's listed "partners" and the governance of CN itself. A search of the Kentucky Secretary of State's website reveals that Connected Nation, Inc., is a Kentucky corporation. More importantly, that website lists the members of CN's board of directors. *See* http://apps.sos.ky.gov/business/obdb/showentity.aspx?id=0510856+ct=09+cs= 99998 (last visited July 31, 2008). (A hard copy of the Kentucky Secretary of State website's listing of CN's board of directors and additional information is attached as Exhibit 1 hereto.)

CN has fifteen board members. Of those fifteen, three are CN officers. Among the remaining twelve are the following, along with their ties to industry:

James W. Cicconi	AT&T, Senior Executive Vice President – External and Legislative Affairs
Steve Largent	CTIA, President and CEO

Joseph Waz	Comcast, Vice President, External Affairs and Public Policy Counsel
Thomas Tauke	Verizon, Executive Vice President – Public Affairs, Policy and Communications
Walter B. McCormick	USTA, President and CEO
Kyle E. McSlarrow	NCTA, President and CEO
Larry Cohen	CWA, President
Grant Seiffert	TIA, President

It is interesting to note that several of these organizations with high-ranking executives on CN's board – AT&T, CTIA, Verizon, NCTA and CWA – filed comments in this proceeding strongly endorsing the privatized CN/CK data collection and mapping model, and endorsing CN/CK itself. It is also interesting to note that, together with the three CN board members who are CN officers, those eight industry members represent eleven of CN's fifteen board members. (Indeed, these eight industry board members by themselves constitute a majority of CN's board.)

CN/CK's sources of funding are also opaque. CN claims (July 11 *ex parte* at 4-5) that CN receives "the vast majority of its funding from public resources" and that "80% of [CK's] budget stems from public funds and 20% is donated by the private sector." But there is no publicly verifiable, transparent way either to confirm these claims or to determine what entities contributed how much, in both funds and in-kind services, to either CN or CK.[18]

[18] CN asserts (July 11 *ex parte* at 7) that because CK is a § 501(c)(3) non-profit corporation, there are mechanisms to ensure accountability as to how it uses its funds. But this assertion promises more than those mechanisms can bear. In a search for IRS non-profit filings, one would find neither CK nor CN. That's because the CN/CK entity's original name is the Center for Technology Enterprise, Inc. ("CITE"). CITE, however, has filed IRS Form 990s only for 2005 and 2006. There has since been a corporate reorganization, and CITE is now known as CN, with CK being a subsidiary of CN. CN, however, has sought and received an extension for filing its 2007 Form 990, and thus it is not yet available. *See* July 23, 2008, memorandum from R. Eric Mills, CN, to A. McKeeman and R. Desai, attached as Exhibit 2. (By the way, we wish to note that CN personnel were cordial and cooperative in responding to our requests.) In any event, IRS Form 990s do not provide the needed transparency: They do not reveal data on the identity of, and amount contributed by, individual donors.

CN's claim (July 11 *ex parte* at 5) that "there are no 'membership' fees" to CK is, while perhaps technically correct, also misleading. Instead of members, CK has corporate partners. The benefits of becoming a "partner" appear to be membership on CK's board and display of the partner's logo at the CK website. To become a partner, private entities, as well as municipal utilities and their associations, have to pay. In the case of MEPAK (KMUA's predecessor), the price was $20,000, as reflected on page 2 of the MEPAK board meeting minutes of MEPAK for April 23, 2004, October 22, 2004, and February 25, 2005, copies of which are attached hereto as Exhibit 3. We note that MEPAK's April 23, 2004, minutes report that a CK representative informed the MEPAK board that CK was recruiting board members who would be required to contribute $10,000 per year to CK for three years. The October 22, 2004, and February 25, 2005, MEPAK minutes indicate that the price for MEPAK membership on CK's board had increased to $20,000. (MEPAK ultimately declined CK board membership.)

Thus, from the sparse available information about CN and CK, the only conclusions that can be drawn are that CN's board is dominated by incumbent private sector broadband provider interests, those same interests support the CN/CK privatization model and see little need for an independent Commission broadband data-gathering and mapping program, and CN/CK is funded in part, but in unknown amounts, by those same industry interests.

The point is not to suggest that CN/CK has done anything improper. Rather, it is to contest CN/CK's assertion that it is transparent. It clearly is not. For purposes of ensuring a transparent and verifiable broadband data collection and mapping program on which sound broadband policy should be based, that would likely be true of any private entity, Section 501(c)(3) non-profit or not, that would perform those tasks, unless the entity were made subject to strict oversight, control and public transparency requirements by the Commission.

2. CK's Data Are Not Transparent.

CN also claims (July 11 *ex parte* at 2) that its data are transparent and verifiable. But that is simply not true. One need go no further than CN's own opening comments in this proceeding, which tout one of the supposed advantages of the CN/CK model as being its "legal construct" (CN Comments at 13) that enables broadband providers to shield their underlying broadband data from the government and the public, *id.* at 12-13 & 35. In other words, CN's representation in its July 11 *ex parte* that neither CN nor CK "shield[s] data" is flatly contradicted by its own subsequent opening comments in this proceeding.

Perhaps intentionally, CN/CK seeks in the July 11 *ex parte* to change the subject to whether its own output – the maps – is publicly available. But that misses the point. If, as is clearly the case, the underlying input data on which CN/CK's mapping output is based is shielded and thus unverifiable, then by definition any output based on that input data is non-transparent and unverifiable.

B. There Are Inaccuracies and Flaws in ConnectKentucky's Broadband Mapping.

While, for the reasons noted above, it is impossible to verify independently the accuracy of CK's broadband maps, there are, contrary to CK's claims, at least some identifiable flaws in those maps.

The Glasgow Electric Plant Board ("GEPB"), for instance, reports that it has been providing broadband services to its residents for well over a decade – long before the South Central Rural Telephone Company ("SCRTC") and Windstream ever provided lower-capacity DSL in the area. Yet to this day, CK's map shows only SCRTC and Windstream as providing broadband in Glasgow, not listing GEPB's much more longstanding, and more robust,

broadband offering at all. *See* July 17, 2008, letter to Annette DuPont-Ewing from William J. Ray, included in Exhibit 4 hereto.

The same story is true in the case of the Murray Electric System ("MES"). MES has been providing broadband service to Murray residents since 1998. CK's map, however, does not show MES as a broadband service provider in the area. Instead, it shows only AT&T and NextWave Communications. *See* July 23, 2008, letter to Annette DuPont-Ewing from Tony Thompson, included in Exhibit 4 hereto.

The City of Bardstown, Kentucky, operates a cable broadband system in Bardstown and neighboring parts of Nelson County. The City first launched broadband Internet access service in January 2000, over a year ahead of BellSouth's (now AT&T) first deployment of DSL service in April 2001. In 2007, Bardstown notified CK of an error in CK's map, which depicted incumbent cable operator (Insight) broadband coverage in an area that had no private sector cable service at all. *See* July 30, 2008, letter to Annette DuPont-Ewing from Mayor J. Richard Heaton and attachments, including in Exhibit 4 hereto.

Again, it is not our purpose to suggest that CK's, or any Commission, mapping process must be error-free. That's not possible. The evidence does suggest, however, that CN/CK's claims about the accuracy of its maps are overstated, and that there are structural and transparency problems in the CK/CN model that provide inadequate safeguards and checks to maximize accuracy and verification.

C. CN's Assertions About CK's Working with Municipal Utilities To Expand Their Networks Are Misleading.

CN claims that CK has "worked directly with at least ten municipal utilities/providers on expanding their networks." July 11 *ex parte* at 6. These claims are, to say the least, greatly exaggerated.

Attached as Exhibit 4 are letters from eleven KMUA members responding to the claims made in CN's July 11 *ex parte*. We urge the Commission to read them all carefully. Here, we provide a few key points.

Bowling Green Municipal Utilities ("BGMU") reports that it can think of no "meeting, conversation or activity ConnectKentucky may have performed that would have [had] any bearing on [BGMU's broadband network's] growth and success."[19] GEPB, Owensboro Municipal Utilities, the Barbourville Utility Commission, the Murray Electric System, the Hopkinsville Electric System, Henderson Municipal Power & Light, and the City of Bardstown report the same.[20]

The facts from Berea Municipal Utilities ("BMU"), the City of Williamstown, and the Frankfort Plant Board ("FPB") differ somewhat from the others, but not in the way CN's July 11 *ex parte* suggests.

In the case of BMU, it did in fact contract with a CK representatives for a pilot wireless project, but the "project was flawed from the outset and has since been abandoned." Among the contributors to the project's failure was the poorly-performing equipment CK's representative installed. *See* July 30, 2008, letter to Annette DuPont-Ewing from Donald Blackburn, included in Exhibit 4.

In the case of Williamstown, the city met with a CK representative in connection with a proposed wireless broadband project. CK representatives provided a list of the equipment that would be needed, but the equipment and the resulting system designed by someone CK

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[19] July 24, 2008, letter to Chairman Kevin Martin from Mark Iverson, included in Exhibit 4 hereto.

[20] *See* July 17, 2008, letter to Annette DuPont-Ewing from William Ray; July 24, 2008, letter to Annette DuPont-Ewing from Richard Chapman; July 28, 2008, letter to Annette DuPont-Ewing from Chris Brewer; July 23, 2008, letter to Annette DuPont-Ewing from Tony Thompson; July 18, 2008, letter to the FCC from Austin Carroll; July 22, 2008, letter to Annette DuPont-Ewing from Gary Quick; July 30, 2008, letter to Annette DuPont-Ewing from J. Richard Heaton; July 31, 2008, letter to Chairman Kevin Martin from Warner Caines, all included in Exhibit 4.

recommended to the city was lacking in certain basic respects, "and had it not been for the help of third parties, this project would have failed or at the very least worked after several setbacks and problems, possibly costing the City thousands of dollars." *See* July 31, 2008, letter to Annette DuPont-Ewing from Roy Osborne, included in Exhibit 4.

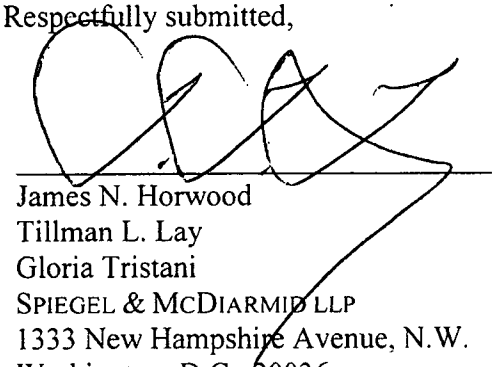
In the case of FPB, it approved the upgrade of its pre-existing municipal cable and telecommunications network to a full service broadband network ("FSN") in 1997 and completed the upgrade in 2003. Since the inception of FPB's FSN project in 1996 through July 31, 2008, CK "neither participated in this process nor were they contacted by anyone affiliated with FPB." CK provided no "assistance with the expansion of FPB's network." FPB personnel have met with CK representatives occasionally over the past three years, and at the request of CK representatives, FPB agreed to allow engineers recommended by CK to do survey work for possible wireless broadband service in a portion of northern Franklin County, but those engineers came to the same conclusion that FPB had already reached a year earlier: Due to terrain and other factors, it was not financially feasible for FPB to pursue a wireless project in the area. *See* July 31, 2008, letter to Chairman Kevin Martin from Warner Caines, included in Exhibit 4.

In short, CN's claim that CK "has worked directly with at least ten municipal utilities providers on expanding their networks" (July 11 *ex parte* at 6) is, at best, an exaggeration.

CONCLUSION

The Kentucky Municipal Utilities strongly support the *FNPRM*'s proposal that the Commission develop a granular nationwide broadband reporting and mapping program. Such a program should not, however, be privatized under the CN/CK model, nor should the Commission become a mere clearinghouse for data and mapping generated by entities such as CN/CK. We also urge the Commission not to restrict the public availability of data concerning broadband geographic availability, speeds and prices.

Respectfully submitted,



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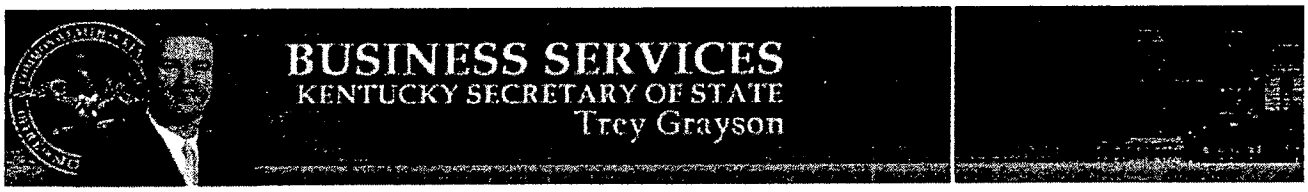
August 1, 2008

EXHIBIT 1



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File Amended Annual Report | Print Amended Annual Report | Statement of Change of Reg. Agent/Office (PDF) | Statement of Change of Principal Office (PDF)

☐ Printable Version of this page

Organization Number	0510856
Name	CONNECTED NATION, INC.
Profit or Non-Profit	N - Non-profit
Company Type	KCO - Kentucky Corporation
Status	A - Active
Standing	G - Good
State	KY
File Date	2/19/2001
Organization Date	2/19/2001
Last Annual Report	5/23/2008
Principal Office	1020 College Street P.O. Box 3448 BOWLING GREEN, KY 42102-3448
Registered Agent	BRIAN R. MEFFORD 1020 COLLEGE STREET P.O. BOX 3448 BOWLING GREEN, KY 42102-3448

Current Officers

Chairman	Brian Russell Mefford
CEO	Brian Russell Mefford
Secretary	Ronald Eric Mills
Treasurer	Bernice Ann Bogle
Director	Brian Russell Mefford
Director	Mark K McElroy

Director	Ronald Eric Mills
Director	James W. Cicconi
Director	Steve Largent
Director	Joseph W. Waz
Director	John E. Davies
Director	Doug Robinson
Director	Wendy Lazarus
Director	Larry Cohen
Director	Thomas J. Tauke
Director	Harry Herington
Director	Walter B. McCormick
Director	Kyle E. McSlarrow
Director	Grant Seiffert
COO	Mark K. McElroy

Incorporators and Initial Directors

Incorporator	CHARLES E. ENGLISH, JR.
Director	ANN MEAD
Director	DAN CHERRY
Director	DON VITALE
Director	BOB JEFFERSON

Assumed Names	**Status**
ECOMMUNITY STRATEGIES	Active
CENTER FOR TECHNOLOGY ENTERPRISE	Active
CONNECT KENTUCKY	Inactive
CITE	Active

Previous Names

CENTER FOR TECHNOLOGY ENTERPRISE, INC.

Images Available Online

Documents filed with the Office of the Secretary of State on September 15, 2004 or thereafter are available as scanned images or PDF documents. Documents filed prior to September 15, 2004 will become available as the images are created.

5/23/2008	2 pages	PDF		Annual Report Amendment
2/4/2008	2 pages	PDF		Annual Report
7/19/2007	1 page	tiff	PDF	Certificate of Withdrawal of Assumed Name
7/16/2007	1 page	PDF		Annual Report Amendment

6/27/2007	3 pages	tiff	PDF	Articles of Merger
2/8/2007	1 page	tiff	PDF	Certificate of Assumed Name
1/2/2007	1 page	PDF		Annual Report
6/20/2006	1 page	tiff	PDF	Name Renewal
5/1/2006	8 pages	tiff	PDF	Amended and Restated Articles
3/17/2006	1 page	PDF		Annual Report
11/8/2005	1 page	tiff	PDF	Statement of Change
5/10/2005	1 page	PDF		Annual Report
7/13/2004	1 page	tiff	PDF	Certificate of Assumed Name
7/13/2004	1 page	tiff	PDF	Certificate of Assumed Name

Certificates Available

Nonprofit Domestic Certificate of Existence

Certificate of Registered Agent (Domestic and Foreign)

Click on a certificate title to purchase it. Certificates are $10.00, payable by credit card or prepaid account. They are stored and returned as PDF documents. You must have Adobe PDF Reader to print the document.

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EXHIBIT 2

CONNECTED
NATION.

WWW.CONNECTEDNATION.ORG
444 NORTH CAPITOL ST
SUITE 224
WASHINGTON, DC 20001
1-877-846-7710

MEMORANDUM

To: Alanna McKeeman and Rita Desai, Spiegel & McDiarmid

From: R. Eric Mills, General Counsel

Date: July 23, 2008

Subject: Open Records Request

Please find enclosed a copy of the tax documents that you requested on July 23, 2008. The 2006 Form 990 Information Return is in the name of the Center for Technology Enterprise, Inc., as this was the legal name of the corporation also known as ConnectKentucky at that time. Please note for privacy purposes, personal addresses have been omitted from the return. The Form 1023 Application for Exemption was filed in the name of Center for Information Technology Enterprise back in 2001.

In 2007, the non-profit corporation formerly known as the Center for Technology Enterprise underwent a restructuring to better accommodate national expansion and is now known as Connected Nation. The IRS has approved this name change as you will find on the enclosed documentation. ConnectKentucky is a single-member LLC subsidiary of the parent Connected Nation, Inc. eCommunity Strategies is an assumed name of this subsidiary in Kentucky. Please take note that the 2007 tax documents have not yet been completed nor filed, pursuant to an automatically approved request for extension of time from the IRS, so they are not yet available.

Finally, the Connected Nation Development Corporation, Inc., with an assumed named in Kentucky of the ConnectKentucky Development Corporation, was just recently incorporated in April of 2008. As such, no Form 990 Information Return has yet been filed, nor has an application for exemption yet been filed.

Thank you for your interest in our organization.

EXHIBIT 3

Board of Directors of the Municipal Electric Power Association of Kentucky

Quarterly Meeting, April 23, 2004
Mammoth Cave National Park
Park City, Kentucky

Minutes for Board Meeting

Members Present
Tony Thompson, President, Murray
Ron Herd, Secretary/Treasurer, Corbin
Doug Beckham, IOU Representative, Williamstown
Jeff Garner, Generating Utility Representative, Henderson
Chris Brewer, Barbourville
Warner Caines, Frankfort
Dave Clark, Paducah
Bob Hunzinger, Owensboro
Larry Miller, Bowling Green
Teresa Newman, Bowling Green
Billy Ray, Glasgow
Richard Shaw, Hopkinsville
Larry Wilcutt, Russellville
Randell Young, Barbourville

Others Present
Jeff Herbert, Herbert, Herbert and Pack
Libby Marshall, Executive Director
Tom Trauger, Spiegel & McDiarmid
Brown Thornton, R.W. Beck

The MEPAK Board of Directors met on April 23, 2004 at Mammoth Cave National Park for the regularly scheduled quarterly meeting. President Tony Thompson welcomed members and guests.

The minutes of the February meeting were approved with two corrections requested by Doug Beckham: that Williamstown Utility Company be changed to Williamstown City Utility and that Doug Beckham be correctly noted as the IOU representative to the board rather than the KU representative. The motion was made by Billy Ray and seconded by Doug Beckham.

The financial report was reviewed by Ron Herd and approved on a motion by Doug Beckham.

The board discussed the maintenance plan for the MEPAK office in Frankfort. The board directed that priority be given to replacing the roof and gutters and directed Libby Marshall to continue to request estimates for these improvements.

John Higgins, Vice President and Director, Consulting Group, of the Center for Information Technology and Enterprise, (CITE) made a presentation to the board on CITE's work on technology infrastructure development. Mr. Higgins explained that CITE is a public-private partnership that is supported by *connectkentucky* funds and grants from private and public sponsors represented on the board of CITE.

Mr. Higgins is responsible for the Rural Broadband Initiative which has three phases: create a strategic plan, develop telecommunications infrastructure and stimulate demand. CITE has three ongoing projects with the Monticello Electric Plant Board in Wayne County, in Hardin County and in Mason, Fleming and Greenup Counties. CITE assists local communities in obtaining Rural Utilities Services loans and other funding and in developing the plan for providing service to the area.

The Rural Broadband Initiative is in the early stages of recruiting board members who will serve with a contribution of $10,000 per year for three years beginning July 1, 2004. Discussion followed about the size of the contribution necessary to participate with CITE and Mr. Higgins said that he would pursue discussions at CITE about offering opportunities for participation at lower contribution levels.

CITE has been given a state grant to improve business performance through the use of technology, allowing CITE to offer training at a reduced cost in the use of technology to improve business performance. He offered examples of training that might be applicable to municipal electric systems, such as tracking training hours and courses for all employees working toward particular certifications required for their position.

Billy Ray presented his ideas on creating a purchasing alliance to augment savings to MEPAK members in purchasing for their systems. He identified three challenges to the municipal utilities in finding the best price for products and services: small size, lack of product standardization, and loyalty to products and suppliers. He has learned that suppliers do not want to reveal the price being charged to different systems. He offered that a beginning point might be to share information on price paid for all products purchased by each system. This could be shared using the MEPAK website. Over time, systems might grow toward standardization once managers see a predominance of use, satisfaction and favorable pricing on particular products.

Warner Caines offered the possibility of one system purchasing for others, enabling the systems to take advantage of quantity. Libby Marshall said that she had contacted Bob Kirk, former purchasing director with Owensboro Municipal Utilities and now retired, who has expressed an interest in discussing involvement in the purchasing alliance.

Jeff Garner asked about whether the requirements of a public bid are met if a system purchases based on another system's bid. Tony Thompson asked if anyone had been

challenged on purchasing. Doug Beckham said that Williamstown had been challenged. Jeff Herbert responded that bidding is to protect the citizen and not the purchaser.

Bill Ray offered to develop an itemization of information needed from each system so that standardized information is being compared. Dave Clark suggested that it would be important to gather all of the purchasing directors together for their ideas to ensure their support in its success. Bob Hunzinger said the OMU makes an annual bid that could result in significant savings to systems if purchasing were to be combined at this time.

On a motion by Bill Ray and seconded by Dave Clark, the board directed Libby Marshall to solicit a proposal from Bob Kirk to develop a purchasing inventory to be designed by MEPAK members.

Several items on the agenda were postponed due to the absence of John Humphries. Libby Marshall is to check about whether SPCC plans developed by TVPPA can be shared with associate members and costs that may be involved.

Teresa Newman gave the report for the Telecommunications Committee that met at the MEPAK office on April 13, 2004. She said that Motorola presented a report on wireless technology. OMU reported that 2,000 wireless customers are now being served and OMU has recently made an agreement with the local RECC. Tony Thompson requested managers to give support for the telecommunications meetings.

The board continued discussion of maintenance to the MEPAK office and other budget proposals in the tentative budget presented for FY 2004-05. On a motion by Larry Wilcutt and seconded by Doug Beckham, the board authorized the executive committee to spend up to $30,000 to get necessary repairs to the MEPAK office roof and gutters.

Libby Marshall discussed a budget proposal to launch a year long campaign to elevate the public identity of municipal power systems with the audience being both the public and policy makers. She raised concerns about the leanings of the current administration toward privately owned utilities and the vulnerability of municipal systems in the telecommunications area as a result of the recent U.S. Supreme Court decision letting stand state laws that limit municipal service in telephone. She referenced the political plan included in the MEPAK board material and said that the campaign would be one phase of a series of recommendations to expand MEPAK political influence. She said that she would ask for proposals from various public relations firms, individuals, if the board approved.

In the course of this discussion, Dave Clark raised the idea of hiring a highly connected, inside lobbyist for limited issues when MEPAK members need such services. Libby Marshall said that she would pursue proposals from such lobbying firms, but noted that the firms with the largest PACs had been hired by BellSouth.

Jeff Herbert reviewed earlier discussions within MEPAK about managers and board members making political contributions to candidates for legislative office. He offered the opinion that MEPAK members need to become more active in this way. Libby Marshall said

that she is unable to contribute directly to candidates for legislative office because she is a registered lobbyist and must distance herself from this endeavor. She suggested that a manager be put in charge of this work in each election cycle who would work with managers to support candidates who had shown loyalty to municipal system issues.

The board gave approval to the tentative budget for FY 2004-05 with the understanding that changes will be presented at the July meeting, on a motion by Billy Ray and seconded by Jeff Garner.

Tony Thompson noted that the current officers' terms expire this year. He said that the practice of the slate of officers is for everyone to advance. He nominated Doug Beckham to fill the position of Secretary/Treasurer. Ron Herd will move to Vice President and Larry Musick will move to President.

Doug Beckham reported that Williamstown is ready to get into Internet services and is issuing the necessary bids. Warner Caines said that Frankfort supplied wireless to the Capitol Annex for laptop use during the legislative session and expects to expand wireless availability.

The next meeting of the MEPAK Board of Directors will be July 22 and 23, 2004 at the Marriott Griffin Gate Resort in Lexington.

With no further business, the meeting was adjourned.

Minutes
MEPAK Board Meeting
October 22, 2004

Members Present:
Larry Musick, President
Ron Herd, Vice President
Jim Asbury, Madisonville
Jeff Garner, Henderson
John Humphries, Princeton
Sarah Botkin, Berea
Chris Brewer, Barbourville
Warner Caines, Frankfort
Austin Carroll, Hopkinsville
Gray Cassity, Benton
Dave Clark, Paducah
Bob Hunzinger, Owensboro
Jeff Mills, Bardstown
David Moss, Fulton
William Ray, Glasgow
David Richardson, Murray
Bobby Simpson, Bardstown
Brian Skelton, Bowling Green
Tony Thompson, Murray
Larry Wilcutt, Russellville

Others Present:
Tom Trauger, Spiegel & McDiarmid
Brown Thornton, R. W. Beck
Libby Marshall, Executive Director

The October quarterly meeting of the MEPAK Board of Directors was held on October 22, 2004 at Kentucky Dam Village State Resort Park. The meeting was called to order by President Larry Musick. He introduced Brian Skelton, new manager for Bowling Green Municipal Utilities, and David Richardson, Murray Electric System, chairman of the Telecommunications Committee.

The minutes from the July 22, 2004 annual meeting were approved on a motion by Tony Thompson and seconded by John Humphries. The financial report was given by Libby Marshall in the absence of Doug Beckham, Secretary/Treasurer. She reported a balance as of October 18, 2004 of $238,869.74. In response to a question about the improvements to the MEPAK office building, she reported that the roof and copper guttering had been installed with a significant improvement to the appearance of the building, but touch up painting is still needed. She also reported that there is the appearance of a slight bow in the building where the concrete driveway may be exerting

pressure on the building. The roofer will investigate this as soon as possible. She also reported that the upstairs apartment/office has not yet been rented.

David Richardson was asked to give the report of the Telecommunications Committee from the meeting on September 29 at Bowling Green Municipal Utilities. He updated the board on the departure of Phillip Coleman to teach at Western Kentucky University. Phillip was formerly with Owensboro Municipal Utilities and chairman of the Telecommunications Committee. Wade England of Glasgow Electric Plant Board will be vice chair of the committee. David Richardson said that each system has been asked to prepare a short summary of telecommunications services being offered and of current issues to provide an overview for the MEPAK Board. Having a meeting at which both managers and the telecommunications committee could attend was discussed. David Richardson said that the October and April meeting are preferred.

The board moved into a discussion of MEPAK involvement in the development of the broadband plan for the state being undertaken by CITE as the staff for ConnectKentucky. The members of the board agreed that MEPAK needed to be involved in the planning and in any opportunity to receive federal and state funding that may be available for expanding broadband in Kentucky. Tony Thompson moved that MEPAK pay up to $20,000.00 to participate as a partner on the CITE board. Jeff Garner seconded the motion. It was passed unanimously by the board.

The board then discussed who would attend the quarterly meetings of the CITE Steering Committee. Libby Marshall suggested that it be someone from one of the systems who has an in-depth technical knowledge such as Ed Hancock with Frankfort Electric Plant Board and that she would attend as an observer for the political perspective. Jeff Mills moved that Ed Hancock and Libby Marshall attend the CITE meetings. It was agreed that Ed Hancock should answer directly to the board.

Larry Wilcutt was asked to give an update on the Russellville litigation. He said that the litigation had been submitted to the judge and that the end was in sight. He thanked MEPAK members for agreeing to file an amicus brief in the litigation and noted that the MEPAK brief had been accepted by the court. The TVPPA brief had not been accepted by the judge who recognized that he had made an error in considering the TVPPA brief, but did not feel it was necessary to reconsider his decision as the issues were covered in other pleadings.

Bob Hunzinger gave an update on the litigation with Kentucky Utilities. The case has been moved to federal court at the request of KU. A question submitted to FERC regarding the backup issue had been ruled by FERC to be strictly a contract issue. Trial is expected next summer.

Larry Musick requested that Warner Caines give an overview to MEPAK members who did not attend the presentation by representatives of Peabody Energy on the Thoroughbred Generation Plant. Warner Caines noted that the presentation made clear that the future of power supply for both TVA systems and those supplied by IOU's is

more volatile than it has been in the past and can be expected to be more costly than in the past.

Brown Thornton with R.W. Beck confirmed the future cost indicators presented by Jacob Williams of Peabody Energy: reduction in baseload plants as the cost for environmental compliance makes older units too costly to retrofit, increased costs in transportation of coal, prices tied to the price of gas. He noted that big units such as Thoroughbred are hard for the market to "digest" because they are so costly in the construction.

John Humphries pointed out that the transmission grid in Kentucky is insufficient. He noted that transmission is an issue for several of the systems that would want to consider alternative sources of power and that consideration needs to be given to upgrading the grid through grants or other means.

Larry Musick referred further discussion of power supply to the Power Supply Committee. Bob Hunzinger said that the committee could take a look at the situation but that the decision about power supply is a local one with each system. He pointed out that IMPA had expressed an interest in the Thoroughbred Plant and that Illinois had formed a group separate from IMEA to look at generation.

John Humphries said that MEPAK may not be able to address the generation question as a group because all of the members were not in the same position with respect to the immediacy of their power supply concerns. He said that the TVA rate increase had to be addressed by the TVA systems.

Tony Thompson asked if MEPAK could draft a summary of where the municipal systems are on the power supply question. He said that transmission is a threshold question and that studies had been done in the past that could be researched.

Bob Hunzinger asked that MEPAK set up a conference call for the members of the Power Supply Committee to discuss the next steps in this matter. Several suggestions were made to further the discussion. John Humphries suggested that there be an identification of common needs. Tony Thompson suggested that those interested should continue to work together. Billy Ray said that studies are not needed because the systems know where they are and the problems they are facing. John Humphries suggested that MEPAK talk with AMP of Ohio and the Illinois group; the Illinois group is using IMPA as a management consultant and AMP of Ohio is consultant to the West Virginia municipals. Brian Skelton said that Peabody should be asked: what is the drop dead date for inclusion in the Thoroughbred Plant?

Larry Musick asked that Libby Marshall give the director's report. Abbreviating this report, she asked whether managers would be interested in attending TAPS meetings that are held throughout the country, noting that TAPS meetings are an assembly of other managers with whom MEPAK members would enjoy being involved. Bob Hunzinger responded that he believed that she should attend the TAPS meetings because of the time constraints for managers and should attend the APPA legislative rally as well. It was

agreed that when she must make decisions about priorities, priority should be given to those matters of interest to MEPAK members for which no other organization, such as APPA or TAPS, will represent MEPAK interests.

Libby Marshall introduced the topic of personally employing her son for work at the MEPAK office and at the legislature. She summarized prior discussions with the MEPAK executive committee that had centered primarily on protecting MEPAK from liability. Larry Musick reported that Jeff Herbert had found no problems with the proposal. He requested that the board go into executive session for discussion on this topic and on the salary of the executive director.

Following the executive session, the board continued a discussion of audits being conducted by the Department of Revenue pertaining to the collection of sales tax. It was reported that a residential classification does not require the collecting of sales tax while commercial classifications do.

Libby Marshall proceeded to review proposals for MEPAK legislation and to make recommendations on those proposals. She recommended that MEPAK support the interests of Nicholasville to seek an amendment in Chapter 58 that would authorize municipal utilities created under that chapter to issue bonds. She recommended that no action be taken on the definition of native load that excludes municipals as a priority in the event of constraints on the system because she is still involved in discussions with the PSC as to the effect of this statute. She recommended that no action be taken on the legislation to authorize the prepurchase of power unless she is able to submit the language in the budget bill or through a late amendment to avoid risking that KRS Chapter 96 could be amended through the legislative process.

Discussion ensued on who would oppose the amendment to Chapter 58. Libby Marshall responded that she did not think that there would be opposition from the usual opponents on this amendment and could not see a public interest for the limitation on bonding authority. On a motion by John Humphries and seconded by Austin Carroll, the board agreed to support an amendment to Chapter 58 allowing bonding for municipal utilities created under the chapter.

Warner Caines said that he had learned that an expected push will occur in the next legislative session for all municipals to go under the state health insurance program if retirees participate in the state retirement system. Austin Carroll said that it will be extremely difficult to fight inclusion in the state plan. Jeff Mills said that an update on the health insurance benefits of the MEPAK members is needed. Libby Marshall noted that an update on the wage and benefit survey was included on the meeting agenda and that she will send this request to all systems.

John Humphries asked Tom Trauger whether there had been a recent court decision about railroad right of way fees. Tom Trauger replied that he did not know whether there had been a recent case.

The dates of the next meeting were announced by President Musick as February 24 and 25, with dinner at the Holly Hill Inn on Thursday, February 24 and the MEPAK Board meeting on Friday, February 25.

With no further business, the meeting was adjourned.

MEPAK Board Meeting
February 25, 2005
Frankfort, KY

Members Present:
Larry Musick, President, Franklin
Ron Herd, Vice President, Corbin
Doug Beckham, Secretary/Treasurer, Williamstown
Donald Blackburn, Berea
Sarah Botkin, Berea
Chris Brewer, Barbourville
Warner Caines, Frankfort
Tom Calkins, Nicholasville
Bob Hunzinger, Owensboro
Jeff Mills, Bardstown
David Moss, Fulton
Teresa Newman, Bowling Green
Bobby Simpson, Bardstown
Brian Skelton, Bowling Green
Randy Stone, Berea
Randell Young, Barbourville
Larry Wilcutt, Russellville

Guests and Staff:
Jeff Herbert, Herbert, Herbert & Pack
Brown Thornton, R.W. Beck
Tom Trauger, Spiegel & McDiarmid
Charlie Winter, Kentucky Emergency Management Agency
Camille Crain, Kentucky Emergency Management Agency
Brenda Hill, Kentucky Emergency Management Agency
Libby Marshall, MEPAK Executive Director

Larry Musick, President, convened the meeting. Introductions were made of staff from the Kentucky Emergency Management Agency (KEMA), Mr. Charlie Winter, Brenda Hill, and Camille Crain who discussed mutual aid agreements and the grant programs available through KEMA. Mr. Winter emphasized several points: FEMA is reimbursing only for temporary or emergency work, not permanent work; the state mutual aid agreement does not permit reimbursement for the first twelve hours of work; and FEMA does not recognize aid within the same community. Mr. Winter suggested that MEPAK members establish rates for use of specific items of equipment because FEMA may reimburse on higher rates if there is a historical use of these rates. He also suggested that fuel and maintenance be included in the rate of reimbursement.

Ms. Hill and Ms. Crain discussed two grant programs, the Public Assistance Program and the Hazard Mitigation Program. The Public Assistance Program provides

grant assistance for disaster damaged publicly owned facilities. The Hazard Mitigation Program provides grants for prevention of damage to known disaster prone areas. Distinctions between the programs are that the Public Assistance Program does not require a showing of past storm damage and can offer grant funding for either structural or non-structural repairs. Larry Musick asked Libby Marshall to develop an outline of the KEMA material on mutual aid agreements after the legislative session.

Corrections were made to the minutes of the October 2004 board meeting. Tom Trauger requested that his response to the question about a recent case on railroad right of way fees be changed to reflect his answer that he did not know whether there had been a recent case.

Doug Beckham gave the financial report, reporting that the overall total of MEPAK assets are $196,486.15. Libby Marshall reported that an addition to the budget had been made by the Executive Committee to pay Bob Ferdon, attorney, $15,000.00 for his work updating the joint action legislation that he had originally drafted in 1986 and for his representation of MEPAK interests to City of Louisville. Discussion ensued on the potential sale of LGE/KU. The financial report was approved.

In conjunction with the financial report, Libby Marshall noted that she had not sent the $20,000.00 payment to CITE, ConnectKentucky, for membership as the board had approved at the October meeting. She explained that she had not been able to resolve questions of full compliance with the open meetings and open records law. More recently, she had received reports that CITE was acting almost entirely as a clearinghouse for projects for the large telecommunications companies. After considerable discussion, Larry Wilcutt moved and Bobby Simpson seconded, a motion to rescind the decision to join CITE, ConnectKentucky.

Libby Marshall gave an update on the legislative session and specific bills of interest to MEPAK. She reported that the MEPAK website had a trial of purchasing information for comparison purposes available with the password, membersonly2. She recommended using the word "poles" to begin accessing data.

She reported on the newly formed Kentucky Association of Telecommunications Officers and Advisors and recommended that MEPAK have a role in this new organization of cities with an interest in telecommunications issues. She asked if there would be support for MEPAK taking a larger role in conveying information to other cities about becoming a provider of telecommunications services and referred to information in the notebooks on the Georgia Public Telecommunications Network. It was recommended that MEPAK pursue opportunities to expand the knowledge of city officials about providing telecommunications services.

Larry Musick asked whether non-TVA systems are using the training programs offered by TVPPA. Several managers said that they are using the lineman training program of TVPPA. It was decided that associate membership in TVPPA should be continued to receive the benefits of accessing training at TVPPA member costs plus

$500.00 per year. It was also suggested that TVPPA should be asked to be an associate member of MEPAK and that MEPAK should consider increasing the costs of being an associate. Jeff Mills suggested that associate members be introduced and recognized at dinners.

With no other business, the meeting was adjourned.

EXHIBIT 4

ELECTRIC • WATER • WASTEWATER • FIBER OPTICS

BOWLING GREEN MUNICIPAL UTILITIES

801 CENTER STREET
P.O. BOX 10300
BOWLING GREEN, KENTUCKY 42102-7300
(270) 782-1200
FAX (270) 782-4320
www.bgmu.com

July 24, 2008

Chairman Kevin J. Martin
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: WC Docket 07-38 (Broadband Data Collection)

Dear Chairman Martin,

This letter is in response to the Notice of Ex Parte Communication and the related letter attached to said Notice dated July 11, 2008, from Connected Nation in regard to the above-referenced proceeding. More specifically, page 6 of the July 11th letter from Connected Nation claims certain work provided to Bowling Green Municipal Utilities, and this letter is in direct response to that claim.

The General Services Division of Bowling Green Municipal Utilities (The Division) was created by Municipal Order 2001-5, dated February 20, 2001, for the express purpose of engaging in activities to benefit the general welfare of the citizens of the City. Since its inception, the Division has installed a state-of-the-art, commercial-grade fiber optic network consisting of over 200 miles of fiber optic cable and a network operations center. The Division's network is engineered for functionality and stability, with redundant OC3 Internet connectivity with two separate national carriers. In addition to commercial-grade Internet connectivity, the Division offers its business and governmental clients dark fiber lease options, lighted fiber connectivity (V-LAN and other high-speed data services), VOIP telephone service for businesses, and controlled-environment cage and/or rack co-location rental for clients' primary or back-up network servers.

The Division's customers include many of Bowling Green's large commercial and governmental institutions, including the City of Bowling Green, Western Kentucky University, Fruit of the Loom, Houchens Industries, WKU's Center for Research and Development, among others. In fact, the capabilities of the Division's fiber network enhanced the City's recently installed wireless mesh network for use by its police and fire departments and the City's downtown traffic light coordination project.

The Division's growth and success is a direct result of the many hours of planning, designing and constructing the network. In addition, attention to customer needs – before and after "the sale" – has won over our customers' IT departments. Measuring these efforts against ConnectKentucky's claims to have worked directly to expand our network is very confusing. We have tried to think what meeting, conversation or activity ConnectKentucky may have performed that would have any bearing on the Division's growth and success. We could think of no such activity – not by any stretch of the imagination – that would suggest that ConnectKentucky had anything to do with the Division's growth and success. We suspect it is exactly the lack of any tangible or intangible work that supports Connected Nation's comment, "....at no charge to the local government."

We appreciate the opportunity to present to the Commission our response to Connected Nation's claim. At the heart of our complaint are the negative feelings associated with some other entity taking credit for, or claiming involvement in, the work and efforts of others. It is for the Commission to decide what motivation that entity has for such claims. If you or the other members of the Commission have any questions regarding this response, please feel free to contact me by phone at 270-782-4338, or e-mail at miverson@bgmu.com.

Sincerely,

BOWLING GREEN MUNICIPAL UTILITIES

Mark Iverson
General Manager

cc: Commissioner Michael J. Copps
Commissioner Jonathan S. Adelstein
Commissioner Deborah Taylor Tate
Commissioner Robert M. McDowell

July 24, 2008

Annette C. Dupont-Ewing
Executive Director
Municipal Electric Power Association of Kentucky and
Muncipal Water and Wastewater Association of Kentucky
110 A East Todd Street
Frankfort, KY 40601

Dear Annette:

Owensboro Municipal Utilities (OMU) began to offer commercial telecom services with its existing fiber optic system in 1998. In 2002, OMU determined that high speed and affordable internet was not available to residential customers in Owensboro and began to deploy a commercial wireless internet system. OMU presently provides over 2,800 residential and commercial customers with telecommunication services.

In the past ten years of providing quality data and internet services to our customers, OMU has never received assistance from Connect Kentucky. Moreover, OMU does not anticipate any need for assistance or support from Connect Kentucky in the future.

Respectfully,

Richard H. Chapman
Director, Engineering and Operations

Local people. Local service. Local people. Local service. Local people. Local service. Local people. Local service. Local people. Local service.

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(270) 651-8341 - Fax (270) 651-7572 - epb@glasgow-ky.com

July 17, 2008

Annette C. Dupont-Ewing
Executive Director
Municipal Electric Power Association of Kentucky and
Municipal Water and Wastewater Association of Kentucky
110 A. East Todd Street
Frankfort, KY 40601

Dear Annette:

This letter is written in response to Brian Mefford's July 11, 2008, letter to FCC Chairman Kevin J. Martin and to clarify the facts relative to Connect Kentucky's influence over, and mapping of, the municipally owned broadband network in Glasgow and Barren County, Kentucky. Connect Kentucky had nothing whatsoever to do with our network and, as evidenced by their failure to note it on any of their maps, still have nothing to do with it.

The City of Glasgow, through its wholly owned utility - Glasgow Electric Plant Board, decided to build a broadband network to every home and business in the city back in 1987. The network construction began in 1988 and it continues today. The network carries electric utility telemetry, cable television, LAN/WAN, high speed internet access, telephony, and other data services. It even synchronizes the traffic signals throughout the city of 15,000 people. This network was conceived, designed, and financed by the people of Glasgow. It did not require a single tax dollar. It was built without access to a ubiquitous map of broadband in the state. It did not require the advice of "experts" from the likes of Connect Kentucky. Further, Glasgow has nothing special going for it and any city in any state could do precisely the same thing. It does require a little leadership and vision, but those qualities do not flow from Connect Kentucky or Connected Nation.

One of the most troubling claims by Connect Kentucky is that the mapping data, paid for, according to them, mostly with public money put up by the taxpayers of the Commonwealth of Kentucky, is accurate, "verified and continuously updated." Using the links to this, supposedly, thoroughly scrubbed data provided in Brian Mefford's letter, one finds that the City of Glasgow seems to only get broadband from DSL providers like South Central Rural Telephone Company and Windstream (both are members of one of the groups which Connect Kentucky lists as a member), even though Glasgow

Electric Plant Board was providing faster broadband services many years before either telephone company provided DSL. It is not at all clear what the people of Kentucky got for the millions they paid Connect Kentucky for mapping. One can search Google.com with the terms "broadband" "kentucky" "Glasgow" and get more than two hundred thousand results, many of which are about our broadband project in Glasgow, yet Connect Kentucky has never even heard of us and we are not listed on their mapping which we helped to fund through our taxes. We find this curious.

In summary, Glasgow, Kentucky is often lauded as one of the most "wired" communities in North America and Connect Kentucky had precisely nothing to do with it. In fact, it was done long before the idea of creating Connect Kentucky and funding it at the public trough was even hatched. Glasgow's project has been replicated many times now all across the United States, but none of those projects owe their success to Connect Kentucky.

Respectfully,

William J. Ray, P.E.
Superintendent

Barbourville Utility Commission

Serving Barbourville Since 1938

July 28, 2008

Annette C. Dupont-Ewing
Executive Director
Kentucky Municipal Utilities Association
110 A. East Todd Street
Frankfort, KY 40601

Dear Annette:

I am writing this letter in response to Brian Mefford's July 11, 2008, letter to FCC Chairman Kevin J. Martin.

The Barbourville Utility Commission is a Municipally owned utility serving the City of Barbourville as well as Knox County since 1938. We currently provide Electric, Water, Wastewater; Cable Television and Broadband Internet to this very rural Eastern Kentucky County.

We have been providing Internet service to Knox County since 1996 when we became the very first local ISP in Southeast Kentucky. In 1998, the Barbourville Utility Commission began offering High-Speed Internet service via cable modems. We were the first community in Eastern Kentucky to provide this service and only the third community in Kentucky. In 2000, the City of Barbourville was recognized by Yahoo Internet Life Magazine as one of the "Most Wired Cities in America".

The reason that the Barbourville Utility Commission began offering Internet service was because of Union College's need for connectivity and the lack of any private company willing to come to Barbourville and provide it. The local phone company was not at all interested in providing the college or the community with Internet. However after the Utility Commission had invested substantial amounts of capital and manpower the phone company finally decided to provide DSL, although it was just seven years after we started.

P. O. Box 1600
202 Daniel Boone Drive
Barbourville, KY 40906
(606) 546-3187
Fax (606) 546-4848

I have personally attended several of the Connect Kentucky community meeting and from my experience; they were a complete waste of time. The CK representative never presented any ideas or plans on how to either generate more subscribers or how to expand our service to areas not currently served.

Currently nearly 45% of the subscribers to the Barbourville Utility Commission's cable television service take some sort of broadband Internet. This is a county were less than half of the residence have graduated high school. If you look at CK's Broadband Adoption Map and look at Knox County in particular, you will see that Knox County has the highest adoption rate of any county in Southeast Kentucky. I believe that this is due to the Barbourville Utility Commission's work in providing very affordable Internet service long before any other provider and before Connect Kentucky.

As you can see, Connect Kentucky has had absolutely nothing to do with the success of Broadband in Barbourville and Knox County.

If you have any questions or need any additional information, please don't hesitate to contact me.

Sincerely,

Chris Brewer, P.E.
Assistant Superintendent

ELECTRIC POWER & TELECOMMUNICATIONS

MURRAY ELECTRIC SYSTEM

P. O. Box 1095 • 401 Olive Street • Murray, Kentucky 42071
Phone: (270) 762-1704 • Fax: (270) 753-6494

Tony Thompson
General Manager

tthompson@murray-ky.net

July 23, 2008

Annette C. Dupont-Ewing, Executive Director
Municipal Electric Power Association of Kentucky
110 A. East Todd St.
Frankfort, KY 40601

Dear Annette:

In response to Brian Mefford's letter to July 11, 2008, letter to FCC Chairman Martin, I would like to offer Murray's insight into Connect Kentucky's impact on broadband deployment and the veracity of any "accurate maps" that might reside on the CK website.

The City of Murray, similar to our sister cities of Glasgow, Barbourville, Frankfort, Bardstown, and others launched a fully functional broadband system through its wholly owned utility, Murray Electric System, in 1998. Through this system, a majority of our citizens take services for cable television, high speed internet, telephony, and other high tech services from MES.

I vaguely recall that at some point in our project, we received a visit from a representative of Connect Kentucky. I similarly remember a seminar being hosted at Murray State University, that touted the beginnings of the Connect Kentucky initiative. At that point, I remember waving it off as a political strategy of Bellsouth, offering nothing to our project.

Recently the claims of Connect Kentucky in being a "visionary" organization, mostly responsible for pushing broadband into the far reaches of the state have caught my attention. Interestingly, when I visited the CK website, Murray Electric System was nowhere to be found as being a provider of broadband services to our community. Instead I found AT&T, and NewWave communications, a relative newcomer to Kentucky cable service as being the providers of such services to Calloway County.

Murray Electric System and its customers have built its system without any help or input from Connect Kentucky. We would have been happy to have received some of their funding, or expertise, but was never offered either, and continue to be overlooked by them in our end of the state.

Sincerely,

Tony Thompson, General Manager

HOPKINSVILLE ELECTRIC SYSTEM

P.O. Box 728 • 1820 East Ninth Street
Hopkinsville, Kentucky 42241-0728
(270) 887-4210 • FAX (270) 887-4214

"Serving You Better Electrically"

AUSTIN B. CARROLL
General Manager
acarroll@hop-electric.com

July 18, 2008

Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Dear Sir/Madam:

I am surprised to learn that Connect Kentucky (CK) claims they assisted Hopkinsville Electric System/EnergyNet Services (HES) to expand our network or offered any assistance to HES. CK has not provided any help to HES.

HES built a fiber network in Hopkinsville in 1998 to improve communications for our electric substations. In 1999, HES determined that affordable internet connectivity did not exist in Hopkinsville. The average cost for a T-1 (1.5 meg) internet connection was $3,000 per month. HES was able to provide the same service for $350.00 per month. Therefore, HES offered connectivity to businesses, government and the Christian County School System since no other providers offered affordable bandwidth in our area. When the school system could not find an affordable provider, HES built an additional 50 miles of fiber to provide connectivity to all the schools in the county.

Since the advent of EnergyNet, other providers have entered the market. Even with these other providers, not all residents in Hopkinsville had access to broadband. HES recently constructed a wireless network that covers Hopkinsville and we are now expanding the wireless to include the county. In time, this wireless service will be available to all but the most remote residents of Christian County.

While the cost of Internet has dropped, HES realized our community still pays more than larger cities. That puts Hopkinsville at a disadvantage when competing in the global economy. Consequently, HES just completed construction of fiber transmission lines to the nearest POP's. In other cities, this connectivity will lower our costs for bandwidth and make Hopkinsville an attractive location for technology companies.

Looking back at the past 10 years of growth and service to Hopkinsville and Christian County and cannot point to an instance where CK provided or offered assistance.

Sincerely,

Austin B. Carroll

HMP&L HENDERSON MUNICIPAL POWER & LIGHT

July 22, 2008

Annette DuPont-Ewing
Executive Director
Municipal Electric Power Association of KY
110 A. East Todd Street
Frankfort, KY 40601

Dear Annette:

ConnectKentucky does not have a business relationship with Henderson Municipal Power & Light or our Communications Department. ConnectKentucky was not involved in the deployment of our broadband services for the citizens of Henderson, Kentucky.

We did have discussions with ConnectKentucky during the first couple of months of 2006, but those discussions were related to questions presented by ConnectKentucky. We responded to their questions and provided them with information concerning the locations of our wireless base sites, direction of antennas, and design data for the antennas.

Sincerely,

Gary Quick
General Manager

100 FIFTH STREET P.O. BOX 8 HENDERSON, KENTUCKY 42419-0008 (270) 826-2726 FAX (270) 826-9650

BEREA MUNICIPAL UTILITIES

P.O. BOX 926
BEREA, KENTUCKY 40403
(859) 986-4391
FAX (859) 986-5884

July 30, 2008

Annette C. Dupont-Ewing
Executive Director
Kentucky Municipal Utilities Association
110 A. East Todd Street
Frankfort, KY 40601

Dear Ms. Dupont-Ewing:

It is quite shocking to see that Connect Kentucky is claiming a successful wireless network project for the City of Berea, Kentucky. Berea did, in fact, contract with a Connect Kentucky representative for a pilot project that was flawed from the onset and has since been abandoned.

Berea has several craft shows and festivals throughout the year. As a pilot project, Berea wanted to provide wireless internet service to some areas in town where festival vendors could connect to the internet, thus allowing them to also display their web sites. Berea interviewed different suppliers and chose the sales pitch of the Connect Kentucky rep. Equipment was ordered and the Connect Kentucky rep was contracted to install. One installation worked most of the time, one was intermittent at best, and the third was never able to make a connection. While Berea was evaluating how to proceed, lightning fried the transmitter that had been installed on the water tower. That ended Berea's adventure into the world of wireless internet and our relationship with Connect Kentucky.

If Mr. Mefford is claiming Berea as one of its success stories, I would invite him to come to Berea and explain the "success" to the Mayor and City Council. Then maybe Mayor Connelly might feel better about the money that had been spent.

Please relay the true Berea story to FCC Chairman Kevin J. Martin.

Thanks for your attention,

Donald D. Blackburn
Utilities Manager

C: Mayor Steven Connelly

CITY OF WILLIAMSTOWN

400 NORTH MAIN STREET
P.O. BOX 147
WILLIAMSTOWN, KENTUCKY 41097

(859) 824-6351 – Mayor's Office
(859) 824-3633 – City Clerk's Office
(859) 824-6320 – Fascimile

Glenn V. Caldwell, Mayor
Douglas Beckham, City Administrator
Vivian Link, City Clerk/Treasurer

CITY COUNCIL MEMBERS:
Kim Crupper
Edward Gabbert
William Hutchison
Robert Perry
Rick Skinner
Stanley Woodyard

July 31, 2008

Ms. Annette Dupont-Ewing
Kentucky Municipality Utility Association
110 A East Todd Street
Frankfort, KY 40601

Dear Annette:

As for the City of Williamstown and regarding ConnectKentucky (CK), we cannot say that they did not work with us. Here is how our experience progressed:

In June 2006, the City of Williamstown was approached by a company to design a Wireless High Speed Internet service to cover areas of Grant County. After performing their study, they presented the City with an estimated price tag of $250,000.00. In October of 2006, representatives of CK met with us. I don't know who contacted who; Mayor Caldwell may recall that detail. The City of Williamstown gathered the coordinates of various water towers in the community and their height. This information was sent to a gentleman CK contracted. He returned to us a propagation study with an estimated price to launch a wireless service of around 160,000.00 as I recall. CK wrote an RFP for the City that would include the equipment we would need to run such a service.

After the project began, we found that the system they designed was inadequate and had it not been for the help of third parties, this project would have failed or at the very least worked after several setbacks and problems, possibly costing the City thousands of dollars.

In closing, we cannot say they never worked with us at all. They did give us a list of the equipment we would need to run a wireless system. The list did not include details such as antenna polarity. Someone I would recommend that you talk to is Bill Osborne, with the City of Carrolton. I met with Bill and the Mayor of Carrolton. They were approached by CK about wireless service for their area. CK pushed for private industry to launch a service off of their water towers but The City of Carrolton wanted to look at the feasibility of them operating the service as a municipality. I put them in touch with one of our third party sources and they preformed their own study. The third party had several concerns about the study CK had

preformed for Carrolton. I don't know if they decided to proceed or not with the wireless service but give him a call and just ask how his experience was with CK.

If I can be of any other help, please let me know.

Very Respectfully,

Roy W. Osborne

ROY OSBORNE
Assistant Superintendent
CALEA Compliance Manager

OLD KENTUCKY HOME DOORWAY

City of Bardstown

J. RICHARD HEATON, MAYOR
220 N. 5TH ST.
BARDSTOWN, KENTUCKY 40004
TEL. NO. 877/348-5947
FAX. NO. 502/348-2433

ART TREASURES IN ST. JOSEPH CATHEDRAL

July 30, 2008

Annette C. Dupont-Ewing, Executive Director
Kentucky Municipal Utilities Association,
Municipal Electric Power Association of Kentucky and
Municipal Water and Wastewater Association of Kentucky
110 A. East Todd Street
Frankfort, KY 40601

Dear Annette,

I am writing to respond the Brian Mefford's letter dated July 11, 2008 to FCC Chairman Martin regarding Connected Nation particularly as it relates to our experiences with ConnectKentucky.

As a municipal cable operator since 1985, with expansions into Nelson County since 1987, the City of Bardstown today operates a modern cable plant with 2-way cable modem service. We first launched cable modem service in January of 2000 over a year ahead of BellSouth's April 2001 deployment of DSL service.

I recall our staff participating in the mapping and e-Community Leadership Team process, in part to give the process a chance and particularly to find out if any grant funds were available for further deployment of our existing broadband infrastructure. We inquired several times about the availability of grant funds, but we never got a straightforward answer from our Connect Kentucky contacts. Please find attached an example of such an unanswered request in the form of an e-mail exchange between one of our engineers and Connect Kentucky staff.

Also attached is another message in which we were disappointed to hear that the Connect Kentucky initiative was not ready or designed to address infrastructure issues. We found this curious as most of the issues related to the lack of broadband availability are directly related to a lack of the supporting infrastructure. In one last attachment, a screen shot from yesterday, it was pointed out to me that on the forum set up for Nelson County's e-Leadership Team, the only posts ever made were apparently those by someone at Connect Kentucky after an initial team meeting. Given the depth and breadth of the local Nelson Countians listed on Connect Kentucky's website, http://www.connectkentucky.org/NR/rdonlyres/456D78FE-7505-4169-8BCC-D338ECA3A2C8/0/3_NELSON_COUNTY_LEADERSHIP_TEAM.pdf, this Nelson County forum certainly does not appear to be a demonstration of an active, vibrant e-Community. That is certainly not the case and perhaps one should draw their own conclusion when considering Connect Kentucky's claims of the level of local participation. Perhaps Mr. Mefford would give Chairman Martin a login to these same forums so he could judge for himself.

We began to realize that Connect Kentucky really did not have anything new or significant to offer our community that we either had not already considered or was already under development or deployment. That begs the question: What did Connect Kentucky really do for Nelson County? At this point, our answer would have to be very little. They certainly did not play a role in our deployment of broadband over our cable system.

We remain ready and willing to participate in any initiative that will allow us, as a municipal broadband provider, to participate in a meaningful way in expanding broadband coverage within our community.

Sincerely,

J. Richard Heaton, Mayor
City of Bardstown, KY

Jm/JRH

Attachments

Jeff Mills

From: Cutler, Sage (CONNKY) [scutler@connectky.org]
Sent: Tuesday, April 10, 2007 10:34 AM
To: jmills@bardstowncable.net
Cc: Mefford, Joe (CONNKY)
Subject: FW: Nelson - cable map

Jeff,

Here is the response from Joe Mefford our statewide director.
Hope this helps.

Sage

From: Mefford, Joe (CONNKY)
Sent: Tuesday, April 10, 2007 9:21 AM
To: Cutler, Sage (CONNKY); Jjmills@bardstowncable.net
Subject: RE: Nelson - cable map

Insight is the cable company identified in the area you identify. They are in the process of providing us new information that will correct these errors. Thanks for your email.

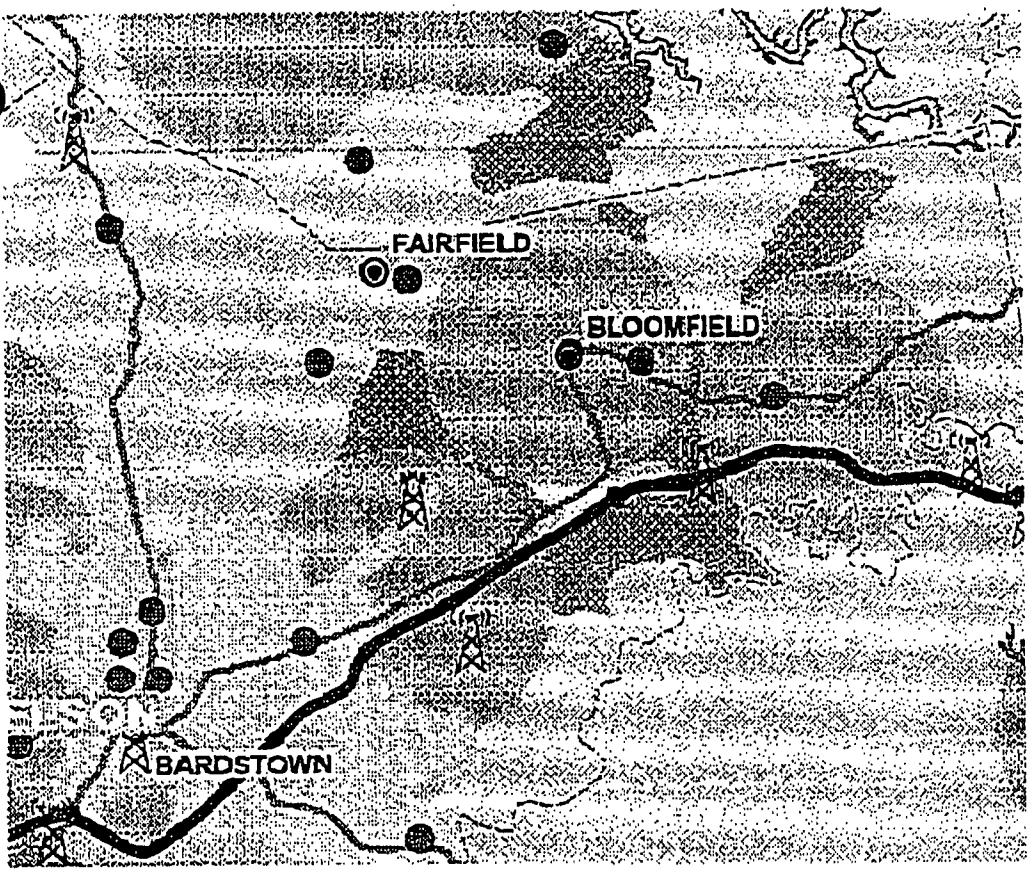
Sage,

.i the broadband inventory map excerpt below (for Nelson County), I'm curious about the pink "cable broadband areas" southwest of Bloomfield. That's in our cable/internet franchise area (the municipal yellow) and there is no cable service at all in that spot (between the town LEC circles of Bloomfield and east Bardstown, north of the Bluegrass Parkway. Who would I need to contact that to get it corrected?

Also, what is the status of/process for obtaining grant funds through ConnectKentucky and how might the City of Bardstown participate/influence same?

Thanks,

Jeffrey C. Mills, P.E.
City Electrical Engineer
City of Bardstown, KY
502-348-5947 (office)
502-249-1037 (mobile)
502-348-2433 (fax)
jmills@bardstowncable.net



From: Cutler, Sage (CONNKY) [mailto:scutler@connectky.org]
Sent: Friday, December 15, 2006 4:12 PM
To: Cutler, Sage (CONNKY)
Subject: Connect Nelson County - December recap

Team,

It was exciting to review some of the key accomplishments in 2006, including several enhancements to the Chamber website, 200 more businesses now using email than last year, Google maps for local businesses with links to various websites, web pages available for small business via COC, online video clips for economic development, online P&Z ordinances and city ordinances, and new computer class offerings by Adult Education.

Our next eCommunity Leadership Team meeting is scheduled for **Thursday April 12th at 2pm** at the **Welcome Center** in Bardstown. This meeting will be to plan and discuss the new action items and ideas for 2007.

Remember to use the Online Discussion Forum to help coordinate the project plans and details. All of the project information is available online at - http://www.connectkentucky.org/localinfo/countyprofiles/ - select your county from the list.

Some of the local tasks needing attention for our next meeting include:

- expanding the depth of the Leadership team to include more community sector representation and participants
- inviting local providers to attend and give an update of their coverage and wireless availability
- creating a list of existing and potential locations for community hotspots
- looking at wireless service opportunities in Bloomfield and New Haven
- enhancing county and city websites and information

I have included a spreadsheet with contact information for current and potential leadership team members to enhance internal communication between the project teams, and promote additional participation.

Have a safe and ***Merry Christmas*** !

I look forward to seeing you in April.

Sage Cutler
Manager, Central Ky Region
ConnectKentucky
Phone: 859.734.3851
Mobile: 270.799.0874
Email: scutler@connectky.org

www.connectkentucky.org
ConnectKentucky is a division of The Center for Technology Enterprise, Inc.

Jeff Mills

From: Jeff Mills [jmills@bardstowncable.net]
Sent: Wednesday, July 30, 2008 10:51 AM
To: Jeff Mills
Subject: Infrastructure Discussion

-----Original Message-----
From: Cutler, Sage (CONNKY) [mailto:scutler@connectky.org]
Sent: Thursday, May 25, 2006 3:54 PM
To: Jeff Mills
Subject: RE: Connect Nelson County Report

Jeff,

Yes. The new info includes the County Projects and Plan Outlines plus the Best Practices resources for implementation along with recent county demographics and maps.

This plan is the starting point, not the finish line. It is designed to help increase demand for and usage of broadband services. It is not focused on the infrastructure itself. However, many providers are using this information and demographic research to help in their infrastructure expansion planning. I would anticipate that the City Cable system would want to participate in these projects and look forward to more subscribers being added because of it.

I hope this helps.

Sage

From: Jeff Mills [mailto:jmills@bardstowncable.net]
Sent: Monday, May 22, 2006 11:40 AM
To: Cutler, Sage (CONNKY)
Cc: Nahom Ayele; Mike Abell; Larry Green; Barbie Bryant
Subject: RE: Connect Nelson County Report

Sage,

I read through the strategic plan last week.....does this message contain new information?

I was a little disappointed that the City's Cable Internet System wasn't more pronounced in the plan. Suggestions?

Thanks,

Jeffrey C. Mills, P.E.
City Electrical Engineer
City of Bardstown, KY
502-348-5947 (office)
502-249-1037 (mobile)
502-348-2433 (fax)
jmills@bardstowncable.net

-----Original Message-----
From: Clark, Dawn (CONNKY) [mailto:DClark@connectky.org]**On Behalf Of** Cutler, Sage (CONNKY)
Sent: Friday, May 19, 2006 11:09 PM
To: bfield@bardstown.com; dwtrcecil@bellsouth.net; kimhuston@nceda.net; ncpz@bardstowncable.net; kg@bardstown.com; jw.mattingly@bardstown.kyschools.us; ginny@bardstownchamber.com; robsmith@uky.edu;

ncjudge@bardstown.com; mabell@bardstowncable.net; steve.arnold@bardstown.kyschools.us; nayele@bardstowncable.net; dawn@bardstowntourism.com; mike@ltadd.org; Clark, Pat; s0gude01@louisville.edu; [redacted]littlej@flaget.com; tal@flaget.com; kenny@thewebguys.com; Levee, Krista R (Gov Office); [redacted]mes.Shearer@Nelson.kyschools.us; james.shearer@Nelson.k12.ky.us [redacted]ldawson@bardstown.com; dfloyd@bardstown.com; lgreen@bardstowncable.net; Hardin, Roman; jmills@bardstowncable.net; james.roby@bellsouth.com; johnnyw@stephenfoster.com; tomwittman@chi-caritas.org; Levee, Krista R (Gov Office); James.Shearer@Nelson.kyschools.us; james.shearer@Nelson.k12.ky.us; larryh@srelectric.com; sherry@ltadd.org; bak@flaget.com; wendell@ltadd.org; mrobinson@ltadd.org; Smith, Brian D (Gov Office); larryw@bgenergy.com
Subject: Connect Nelson County Report

Team,

As a result of our recent team meeting, the **Full County Report** is now available on our website at - http://www.connectkentucky.org/localinfo/countyprofiles/ - select your county from the list.

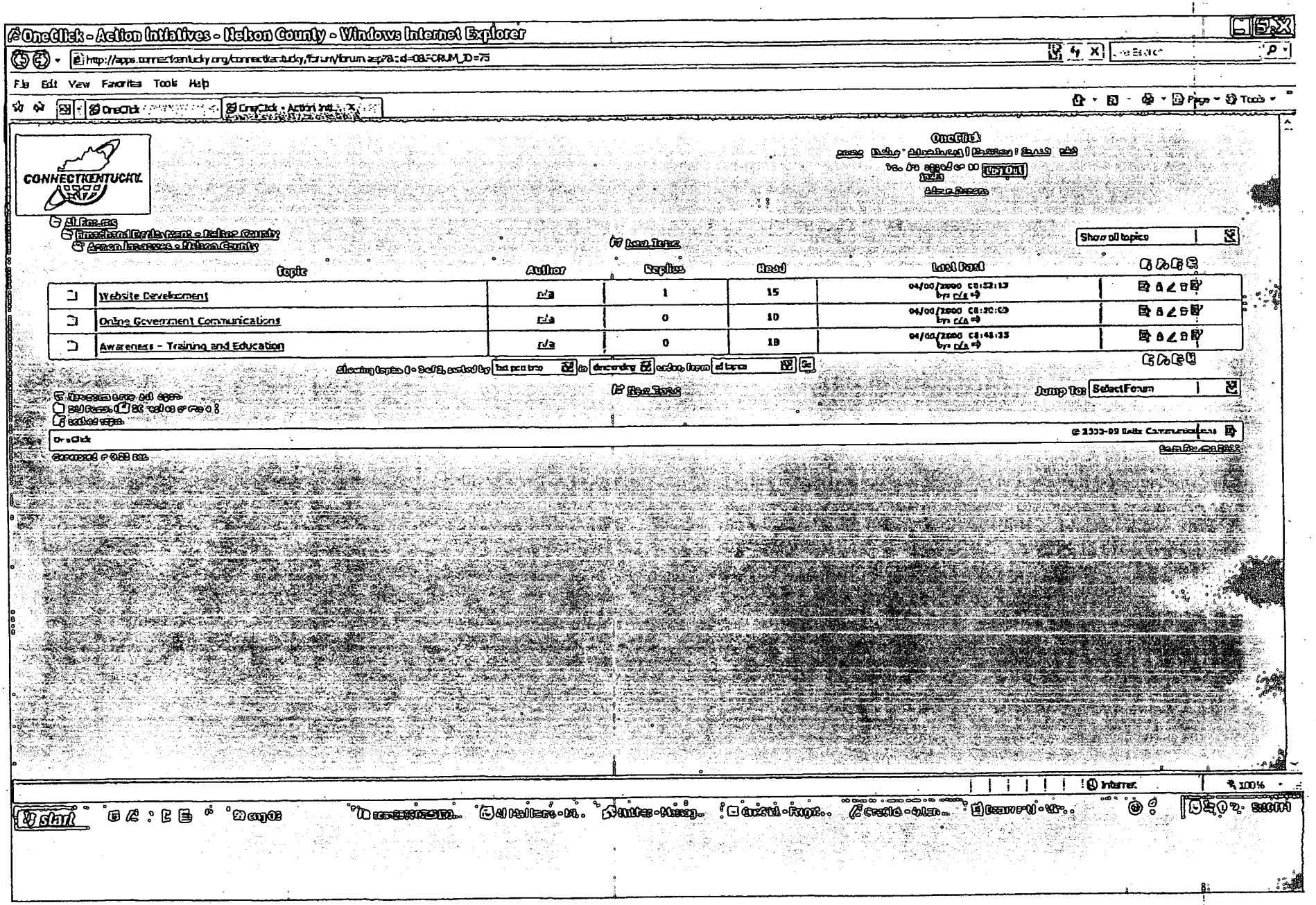
This contains the **Strategic Technology Plan**, county demographics and statistics, broadband and census block maps, plus a Best Practices Resource Guide. I hope you find this information useful and beneficial.

Our next meeting is scheduled for **Thursday, August 31 at 2:00 p.m. EST at the Welcome Center, One Court Square in Bardstown.**

Congratulations on this milestone accomplishment! I have attached a copy of the **Press Release** for your review, and look forward to working with you on the continued implementation of these initiatives.

Sage Cutler
Manager, Central Ky Region
ConnectKentucky
Phone: 859.734.3851
[redacted]bile: 270.799.0874
email: scutler@connectky.org

www.connectkentucky.org
ConnectKentucky is a division of The Center for Technology Enterprise, Inc.


OneClick - Action Initiatives - Nelson County - Windows Internet Explorer
File Edit View Favorites Tools Help
CONNECTKENTUCKY
Topic
Author
Replies
Read
Last Post
Website Development
n/a
1
15
Online Government Communications
n/a
0
10
Awareness - Training and Education
n/a
0
10
Show all topics
Jump To
SelectForum

Warner J. Caines
General Manager

Frankfort Plant Board™

Water
Cable
Electric
Security
Local Phone
Digital Cable
Long Distance
Community TV
Ethernet/Internet
Cable Modem/ISP
Cable Advertising

July 31, 2008

Chairman Kevin J. Martin
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: WC Docket 07-38 (Broadband Data Collection)

Dear Chairman Martin:

This letter is in response to the Notice of Ex Parte Communication dated July 11, 2008, from Connected Nation in regard to above-referenced proceedings. The purpose of this letter is to respond directly to the claim of Connected Nation, on Page 6 of the July 11th letter, stating Connected Nation has worked with the Frankfort Plant Board (FPB) in expanding its network.

FPB has offered cable services to Franklin County since 1952. In 1994, FPB began offering dark fiber services to local and state governments and commercial clients. Today, FPB is the predominate provider of fiber connectivity to all local governments and serves nearly 100 state offices located in Frankfort with these services.

In 1995, FPB began installing fiber for both public school systems in our community, Franklin County Public Schools and Frankfort Independent Schools. This project was completed in 1998. The schools utilize this fiber for all voice, data, security and classroom instruction.

In 1996, FPB began planning for the future of telecommunications for residential and commercial subscribers by hiring a consultant to assist in designing a network that would not only continue to offer cable services but also leverage that network by offering broadband services, high capacity data services and local and long distance telephone services to the subscribers in our service area. After extensive research, planning, and customer surveys, followed by town hall discussions concerning the viability of the project, FPB's Board of Directors approved the "Full Service Network" (FSN) project in October 1997. FPB began work in early 1998 with neighborhoods being turned on as the new infrastructure was completed. FPB finished the upgrade in early 2003.

Today FPB offers broadband services to over 10,500 customers via a cable modem. This correlates to serving over 60% of our basic cable customers with broadband service, well above the national average.

We count several medium and large businesses as our customers through our high capacity Ethernet service. FPB also offers over 11,000 voice lines in our service area.

Since the inception of our FSN Project in 1996 through July 31, 2008, I can say unequivocally, the success of our network is specifically attributed to the hard work and dedication of our consultants, contractors, FPB employees and, most especially, our subscribers. Connect Kentucky neither participated in this process nor were they contacted by anyone affiliated with FPB.

Mr. Mefford's claim in the July 11th letter that Connect Kentucky assisted with the expansion of our network is without merit. He met personally with me in my office sometime in 2005 to discuss problems with FPB's mapping information not reaching those that actually performed mapping services for Connect Kentucky. As promised, the issue was remedied.

Also at the meeting was discussion of Connect Kentucky lending engineering assistance to FPB by a third party wireless company. The intent was to survey a portion of northern Franklin County for wireless broadband potential. I told Mr. Mefford that we had evaluated the potential for wireless service in that area; but, due to the rugged terrain and lack of available tower space, FPB could not affordably build out the project. It should be noted Mr. Mefford and his family resided in this area for several years so his knowledge of this area and the probability of success in wireless infrastructure success should have been familiar to him. I agreed to allow the engineers from Vivato to come in; and a few weeks later, the survey was completed. Those engineers came to the same conclusion as we had a year earlier. Due to the topography of the area and lack of substantial towers, the project could not be economically constructed. It should also be noted that Vivato went out of business a few months after their visit to Frankfort.

Connect Kentucky moved some of their offices from Bowling Green to Frankfort in late 2005. FPB is delighted that Connect Kentucky picked a municipal cable/telecom operator for their broadband, local phone, cable and security services. I suspect FPB was chosen for its good service and economical rates.

In 2005, staff members were invited to participate in community meetings in Anderson County. Even though FPB does not offer service in this county, the staff attended the first meeting. Months later, invitations to attend similar meetings in Franklin County were extended to FPB. My staff attended a few meetings but no longer attends these

community meetings in either county due to a lack of participation by other community members but also because of the perception by FPB regarding the relevance of the meetings to this community.

To my best recollection, this is the extent of the relationship between the Frankfort Plant Board and Connect Kentucky with respect to Mr. Mefford's claim of assistance in the expansion of our network. I'm sure our Board of Directors and customers would be pleased that this assistance was offered at no charge to FPB by Connect Kentucky.

In closing, we're proud of our network and the services we supply to Kentucky's Capital City. Our success in deploying broadband services to this community speaks for itself. I appreciate the opportunity to comment on the claim made by Mr. Mefford on behalf of Connected Nation in the July 11th letter. If additional information is needed, or if I can clarify points made herein, please do not hesitate to contact me at 502-352-4377 or at wcaines@fewpb.com.

Respectfully,

Warner J. Caines
General Manager

State Library of North Carolina
Government and Heritag

ATTACHMENT 7

Resources and Services

The Government and Heritage Library at the State Library of North Carolina serves state government and the people of North Carolina through services and access to specialized collections related to North Carolina government, history, and culture in a variety of formats. Experienced reference librarians are available to assist with research requests and locating resources for state employees, the General Assembly, and the public.

Government and Heritage Library Collections

Books and Videos/DVDs
- Over 135,000 books
- Strong collection on North Carolina, government and public policy, and data and demographics
- Over 5000 videos/DVDs on human resources, management, health and safety, and North Carolina

State Documents
- Official repository for North Carolina state government publications
- Over 143,000 historical and current documents

Newspapers
- Over 100 current North Carolina newspapers in print
- Over 35,000 reels of historic and current North Carolina newspapers on microfilm

Digital Collections http://statelibrary.dcr.state.nc.us/dimp/digital/index.html
- NC State Government Web Site Archives
- NC State Publications Collection

Databases http://statelibrary.dcr.state.nc.us/iss/EResources/EResources.htm
- Full-text current and historic newspapers, journals, and magazines
- Access from home or office with library card

Online Resources
- Online catalog http://go.dcr.state.nc.us
- E**NC**yclopedia http://statelibrary.dcr.state.nc.us/nc/cover.htm

Government and Heritage Library Services

Reference
- Professional librarians with expertise in demographics and statistical data; historical, legal, and genealogical research; and general reference services
- Assistance available at the library or by telephone, email, or fax

Interlibrary Loan
- State agency staff can request books and articles available at other libraries; some charges may apply.

Phone: (919) 807-7450
Email: slnc.reference@ncdcr.gov or http://statelibrary.dcr.state.nc.us/iss/forms/refform.htm
Fax: (919) 733-5679

House Select Committee on High Speed Internet in Rural Areas

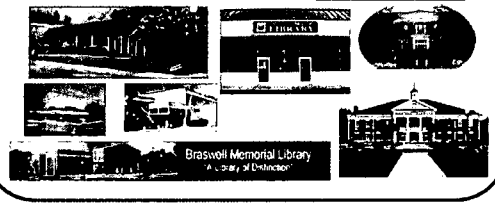
State Library of North Carolina
December 18, 2008

State Library of North Carolina

- State and Federal Statutory Mandates
  - Serve as information center for State government and the people of the State for promotion of knowledge, education, commerce and business of the State (GS 125-2)
  - Promote, aid, and equalize public library service in North Carolina through the Aid to Public Libraries Fund (GS 125-7)
  - Be the official, complete, permanent repository of all State government publications (GS 125-11)
  - Disseminate Federal funds to all types of libraries as authorized by the Library Services & Technology Act (20 USC 9101)
- Commissions (GS 143B)
  - North Carolina State Library Commission
  - North Carolina Public Librarian Certification Commission

North Carolina Public Libraries

- 77 Systems (386 library buildings)
  - Multi-County Regional (47 counties)
  - County (53 counties)
  - Municipal (10 cities)



Library Cooperation Summit

Library Cooperation Summit
August 27, 2008 in Boone, NC
"Let's Get the Ball Rolling"

Major Issue:

"A project that will make affordable and accessible bandwidth available across the entire state."

North Carolina Public Library Directors

Broadband in Public Libraries

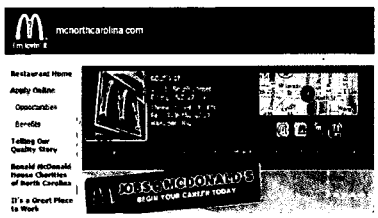
- Children
  - No computer at home
  - Computer literacy skills
  - Homework
  - Home schoolers

Broadband in Public Libraries

- Adults
  - Computer literacy skills
  - Resume skills
  - How to apply for jobs

Broadband in Public Libraries

Apply for jobs



"I got my job at the library"

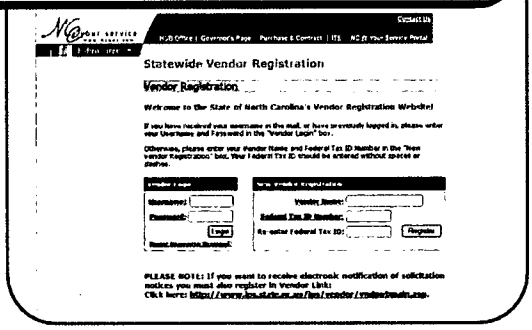
Reprinted with permission of the American Library Association

Broadband in Public Libraries

The Havelock Public Library serves

- the citizens of Havelock
- the students of the Craven Community College's Havelock Campus, and
- the families of the Cherry Point Marine Corps Air Station, who can stay connected during deployments at the public library.

Broadband for e-Government



Libraries Strengthen Communities

US House of Representatives

Committee on Education and Labor

Subcommittee on Healthy Families and Communities

Hearing: "*Examining the Role of Libraries and Museums in Strengthening Communities*"

September 11, 2008

Small Business Support

"For many small businesses, the library is the source for research and specially-trained and experienced staff they could not otherwise afford. Greg Skoog credits the Hickory Public Library in North Carolina for getting his transport company started. He used books from the library on writing a business plan and cash flow analysis; he used the Internet for market research and wrote his business plan in the library. Mr. Skoog says that basically, this library was his office for three weeks. He now employees 135 people."

LANCE TRANSPORT INC

NC LIVE

- NC LIVE provides the people of North Carolina with online access to a large and diverse collection of resources aimed at serving the educational, economic, and informational needs of everyday life.
- NC LIVE is a statewide collaborative among the nearly 200 public and academic libraries in North Carolina. Consisting of four Communities of Interest (COIs):
  - North Carolina public libraries, serving all 100 counties
  - University of North Carolina System libraries
  - North Carolina Community College System libraries
  - North Carolina Independent Colleges and Universities libraries
- NC LIVE offers users the highest quality, most authoritative resources in the information market place with content and indexing from more than 50,000 newspapers, journals, magazines, encyclopedias, e-books, e-audio, and streaming video titles.

PBS Videos

NC live .org ..... Media Collection .....

- **How will the videos impact my bandwidth?**
  - All Internet usage will impact your bandwidth, and audio and video files have a larger impact due to their size and network demand. NC LIVE has compressed the files substantially in order to have the least amount of impact on a user's connection as possible, but a minimum Internet speed of 175 Kbps will be necessary to adequately view the videos.

Library Services & Technology Act

Institute of Museum and Library Services

- Technology Grants Program Goal:

  "Promote equal access to 21st century library services for all North Carolinians by providing contemporary and evolving technologies to our state's libraries through programs designed to address infrastructure, resources and services."

Bill & Melinda Gates Foundation

BILL & MELINDA GATES *foundation*

U.S. LIBRARIES INITIATIVE
2008 Opportunity Online Hardware Grants

- The last Gates Foundation "hardware" grant program aims to ensure that public libraries have a minimum standard of public access computers (number and age of equipment); this grant also promotes working with local officials to established sustained local funding for computer replacements and upgrades.
- To date, the Gates Foundation has invested $325 million in grants to install and sustain computers in libraries and to train thousands of library staff in all 50 states and the U.S. territories.

Bill & Melinda Gates Foundation

BILL & MELINDA GATES *foundation*

U.S. Libraries Initiative
Broadband Assessment Project

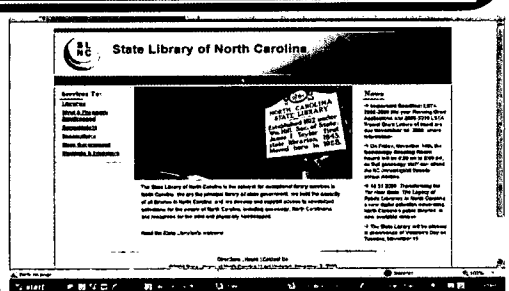
Current situation:

- Approximately 29% of public libraries have Internet speed of less than 1.5 Mbps, and more than 60% of those say the speed does not meet the needs of their users all or part of the time.

Our Goal:

- Help ensure that 85% of all U.S. public libraries have Internet speeds of ≥ 1.5 Mbps in the next three years; and are on a path to sustain adequate Internet service into the future.
- Build capabilities needed to sustain and increase connectivity speeds in public libraries going forward.

State Library Website



http://statelibrary.dcr.state.nc.us/

powerful tool for eryday questions

e and more North Carolinians are ng their answers using NC LIVE. it's making their lives a lot easier.

en an elderly man was diagnosed n lymphangiomatosis, his wife sought rmation on current treatment programs NC LIVE.

a college student who worked full-time, LIVE was a lifeline to the resources she ded to complete her assignments.

ouple building their own home did a little ging with NC LIVE and made smarter isions about contractors.

oung woman starting her own business covered a wealth of information on NC E, from national business trends to local rket facts to small business tax laws.

at questions can LIVE answer for you?

NC live .org

Answers anytime, anywhere.

A collaboration that works for North Carolina

Thanks to the generous support of the NC General Assembly, NC LIVE has offered North Carolinians free access to reliable information since 1998. NC LIVE is a collaborative program of nearly 200 public and academic libraries in North Carolina. It's a unique public-private partnership between state-funded organizations and the state's private colleges and universities including:

- University of North Carolina System
- North Carolina Community College System
- State Library of North Carolina and public libraries serving all 100 counties
- North Carolina Independent Colleges & Universities

Need help getting started?

Ask your librarian about NC LIVE, including the password designated for your library.

Supported 100% by the Institute of Museum and Library Services under the provisions of the federal Library Services and Technology Act as administered by the State Library of North Carolina, a division of the Department of Cultural Resources.

Need answers?

NC live .org

Answers anytime, anywhere.

's a library at your fingertips.

Every day brings new questions, whether you're at work, at school or at home. For the information you need, visit NC LIVE—North Carolina's online library service.

ANSWERS

Whatever information you're looking for—from health information to children's crafts to historical maps—you'll find it with NC LIVE. Because professional librarians select all the resources, you can trust that the information is reliable.

ANYTIME

NC LIVE is online, so it's available 24 hours a day. You can log on Saturday morning in your pajamas with a cup of coffee by your side. Up until dawn finishing a research project? NC LIVE wil be there to give you the facts you need.

ANYWHERE

NC LIVE is accessible from any computer with Internet access, so you're only a click away from the answers you need. Wherever you are—from Charlotte to Chapel Hill, from Murphy to Manteo, and all points in between—you have instant access to the resources on NC LIVE.

How can you be sure that what you find on the Internet is accurate?

You need more than a search engine. Rely on NC LIVE for books, magazines and newspapers—a library of information that is not readily available online. NC LIVE is a free service offered by North Carolina's libraries.

Who can use NC LIVE?

Any North Carolina resident with a library card can use NC LIVE. From students to executives, from professionals to retirees, anyone who needs access to research materials will appreciate NC LIVE.

What information can I access?

NC LIVE provides you free access to information sources that otherwise would be restricted—or available by subscription only. Through NC LIVE, you have free online access to a wide variety of information sources:

- **Newspapers**
  Not just today's news, but archives from past years
- **Journals and magazines**
  From *Harvard Business Review* to *Highlights for Children*
- **Quick reference**
  Encyclopedias and directories
- **A guide to almost 10,000 full-text periodical titles**
- **More than 22,000 electronic books**
- **Health information**
  Prescription drug facts and materials written for consumers and health care professionals
- **Historical materials**
- **Book reviews, poetry, reader's advisory**
- **Business resources**
  Company profiles, stocks, and more
- **Images and maps**

When can I access NC LIVE?

Anytime you like! Because NC LIVE is an onlin resource, you can use it 24 hours a day, 7 day week. It's the library that's always open.

Where can I access NC LIVE?

Wherever you have access to a computer con to the Internet—at home, at work or at nearly affiliated libraries across the state. This inclu public libraries and our state's public and pri colleges and universities, including communi colleges.

How do I use NC LIVE?

Outside the library, go online and type in the Web address: www.nclive.org. You'll be asked choose your institution and give a valid passv you have a library card, you can get a passwo your participating library.

It's simple. Type in the key words of the topic interested in. Then NC LIVE searches through than 30 databases to find the material. Or if y know what you're looking for, you can browse through our resources and choose the one yo

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ATTACHMENT 8

CONNECTED NATION.

WWW.CONNECTEDNATION.ORG

444 North Capitol St
Suite 224
Washington, DC 20001

1-877-846-7710

VIA ELECTRONIC MAIL

July 11, 2008

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: **Notice of Ex Parte Communication**
Notice of Ex Parte Communication in the Matter of WC Docket 07-38 (Broadband Data Collection)

Dear Ms. Dortch:

Today I, Brian R. Mefford, sent the attached letter to Chairman Kevin J. Martin with copies to Commissioner Michael J. Copps, Commissioner Jonathan S. Adelstein, Commissioner Deborah Taylor Tate, and Commissioner Robert M. McDowell.

In accordance with Rule 1.1206 of the Commission's Rules, a copy of this notice and attachments are being filed in the above-referenced proceeding.

Sincerely,

Brian Mefford
Chief Executive Officer

CONNECTED NATION.

WWW.CONNECTEDNATION.ORG

444 NORTH CAPITOL ST
SUITE 224
WASHINGTON, DC 20001

1-877-846-7710

July 11, 2008

Chairman Kevin J. Martin
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: WC Docket 07-38 (Broadband Data Collection)

Dear Chairman Martin:

Connected Nation is a recognized leader and innovator in developing and implementing comprehensive broadband deployment and adoption programs in several states, including Kentucky, Tennessee and Ohio. And for good reason. Connected Nation's programs have helped boost broadband availability in Kentucky from less than two-thirds of Kentucky households to over 95% in only four years, and similar progress is being made in Ohio, Tennessee, West Virginia and South Carolina. Connected Nation has worked with more than 4,000 state and local leaders, volunteers and service providers of all sizes who share the same purpose—to bring broadband services to the most rural areas of Kentucky and is undertaking the same program in other states. The primary beneficiaries of this success are individuals and businesses in smaller, rural communities in those states, where broadband access is rapidly becoming an essential economic development lifeline.

Connected Nation is proud of this achievement and is appreciative of the attention that this success has generated. Unfortunately, it is perhaps inevitable that this success and attention would breed several misconceptions and mischaracterizations as to how it was achieved. I am writing to you today to set the record straight in response to several unattributed misstatements made by the American Public Power Association (APPA) in meetings on July 1, 2008 with Commissioners Michael J. Copps and Commissioner Jonathan S. Adelstein.[1]

Without offering any alternative, APPA's letter presents four broad yet wholly inaccurate critiques and attacks upon our approach. First, APPA implies that the broadband data we collect and disseminate to state and local community leaders is "inaccurate" and is neither "transparent"

[1] Letter from Gloria Tristani, Spiegal & McDiarmid, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 07-38 (Jul. 2, 2008).

nor "verifiable." Second, APPA asserts that Connected Nation is somehow "dominated by incumbent telcos" and that our approach is "tilted" against municipal broadband providers and in favor of the private providers that "participate in and control" Connected Nation. Third, while APPA acknowledges that ConnectKentucky receives public funding, it mistakenly alleges that "there is no mechanism to ensure accountability" of those funds. Fourth, APPA wrongly asserts that Connected Nation is seeking to "lock in" its model at the federal level. These allegations are incorrect and I will address each of them in turn.

1. **The broadband availability data collected by Connected Nation/ConnectKentucky is accurate, detailed, comprehensive, transparent, and verifiable.**

Connected Nation – and by extension, ConnectKentucky – does not "shield" data. On the contrary, the very purpose of Connected Nation's maps is to make data *more* available to policymakers and consumers – at a far more granular level than the FCC's proposed approach would accomplish. These data are collected and used to expand broadband, promote economic development, and improve technology literacy and use. APPA asserts that "broadband deployment data must be collected and delivered in a transparent, verifiable manner," and we agree. That is precisely what ConnectKentucky was created to accomplish and what it has achieved, as the following summary of our operations demonstrates.

Broadband Data is Available to the Public

- ConnectKentucky maintains web-based, interactive GIS maps that demonstrate, down to a household level, where broadband exists and where it does not exist. These maps allow consumers and policymakers to view not only broadband data, but also a host of other granular data and analyses such as proposed roads and water/sewer lines, collocation resources such as cellular towers and water tanks, household density in areas not served by a broadband provider, among many other data. These maps are continuously updated with new data, and they are always available for public consumption. http://www.connectkentucky.org/broadband_landscape/interactive_map.php

- Beyond the maps, ConnectKentucky conducts statistical surveys in each county to measure computer/broadband adoption and barriers to adoption among both residents and businesses. The residential survey data are analyzed according to various demographics such as income, presence of children, race, and education attainment; and the business data are analyzed by industry sector and company size. All of these data are also posted on the website in detail. http://www.connectkentucky.org/research/kentucky_technology_trends.php

- Over the last three years, ConnectKentucky has worked with local leaders in all 120 of Kentucky's counties to develop a local strategic technology plan for each county and the communities within it. To accomplish this, ConnectKentucky provides to the general

public detailed information about the broadband inventory and survey results in each county. This information is publicly available for each county on our website at http://www.connectkentucky.org/find_your_county/counties/

- Aided with this information, community leaders in each county work with ConnectKentucky to develop local strategic technology plans. These plans contain best practices, the county's technology priorities, county-level broadband maps, and in-depth analysis of the survey data ConnectKentucky collects in each county. Here is one example from Pendleton county, one of the 120 county technology plans posted on ConnectKentucky's website: http://www.connectkentucky.org/find_your_county/counties/pendleton/index.php

- ConnectKentucky frequently generates detailed, customized maps and data reports for municipal governments, other policymakers, and economic development organizations. In fact, ConnectKentucky produces customized reports of its data upon request by any of these entities – and often before it is requested – in an effort to shed light and produce objective data for local officials to use. One example of the many custom mapping analyses that we conduct for local leaders is attached as an addendum to this document in Appendix A. This particular example is a wireless engineering assessment that ConnectKentucky conducted at no cost to Grant County and the city of Williamstown.

ConnectKentucky Data is Verified and Continuously Updated

- Connected Nation works with all willing broadband providers – 83 total providers across the state of Kentucky, including small providers and municipal systems – to gather broadband availability data down to the household level of granularity. Of course, most broadband providers do not have availability data at the household level, and so ConnectKentucky engineers and mapping technicians get out in the field with many of these providers to help them gather these data that are then translated into Geographic Information Systems (GIS) format for the broadband maps. This is a labor intensive process that Connected Nation undertakes and, as discussed above, presents transparently to the general public.

- We constantly maintain, update and correct this information where necessary, in an open and transparent manner. Broadband adoption is growing rapidly and any one "map" will rapidly become dated unless the information is constantly updated. We actively seek to verify the information obtained from broadband providers directly with local community leaders and consumers. This process has many facets. Through grassroots awareness campaigns and the ConnectKentucky website, consumers are encouraged to perform an address search on the ConnectKentucky broadband map to find out which broadband

providers have service available where they live. If consumers discover that the map is incorrect, they are encouraged to email or call ConnectKentucky's toll-free number to help make the map more accurate. This consumer information is used to make corrections to the map at a street and household level to ensure accuracy at the lowest level of granularity. This highly transparent system of consumer oversight and verification was developed to provide a critical quality control on the mapping process.

- This consumer feedback mechanism is not limited to verification of broadband data. Indeed, the ultimate goal is to ensure consumers are able to obtain complete information about the broadband services available (or unavailable) to them, in an effort to inform consumers, increase broadband use, and to aggregate demand for increased broadband deployment. To that end, consumers are also encouraged to email or call Connected Nation if they need help interpreting the maps, if they can't access the maps but want to understand their broadband options, and finally, if they want to subscribe to broadband but cannot because broadband is unavailable where they live. This information on pent-up consumer demand is then aggregated and used in combination with other data to help build the business case for broadband deployment into unserved areas. Connected Nation has responded directly to more than 5,500 broadband inquiries.

- As a result, we are befuddled by APPA's blanket assertions—without citation or attribution—that unnamed "independent sources" have found ConnectKentucky's broadband mapping data is not accurate. As discussed above, if there are areas where our maps indicate that broadband is available but it is in fact not, we would like to know and have provided a multitude of tools for consumers, businesses and policymakers to report that fact. Indeed, APPA's unnamed "sources" could readily utilize the tools we make available that are intended to provide quality controls for our maps, precisely for this purpose. Either these "sources" do not in fact have such examples of inaccuracies or, if they do, they apparently have chosen to keep this information a secret. In which case, it would appear that APPA's unnamed sources seem less interested in pushing the deployment of broadband infrastructure and more interested in pushing a particular (and similarly secret) agenda.

2. Connected Nation and its subsidiaries work with all broadband providers on a technology-neutral basis, and provide substantial engineering and technical support to public and municipal broadband systems.

Connected Nation is a transparent, 501(c)(3) organization that receives the vast majority of its funding from public resources. In every state we operate, we work with all broadband providers, including public and municipal systems, start-up wireless Internet Service Providers, large and small local fixed-line and wireless telephone companies, and cable companies. APPA's

unsupported statement that we are "dominated by incumbent telcos" could not be further from the truth.

ConnectKentucky is primarily funded by state government funds. Indeed, 80% of the ConnectKentucky budget stems from public funds and 20% is donated by the private sector. There are no "membership" fees to ConnectKentucky or any Connected Nation program. Private sector companies make donations to ConnectKentucky programs at various levels, both financial and in-kind. The private sector funding includes donations such as computers, printers, software and financial support to our award-winning No Child Left Offline® program, which distributes these materials into the homes of low-income children and disenfranchised citizens. Every dollar or in-kind contribution that ConnectKentucky receives is reinvested directly in communities across Kentucky to achieve the goal of digital inclusion and universal broadband availability. Connected Nation follows that model in every state in which we operate.

The support and participation of this broad coalition of contributors—including the private sector—is key to our success. An effective means of expanding broadband availability is to bring the public sector, private sector, and nonprofit sector together to achieve this common goal. The FCC correctly recognized the value of these public-private partnerships in its recent *Broadband Data Gathering NPRM.*[2] The involvement of the for-profit private sector, to which APPA appears to object—is necessary for success. Commissioner Copps has called for "a coordinated public-private partnership to meet this central infrastructure challenge of our time," and stated that "we can tackle this one . . . with business, government and communities all pulling together to get the job done."[3] We agree. The inclusion of the private sector alongside the government and community is integral. It is misguided and wrongheaded to imply, as APPA does, that the private sector should be excluded from this process.

Connected Nation's approach is not in any way tilted in favor of participating providers or against municipal broadband providers. Quite to the contrary—we work with all willing providers of all technologies including many of the largest municipal and public sector broadband providers in the country. Indeed, we invest far more time and resources working with small providers, such as wireless Internet Service Providers and small cable and telephone systems, than with large providers. These smaller entities are the primary beneficiaries of our

---

[2] *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership,* WC Docket No. 07-38, Report and Order and Further Notice of Proposed Rulemaking, FCC 08-89 (rel. Jun. 12, 2008) ("*NPRM*") at ¶ 34 ("We note that the ConnectKentucky program, along with other efforts at the state and local level, has facilitated identification of areas without broadband service, and that this identification has resulted in public and private resources being focused to provide service to unserved areas.").

[3] Remarks of Commissioner Michael J. Copps, Pike and Fischer's Broadband Policy Summit IV, Washington, DC (Jun. 12, 2008) (available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-282890A1.pdf).

technology and engineering expertise, which we provide for free. (An example of such engineering expertise provided by ConnectKentucky can be seen in Appendix A). ConnectKentucky works directly with municipalities in every county across the state, and has helped develop a number of public broadband projects. For example:

- ConnectKentucky works with 83 Kentucky broadband providers, which I list as Appendix B to this document. A quick perusal of this list shows that the vast majority of these providers are a combination of small, rural cable companies, rural independent telephone companies and cooperatives, and wireless Internet service providers. These are the very companies that are most likely to serve rural areas where the needs are the greatest and where much of Connected Nation's work is focused.

- We have worked directly—on the ground—with a multitude of local governments in designing, planning and building public broadband systems. In Kentucky, ConnectKentucky conducts free wireless engineering assessments to identify existing towers and other vertical assets that can be used for the proposed network, to determine the feasibility of the proposed network, and to produce GIS propagation studies that demonstrate the households which could be served through a proposed wireless network. All of this information is provided to government officials and interested providers. ConnectKentucky has conducted such wireless assessments for local governments in 25 counties in Kentucky. As noted above, an example of a wireless assessment conducted for Grant County is attached as an addendum. In addition, ConnectKentucky often helps develop RFPs to assist governments that are searching for vendors to construct these networks for them. We provide all of this work free of charge, of course. And *not one* of the vendors ultimately selected for these projects has been an incumbent cable or local telephone company provider.

- ConnectKentucky has worked directly with at least ten municipal utilities/providers on expanding their networks. They include the City of Berea, the City of Williamstown, Frankfort Plant Board, and Bowling Green Municipal Utilities, among many others, again at no charge to the local government.

- ConnectKentucky actively supported and facilitated the development of Kentucky's (and perhaps the nation's) largest public broadband project – ConnectGRADD. In recognition of this achievement, ConnectGRADD received the 2006 Spirit of Kentucky award. ConnectGRADD is a publicly supported wireless broadband project that spans seven counties in the Green River Area Development District, an area the size of the state of Delaware. ConnectKentucky conducted the wireless engineering assessments for this project and helped develop the RFP.

- APPA's assertion that ConnectKentucky "tends to promote telco-provided broadband to local businesses" is incorrect. ConnectKentucky is technology neutral, and it promotes

all broadband services equally, wherever they are present. There are certainly more areas in Kentucky where telephone companies provide service than there are areas where municipals provide service, and so it would make sense that there may be a greater number of businesses with access to DSL service over commercial telephone service. But as discussed above, we have worked with a number of publicly-owned networks and municipalities to research technology alternatives, particularly wireless, for their communities.

3. There are effective public mechanisms to track ConnectKentucky's use of public funds.

APPA claims, again without support, that "there is no effective mechanism to ensure accountability as to how CK actually uses" public funding. This is inaccurate. ConnectKentucky receives grant funding from contracts with the Kentucky Cabinet for Economic Development and the Kentucky Governor's Office for Local Development. As such ConnectKentucky is subject to regular reporting requirements, audits, and record-keeping requirements. Moreover, as a nonprofit 501(c)(3) organization, ConnectKentucky must file its revenue and expenditures with the IRS every year in order to maintain that status.

4. Connected Nation supports broadband deployment models that work and does not seek to "lock in" any one particular approach.

Connected Nation supports proposed federal legislation that would provide states the flexibility to develop public-private partnerships for mapping broadband and stimulating demand for broadband. That said, Connected Nation is not interested in "locking in" any particular model. We support models that work, and while it took years of research and progressive dialogue in Kentucky to achieve, we are proud to say that the Connected Nation model has proven to work. There is no one-size-fits-all approach to solving what Commissioner Copps has called the "central infrastructure challenge of our time." As a result, we frequently provide advice and assistance to state and local leaders that are interested in exploring their own specific approaches, and we support those efforts and will work with them and offer our expertise to them in any way they wish. Most recently, Connected Nation has worked on a consulting basis with the California Emerging Technology Fund to help build local and regional coalitions for stimulating broadband demand.

* * *

I am very proud of the success that Connected Nation has achieved in the last five years, in Kentucky and now in several other states across the country. Our basic premise is that solving the broadband divide requires the cooperation of the public, private and nonprofit sectors of our economy, and the public-private partnership models we have built in Kentucky, Tennessee, Ohio, West Virginia and South Carolina demonstrate that such an approach yields near-

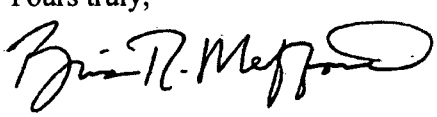
immediate results. There is a strong momentum behind establishing similar programs from states and localities across the nation.

I hope that as the Commission explores its own broadband availability mapping program, it looks at and studies the reasons for our success. And in these efforts, I certainly hope that the Commission will not attempt to cut off the momentum that is building in support of public-private partnership approaches and instead seeks to build upon and leverage the success of public-private partnerships as part of a comprehensive, nationwide broadband strategy.

In your deliberations on this matter, I encourage the Commission to learn more about how Connected Nation operates and the specific methods it uses. I encourage you to visit the community centers and food banks where we distribute computers and offer free computer training to disenfranchised populations. I encourage you to talk to the small and start-up broadband service provider entrepreneurs that have benefitted from our research and engineering skills. I encourage you to attend an eCommunity Leadership Team meeting in one of the hundreds of local jurisdictions that we operate, where we bring elected officials, community and business leaders, and providers together to talk about the particular, localized infrastructure challenge that that community faces. I encourage you to talk to the mayors and city councils of the municipalities that we literally helped connect to the rest of the world through broadband. I encourage you to speak with the business and nonprofit leaders in those communities that are now able to use new broadband infrastructure to bring jobs and economic opportunities to those rural and insular areas.

In short, I encourage the Commission to learn the facts. The deployment of broadband infrastructure to all Americans is far too critical and far too important a policy challenge to be caught up in the unsubstantiated allegations, incorrect and secret accusations, and factual misstatements that APPA has raised about our work. I hope that this letter sets the record straight. If you have any further questions, please do not hesitate to contact me.

Yours truly,



Brian R. Mefford
Chief Executive Officer
Connected Nation, Inc.

cc: Commissioner Michael J. Copps
Commissioner Jonathan S. Adelstein
Commissioner Deborah Taylor Tate
Commissioner Robert M. McDowell

APPENDIX A:
CONNECTKENTUCKY WIRELESS ASSESSMENT
FOR
GRANT COUNTY, KENTUCKY

Introduction:

On October 11, 2006 Joe Mefford (ConnectKentucky) and Chip Spann (a wireless consulting engineer for ConnectKentucky) met with Mayor Glenn Caldwell and the Assistant Cable Superintendent Mr. Roy Osborne. At the conclusion of the meeting the CK members were asked to conduct an assessment of the Grant County area to determine the feasibility of deploying a fixed wireless Internet system in the county. A large portion of the County does not have access to any type of broadband service.

The CK wireless consulting engineer received site specific information from Mr. Osborne required for:

- determining use of existing towers; and
- designing a fixed wireless Internet system comparable in scope to the design already in hand by Williamstown officials; and
- extending Internet coverage into the unserved and under served areas of Grant County.

Coordinates were provided for the sites and for substitute sites suggested by Mayor Caldwell and Mr. Osborne. Tower heights were also provided so that a line-of-site ("LOS") assessment could be completed. LOS calculations were conducted to determine possible redundancy design. Several towers can be interconnected to the existing fiber system.

Topology and Morphology Assumptions:

- Ground clutter is sparse throughout the region. Of the approximate 9,306 housing units in the county 53.4% are single family, single story dwellings. The majority of these homes are situated along the I-75 corridor. Foliage is above average for this area and an interference factor of 35% was used in this area to compensate for dense deciduous hardwood.

- LOS exists between most of the towers.

Original Towers Studied:

Tower 1:	(Humes Ridge)	38° 39' 08.1" N x 084° 33' 59.5" W – Estimated AGL 120'
Tower 2:	(AT&T)	38° 37' 55.4" N x 084° 33' 11.7" W – Estimated AGL 360'
Tower 3:	(Dry Ridge)	38° 40' 45.5" N x 084° 35' 01.4" W – Estimated AGL 125'

Tower 4: (Unknown) 38° 38' 00.8" N x 084° 39' 51.8" W – Estimated AGL 145'
Tower 5: (Crittenden) 38° 47' 02.4" N x 084° 36' 26.5" W – Estimated AGL 100'
Tower 6: (Corinth) 38° 29' 36.2" N x 084° 33' 18.6" W – Estimated AGL 90'

Additional Towers Studied:

Tower 7: (Dry Ridge Tower) 38° 40' 54.1" N x 084° 36' 10.8" W – Estimated AGL 130'
Tower 8: (Sherman Tower) 38° 43' 57.5" N x 084° 35' 54.4" W – Estimated AGL 120'
Tower 9: (Hilltop Tower) 38° 36' 28.9" N x 084° 34' 34.2" W – Estimated AGL 125'
Tower 10: (Keefer Tower) 38° 31' 30.7" N x 084° 35' 08.7" W – Estimated AGL 120'
Tower 11: (Depot Tower) 38° 38' 03.4" N x 084° 33' 57.0" W – Estimated AGL 130'

Crown Castle Towers Available in Grant County (Not Studied):

Site ID 805252: (Dry Ridge) 38° 44' 15.5" N x 084° 36' 14.3" W – Actual AGL 300'
Site ID 815891: (Dry Ridge) 38° 43' 30.0" N x 084° 38' 29.0" W – Actual AGL 285'
Site ID 811160: (Williamstown) 38° 35' 22.0" N x 084° 34' 38.2" W – Actual AGL 285'

Engineering Notes:

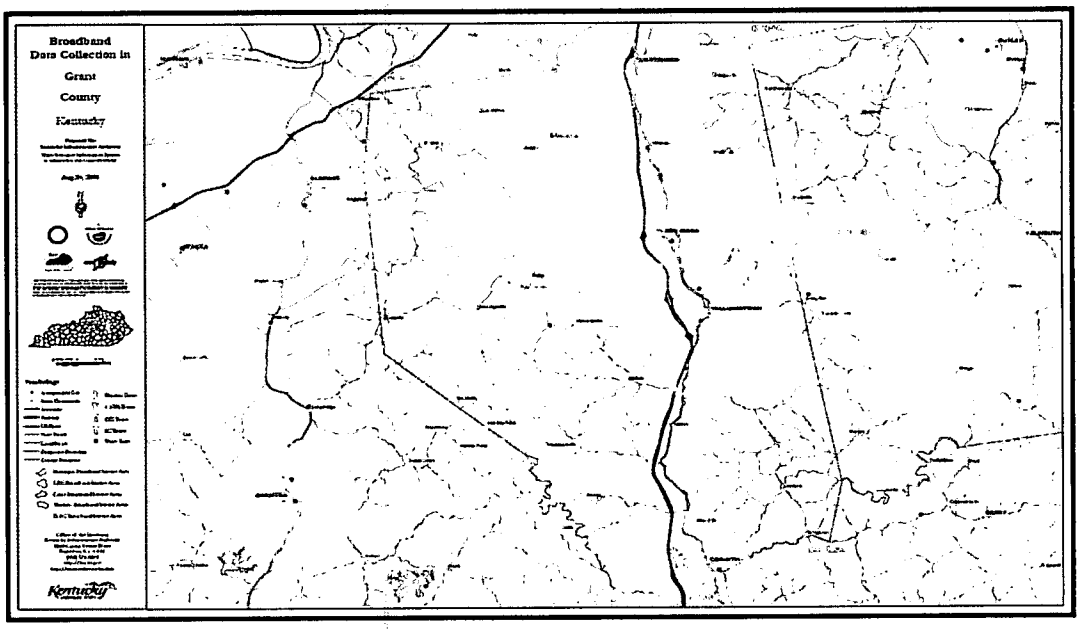
Crittenden (T5): 180° antenna oriented at 170° covering 80° through 260°.
Corinth (T6): 180° antenna oriented at 330° covering 240° through 60°.
Keefer (T10): 180° antenna oriented at 300° covering 210° through 30°.

The following towers can deploy either a 360° antenna; or three 120° antennae: Dry Ridge tower (T7), Hilltop (T9) and T4.

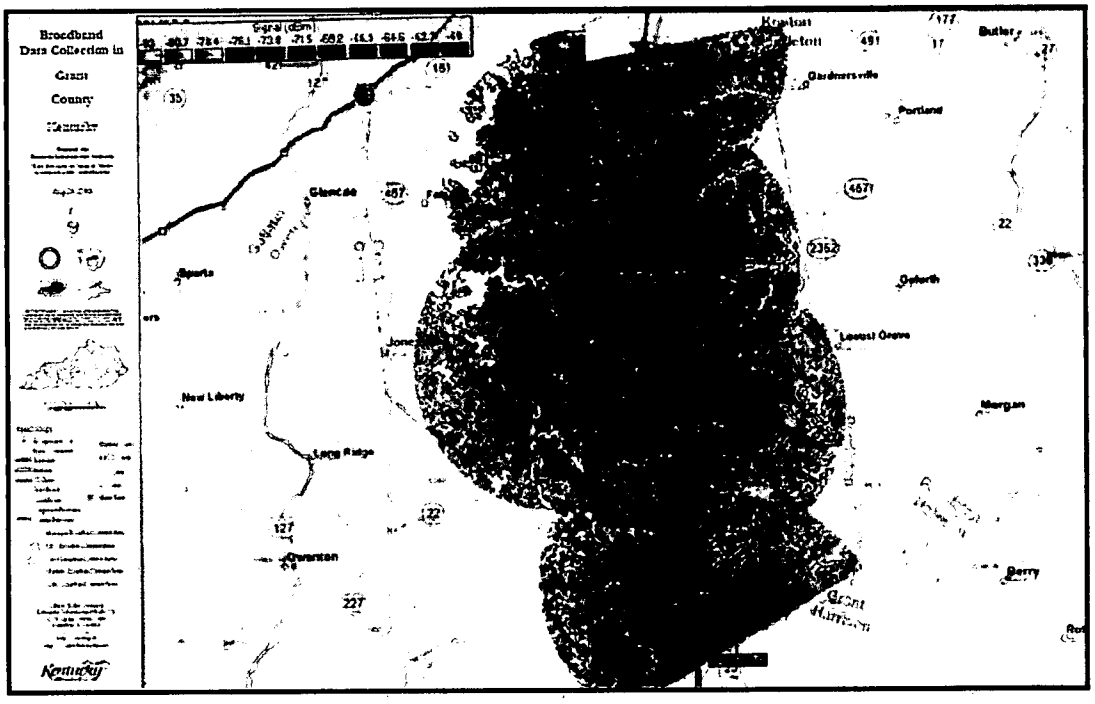
The water tank near Mt. Zion could also be used, deploying a 180° antenna with the main lobe oriented at 270° covering an area on the compass from 180° through 360°. This would extend coverage to within ¾ of a mile outside the town of Folsom (included in engineering design above) In either pricing scenario above, the network is completely redundant with all 7 towers (including Mt. Zion) interconnected with Canopy 5.7 GHz PTP radios. These units are rated at a raw throughput of 20 Mbps and can actually perform in a 7 Mbps x 7 Mbps full duplex (14 Mbps) role.

Throughput can be increased by upgrading the PTP links from Canopy to Orthogon Spectralite units. The difference in pricing is approximately $10,000/pair but allows the path to run at a 45 Mbps raw rate and/or approximately 16 Mbps x 16 Mbps.

GRANT COUNTY BROADBAND COVERAGE BEFORE USING WIRELESS



GRANT COUNTY BROADBAND COVERAGE AFTER USING WIRELESS



Estimated Equipment Cost:

Using **a simple design** (outlined below) where each tower deploys a single Motorola Canopy Advantage AP and antenna the costs for the system (including spares) and the first 150 CPE the cost **is estimated to be $129,632.21**

Using **a more aggressive approach** (3 APs and transmit antennas at the Dry Ridge, Hilltop and T4 site the cost **rises slightly to $165,523.98.**

The simple design provides maximum coverage and at speeds of 512 kbps could serve approximately 200-250 households with simultaneous use. Customer premise equipment, including antenna, brackets and hardware is estimated in the range of $265 - $325 per unit. By purchasing all CPE at one time the per unit cost of the Canopy SMs will be $255/unit (+ antenna, brackets, band clamps, etc.)

Tower (Simple)	Equipment	Qty.	$/Unit	$ Total
Base 6 + Mt. Zion Transmit Equipment	900 MHz Advantage AP (Connectorized)	7	1,558	10,906
	CMM Micro	7	1,160	8,120
	11 dBi 180° Antenna	3	585	1,755
	12 dBi 120° Antenna	1	395	395
	10' GPS Cable for CMM	7	25.85	180.95
	Surge Suppressor	7	26.50	185.5
	Belden 7919A CAT5e Outdoor UV Rated 1,000'	2	245.88	491.76
	900 MHz 13 dBi Omni Antenna	3	1,375	4,125
	8 Pin RJ45 50 Micron Gold Connectors (100)	10	36	360
	Construction Labor –Flat Rate Per Day	10	1,500	15,000
	Canopy 5.2 GHz 20 Mbps PTP Links (individual)	14	1,395	19,530
Customer Premise	900 MHz SM (25 Pack - Connectorized)	6	7,250	43,500

	Mars 10 dBi External Antennas	75	60	4,500
	Stinger 6 dBi Antenna	75	57	4,275
	Universal Mounting Brackets	150	22.50	3,375
	Universal Power Supplies	150	8.92	1,338
	Surge Suppressor	150	26.50	3,975
	½" Round Band Strap Member Adapters (10)	15	35	525
Spare Equipment	1 of Each Transmit Equipment			7,095
	Total Investment (excluding CPE install labor)			**$129,632.21**

APPENDIX B:

LIST OF BROADBAND PROVIDERS INCLUDED IN CONNECTKENTUCKY'S BROADBAND INVENTORY MAPS

1. ACCESS CABLE TELEVISION
2. ACCESS KENTUCKY
3. ALTIUS BROADBAND
4. ARMSTRONG UTILITIES
5. AT&T
6. BALLARD RURAL TELEPHONE COOPERATIVE
7. BARBOURVILLE UTILITY COMMISSION
8. BARDSTOWN MUNICIPAL UTILITIES
9. BIG SANDY TV CABLE
10. BLUEONE.NET - PENDLETON COUNTY
11. BOWLING GREEN MUNICIPAL UTILITIES
12. BRANDENBURG TELEPHONE COMPANY
13. BURGIN WIRELESS
14. CAINPRO COMMUNICATIONS
15. CEBRIDGE CONNECTIONS
16. CHAPEL COMMUNICATIONS
17. CINCINNATI BELL TELEPHONE
18. CITY OF BELLEFONTE
19. CITY OF RACELAND
20. COALFIELDS TELEPHONE
21. COMCAST CABLE
22. DCI
23. DUO COUNTY TELECOM
24. DUO COUNTY TELEPHONE COOPERATIVE CORPORATION
25. FOOTHILLS RURAL TELEPHONE COOPERATIVE CORPORATION
26. FRANKFORT ELECTRIC & WATER PLANT BOARD
27. GALAXY CABLEVISION
28. HARLAN COMMUNITY TV
29. HENDERSON MUNICIPAL POWER & LIGHT COMPANY
30. HIGHLAND TELEPHONE COOPERATIVE
31. HOPKINSVILLE ELECTRIC SYSTEM
32. INSIGHT COMMUNICATIONS
33. INTERMOUNTAIN CABLE
34. IRVINE COMMUNITY TELEVISION
35. KEN-TENN WIRELESS, LLC
36. KVNET
37. KYWIFI
38. KYWIMAX
39. LESLIE COUNTY TELEPHONE

40. LEWISPORT TELEPHONE COMPANY
41. LIBERTY COMMUNICATIONS, INC
42. LIMESTONE CABLE VISION
43. LOGAN TELEPHONE COOPERATIVE
44. LYCOM
45. MAYFIELD ELECTRIC AND WATER SYSTEMS
46. MEDIACOM
47. MEGA-WI
48. MONTICELLO PLANT BOARD
49. MOUNTAIN TELEPHONE COOPERATIVE
50. NETPOWER, LLC
51. NEWWAVE COMMUNICATIONS
52. NORTH CENTRAL TELEPHONE COOPERATIVE
53. OHIO COUNTY DIRECT NET
54. OWENSBORO MUNICIPAL UTILITIES
55. PEOPLES RURAL TELEPHONE COOPERATIVE CORPORATION
56. PRINCETON ELECTRIC AND PLANT BOARD
57. PRITCHTECH
58. RIVERSIDE COMMUNICATIONS
59. RUSSELLVILLE ELECTIRC PLANT BOARD
60. SALEM TELEPHONE COMPANY
61. SCS WIRELESS
62. SHELBY WIRELESS
63. SIT-CO (FORMERLY OHIO VALLEY WIRELESS)
64. SOUTH CENTRAL RURAL TELEPHONE COOPERATIVE CORPORATION
65. SOUTHEAST TELEPHONE
66. SPEEDBEAM
67. SSINET
68. SUDDENLINK
69. TDS
70. THACKER-GRISBY TELEPHONE COMPANY
71. TIME WARNER CABLE
72. TV SERVICE & UNITED CABLE
73. US DIGITAL ONLINE
74. VORTEX WIRELESS
75. VVDS
76. WEBCATS NETWORKS
77. WEST KENTUCKY NETWORKS
78. WEST KENTUCKY RURAL TELEPHONE COOPERATIVE CORPORATION
79. WILLIAMSTOWN CATV
80. WILLIAMSTOWN UTILITY COMPANY
81. WIMAX EXPRESS
82. WINDSTREAM
83. WORLDWIDE GAP

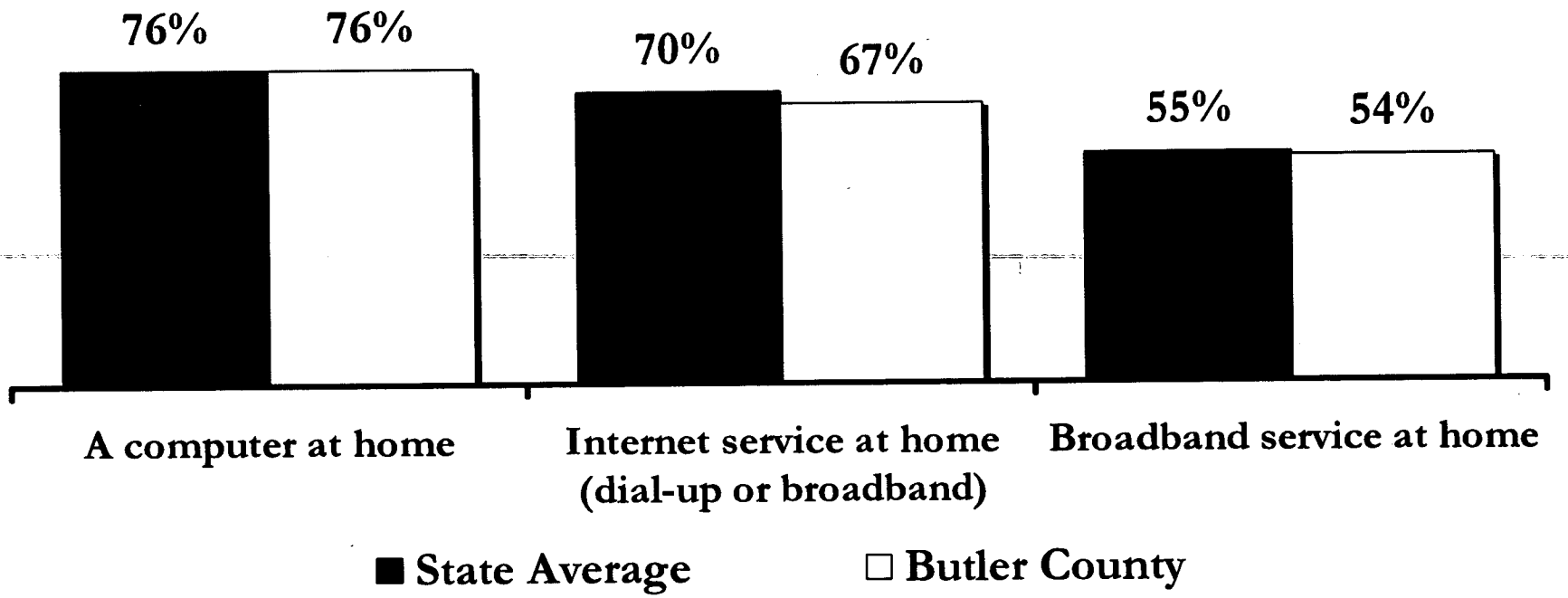
CONNECT OHIO

2008 Connect Ohio Consumer Technology Assessment for Butler County, Ohio

CONNECT OHIO

Residential Technology Assessment for Butler County

Percent of adult residents who have:



(n = 102 Butler County residents, weighted by age and gender)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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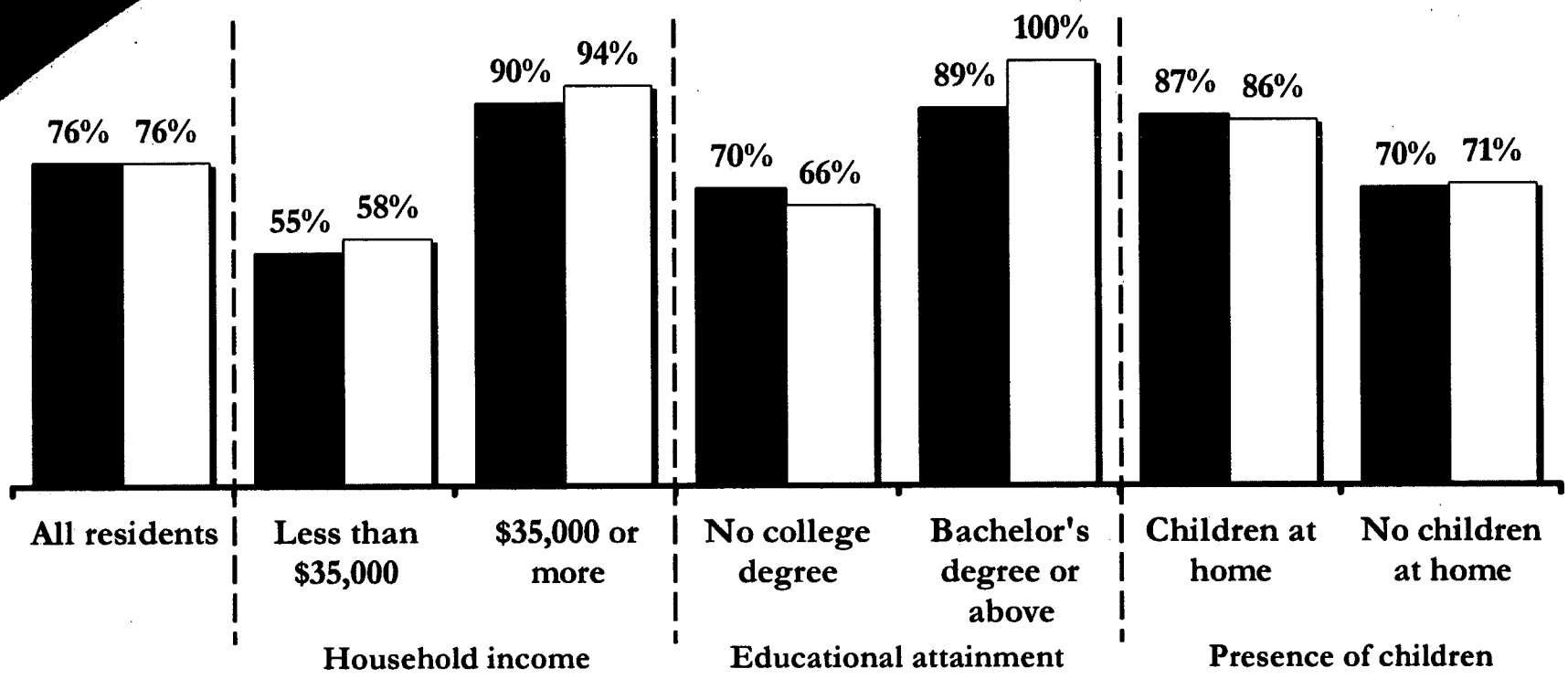
CONNECT OHIO

Computer Ownership in Butler County



■ State Average □ Butler County

(n = 102 Butler County residents, weighted by age and gender)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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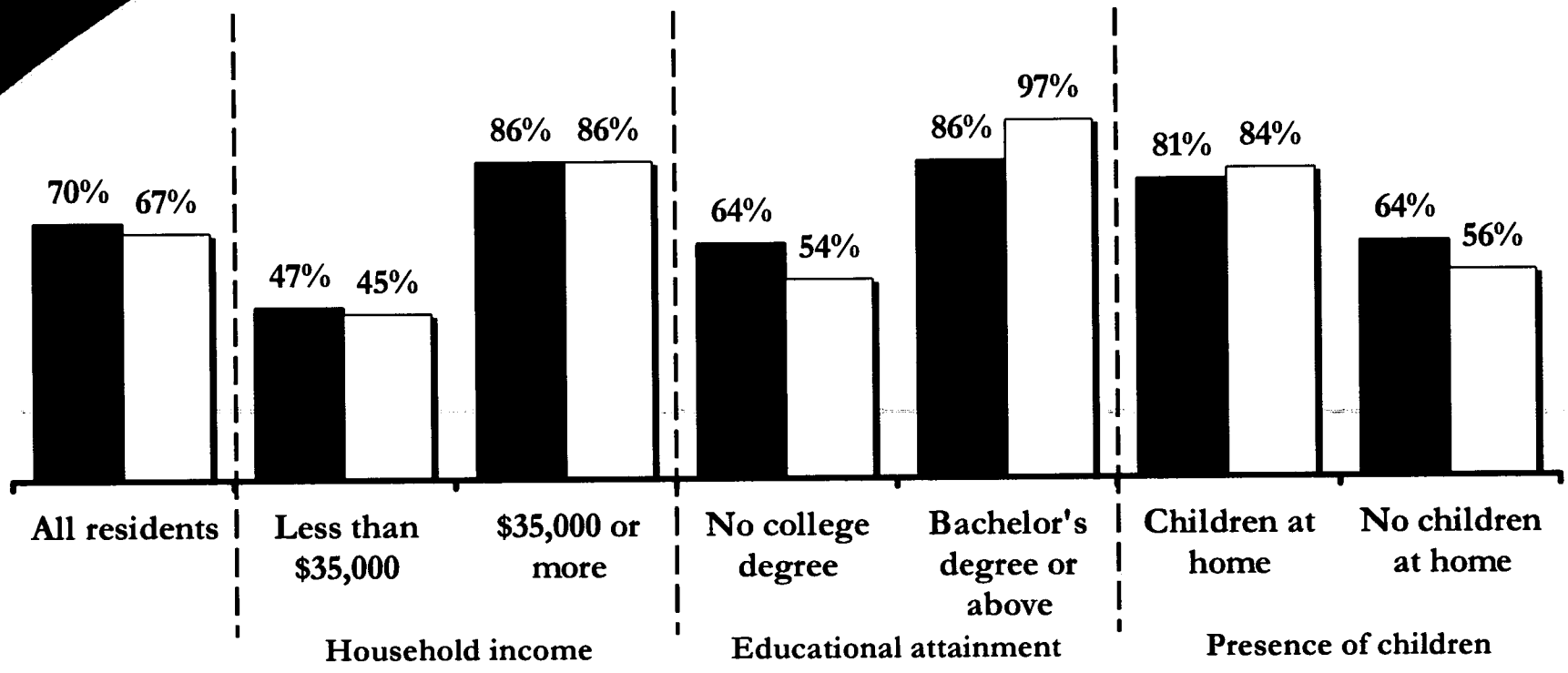
Internet Adoption (Dial-Up or Broadband) in Butler County



(n = 102 Butler County residents, weighted by age and gender)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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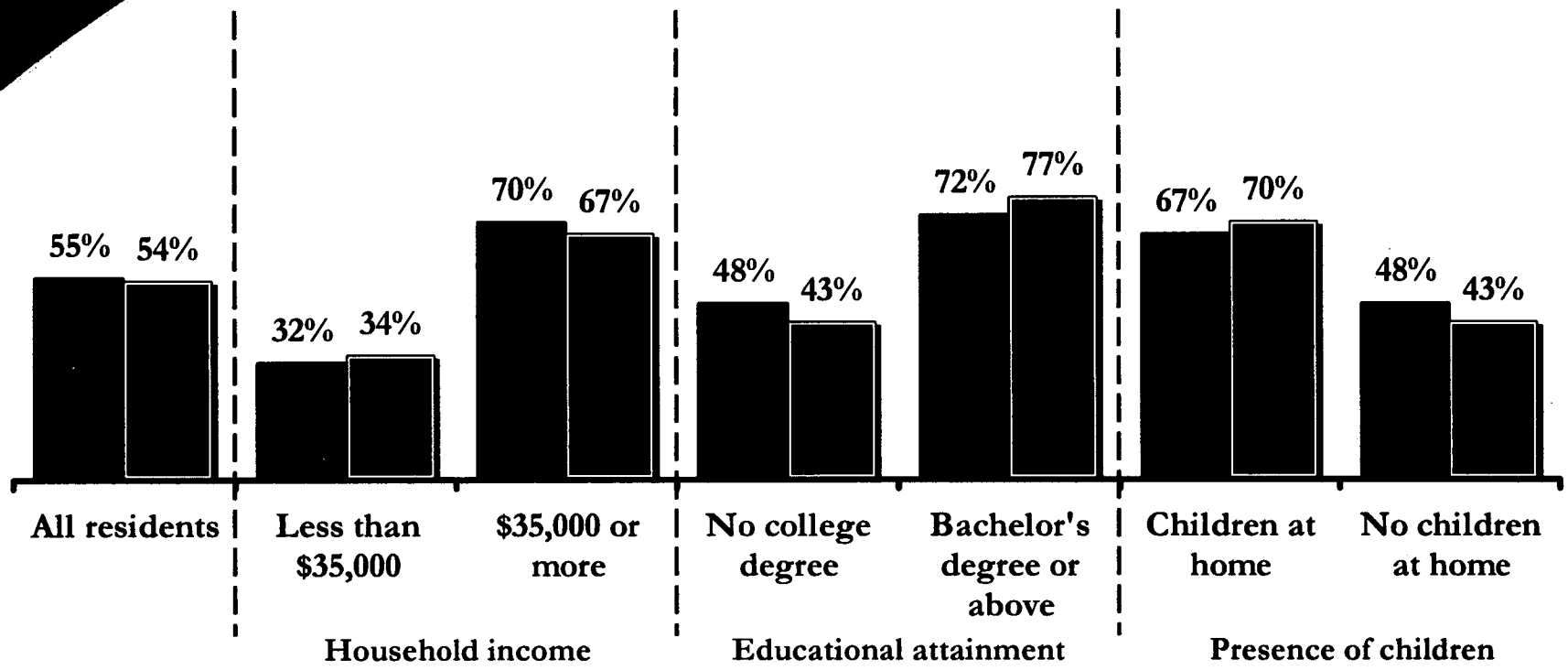
Broadband Adoption in Butler County



(n = 102 Butler County residents, weighted by age and gender)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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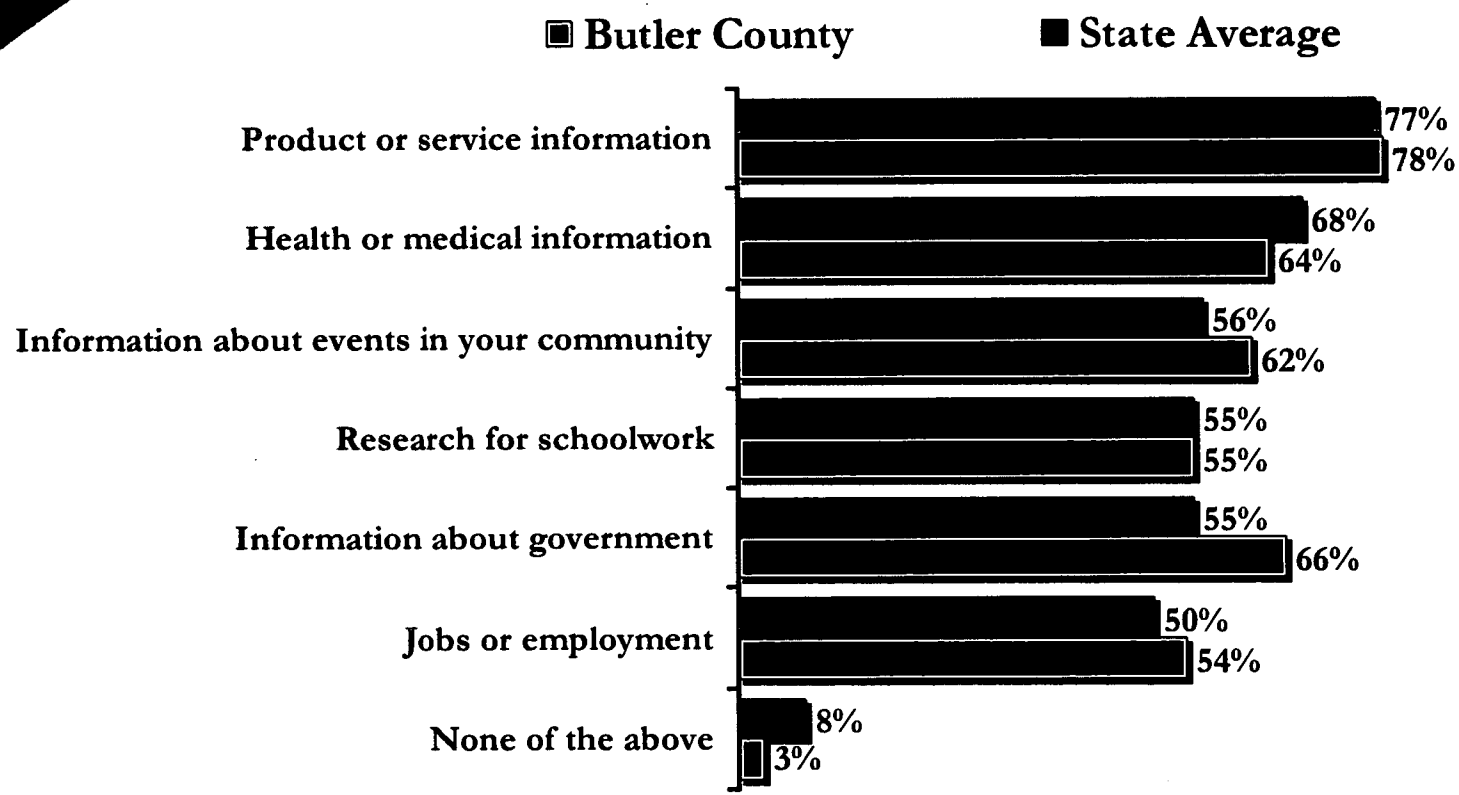
Online Activities Among Butler County Internet Users

CONNECT OHIO

Searching for Information Online

Percent of Ohio Internet users who search for the following types of information:



Q: Which of the following types of information have you used the Internet to look for online?
(n = 949 OH residents who use the Internet, and 71 Butler County residents who use the Internet)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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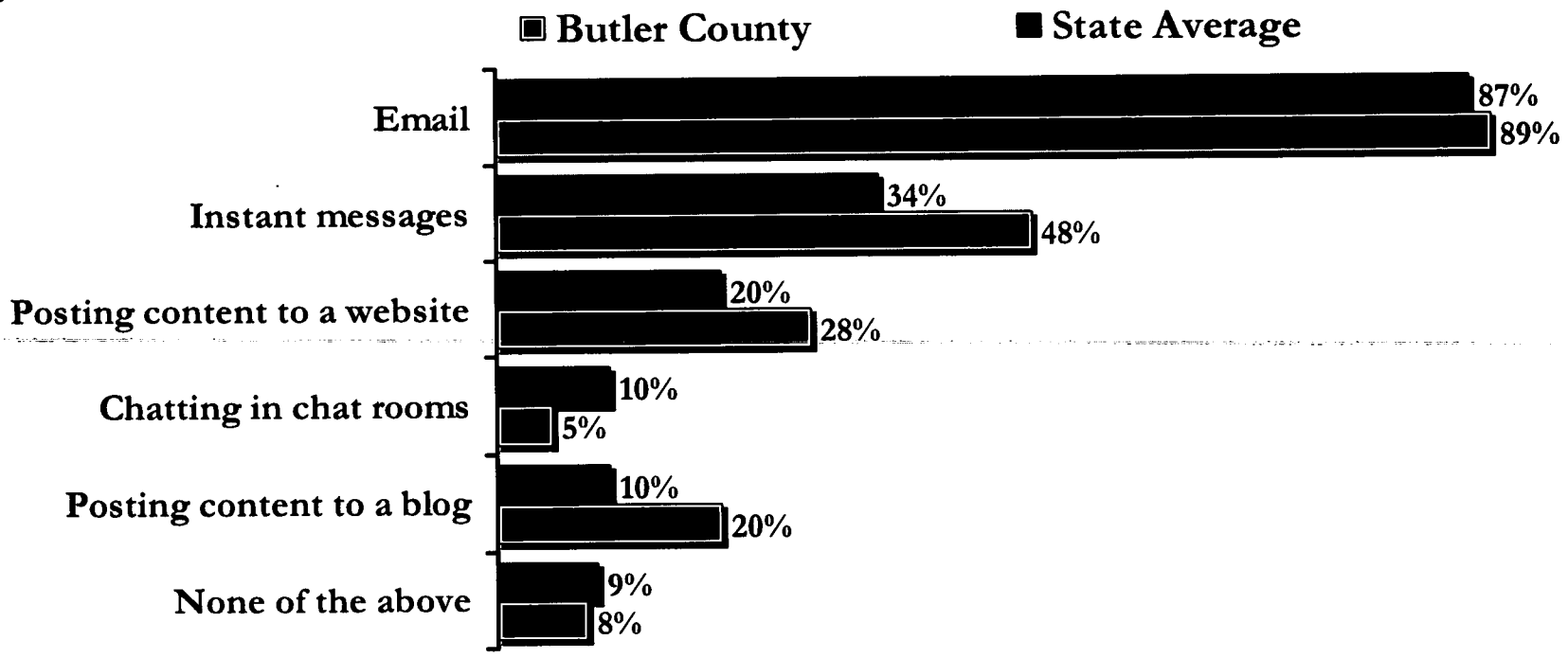
Communicating With Others Online

Percent of Ohio Internet users who communicate with others in the following ways:



Q: Which of the following ways of communicating with others do you use?
(n = 949 OH residents who use the Internet, and 71 Butler County residents who use the Internet)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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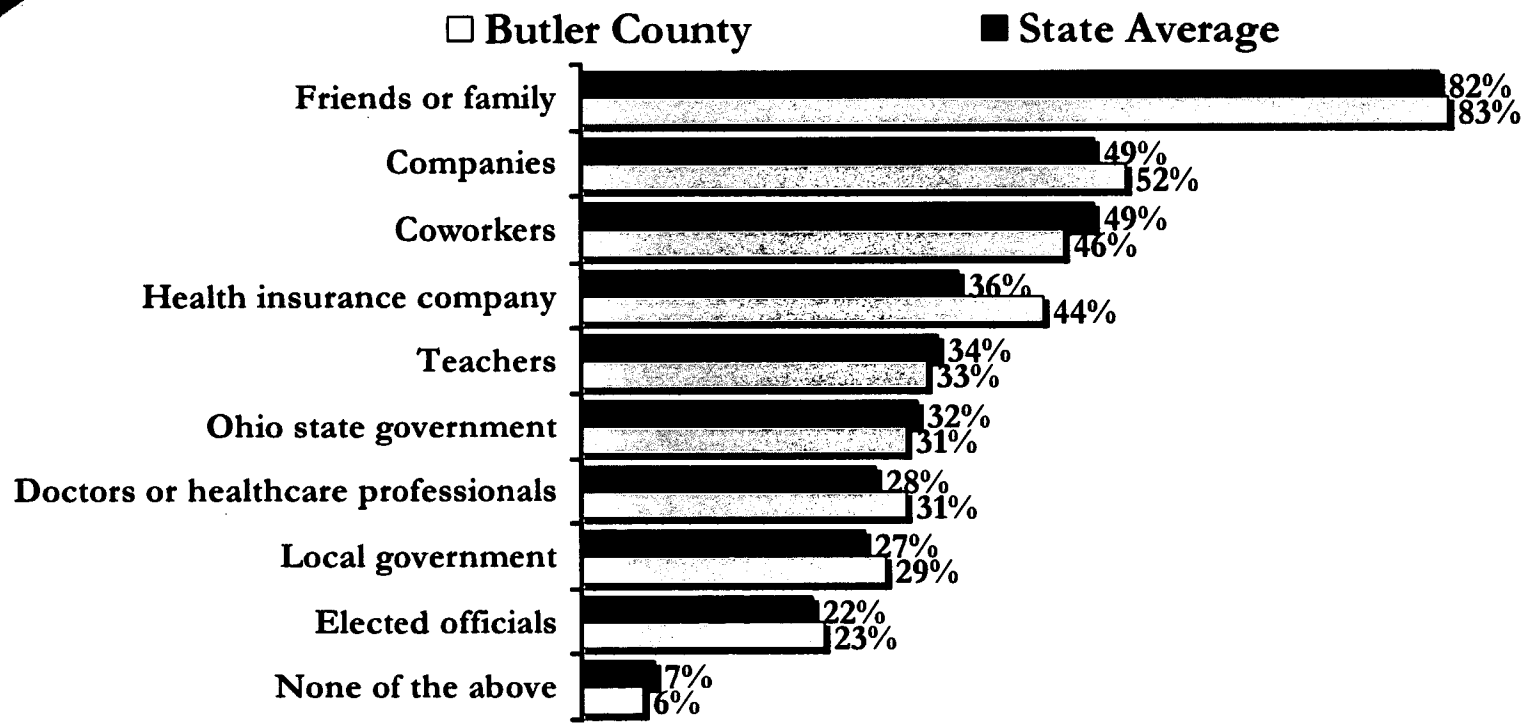
Interacting Online

Percent of Ohio Internet users who interact with the following individuals or organizations:



Q: Which of the following types of individuals or organizations have you interacted with online, by visiting a website or communicating with online to obtain information?
(n = 949 OH residents who use the Internet, and 71 Butler County residents who use the Internet)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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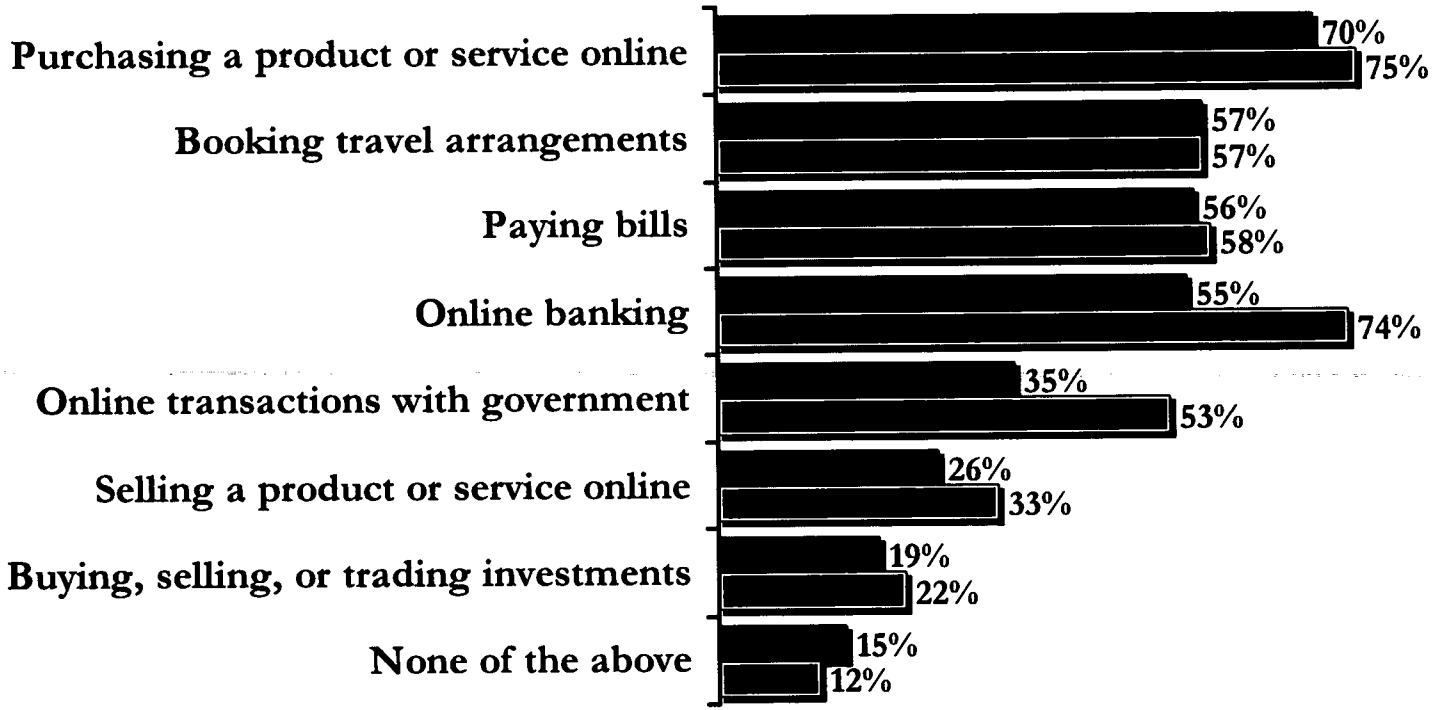
Online Transactions

Percent of Ohio Internet users who conduct the following transactions online:



Q: Which of the following types of transactions have you completed online?
(n = 949 OH residents who use the Internet, and 71 Butler County residents who use the Internet)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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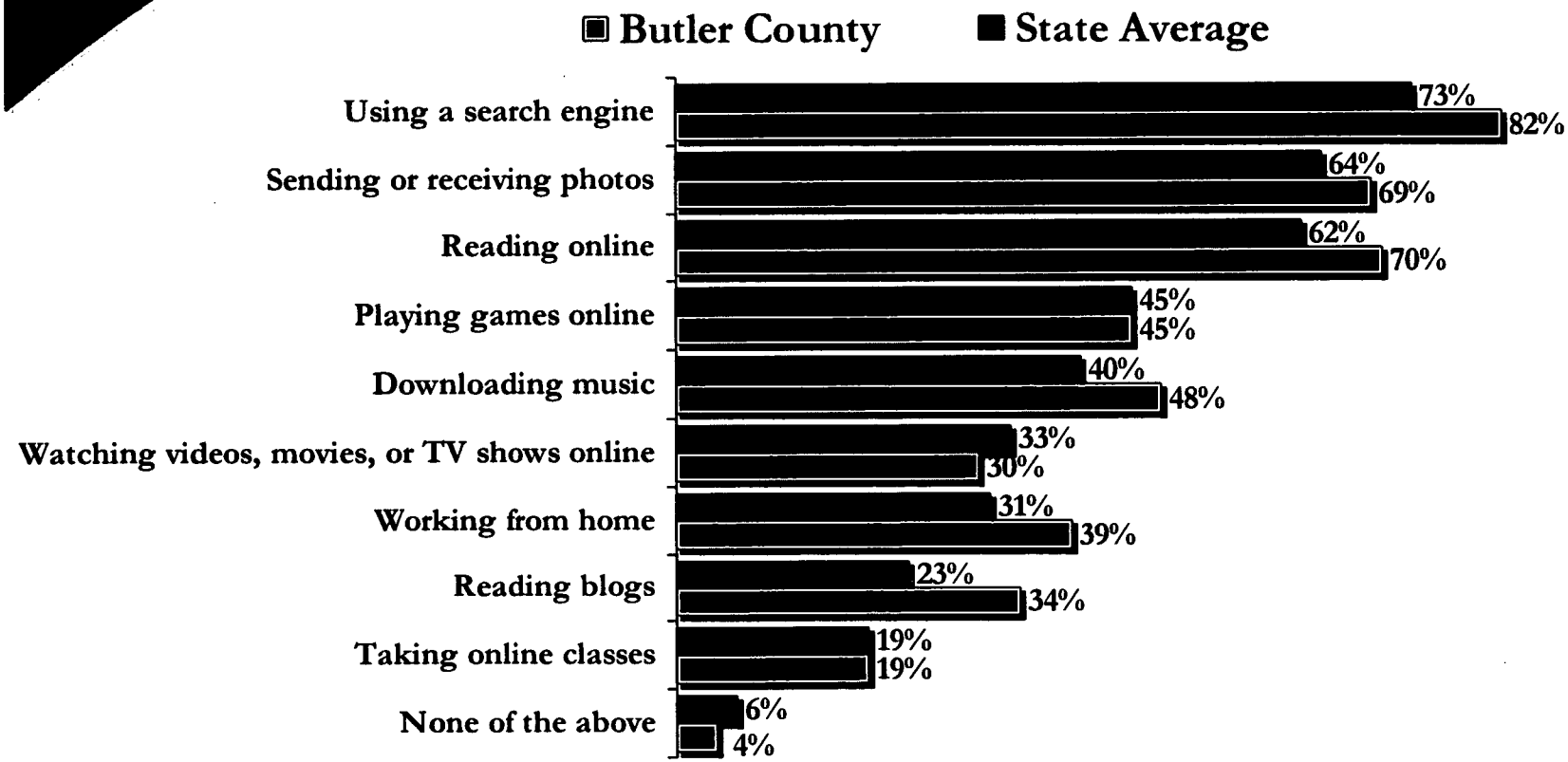
Online Activities

Percent of Ohio Internet users who conduct the following activities online:



Q: Which of the following activities do you conduct online?
(n = 949 OH residents who use the Internet, and 71 Butler County residents who use the Internet)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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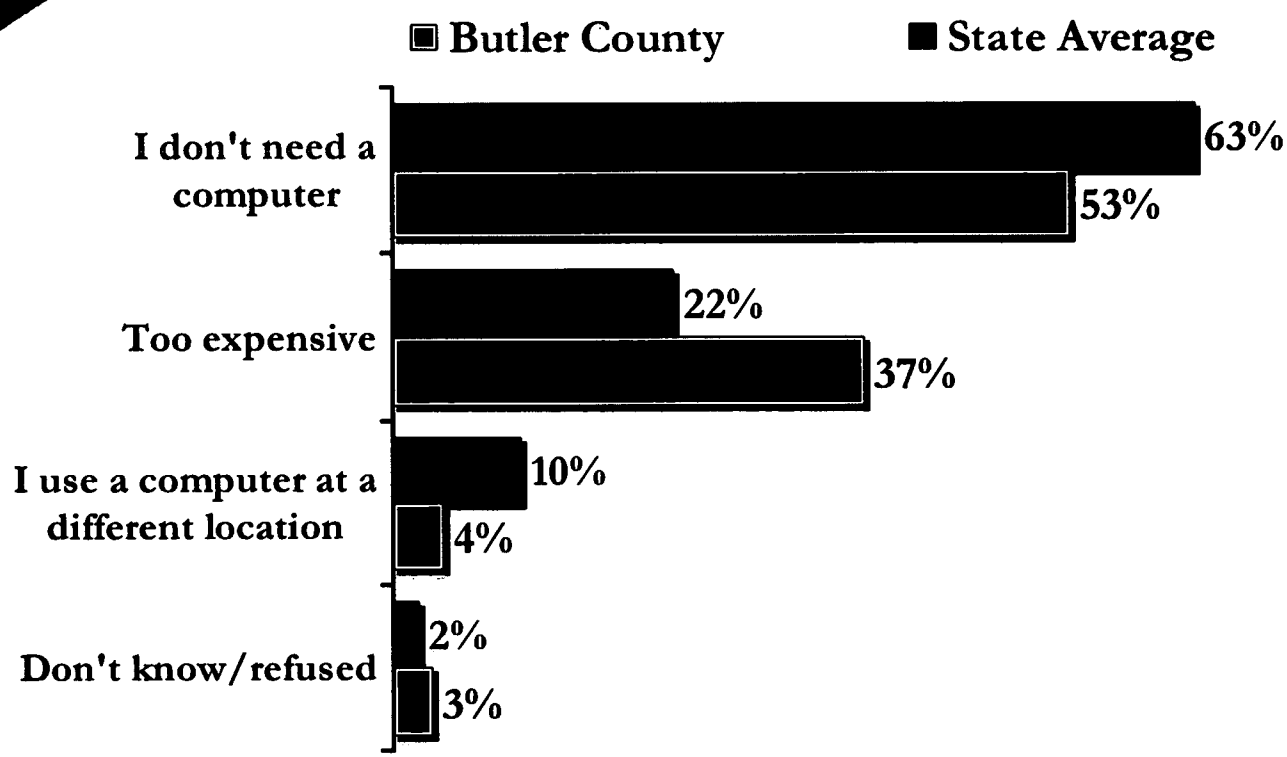
Barriers to Technology Adoption in Butler County

Barriers to Computer Ownership

Among Ohio residents who do not own a computer:*



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

Q: Why don't you have a computer at home?

(n = 290 OH residents with no computer at home, and 25 Butler County residents with no computer at home)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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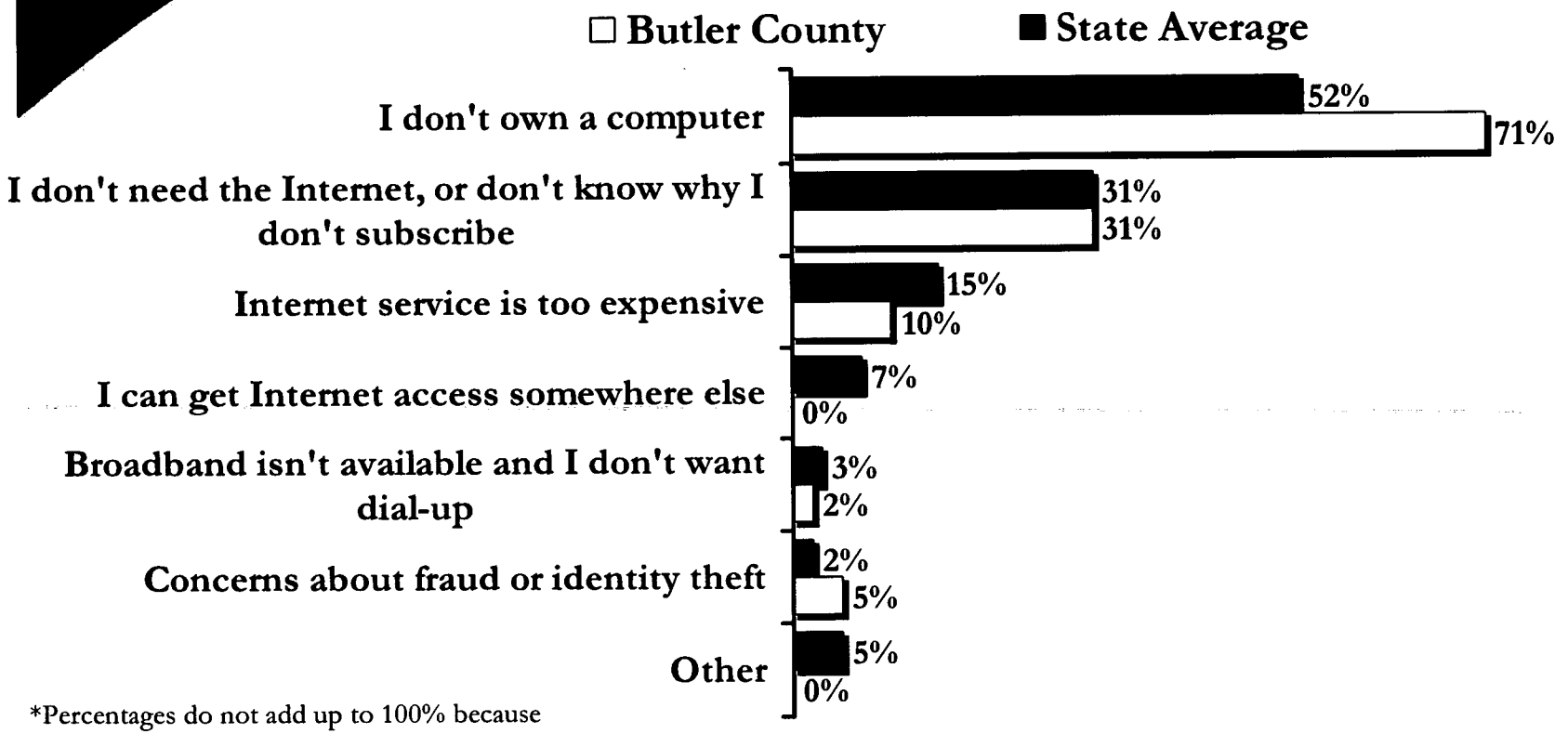
Barriers to Internet Adoption

Among Ohio residents with no Internet (dial-up or broadband) connection at home:*



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

Q: Why don't you subscribe to the Internet at home?
(n = 356 OH residents with no Internet service at home, and 36 Butler County residents with no Internet service at home)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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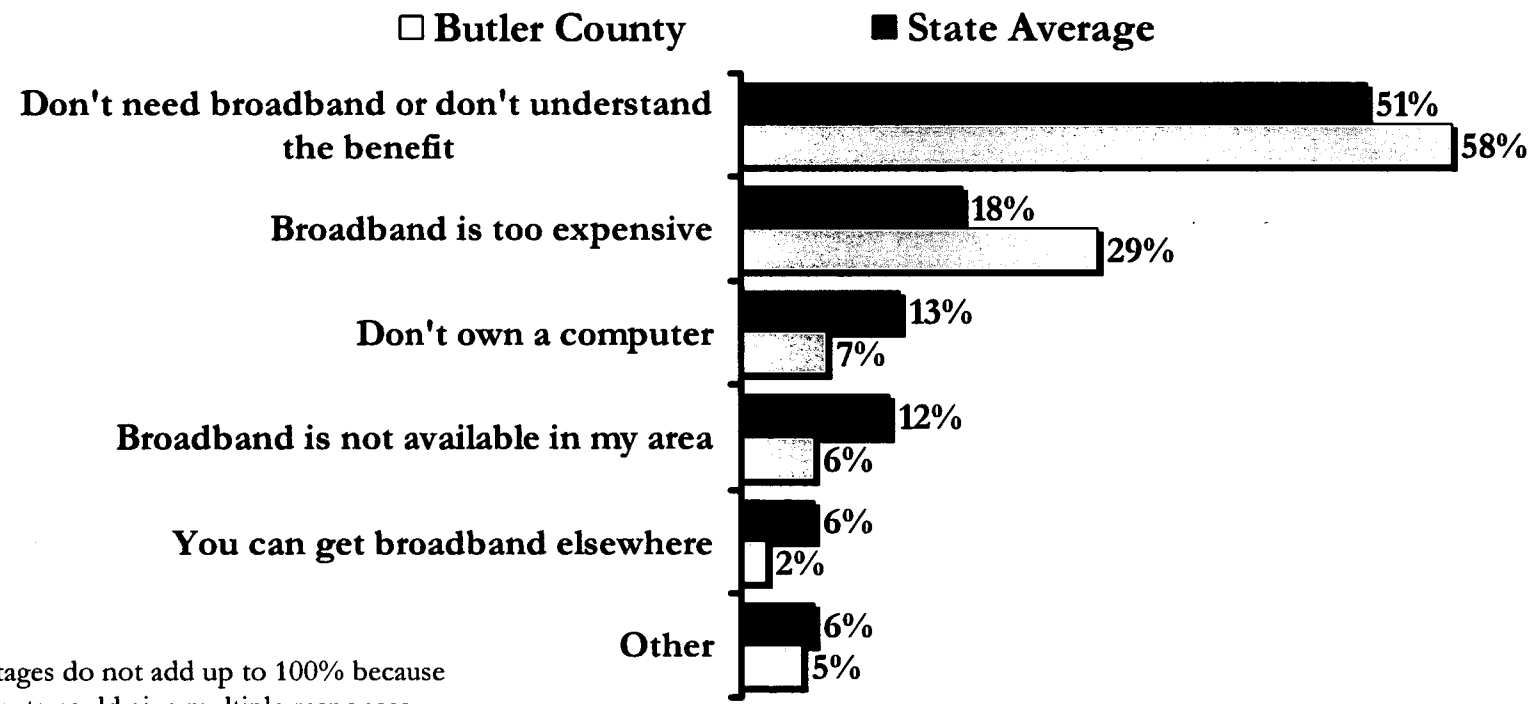
Barriers to Broadband Adoption

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



*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: Why wouldn't you subscribe to broadband Internet service?
(n = 542 OH residents with no home broadband service, and 51 Butler County residents with no home broadband service)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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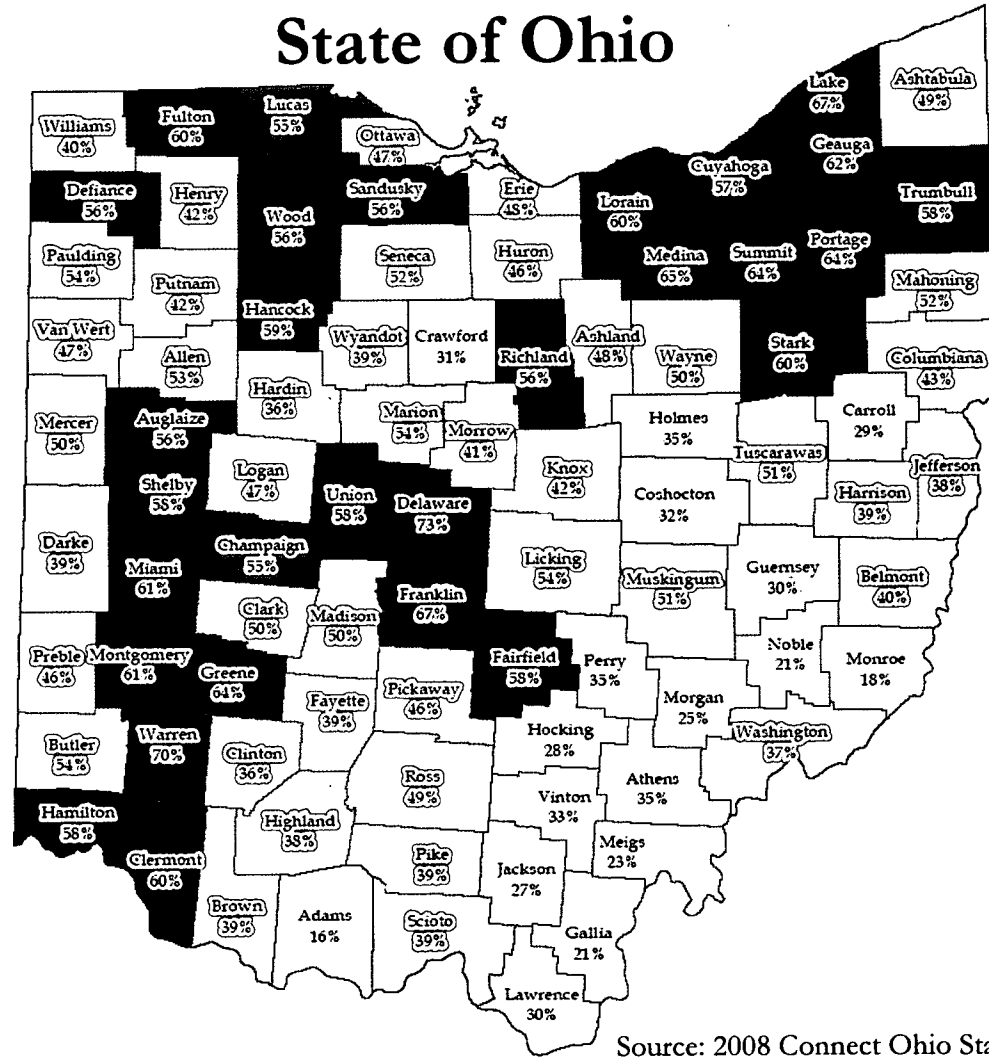
Broadband Adoption for the State of Ohio

Statewide, 55% of all Ohio residents have home broadband service, compared to 54% of Butler County residents.



Compared to Statewide Average

- Significantly Lower (<36%)
- Lower (36-54%)
- Statewide Average (55%)
- Higher (56-64%)
- Significantly Higher (>64%)

Q: Which of the following describe the type of Internet service you have at home?
(n = 10,083 OH residents)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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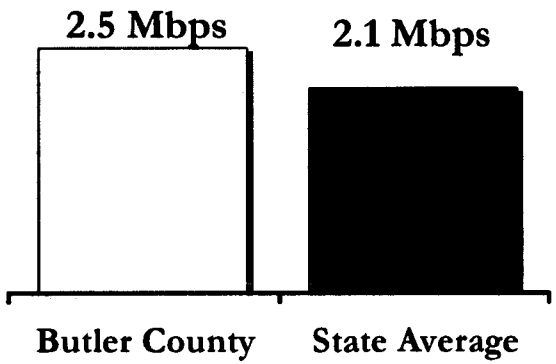
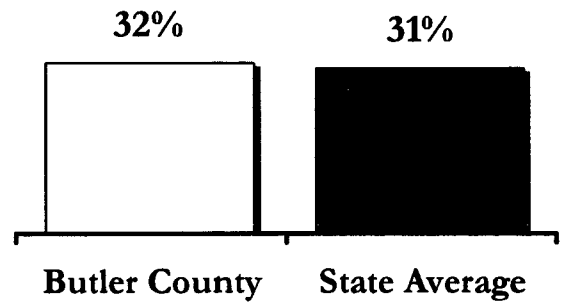
Broadband Download Speeds and Satisfaction

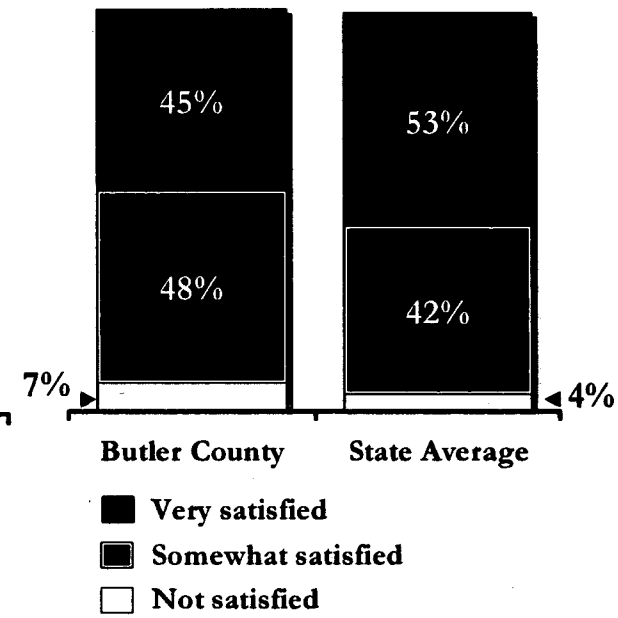
Average reported download speeds (among Ohio broadband subscribers who know their current speed):



Broadband subscribers who are aware of faster available speeds in their area:



Satisfaction with current broadband speeds:



Q: What is the approximate download speed provided by your Internet service provider?
(n = 658 OH residents with broadband service at home)
(n = 51 Butler County residents with broadband, weighted by age and gender)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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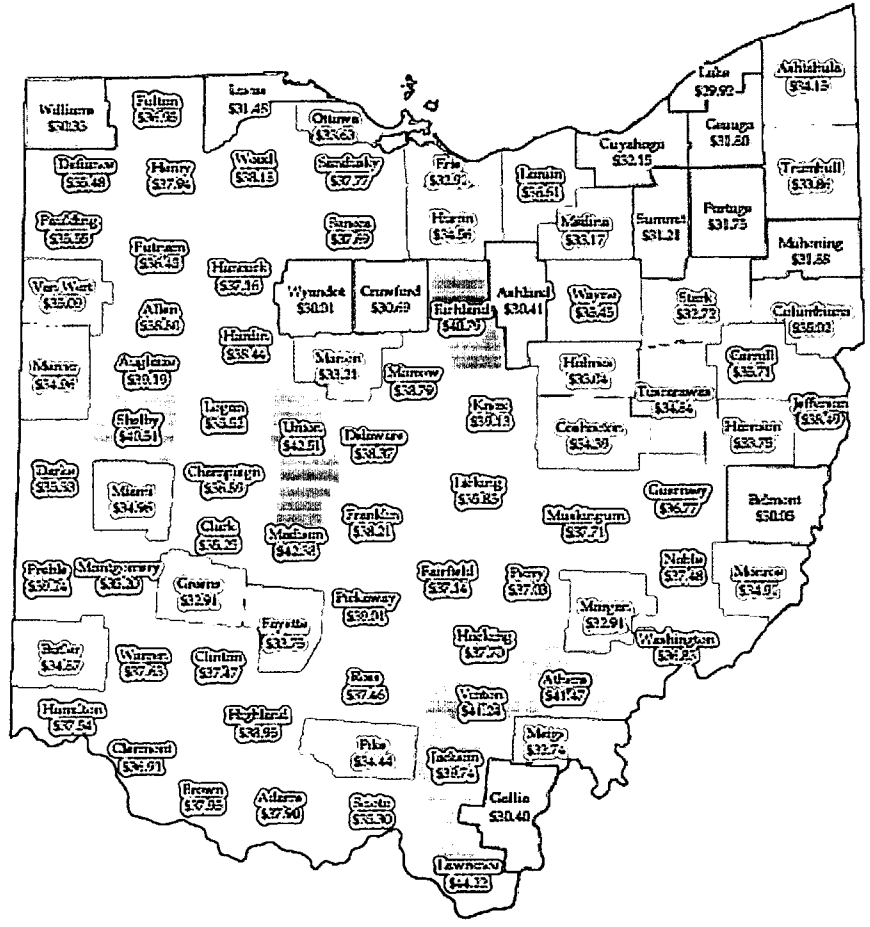
Average Price Paid for Broadband Service by County

On average, Ohio residents pay $35.13 monthly for home broadband service. Butler County residents pay an average of $34.87 each month.



Compared to Statewide Average

- ☐ Significantly Lower ($29.92 - $32.52)
- ☐ Lower ($32.53 - $35.13)
- ☐ Higher ($35.14 - $39.67)
- ☐ Significantly Higher ($39.68 - $44.22)

Q: What do you pay each month for your Internet service?
(n = 4,676 OH residents with broadband service at home)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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Connect Ohio Technology Assessment

Executive Summary

June 2008

CONNECT OHIO

Key Findings

•Statewide, 55% of Ohio adults subscribe to broadband service at home. The Pew Internet and American Life Project recently measured the national broadband adoption rate at 54%.

•In contrast, 92% of Ohio adults have broadband service available where they live. That leaves more than 350,000 Ohio households that cannot connect to broadband service from home.

•At the same time, 14% of households don't know that broadband is available where they live, indicating a lack of awareness about available broadband choices.

•Across Ohio, 96% of urban households have broadband service available to them, compared to only 79% of rural households. This lack of broadband availability is a barrier to adoption for rural homes – 18% of rural residents who don't subscribe to broadband say it's because it's not available. However, a much greater portion of them - 49% - say it's because they don't need broadband. Thus, even in rural areas, lack of demand is the largest barrier to adoption.

•The lack of demand for services is not limited to rural areas. More than one-half of all Ohio residents who do not subscribe to broadband service believe they do not need broadband, or feel that they do not know enough about broadband to benefit from it. This means there are currently almost 1 million Ohio adults who have the ability to subscribe to broadband but believe they don't need broadband.

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Key Findings

•More than one-half of Ohio residents who do not own a computer believe they don't need a computer, and 14% of this group have children at home. Lack of a computer is the largest barrier to Internet adoption (dial-up or broadband) across Ohio.

•Currently 42% of employed Ohio residents use the Internet to work from home (during normal business hours or after hours), and another 24% of working residents would work from home if allowed to do so. Of note, 11% of retirees, 30% of non-working disabled persons, and 24% of all non-working Ohio residents would join the labor force if they could work from home.

•Sixty percent of all Ohio businesses use broadband service for their work.

•Among those businesses that do not subscribe to broadband, nearly one-half do not use a computer, and 31% believe they do not need broadband service. By contrast, only 6% say that the monthly subscription cost is a barrier to broadband adoption. Another 6% of Ohio businesses that do not have broadband service say it is because broadband is not available.

•Median annual revenues for Ohio businesses that use broadband are double those of businesses that do not subscribe to broadband.

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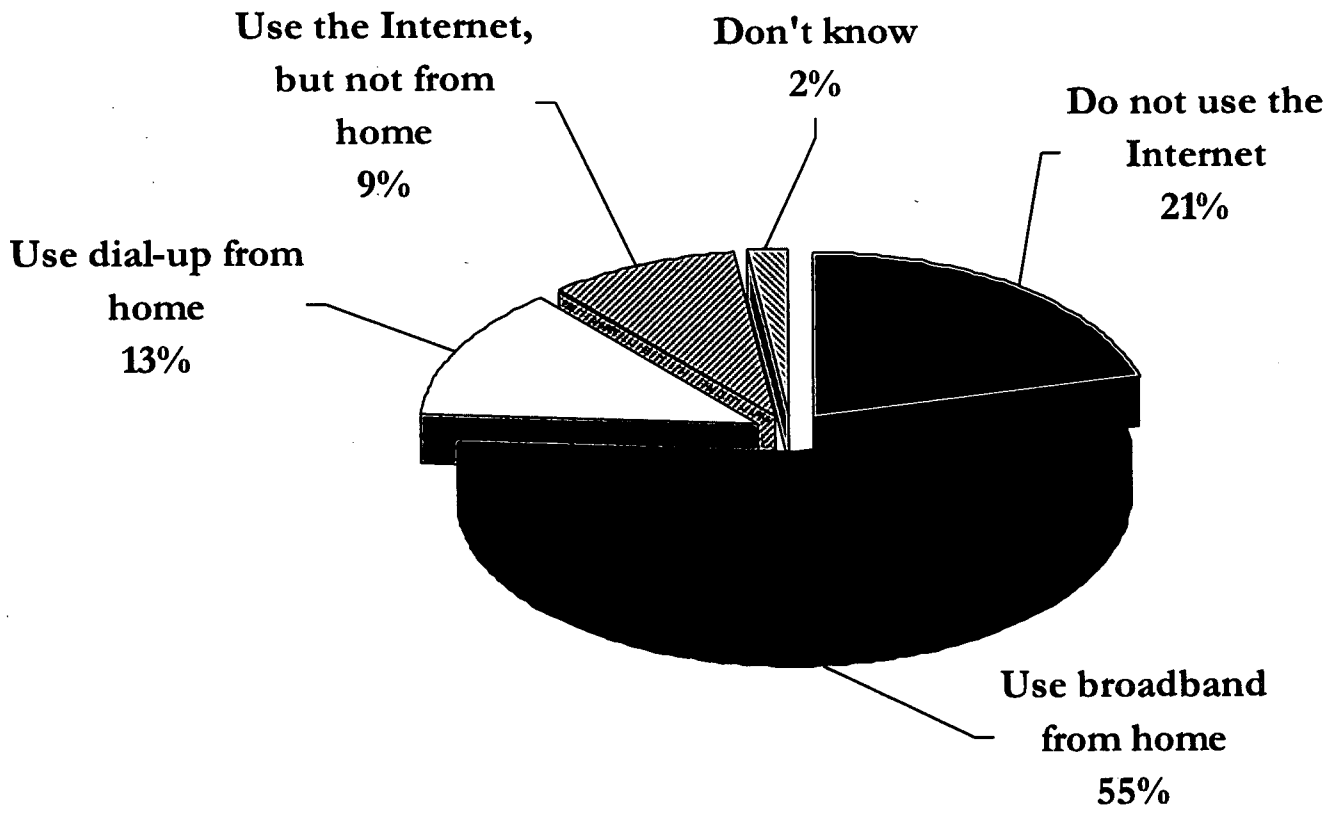
Ohio Technology Adoption Summary

Percent of Ohio residents who:



Q: Do you have an Internet connection at home?
(n = 1,200 OH residents)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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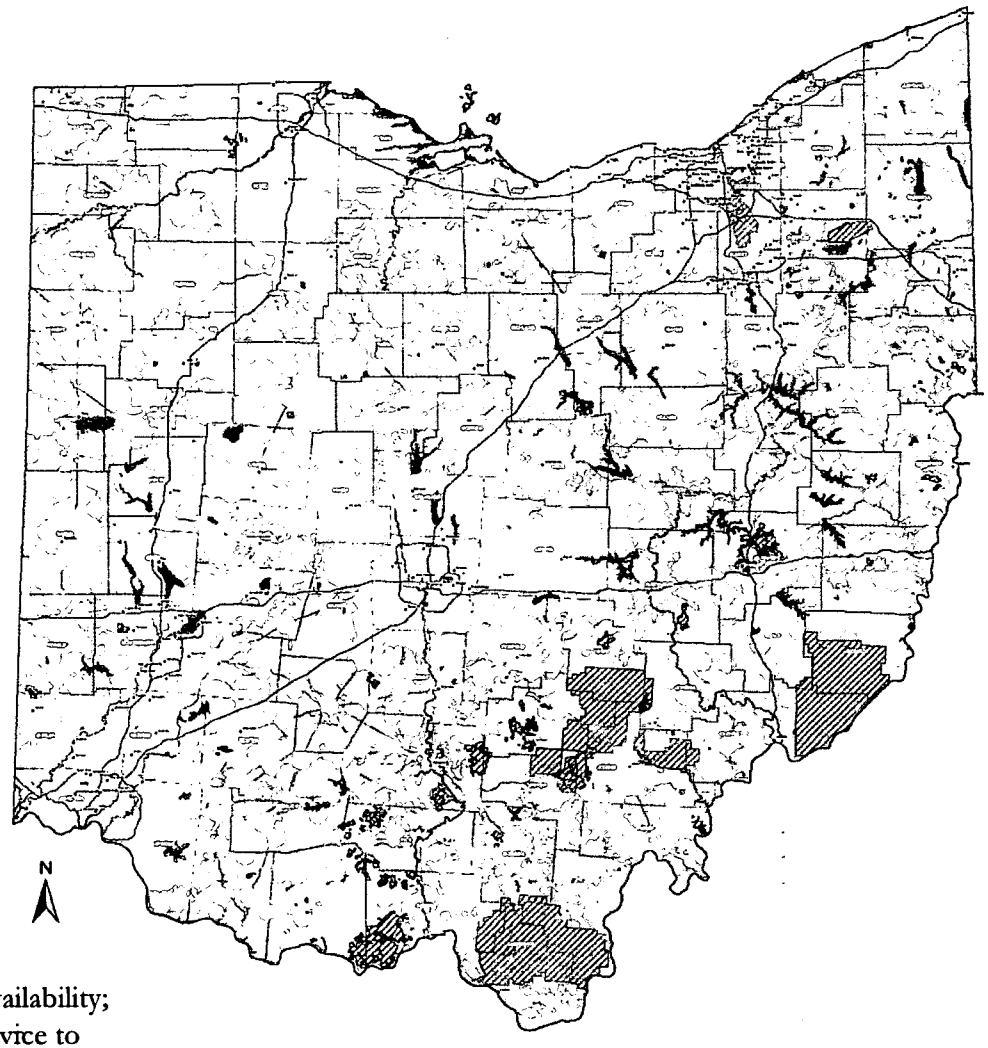
Ohio Broadband Availability

92% of Ohio households have broadband available. Still, more than 350,000 households cannot connect to broadband from home.



Symbology

- City
- Interstate
- US Road
- County Boundary
- Water
- National and State Lands
- Broadband Available
- Broadband Likely Available*
- Unserved Areas

*In these areas there is a strong likelihood for broadband availability; however, technology limitations in select areas may limit service to some homes. Submit questions to: maps@connectohio.org.

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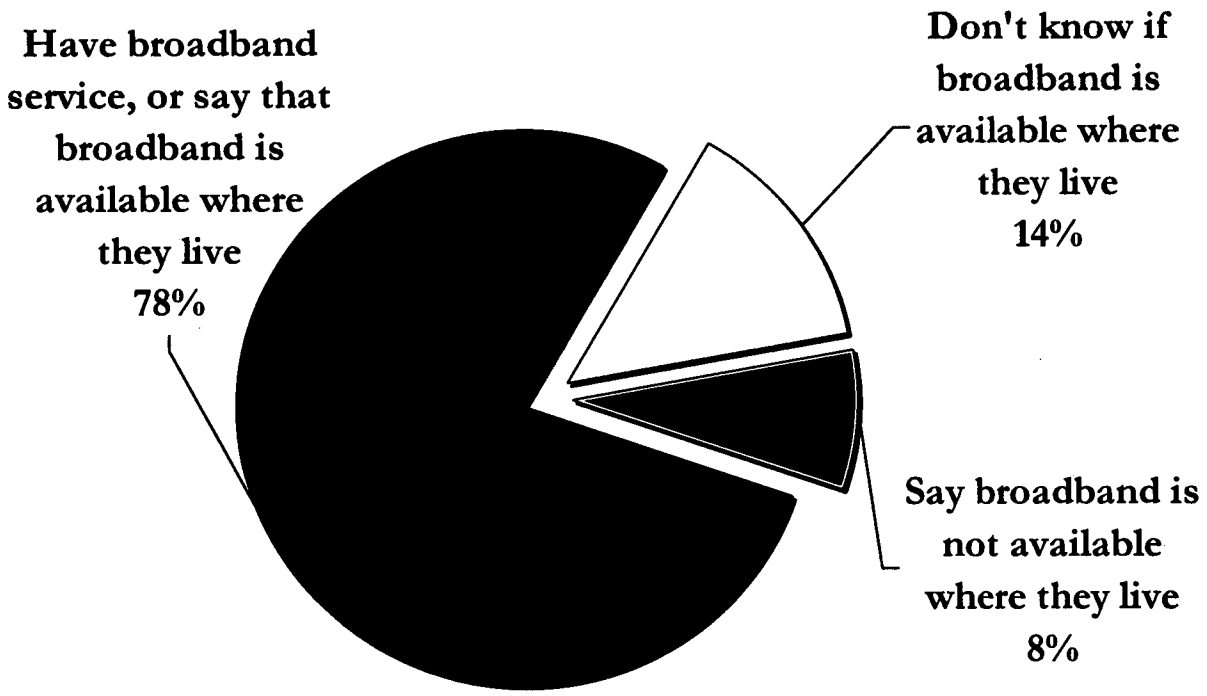
Perceptions of Broadband Availability in Ohio

Awareness of broadband availability among all Ohio residents:



While 92%* of Ohio residents have broadband available to them, only 78% are aware that broadband is available.

*2008 Connect Ohio Statewide Broadband Inventory Map.

Q: Is broadband service available in the area where you live? (n = 1,200 OH residents)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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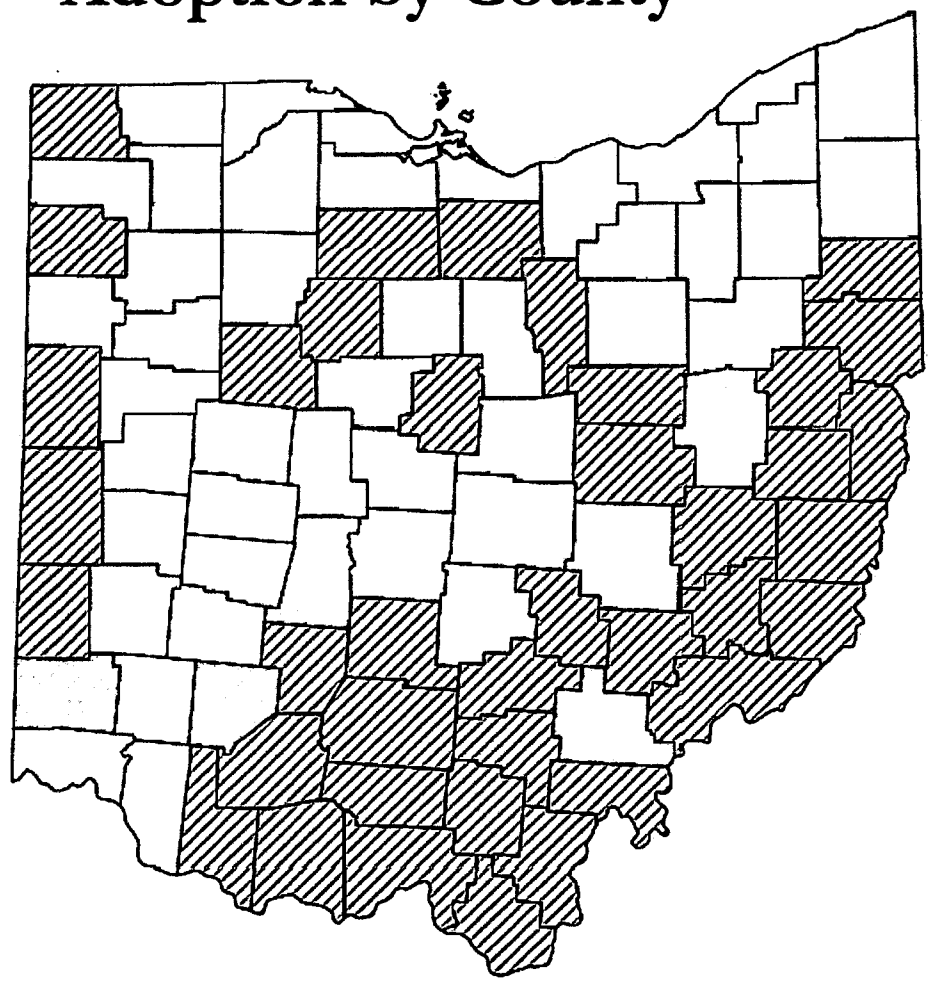
Broadband Availability and Adoption by County

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

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



Legend

- Lower Than Average Broadband Adoption (< 55%)
- Higher Than Average Broadband Availability (>81%)
- Higher Than Average Broadband Availability and Lower Than Average Broadband Adoption

Source: 2008 Connect Ohio Statewide Broadband Inventory Map

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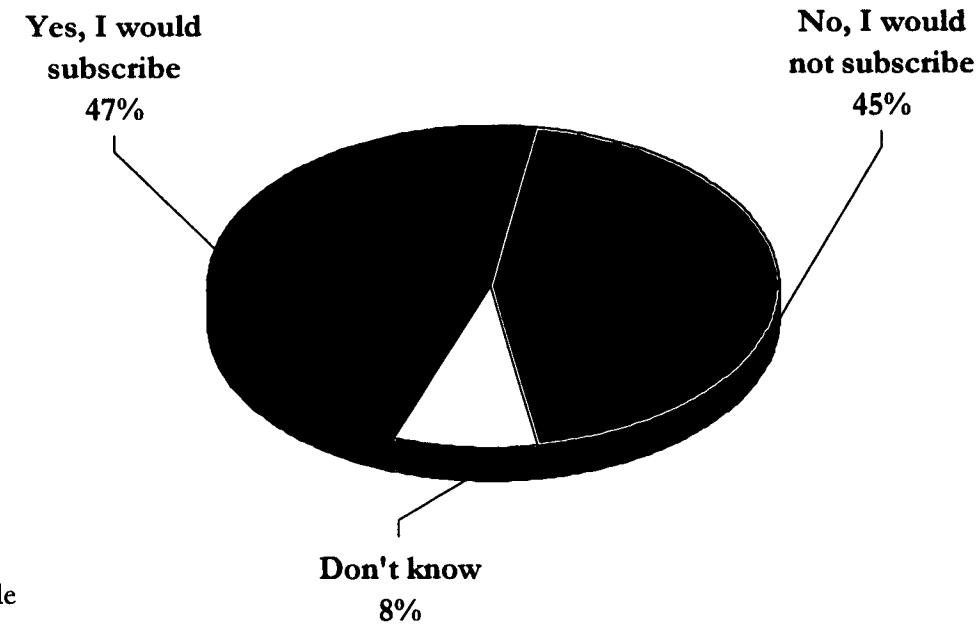
Lack of Availability as a Barrier to Broadband Adoption

Nearly one-half of Ohio residents who say broadband service is unavailable say they would subscribe if it were available.

At the same time, the other half of these Ohio residents would *not* subscribe to broadband if it were available.

Among Ohio residents who say broadband service is not available where they live:



Q: Would you sign up for broadband service if it were available in your area?
(n = 95 OH residents who say broadband service is not available where they live)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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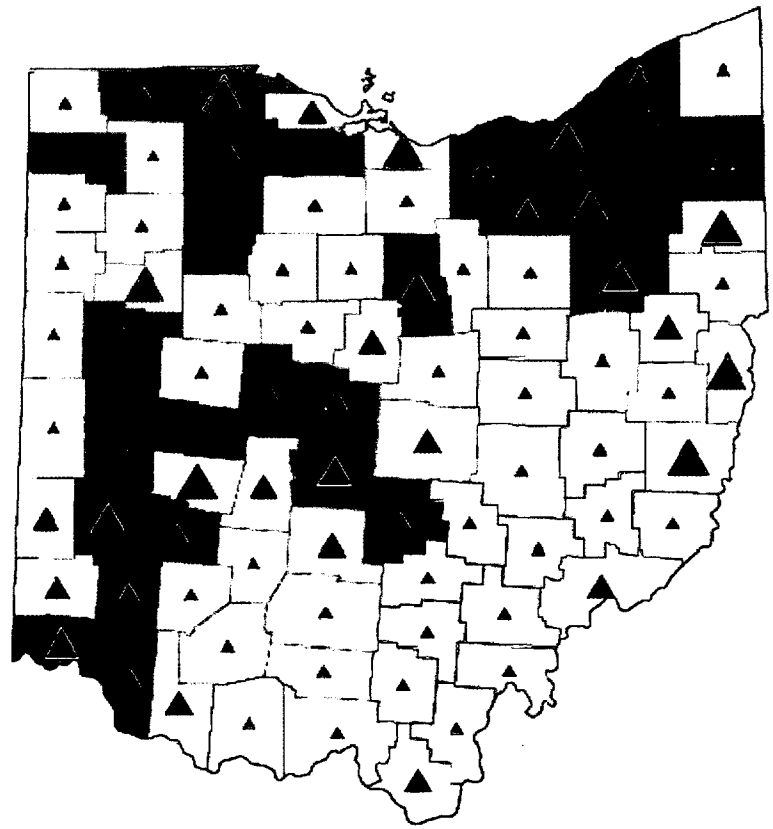
Broadband Adoption by Urban-Rural Classification

Broadband Adoption

- Significantly Lower (<36%)
- Lower (36-54%)
- Statewide Average (55%)
- Higher (56-64%)
- Significantly Higher (>64%)

Urban/Rural Classification

- Rural
- Suburban
- Urban



Across Ohio, 96% of urban households have broadband service available to them, compared to only 79% of rural households.

While 18% of rural adults who don't subscribe to broadband say it's because broadband is not available, and 17% say broadband is too expensive, a much greater percentage – 49% – say they don't need broadband.

Q: Which of the following describe th of Internet service you have at home? (n = 10,083 OH residents)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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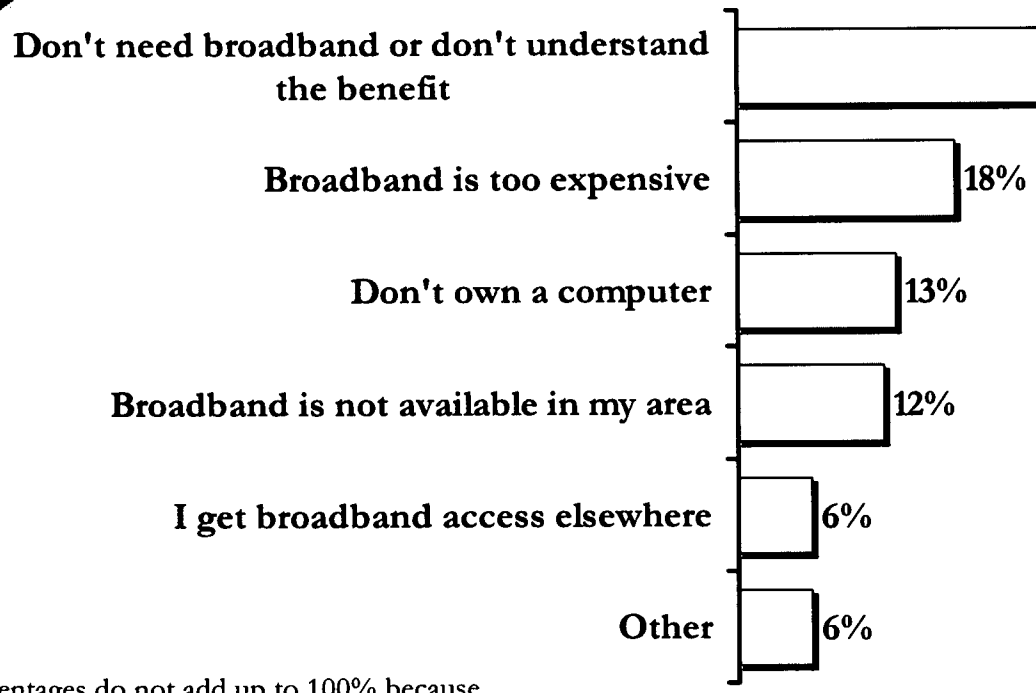
Barriers to Broadband Adoption

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.

*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 = 542 OH residents with no home broadband service)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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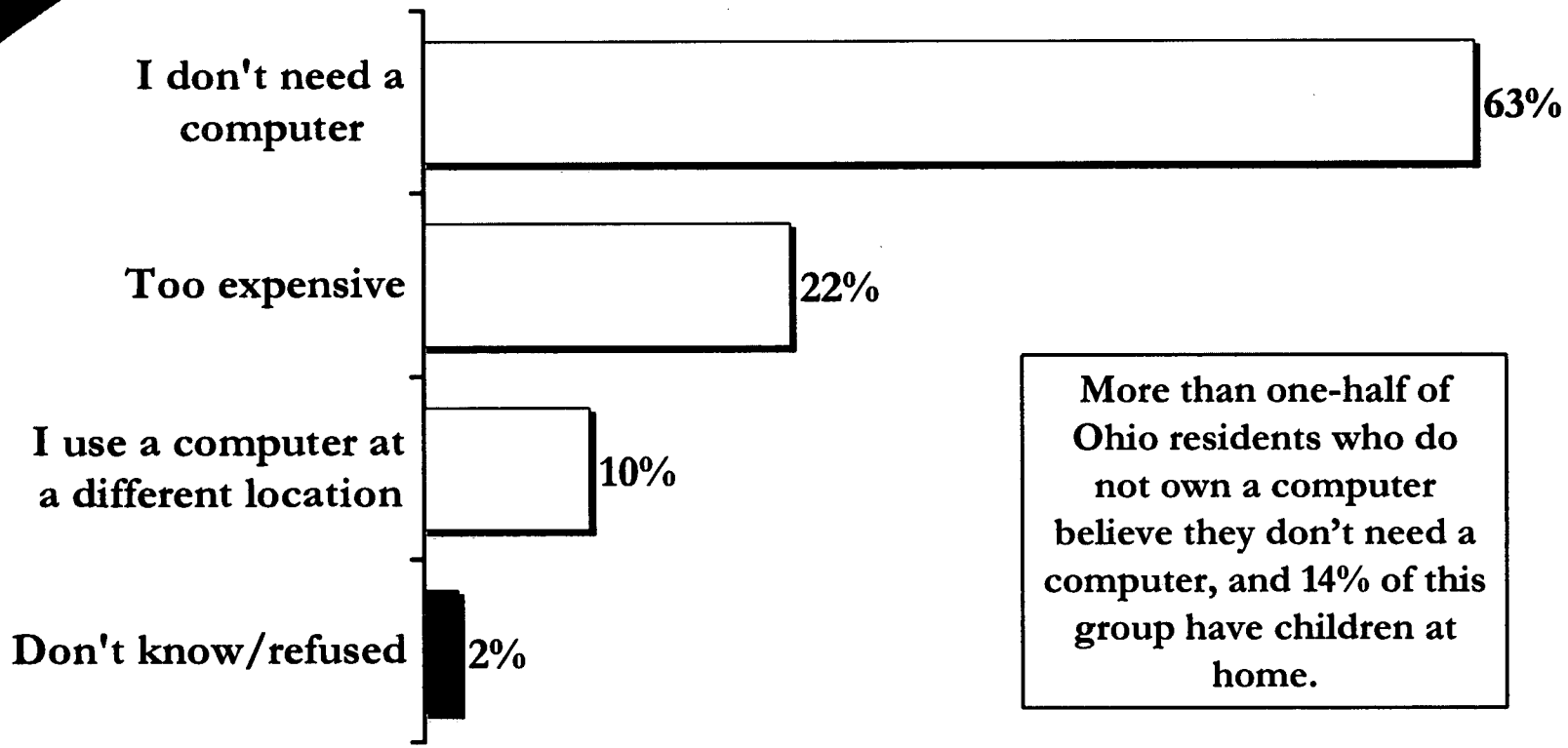
Barriers to Computer Ownership

Percent of Ohio residents who do not own a computer:*



More than one-half of Ohio residents who do not own a computer believe they don't need a computer, and 14% of this group have children at home.

*Percentages do not add up to 100% because respondents could give multiple responses.
Q: Why don't you have a computer at home?
(n = 290 OH residents with no computer in their household)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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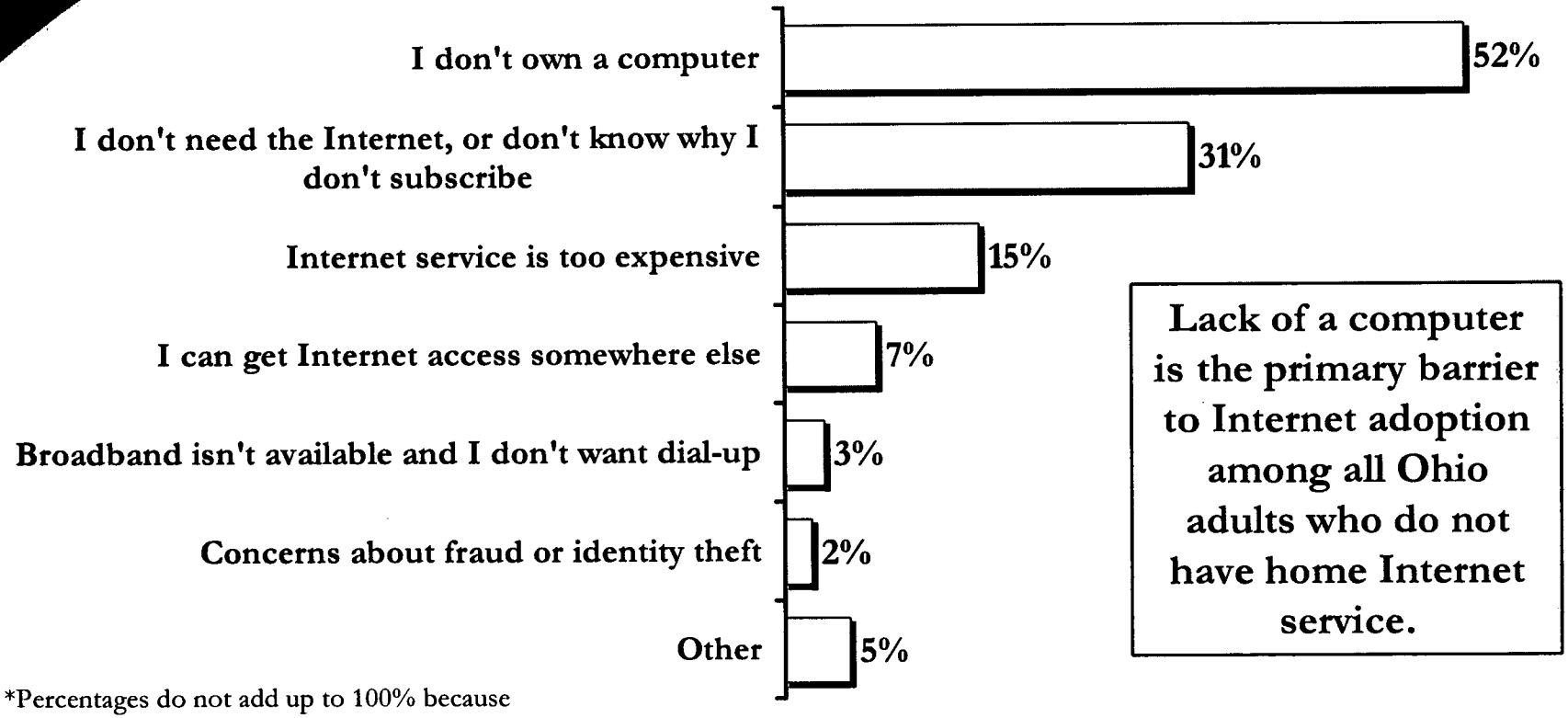
Barriers to Internet Adoption

Among Ohio residents with no Internet (dial-up or broadband) connection at home:*



Lack of a computer is the primary barrier to Internet adoption among all Ohio adults who do not have home Internet service.

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

Q: Why don't you subscribe to the Internet at home?

(n = 356 OH residents with no Internet service in their household)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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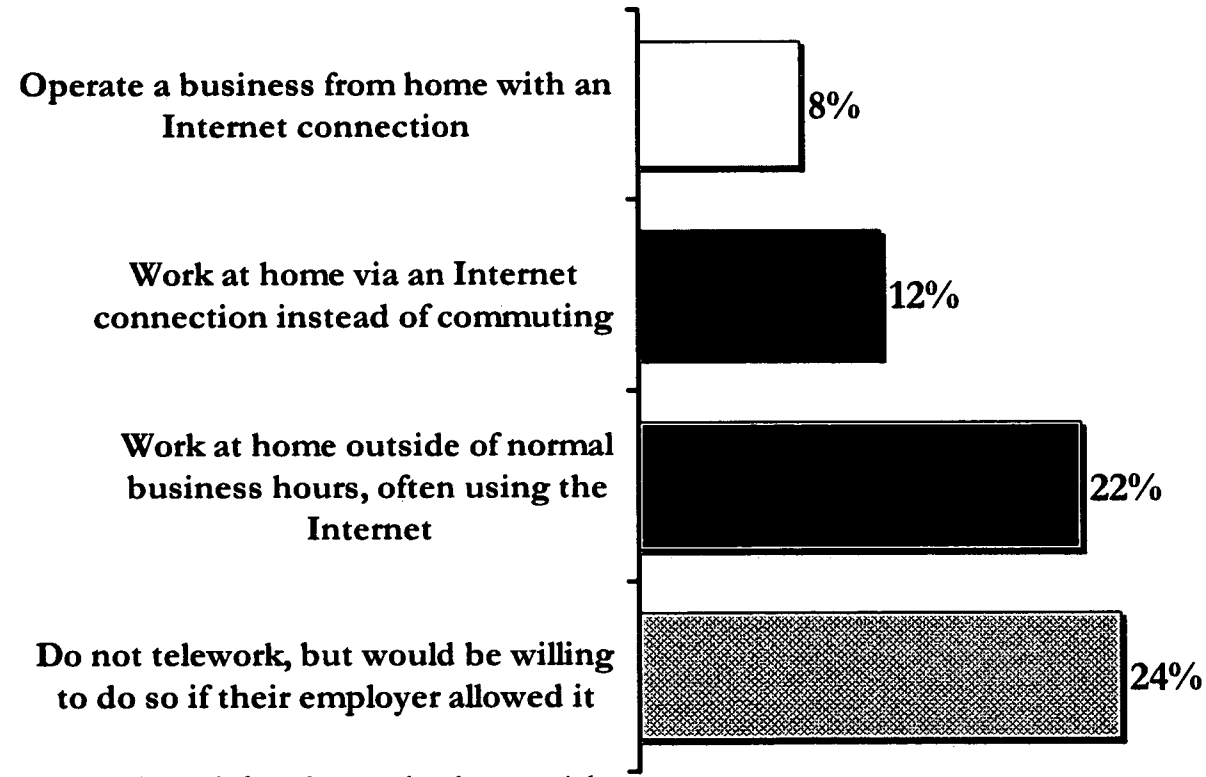
Ohio Residents and Telework

Among Ohio residents employed full- or part-time:



Currently 42% of employed Ohio residents use the Internet to work from home during business hours or after hours.

More than one-quarter (26%) of Ohio workers who say they use the Internet to work at home instead of commuting say they telework almost every workday.

Q: Do you ever do work from home related to your job or self employment?
(n = 729 OH residents employed full- or part-time)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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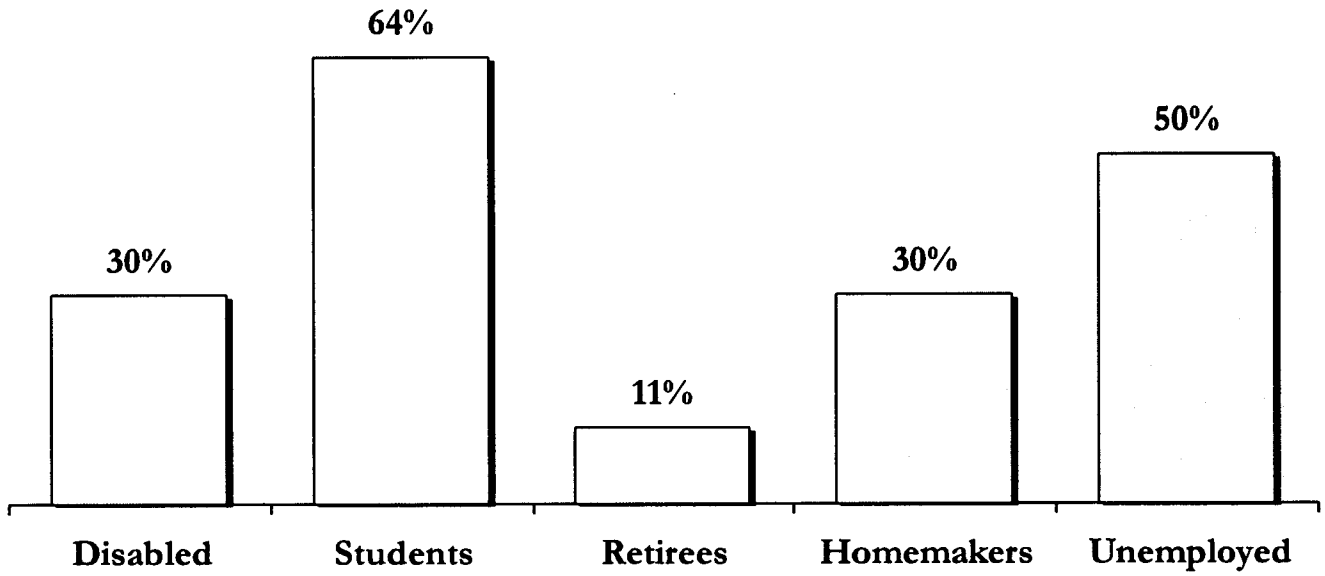
Telework's Potential Impact on the Labor Force

Percent of Ohio adults who don't work, but would be likely to join the labor force if allowed to telework:

24% of all non-working Ohio adults would likely join the labor force if allowed to telework.



Q: If you were able to work from home through a broadband connection - commonly known as teleworking - how likely is it that you would work outside the home?
(n = 471 OH residents not employed full- or part-time)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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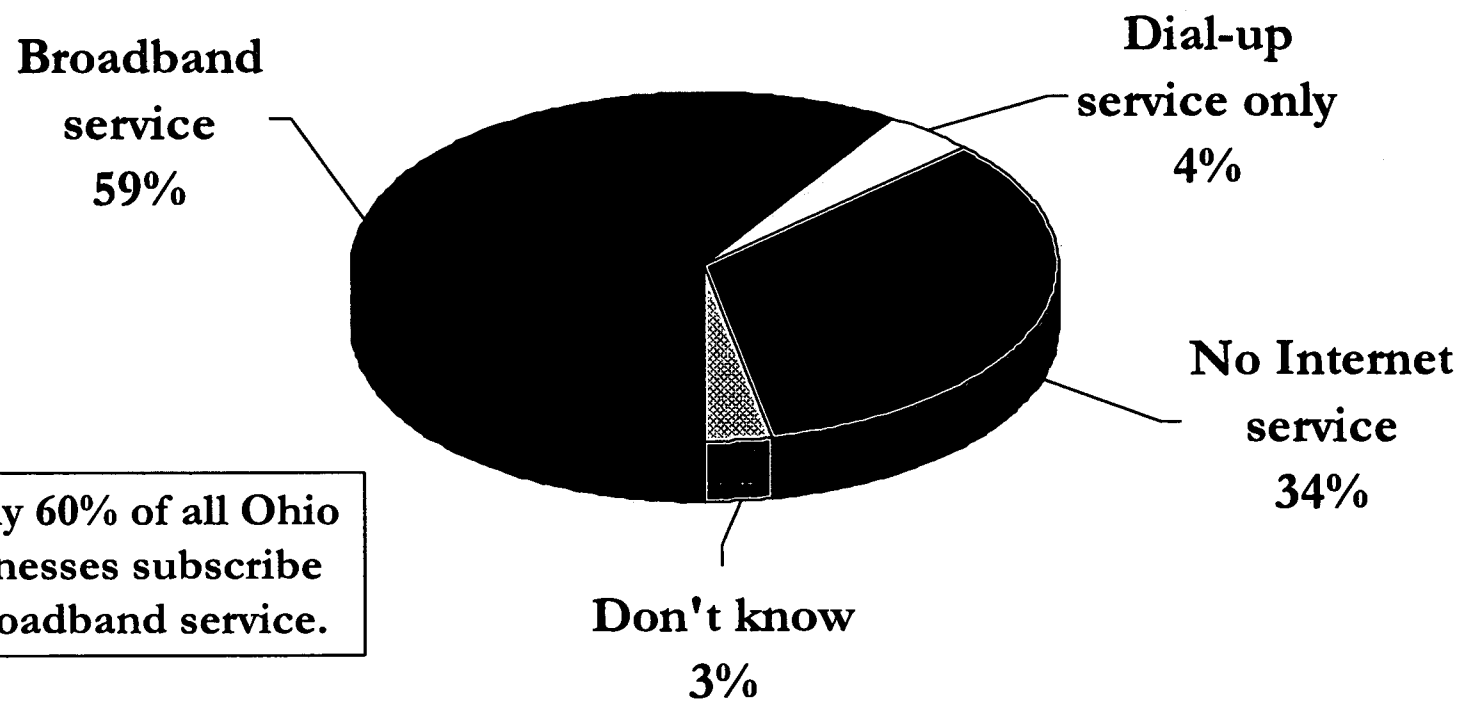
Broadband Adoption Among Ohio Businesses

Percent of all Ohio businesses that have:



Nearly 60% of all Ohio businesses subscribe to broadband service.

Q: Which of the following describe the type of Internet access your company has?
(n = 807 Ohio businesses)

Source: 2008 Connect Ohio Business Technology Assessment

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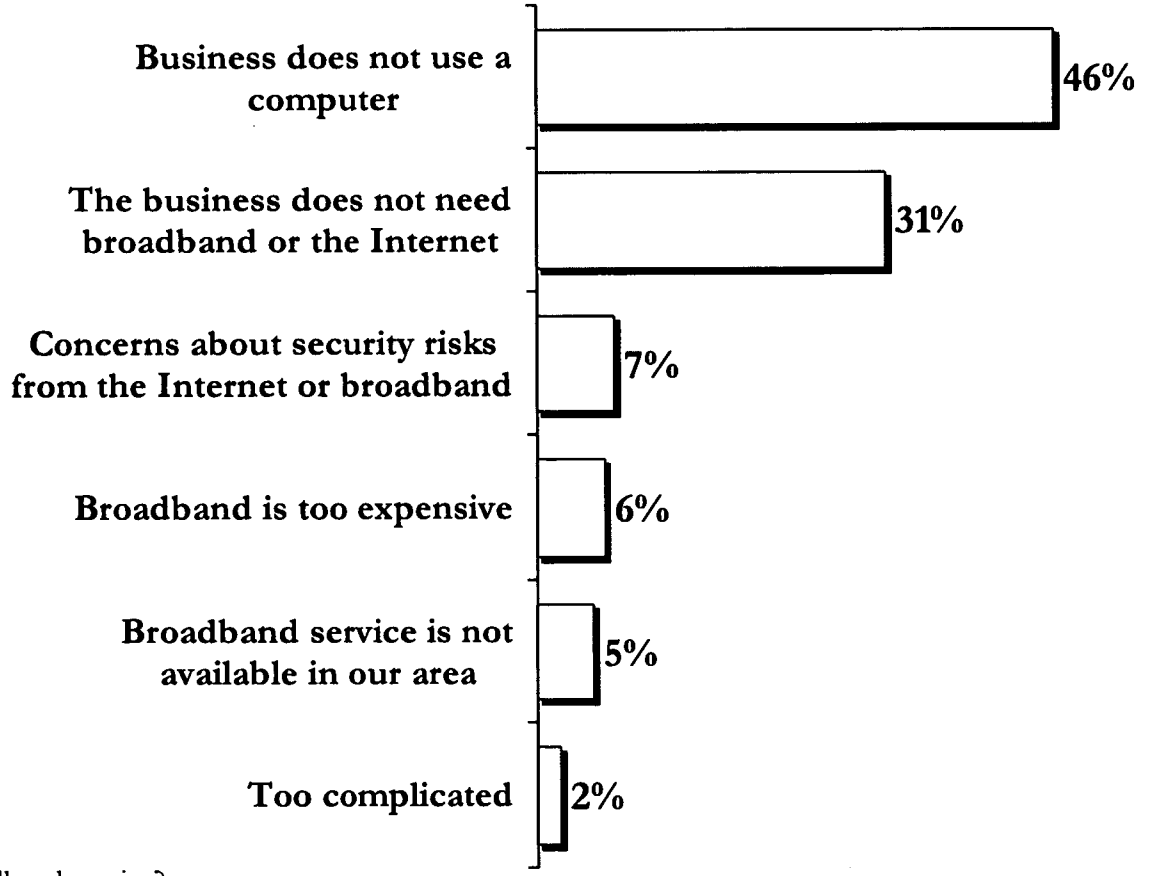
Barriers to Broadband Adoption

Nearly one-half of Ohio businesses that do not use broadband service do not use a computer.

Another 31% believe they do not need broadband service for their business.

In contrast, only 6% believe that broadband service is too expensive.

Percent of Ohio businesses that do not subscribe to broadband:*



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

Q: Why doesn't your organization subscribe to broadband service? (n = 241 OH businesses that do not subscribe to broadband)

Source: 2008 Connect Ohio Business Technology Assessment

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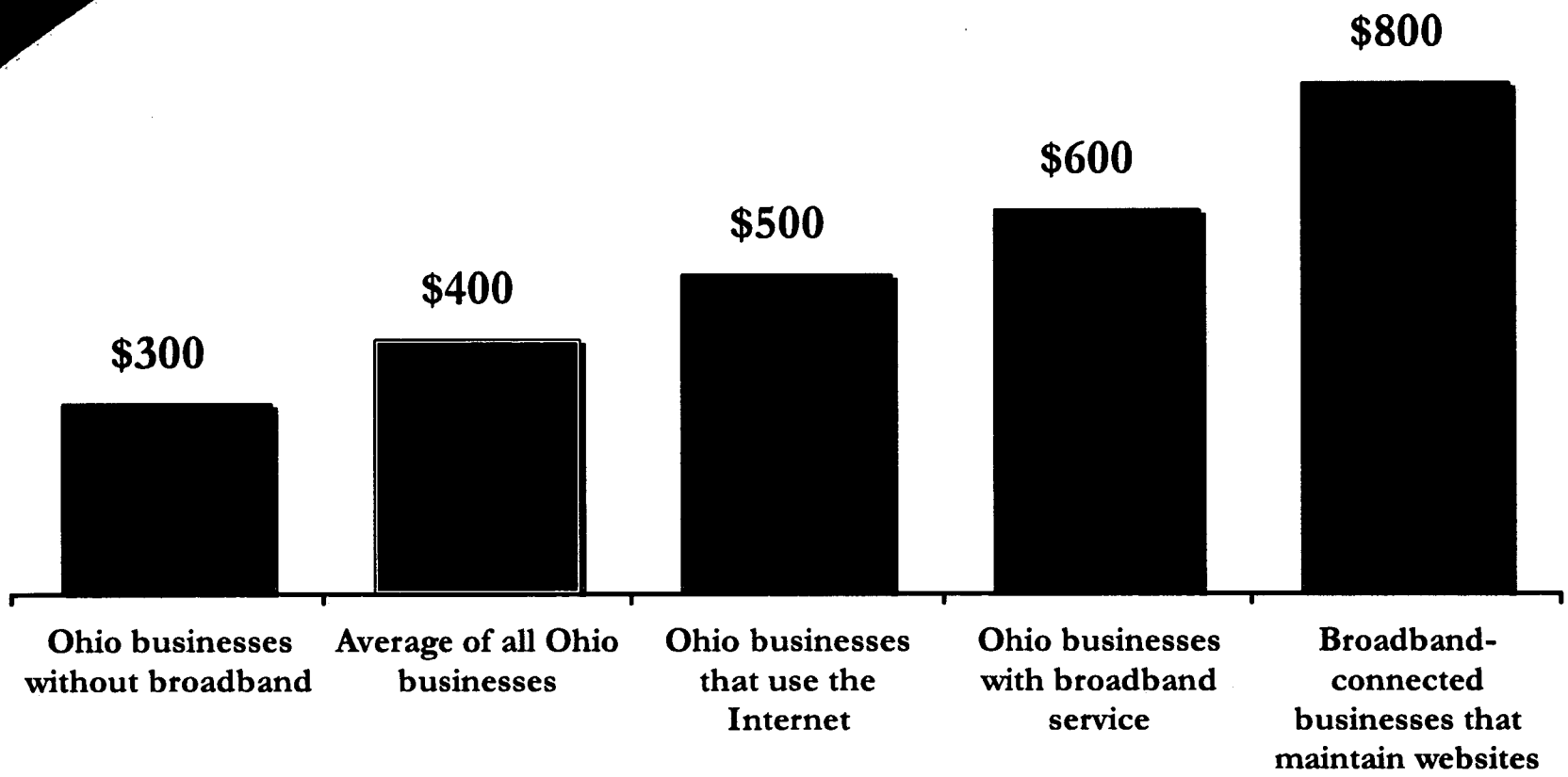
Technology Adoption and Business Revenues

Median Annual Company Revenue ($000):



Q: What is your firm's approximate average annual revenue?
(n = 807 OH businesses)

Source: 2008 Connect Ohio Business Technology Assessment

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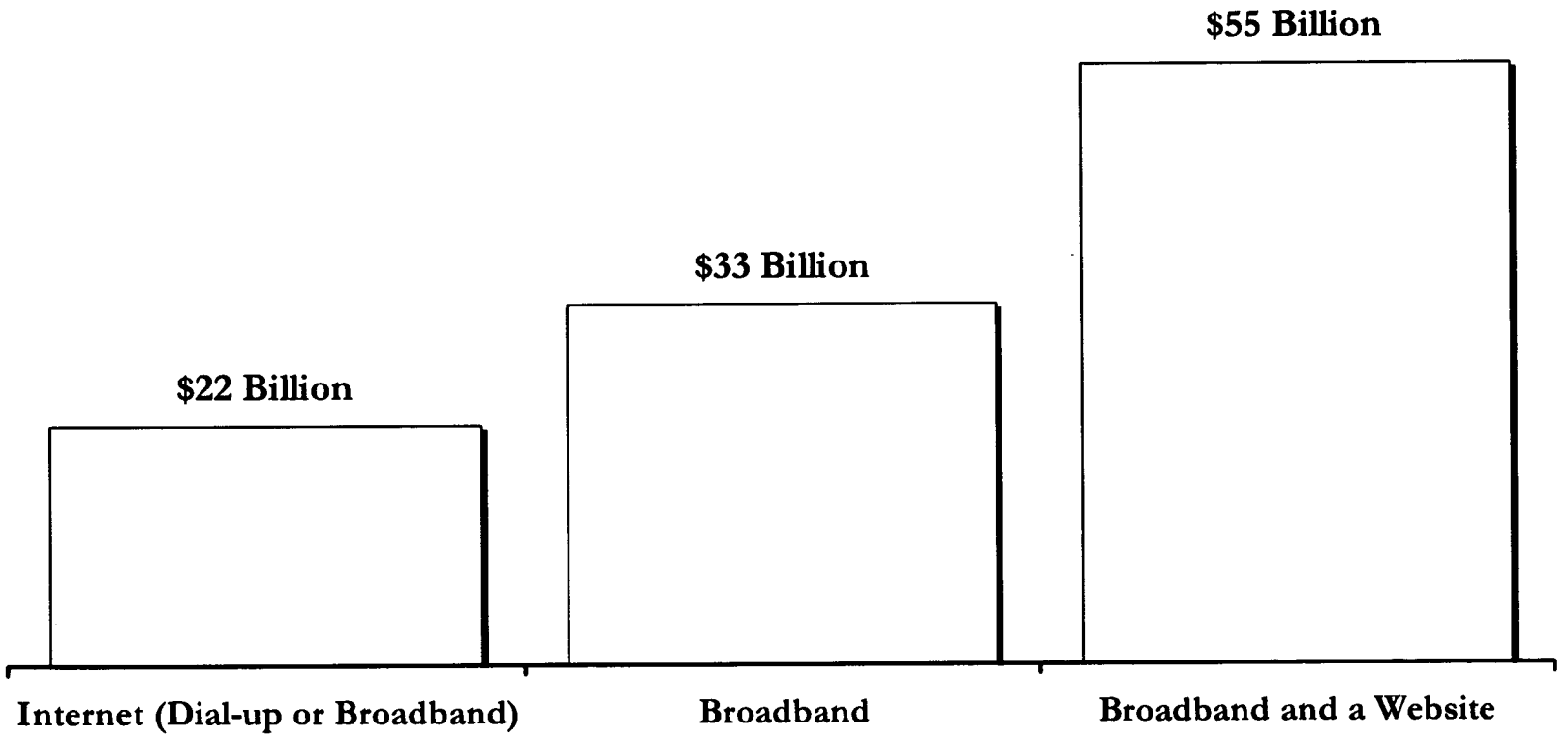
The Potential Impact of Technology Adoption by Ohio Businesses

Estimated total revenue increase if all Ohio businesses without broadband were to adopt:



Q: What is your firm's approximate average annual revenue?
(n = 270 OH businesses that do not have broadband service)

Source: 2008 Connect Ohio Business Technology Assessment

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Research Methodology

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Residential Assessment Methodology

- **Data were collected by telephone through live computer assisted interviews from a statewide random digit dial (RDD) sample of 1,200 households contacted between March 6 and March 15, 2008. Data were collected by Wilkerson & Associates of Louisville, Kentucky. www.wilkersonresearch.com**
- **The questionnaire screened to include only adults age 18 or older with quotas set by gender and age to ensure adequate representation of all adults in the state.**
- **Weights were applied to correct for minor variations and ensure that the sample matches the most recent U.S. Census estimates of the state's population by age and gender. Weighting and research consultation were provided by Lucidity Research LLC. www.lucidityresearch.com**
- **Sampling margin of error:**
  - Statewide, full sample (n=1,200): ±2.82% at the 95% level of confidence.

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Business Assessment Methodology

- The Connected Ohio Business Survey interviewed 807 businesses by telephone between March 5 and March 17, 2008. Data were collected by Wilkerson & Associates of Louisville, Kentucky. www.wilkersonresearch.com.

- The error interval is ± 3.4% at the 95% confidence level.

- On average, once agreeing to participate in the survey, interviews lasted 10 minutes.

- Sample quotas were established by company size (4 brackets) and industry sector (8 sectors). Within these 32 cells, Dun & Bradstreet provided a random sample of businesses selected for the survey. This approach gathers enough interviews within size and industry sub-sectors to analyze the data with confidence.

- By weighting the survey data, the total sample is made to be representative of all employer business establishments, according to the U.S. Census Bureau County Business Patterns. Weighting and research consultation were provided by Lucidity Research LLC. www.lucidityresearch.com.

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Contact Information

Tom Fritz

Executive Director

of Connect Ohio

tfritz@connectohio.org

www.connectohio.org

(877) 846-7710

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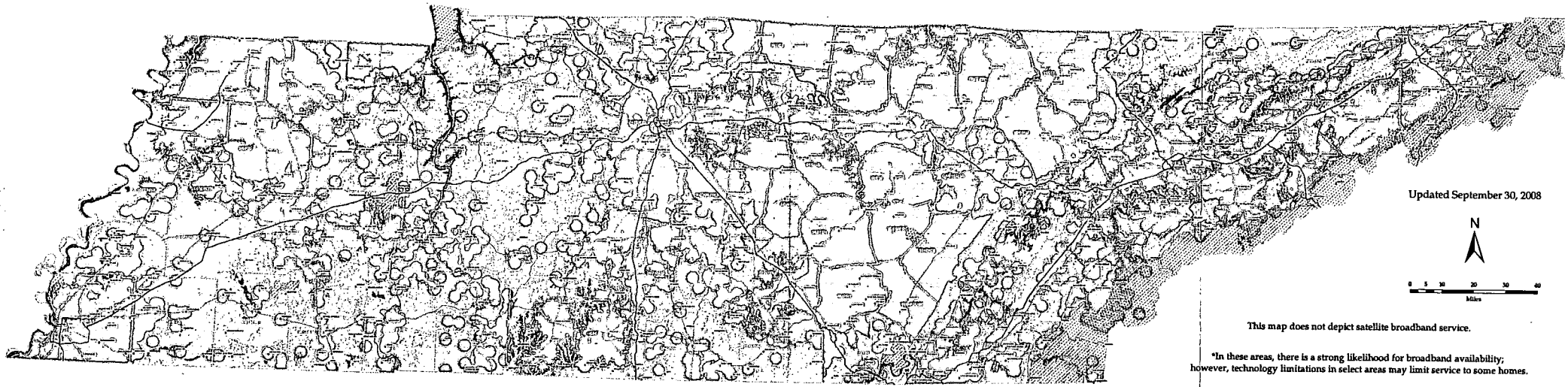
CONNECTED Tennessee
THE TRAIL TO INNOVATION

Broadband Service Inventory for the State of Tennessee

Submit questions or recommended changes to: maps@connectednation.org



Updated September 30, 2008

N

0 5 10 20 30 40
Miles

This map does not depict satellite broadband service.

*In these areas, there is a strong likelihood for broadband availability; however, technology limitations in select areas may limit service to some homes.

**This map is not a guarantee of coverage, contains areas with no service, and generally predicts where outdoor coverage is available. Equipment, topography and environment affect service.

With the support of Governor Bredesen, the Department of Economic and Community Development, the Office for Information Resources, and the Tennessee Broadband Task Force, Connected Tennessee has worked with broadband providers throughout the State to identify the gaps in broadband service - the first step in a statewide effort to "fill the gaps" for 100% broadband availability.

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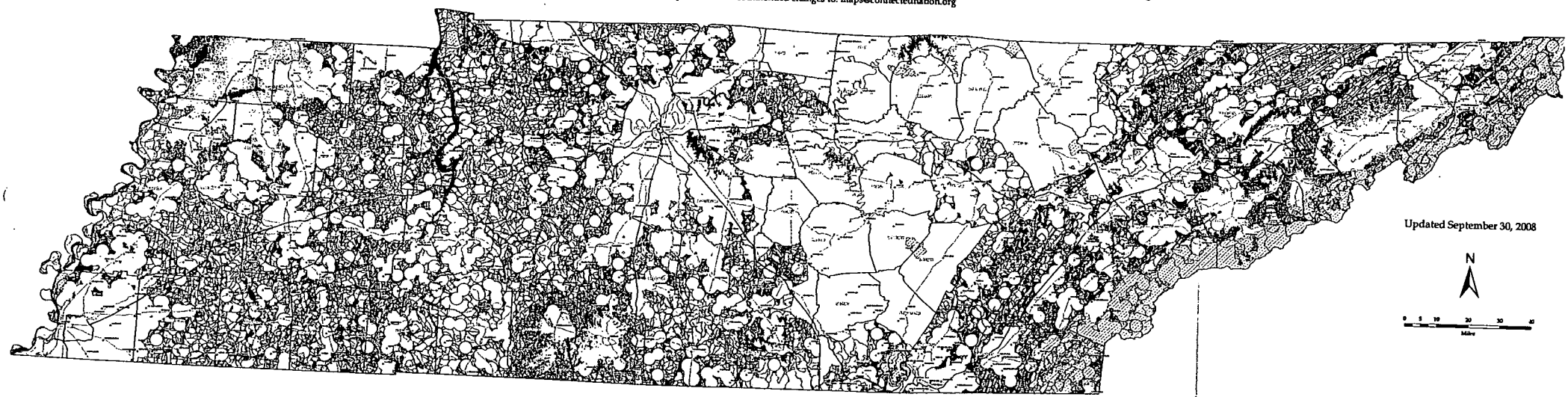
Symbology

- City
- Interstate
- US Road
- County Boundary
- National and State Lands
- Water
- Broadband Available
- Broadband Likely Available*
- Mobile Wireless Broadband Available**
- Unserved Areas

CONNECTED Tennessee
THE TRAIL TO INNOVATION

Density of Households Unserved by a Broadband Provider by Census Block

Submit questions or recommended changes to: maps@connectednation.org



Updated September 30, 2008

N

0 5 10 20 30 40
Miles

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Symbology

- City
- Interstate
- US Road
- County Boundary
- Water
- National and State Lands

Number of Households per Square Mile, per Census Block

- 0 - 8
- 9 - 20
- 21 - 40
- 41 - 85
- 86+
- Area less than 0.25 square mile
- Broadband Available*

*Satellite broadband service is not included in broadband availability.

With the support of Governor Bredesen, the Department of Economic and Community Development, the Office for Information Resources, and the Tennessee Broadband Task Force, Connected Tennessee has worked with broadband providers throughout the State to identify the gaps in broadband service - the first step in a statewide effort to "fill the gaps" for 100% broadband availability.

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Broadband Service Inventory

Lauderdale County Tennessee

Updated September 30, 2008

Submit questions or recommended changes to: maps@connectednation.org

N

CONNECTED Tennessee
THE TRAIL TO INNOVATION

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0 0.5 1 2 3 Miles

Symbology

- City
- Interstate
- US Road
- Local Road
- County Boundary
- Water
- National and State Lands
- Broadband Available
- Broadband Likely Available*
- Mobile Wireless Broadband Available
- Unserved Area

*In these areas, there is a strong likelihood for broadband availability; however, technology limitations in select areas may limit service to some homes.

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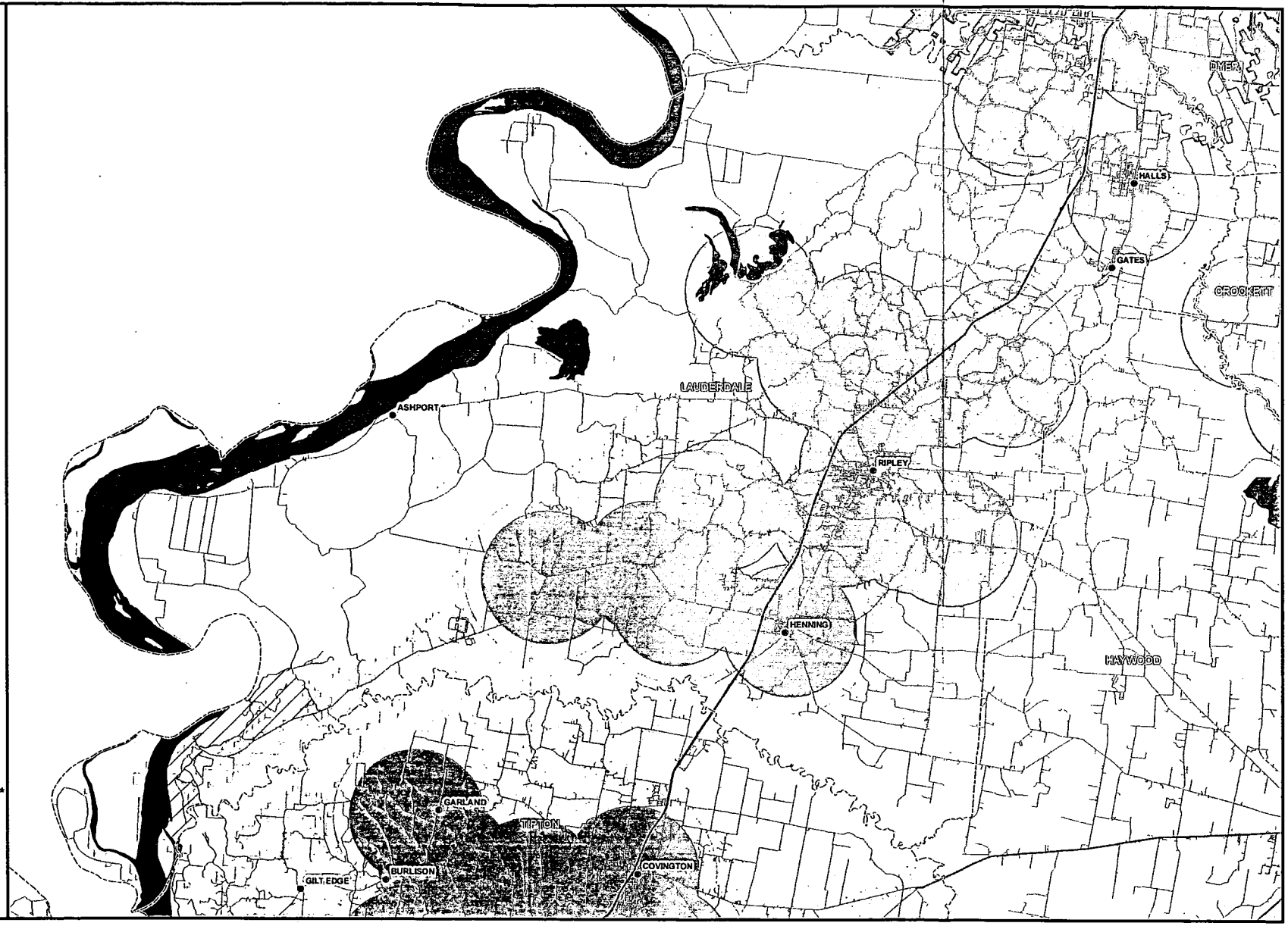

Density of Households Unserved by a Broadband Provider By Census Block

Lauderdale County Tennessee

Updated September 30, 2008

Submit questions or recommended changes to: maps@connectednation.org

N

CONNECTED Tennessee
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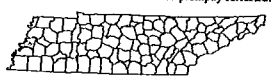

0 0.5 1 2 3 Miles

Symbology

- City
- Interstate
- US Road
- Local Road
- County Boundary
- Water
- National and State Lands
- Municipal Boundary

Number of Unserved Households per Square Mile, per Census Block

- 0 - 8
- 9 - 20
- 21 - 40
- 41 - 85
- 86+
- Area less than 0.25 square mile
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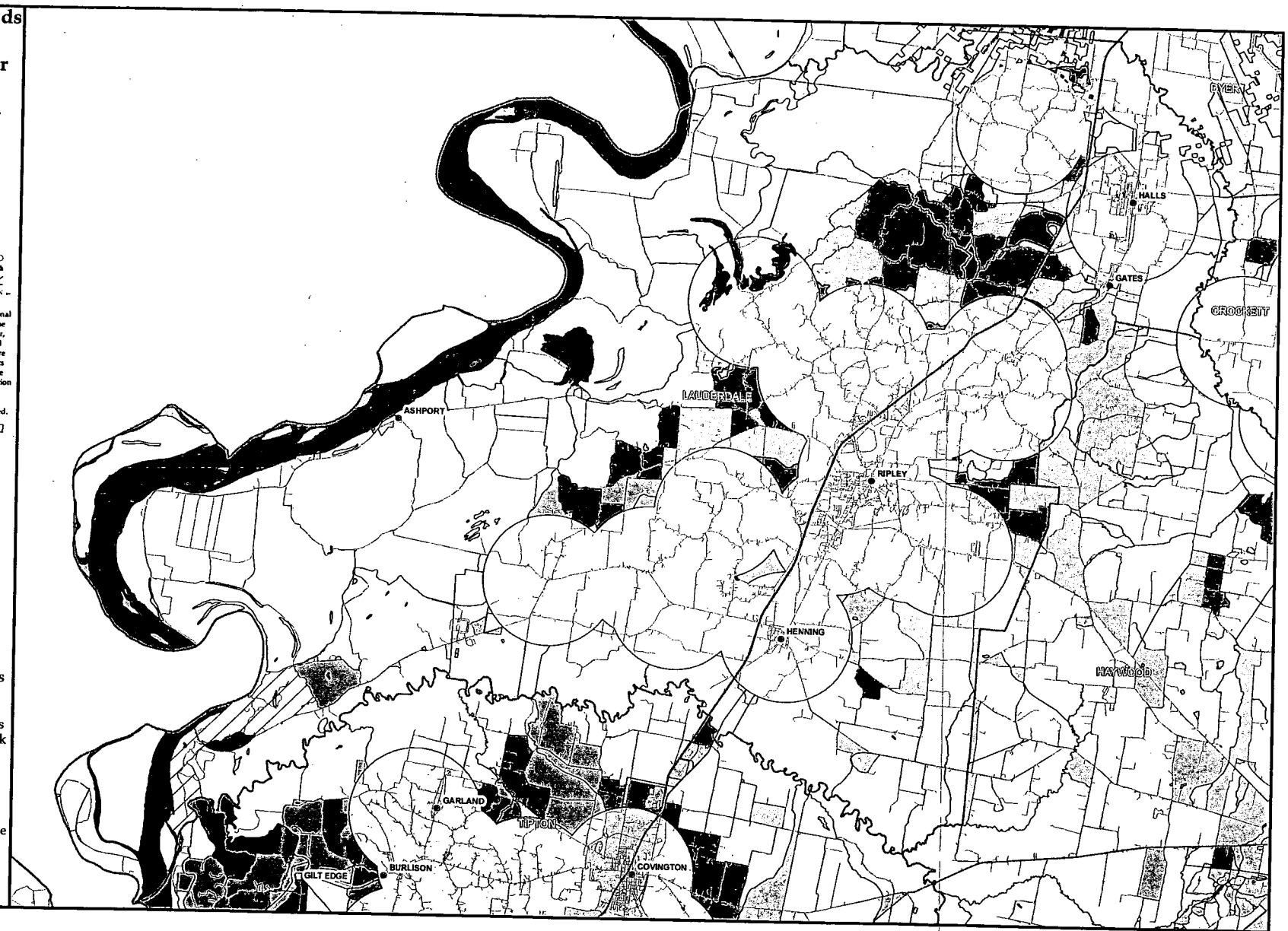

CONNECTED NATION

CONNECT north carolina

CONNECTKENTUCKY

Broadband Mapping Initiative

CONNECTED Tennessee
THE TRAIL TO INNOVATION

House Select Committee on
High Speed Internet in Rural Areas
December 18, 2008

Joe Mefford
Senior Broadband Consultant
jmefford@connectednation.org

Brent Legg
Vice President – State & Local Initiatives
blegg@connectednation.org

CONNECT OHIO

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CONNECTED NATION

Our Mission

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.

We do these things because…

We believe states can realize a significant economic impact by accelerating broadband deployment into rural areas and by increasing broadband adoption in all areas, rural and urban.

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CONNECTED NATION

Our Work

Connected Nation facilitates three comprehensive, statewide broadband expansion initiatives:

CONNECTKENTUCKY

CONNECTED Tennessee
THE TRAIL TO INNOVATION

CONNECT OHIO

We have also produced (or are in the process of producing) broadband availability maps for the states of West Virginia, South Carolina, and Minnesota

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CONNECTED NATION

Our Relationships with Broadband Providers

The initiatives we facilitate are, in every sense of the phrase, public-private partnerships – bringing state government and the private sector together around a common table to work collaboratively on broadband expansion.

We believe that broadband providers are part of the solution, not part of the problem.

Our goal is to help providers build their businesses, while creating a climate that makes it possible for them to extend service to unserved areas.

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CONNECTED NATION

CONNECTKENTUCKY

ConnectKentucky's Accomplishments Since 2004

- **96% of Kentucky households have access to Broadband (up from just 60% in four years)**
- **546,000 new households that have received broadband access since 2004**
- **Over $850 million in private capital invested in Kentucky's telecommunications infrastructure**
- **100% growth rate in home broadband adoption**
- **24% growth rate in home computer ownership – six times the national average (4%)**

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CONNECTED NATION

The Four Key Components of the Connected Nation Model

- **Street-Level Broadband Infrastructure Mapping**
- **Market Intelligence through Survey Research**
- **Demand Creation and Planning at the Grassroots Level**
- **Computers for Underprivileged Households**

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CONNECTED NATION

The Connect North Carolina Broadband Mapping Initiative:

Provider Participation is Critical

- **The purpose of the Connect North Carolina Broadband Mapping Initiative is to complement the work of the e-NC Authority by creating the state's first accurate street-level picture of where broadband service exists and doesn't exist across the state.**
- **The value of such a map lies not only in understanding the extent of broadband availability in North Carolina, but it will ultimately allow for future discussions and efforts to focus on those areas that are truly unserved.**
- **It is critical that all broadband providers—Cable, DSL, Fixed Wireless, Mobile (Cellular) Wireless, and Municipal Providers—participate in the mapping process so that the map is as accurate as it possibly can be.**

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The Connect North Carolina Broadband Mapping Initiative:

Protecting Provider Data

- **Because Connect North Carolina will operate fully outside of state government, we can enter into non-disclosure agreements (NDAs) with each broadband provider to legally protect confidential and proprietary information.**
- **We have spent years building trust with providers of all shapes and sizes in other states, and it is our hope that we can build a mutually beneficial relationship with each and every company that provides service in North Carolina—from large to small.**
- **Once NDAs are in place, the second step consists of working with each provider to develop the most effective and responsible method for collecting that company's broadband coverage data in a way that is least burdensome but yields highly accurate results at the street level.**

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Data Collection Methodology for Cable and DSL Providers

We have worked with cable and DSL providers in others states to develop various methods to represent broadband availability:

1. **If a cable or DSL company has already mapped its broadband availability in GIS format at the street level, Connected Nation can integrate these maps into the statewide broadband map.**

2. **Connected Nation can provide a company with electronic street/road maps for each North Carolina county. That company can then mark up those maps (either electronically or on physically on paper) noting the extent to which each street or road is served. When returned to Connected Nation, that data will be digitized into GIS format for each company's approval.**

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CONNECTED NATION

Data Collection Methodology for Cable and DSL Providers

- continued -

3. **Connected Nation has the ability to geo-code addresses for the homes that are passed by broadband enabled systems. Connected Nation can also utilize the latitude and longitude coordinates of those addresses if that data is more convenient to format. Connected Nation will then create a coverage map for each company's approval in accordance with the data provided.**
4. **Connected Nation can develop broadband availability maps according to household density requirements for broadband deployment as they are provisioned in local franchise agreements, as long as the company has met those franchise requirements.**
5. **Connected Nation can also map the exact location of each DSL central office and remote terminal location and then create 2.5 mile (13,000 ft) radial buffers to represent the broadband availability that each DSLAM provides.**

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CONNECTED NATION

Data Collection Methodology for Wireless Providers

We have worked with fixed and mobile (cellular) wireless providers in others states to develop various methods to represent wireless broadband availability:

1. **If a company has already mapped its broadband availability in GIS format based on topography and signal penetration, Connected Nation can integrate those maps into the statewide broadband map.**

2. **Longitude and latitude coordinates for each wireless tower location can be obtained from 1) the FCC, 2) on site by our wireless engineers, or 3) by the provider itself. A wireless propagation study will then be conducted based on the capability of the equipment located on each tower.**

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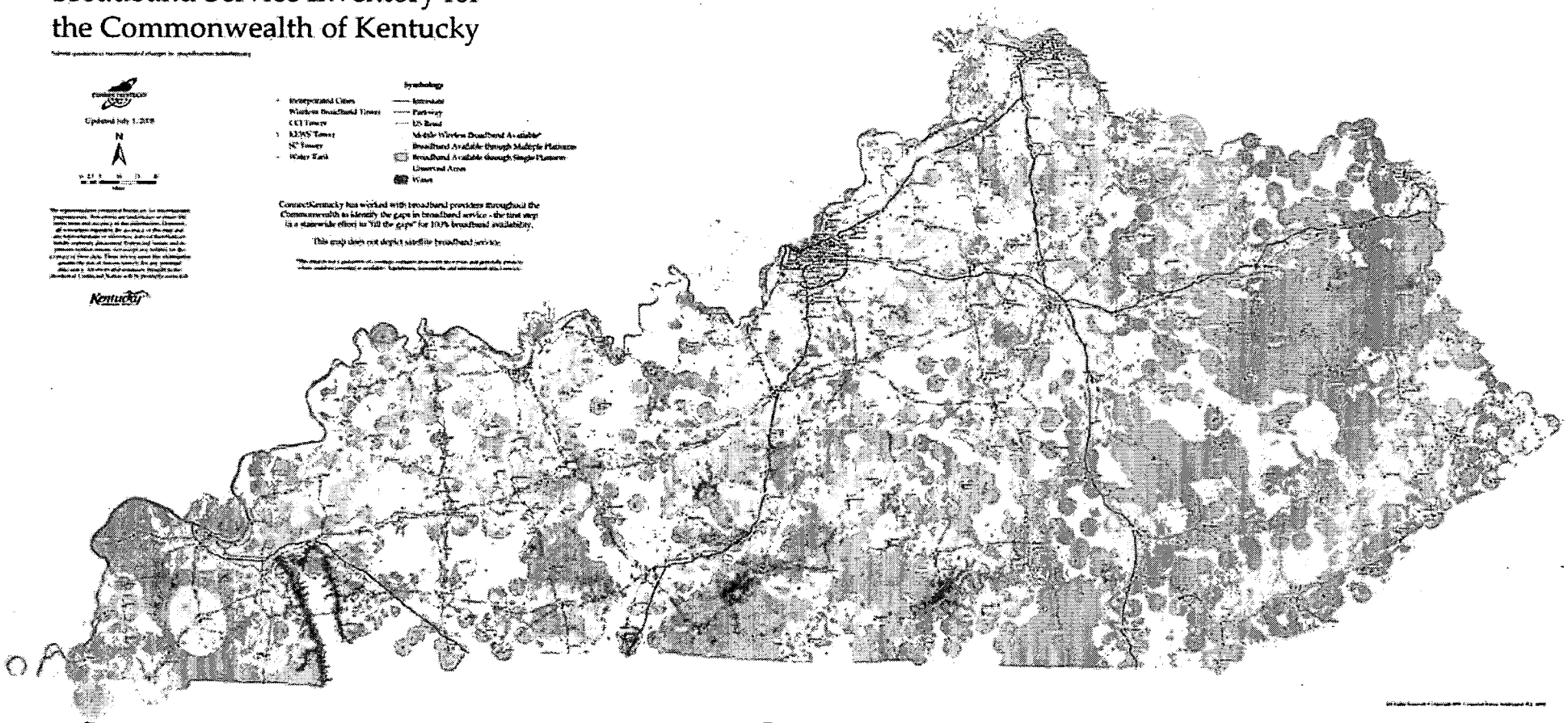
CONNECTED NATION

Broadband Availability Maps

Broadband Service Inventory for the Commonwealth of Kentucky



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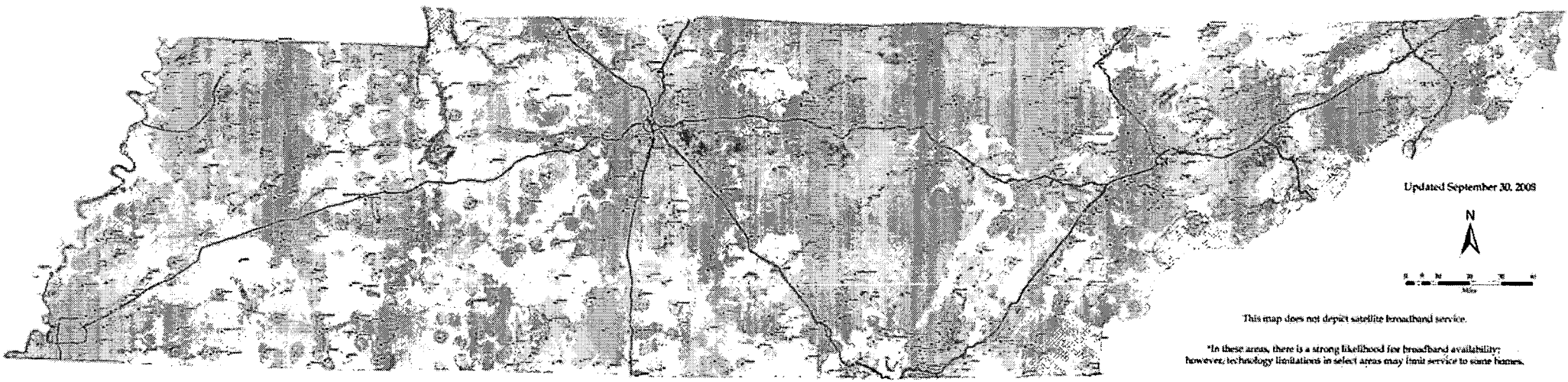
CONNECTED NATION

Broadband Availability Maps

CONNECTED Tennessee
THE TRAIL TO INNOVATION

Broadband Service Inventory for the State of Tennessee

Submit questions or recommended changes to: maps@connectednation.org



Updated September 30, 2008

N

This map does not depict satellite broadband service.

*In these areas, there is a strong likelihood for broadband availability; however, technology limitations in select areas may limit service to some homes.

**This map is not a guarantee of coverage, contains areas with no service, and generally predicts where outdoor coverage is available. Equipment, topography and environment affect service.

With the support of Governor Bredesen, the Department of Economic and Community Development, the Office for Information Resources, and the Tennessee Broadband Task Force, Connected Tennessee has worked with broadband providers throughout the State to identify the gaps in broadband service – the first step in a statewide effort to "fill the gaps" for 100% broadband availability.

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Symbology

- City
- Interstate
- US Road
- County Boundary
- National and State Lands
- Water
- Broadband Available
- Broadband Likely Available*
- Mobile Wireless Broadband Available**
- Unserved Areas

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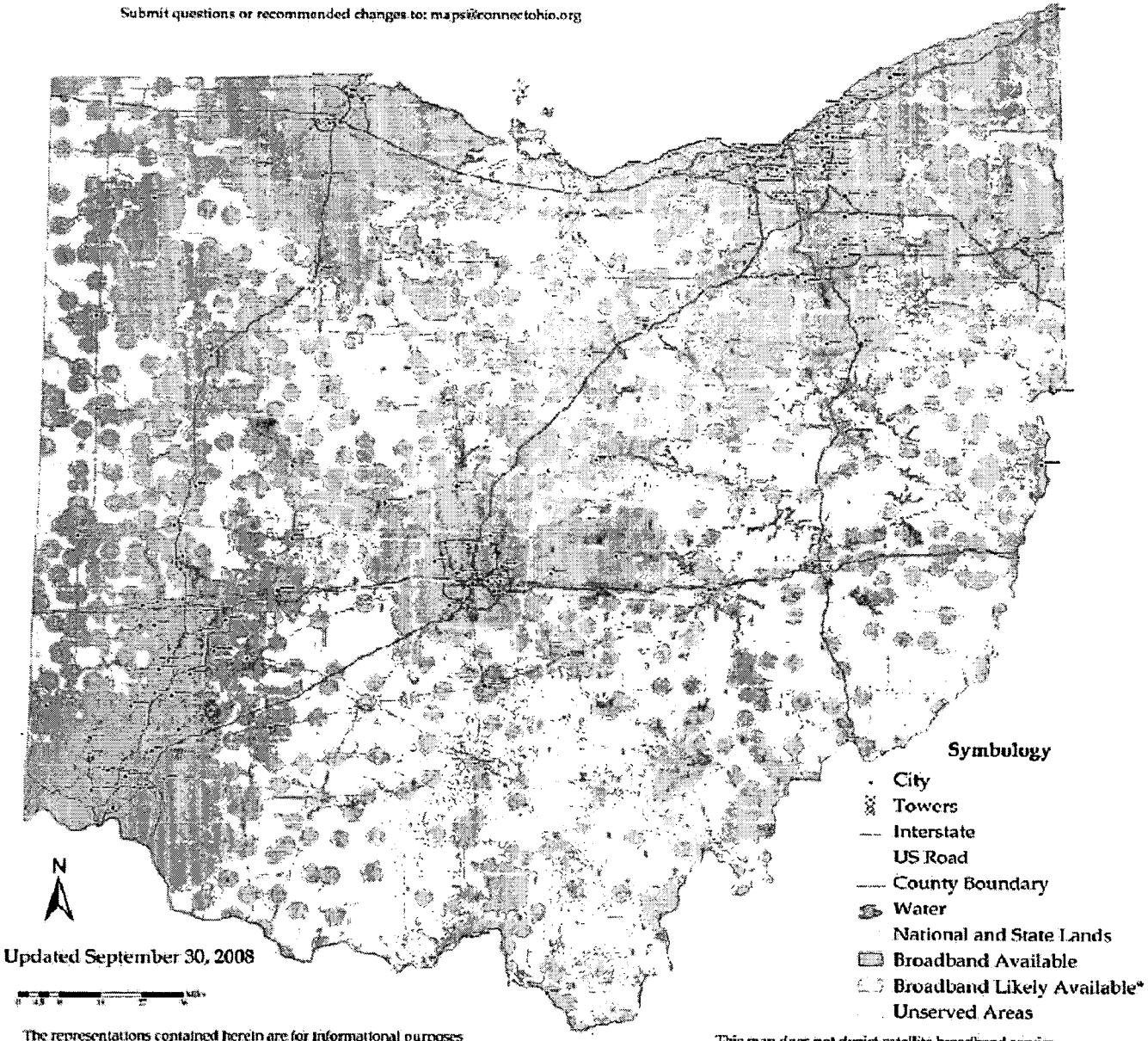
Broadband Service Inventory for the State of Ohio

CONNECT OHIO

Submit questions or recommended changes to: maps@connectohio.org



Updated September 30, 2008

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Broadband Availability Maps

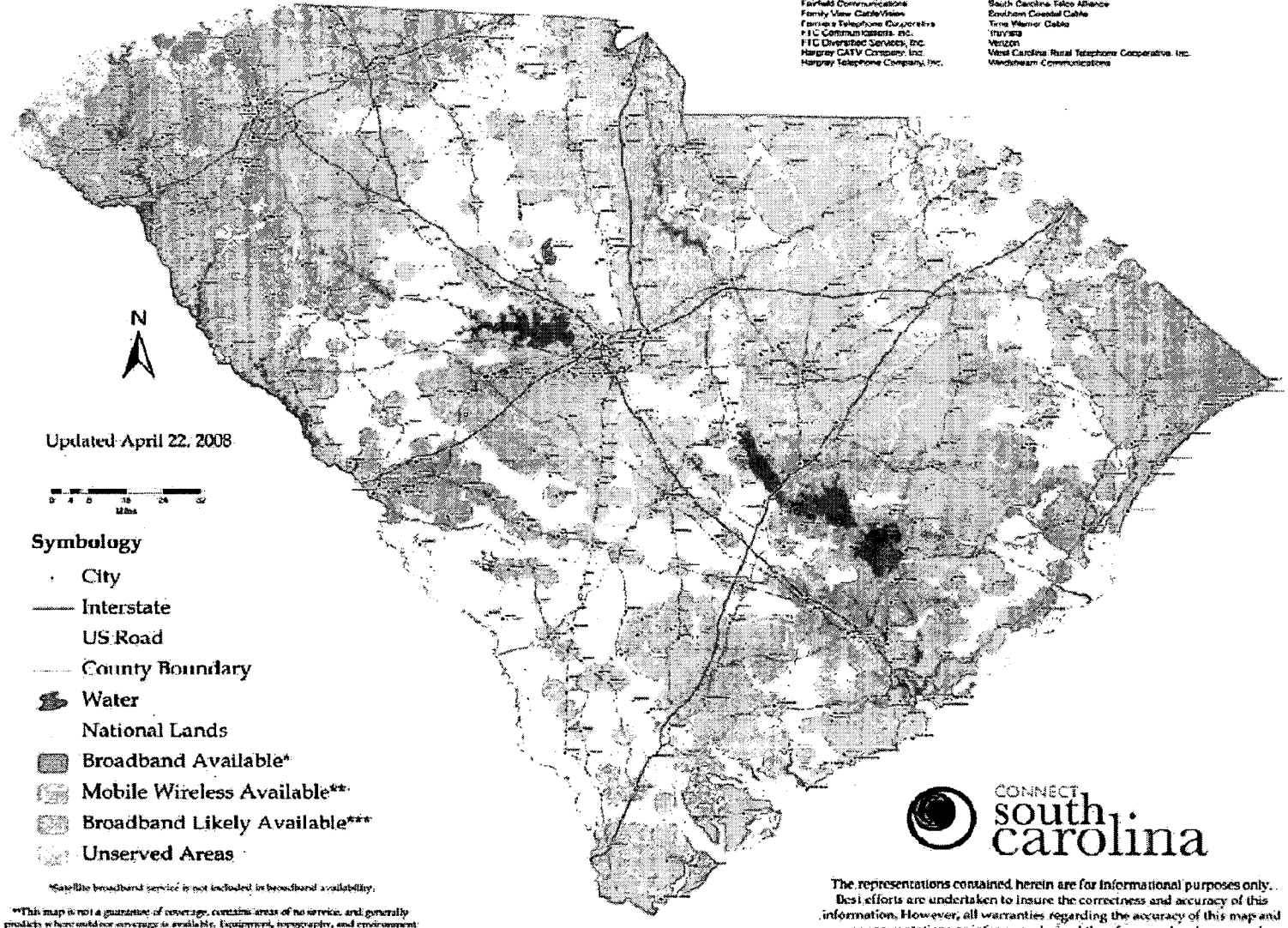
www.connectedn[redacted]on.org

Broadband Service Inventory for the State of South Carolina

Submit questions or recommended changes for maps@connectednation.org
A digital copy of this map can be obtained at: http://connectednation.com/state_programs/south_carolina.php

35 Providers Are Represented on This Map Including:

AT&T
ACSenvNET
Acropina VW dense Networks
Atlantic Broadband
Berkeley Cable TV
Bluffton Telephone Company
Charter Communications
Cheraw Telephone Company
Comcast Cable
Consortium
Embarq
Fairfield Communications
Family View CableVision
Farmers Telephone Cooperative
FTC Communications, Inc.
FTC Diversified Services, Inc.
Hargray CATV Company, Inc.
Hargray Telephone Company, Inc.
Home Telephone Company
Horry Telephone Cooperative, Inc.
HTC Communications, LLC
MainStreet VW dense
Northland Cable
Palmetto Rural Telephone Cooperative, Inc.
PBT Telecom
Pee Dee Online
Personality Cablevision
Piedmont Rural Telephone Cooperative, Inc.
Sandhill Telephone Cooperative, Inc.
South Carolina Telco Alliance
Southern Coastal Cable
Time Warner Cable
Truvista
Verizon
West Carolina Rural Telephone Cooperative, Inc.
Windstream Communications



Updated April 22, 2008

0 4 8 16 24 32
Miles

Symbology

- City
- Interstate
- US Road
- County Boundary
- Water
- National Lands
- Broadband Available*
- Mobile Wireless Available**
- Broadband Likely Available***
- Unserved Areas

*Satellite broadband service is not included in broadband availability.

**This map is not a guarantee of coverage, contains areas of no service, and generally predicts where outdoor coverage is available. Equipment, topography, and environment affect service.

***In these areas, there is a strong likelihood for broadband availability; however, technology limitations in select areas may limit service to some homes.

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CONNECT south carolina

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Broadband Availability Maps

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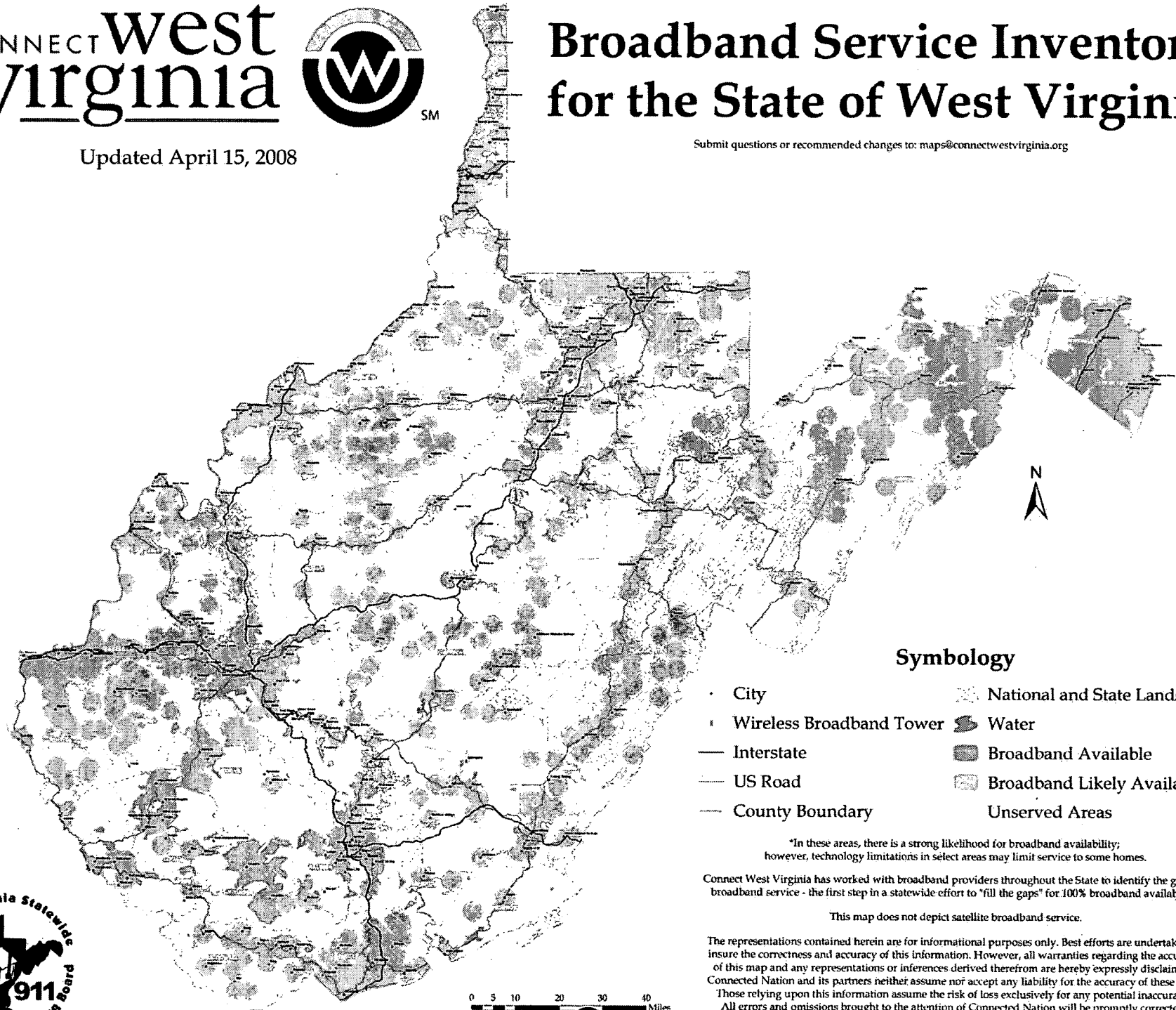
CONNECT west Virginia SM

Updated April 15, 2008

Broadband Service Inventory for the State of West Virginia

Submit questions or recommended changes to: maps@connectwestvirginia.org



Symbology

- City
- Wireless Broadband Tower
- Interstate
- US Road
- County Boundary
- National and State Lands
- Water
- Broadband Available
- Broadband Likely Available*
- Unserved Areas

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West Virginia Statewide Addressing & Mapping Board 911

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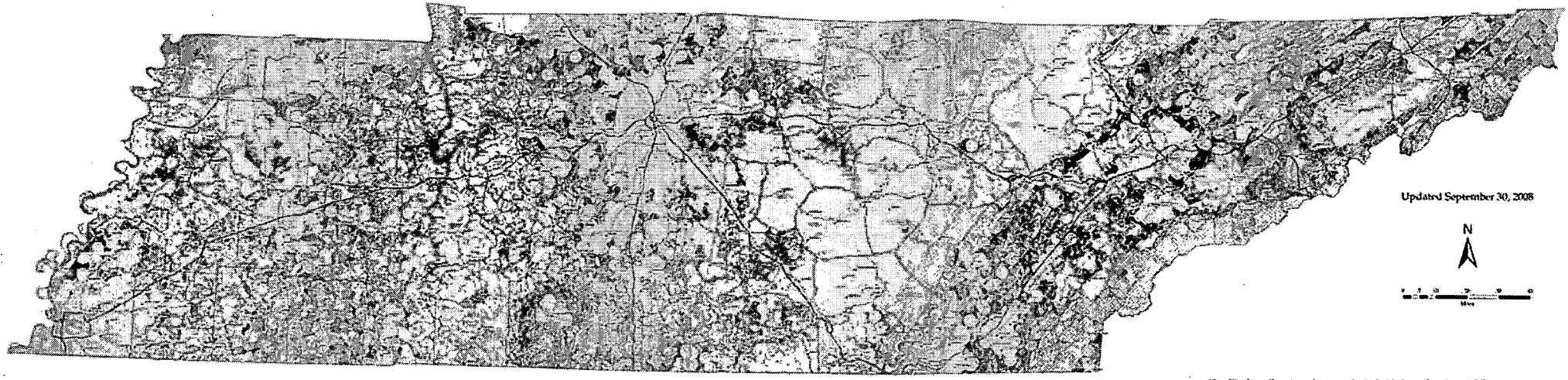
CONNECTED NATION

Analyzing Unserved Areas

CONNECTED Tennessee
THE TRAIL TO INNOVATION

Density of Households Unserved by a Broadband Provider by Census Block

Submit questions or recommended changes to: maps@connectednation.org



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Symbology

- City
- Interstate
- US Road
- County Boundary
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- 0 - 8
- 9 - 20
- 21 - 40
- 41 - 85
- 86+
- Area less than 0.25 square mile
- Broadband Available*

*Satellite broadband service is not included in broadband availability.

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CONNECT west Virginia

Updated April 15, 2008

Number of Households Unserved by a Broadband Provider by Census Block

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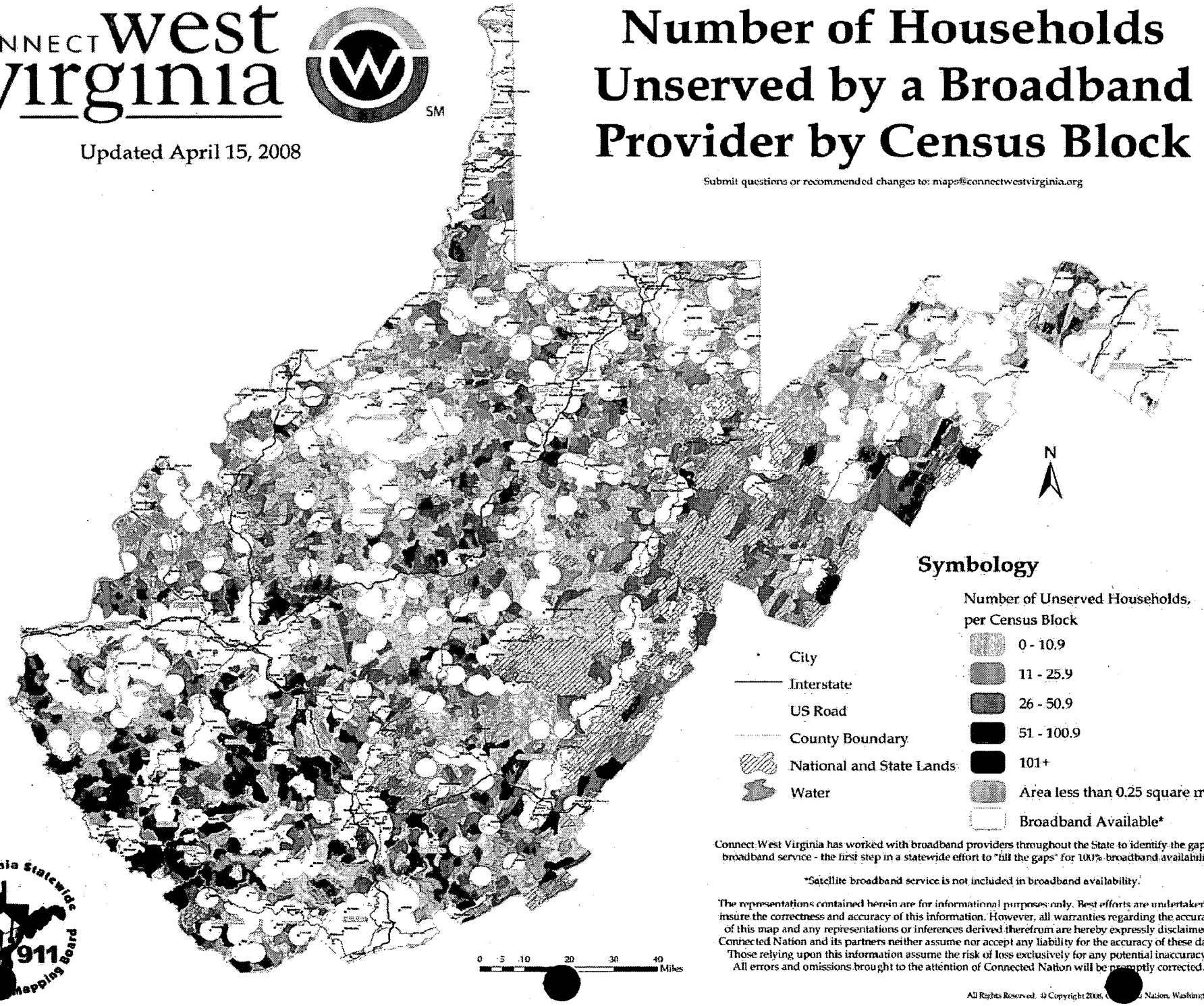

Symbology

- City
- Interstate
- US Road
- County Boundary
- National and State Lands
- Water

Number of Unserved Households, per Census Block

- 0 - 10.9
- 11 - 25.9
- 26 - 50.9
- 51 - 100.9
- 101+
- Area less than 0.25 square mile
- Broadband Available*

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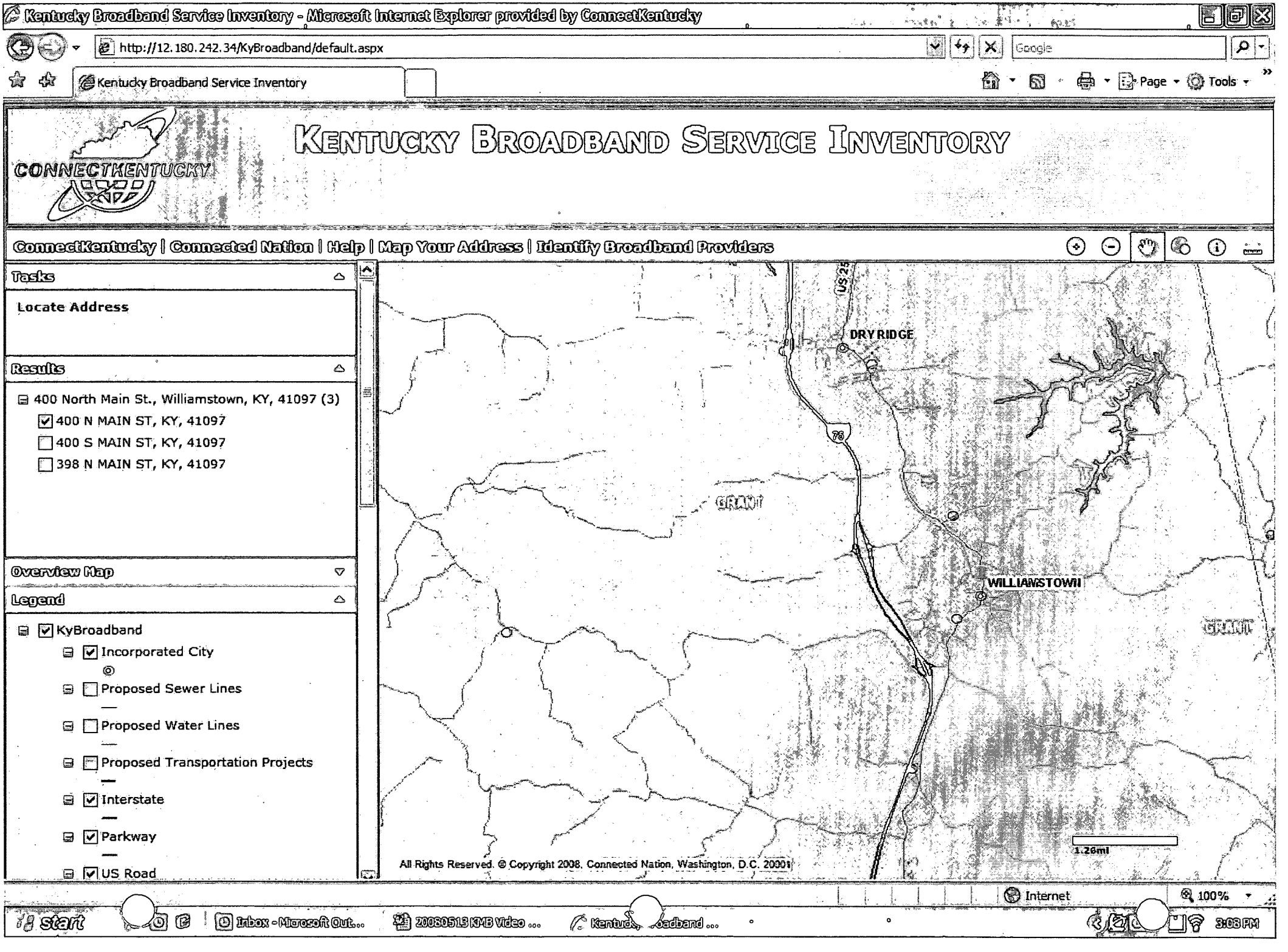
West Virginia Statewide Addressing 911 Mapping Board


Kentucky Broadband Service Inventory - Microsoft Internet Explorer provided by ConnectKentucky
http://12.180.242.34/KyBroadband/default.aspx
Kentucky Broadband Service Inventory
KENTUCKY BROADBAND SERVICE INVENTORY
CONNECTKENTUCKY
ConnectKentucky | Connected Nation | Help | Map Your Address | Identify Broadband Providers
Tasks
Locate Address
Results
400 North Main St., Williamstown, KY, 41097 (3)
400 N MAIN ST, KY, 41097
400 S MAIN ST, KY, 41097
398 N MAIN ST, KY, 41097
Overview Map
Legend
KyBroadband
Incorporated City
Proposed Sewer Lines
Proposed Water Lines
Proposed Transportation Projects
Interstate
Parkway
US Road
DRY RIDGE
US 25
75
GRANT
WILLIAMSTOWN
1.28mi
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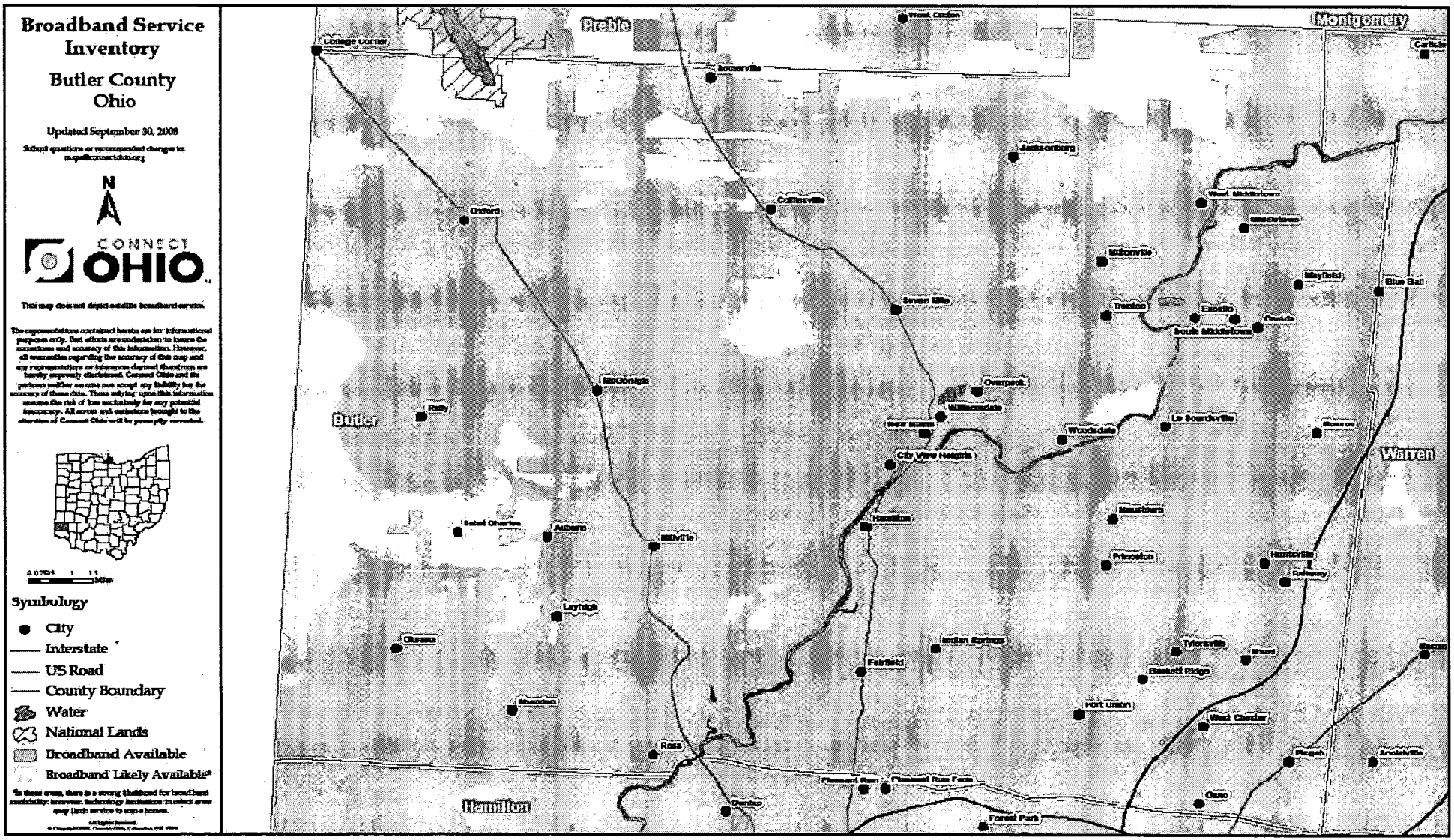
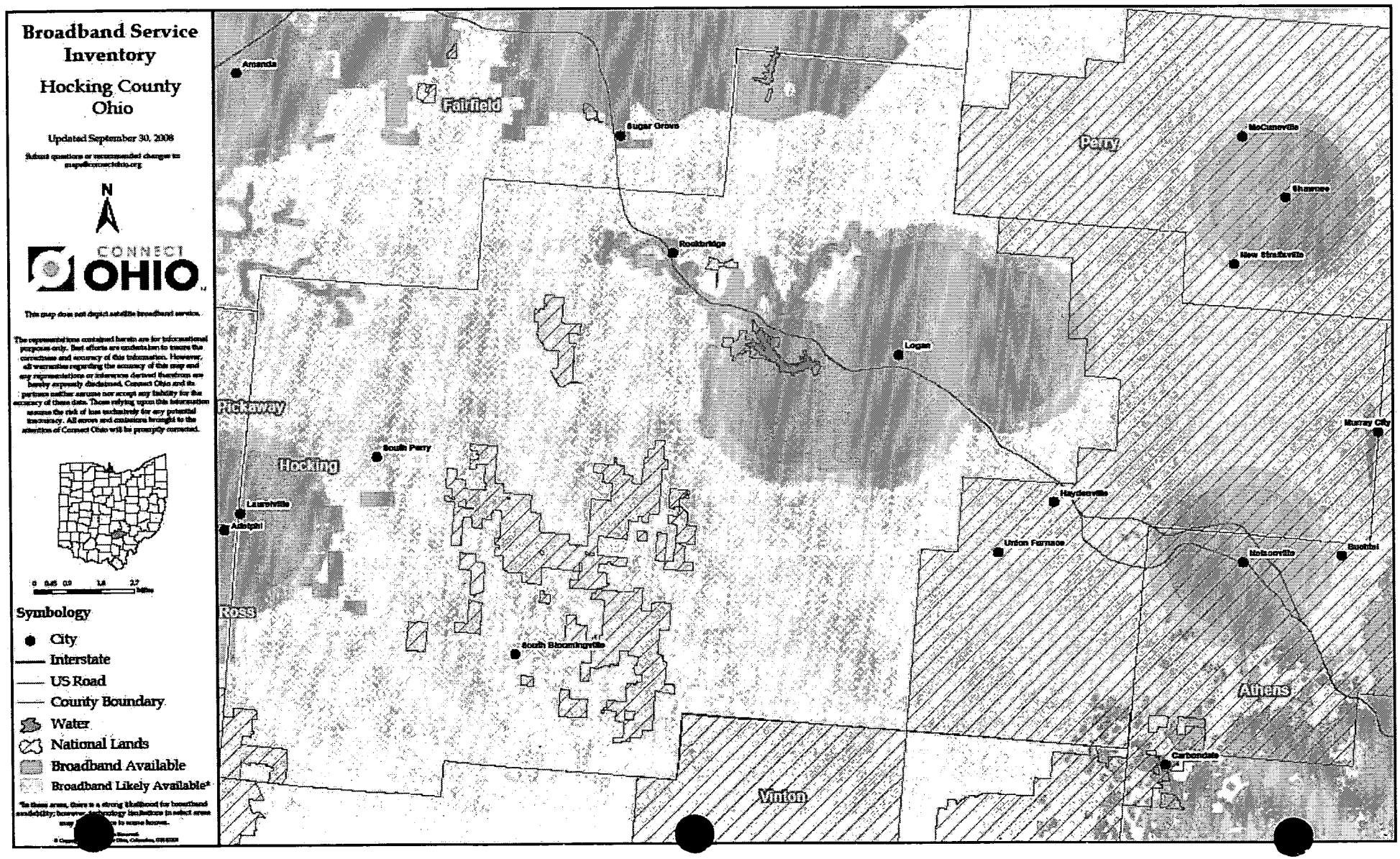
Internet
100%
start
Inbox - Microsoft Out...
20080513 KMB Video ...
3:08 PM

Community-level data for providers, policymakers, & local planning efforts



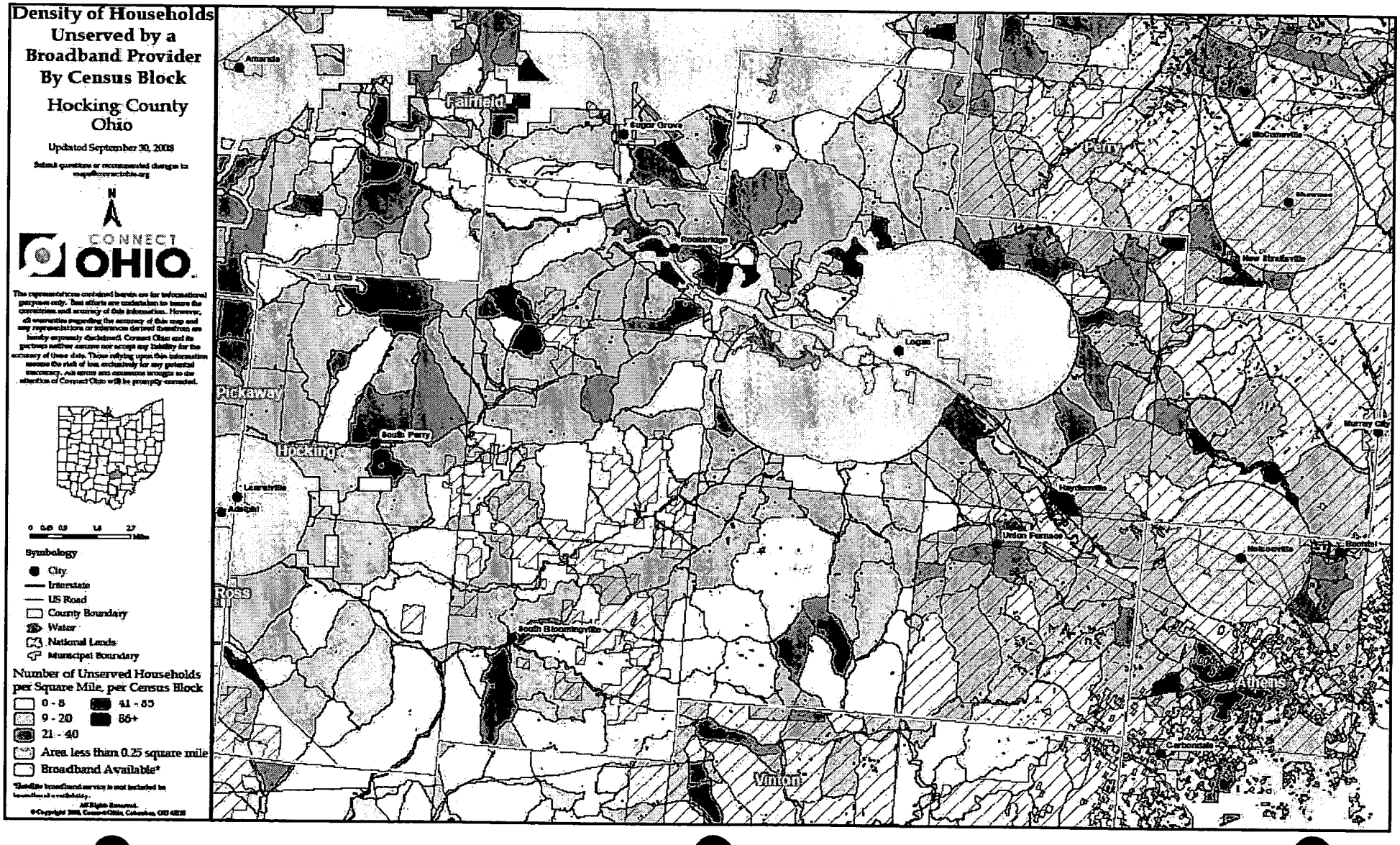
Community-level data for providers, policymakers, & local planning efforts

Hocking County, Ohio



Community-level data for providers, policymakers, & local planning efforts

Hocking County, Ohio



CONNECTED NATION

Other Maps:
Upload & Download Speeds & Broadband Inquiries

- **Connected Nation will also produce a statewide broadband speed map that will depict average *actual* upload and download speeds at the county level of detail for all providers in that county. The data for this map will be obtained from speedtest.net, speedmatters.org, and the speed testing tool on the Connect North Carolina web site.**
- **Connected Nation will also track broadband availability inquiries submitted via the Connect North Carolina web site and will periodically provide that data, including interested subscribers, to the state's broadband providers. A map pinpointing the physical address of each inquiry can be created upon request.**

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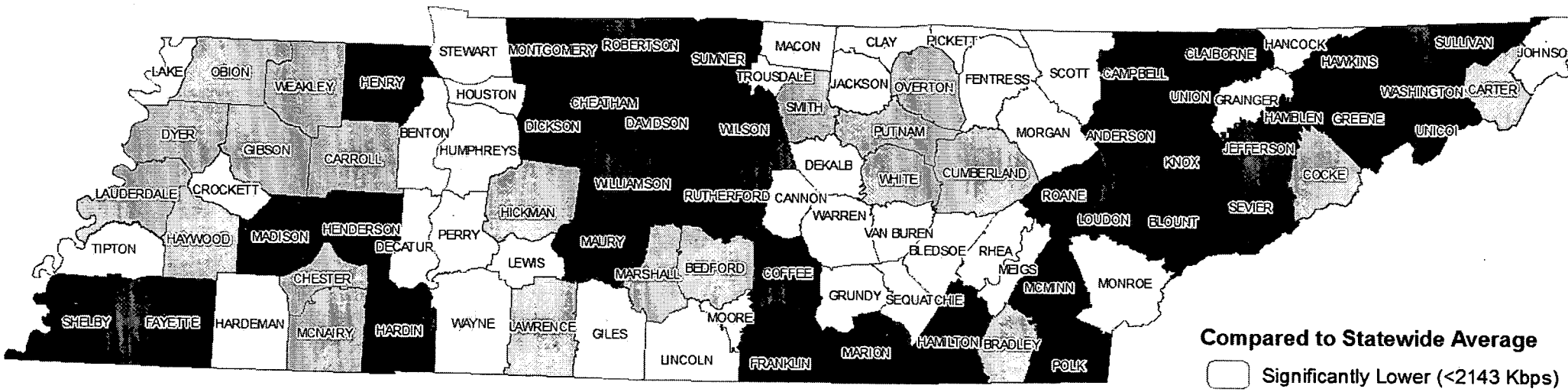
Average Residential Download Speed for the State of Tennessee

Submit questions or recommended changes to: maps@connectednation.org



Average Statewide Download Speed: 3611 KBPS

Updated June 5, 2008

This map shows average download speeds based on the residential broadband speed tests in each county. The map does not reflect commercial or business broadband speeds, broadband availability or adoption, nor does it show available bandwidth within an area.

Compared to Statewide Average

- Significantly Lower (<2143 Kbps)
- Lower (2143 - 3611 Kbps)
- Higher (3611 - 6381 Kbps)
- Significantly Higher (>6381 Kbps)
- Insufficient Sample

Information represented herein reflects speed test data provided by Speedtest.net, CWA's speedmatters.org and Connected Tennessee's Speed Test.

Speed Matters SPEEDTEST.NET

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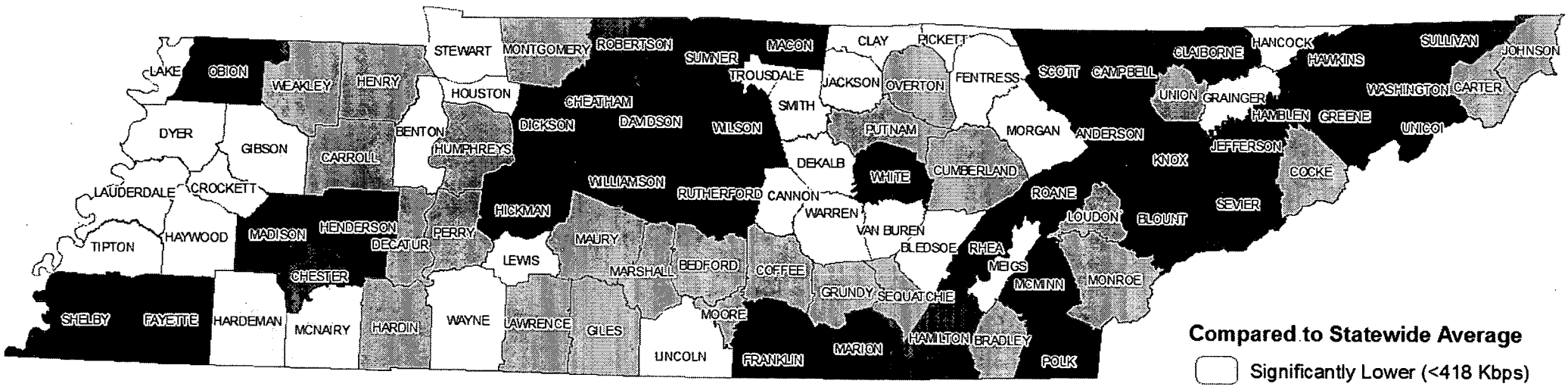
Average Residential Upload Speed for the State of Tennessee

Submit questions or recommended changes to: maps@connectednation.org



Compared to Statewide Average

- Significantly Lower (<418 Kbps)
- Lower (418 - 692 Kbps)
- Higher (692 - 1299 Kbps)
- Significantly Higher (>1299 Kbps)
- Insufficient Sample

Average Statewide Upload Speed: 692 KBPS

Updated June 5, 2008

This map shows average upload speeds based on the residential broadband speed tests in each county. The map does not reflect commercial or business broadband speeds, broadband availability or adoption, nor does it show available bandwidth within an area.

Information represented herein reflects speed test data provided by Speedtest.net, CWA's speedmatters.org and Connected Tennessee's Speed Test.

Speed Matters SPEEDTEST.NET

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CONNECTED NATION

The Five Key Components of the Connected Nation Model

- **Street-Level Broadband Infrastructure Mapping**
- **Market Intelligence through Survey Research**
- **Services to Providers and Local Governments**
- **Demand Creation and Planning at the Grassroots Level**
- **Computers for Underprivileged Households**

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CONNECTED NATION

Key Component #2:
Market Intelligence through Survey Research

Statistically-significant survey samples in EACH county

- **What are the barriers that are keeping people from adopting broadband?**
  - **Simply a lack of availability?**
  - **Computer ownership is low?**
  - **Lack of computer literacy?**
  - **Perceived lack of value to one's life?**
  - **Is the cost too high?**

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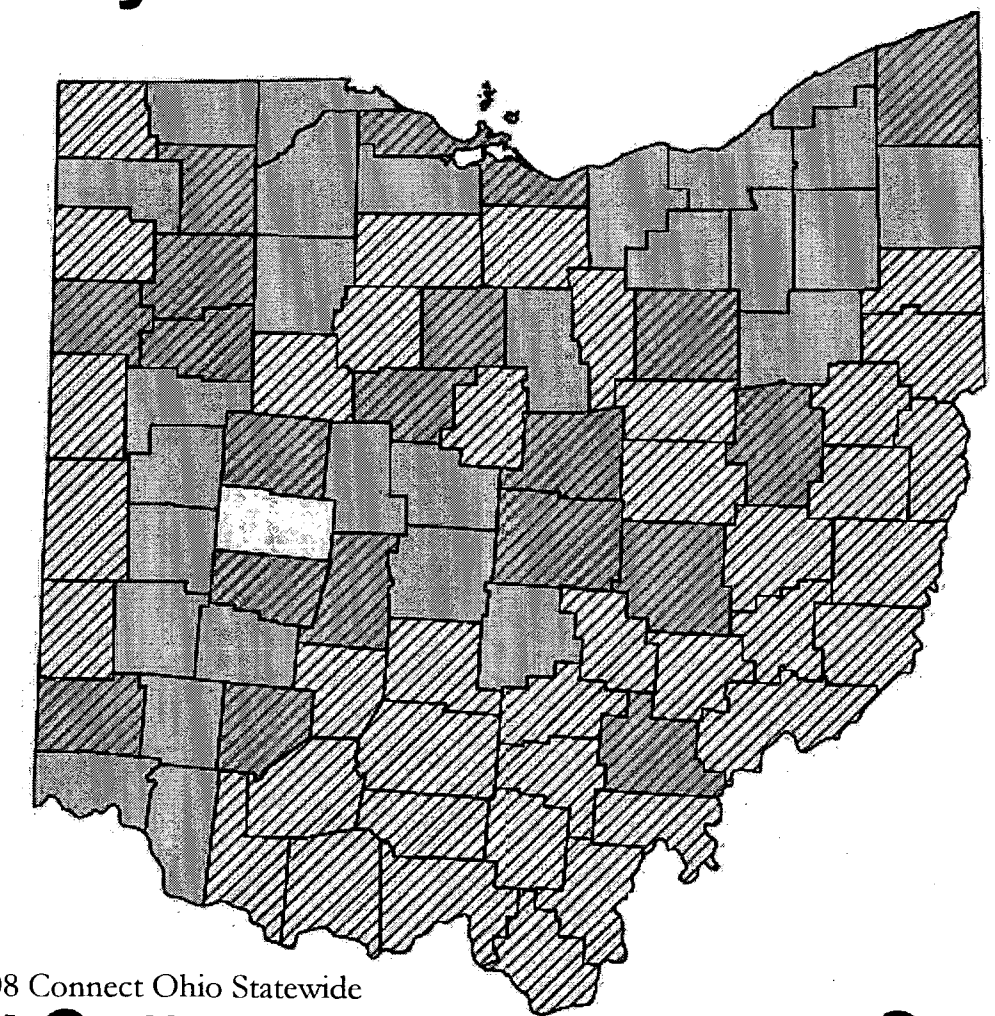
CONNECTED NATION℠

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.



Legend

- Lower Than Average Broadband Adoption (< 55%)
- Higher Than Average Broadband Availability (>81%)
- Higher Than Average Broadband Availability and Lower Than Average Broadband Adoption

Source: 2008 Connect Ohio Statewide Broadband Inventory Map

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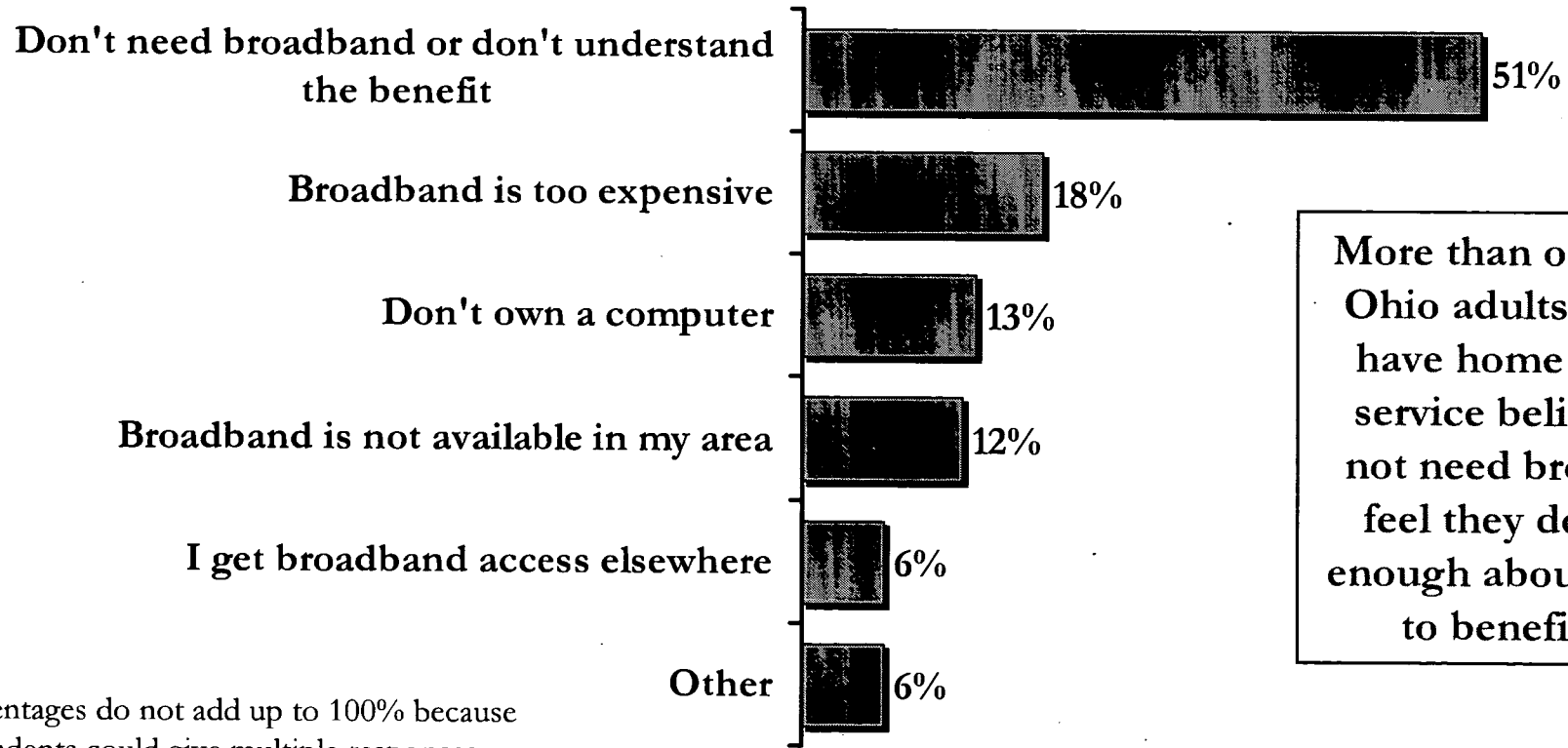
CONNECTED NATION

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.

*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 = 542 OH residents with no home broadband service)

Source: 2008 Connect Ohio Statewide Residential Technology Assessment

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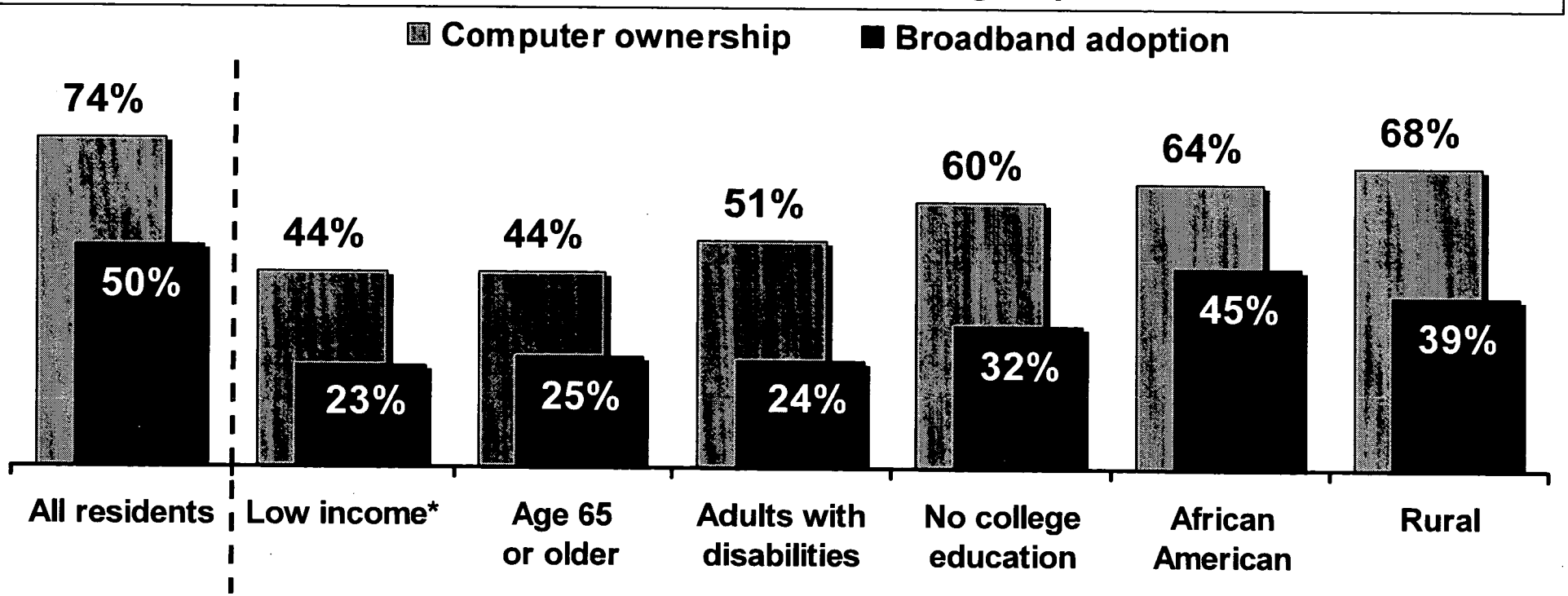
CONNECTED NATION

Computer Ownership and Broadband Adoption Among Demographic Groups

Computer ownership and broadband adoption are lower than average among several demographic groups.



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*
Source: 2007-2008 ConnectKentucky, Connected Tennessee, and Connect Ohio Residential Technology Assessments

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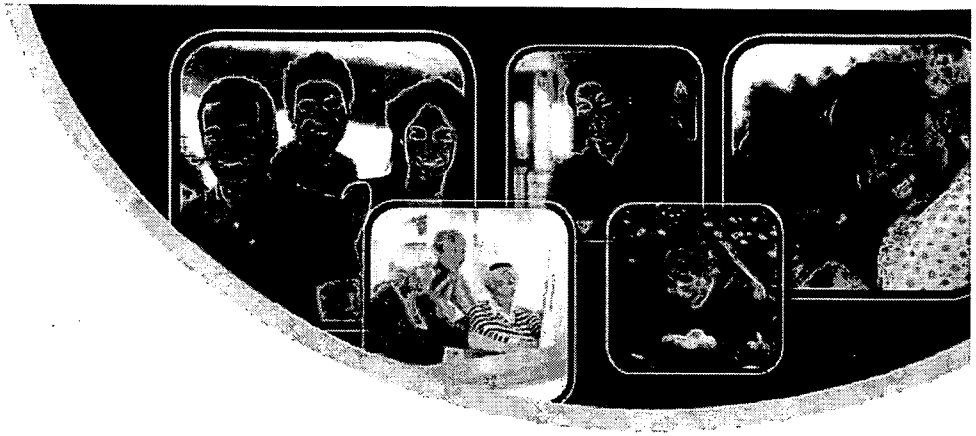
CONNECTED NATION



The Four Key Components of the Connected Nation Model

- **Street-Level Broadband Infrastructure Mapping**
- **Market Intelligence through Survey Research**
- **Demand Creation and Planning at the Grassroots Level**
- **Computers for Underprivileged Households**

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CONNECTED NATION

Key Component #3:
Demand Creation and Planning at the Grassroots Level

- **Facilitate a county by county statewide technology awareness and planning campaign that:**
  1) **Takes inventory of all the resources that the state and private sector have developed that could be deployed at the community level in a more coordinated fashion so as to build demand for computing applications and increase computer literacy;**
  2) **Leverages existing regional and community leadership infrastructure for assessment and visioning in technology planning;**
  3) **Monitors and measures positive impact over time**
  4) **Coordinates technology planning for both private and public entities in every county to identify relevant applications and drive adoption across nine different community sectors**

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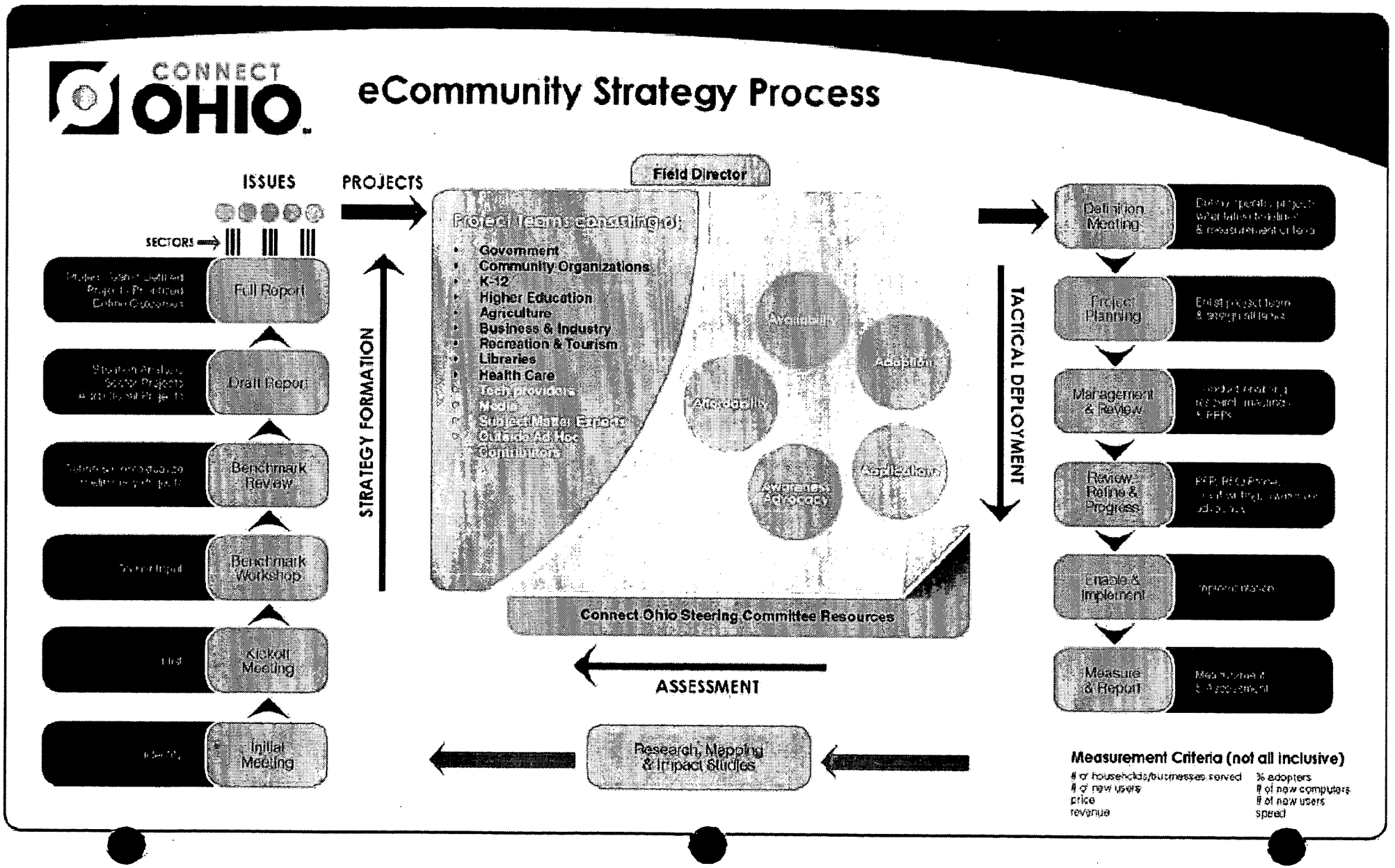
Key Component #3:
Demand Creation and Planning at the Grassroots Level



CONNECTED NATION

CONNECTED NATION

Organization: _____

Your Name: _____

This assessment tool is designed to quickly assess where the community stands today. A rating of *Level 1 is the lowest, Level 5 is the highest* and *Level 0 is disconnected.*

AGRICULTURE

Stage	Networked Places	Applications & Services	Leadership
0	Not using the Internet.	No computer use. No website. All contacts via phone and postal mail.	There is no technology or telecom plan.
1	**Some** growers, suppliers and processors have limited access through a dial-up connection.	**Some** growers, suppliers and processors use e-mail and Internet.	The Internet is seen as a possible enhancement to the way daily business is conducted.
2	**Some** growers, suppliers and processors have always-on connections to the Internet at their desks.	**Some** growers, suppliers and processors have an informational website. **Some** growers, suppliers and processors transmit or receive some orders electronically.	The Internet is seen as essential to business operations. Employees are trained on basic applications.
3	**Most** growers, suppliers and processors have always-on connections to the Internet. **Some** mobile workers have laptop computers and can access the network remotely. Affordable videoconferencing facilities are available in the community.	**Most** growers, suppliers and processors have informational websites. **Some** websites can accept credit card purchases. **Some** growers, suppliers and processors participate in the electronic supply chain.	**Some** suppliers and processors permit employees periodically to telework. **Some** growers, suppliers and processors encourage employees to take work-related classes **offline**.
4	**Some** growers, suppliers and processors use VoIP to save money. **Some** workers have converted from desktop computers to portable devices with wireless connections. **Some** office computers have webcams for videoconferencing.	**Some** growers, suppliers and processors outsource most of their computing services. **Some** growers, suppliers and processors sell goods out of state or internationally.	Training on new technology is a priority. **Some** suppliers and processors permit employees to telework one or two days a week. **Some** facilities encourage employees to take work-related courses **online**.
5	**Most** growers, suppliers and processors use VoIP to save money. **Most** computers have video cameras. **Some** growers, suppliers and processors use Radio Frequency Identification (RFID) to track inventory and equipment.	**Some** growers, suppliers and processors send and receive video mail. **Some** growers, suppliers and processors outsource most of their computing services. **Some** growers, suppliers and processors routinely use multiparty videoconferencing to coordinate operations.	**Some** suppliers and processors have restructured to focus on their core contribution and outsource nonessential functions. New hires are required to have experience using new technology in business applications.

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Community Benchmarking/ Assessment Tool

Based on a series of metrics developed by Connected Nation, participants assess their sector on a scale of 0 to 5 and share their vision

CONNECTED NATION

CONNECTED NATION

Sector: ☐ Agriculture ☐ Business & Industry ☐ Community-Based Organizations ☐ Government ☐ Healthcare ☐ Higher Education ☐ K-12 ☐ Libraries ☐ Tourism, Recreation & Parks

Name: _____

Organization: _____

COMMUNITY BENCHMARK WORKSHOP

Column	Current Assessment	2-Year Goal	Comments/Notes
	0 1 2 3 4 5	0 1 2 3 4 5	
Networked Places			
Applications & Services			
Leadership			

Define Current State
resources, applications, limitations/barriers, etc.:

Explain Future Vision
How advanced communications services will make your sector more successful (include resources and applications needed or desired):

2-3 Ideas for Action Initiatives
Ways to help your sector achieve your two-year goals and get you closer to your vision. Please include cross-sector idea.

*

*

*

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Community Benchmarking/ Assessment Tool

Based on a series of metrics developed by Connected Nation, participants assess their sector on a scale of 0 to 5 and share their vision

CONNECTED NATION

The Four Key Components of the Connected Nation Model

- **Street-Level Broadband Infrastructure Mapping**
- **Market Intelligence through Survey Research**
- **Demand Creation and Planning at the Grassroots Level**
- **Computers for Underprivileged Households**

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CONNECTED NATION

Key Component #5:
Computers for Underprivileged Households

- Nearly all youths between 12-17 use the Internet for school work – but children from low income families are half as likely to have a computer at home
- In collaboration with the state, the private sector, and private foundations, we distribute low-cost new and/or refurbished state-retired computers to the homes of underprivileged middle school students

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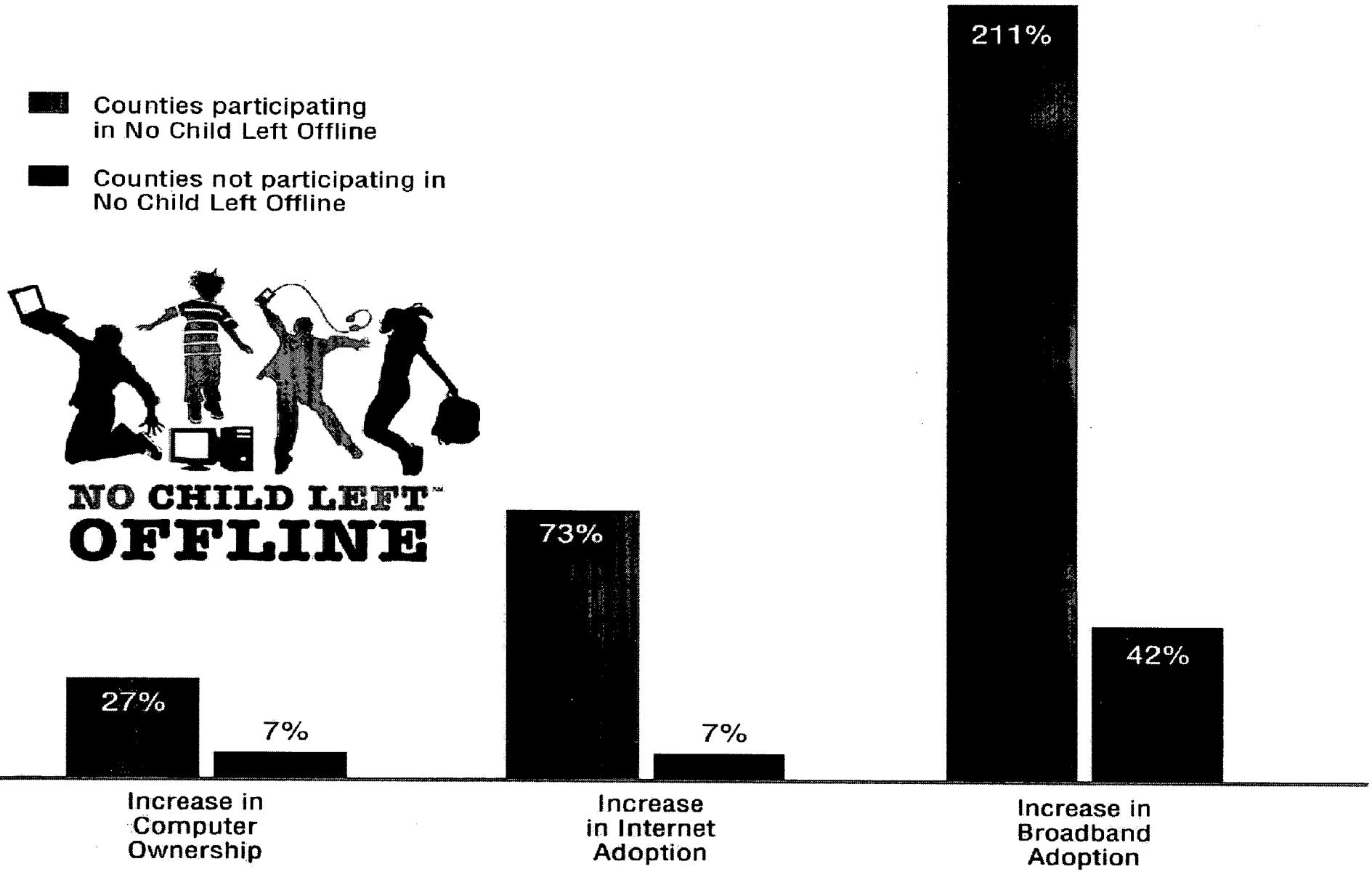

Counties participating in No Child Left Offline include the Kentucky counties of Johnson, Clay, Wolfe, McCreary, Owsley, Carter, Lawrence and Morgan. Low-income is defined as annual household income below $25,000.

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CONNECTED NATION

CONNECT north carolina

CONNECTKENTUCKY

CONNECTED Tennessee
THE TRAIL TO INNOVATION

CONNECT OHIO

Broadband Mapping Initiative

House Select Committee on
High Speed Internet in Rural Areas
December 18, 2008

Joe Mefford
Senior Broadband Consultant
jmefford@connectednation.org

Brent Legg
Vice President – State & Local Initiatives
blegg@connectednation.org

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ATTACHMENT 9

§ 56-265.4:4. Certificate to operate as a telephone utility.

A. The Commission may grant certificates to competing telephone companies, or any county, city or town that operates an electric distribution system, for interexchange service where it finds that such action is justified by public interest, and is in accordance with such terms, conditions, limitations, and restrictions as may be prescribed by the Commission for competitive telecommunications services. A certificate to provide interexchange services shall not authorize the holder to provide local exchange services. The Commission may grant a certificate to a carrier, or any county, city or town that operates an electric distribution system, to furnish local exchange services as provided in subsection B.

B. 1. After notice to all local exchange carriers certificated in the Commonwealth and other interested parties and following an opportunity for hearing, the Commission may grant certificates to any telephone company, or any county, city or town that operates an electric distribution system, proposing to furnish local exchange telephone service in the Commonwealth. In determining whether to grant a certificate under this subsection, the Commission may require that the applicant show that it possesses sufficient technical, financial, and managerial resources. Before granting any such certificate, the Commission shall: (i) consider whether such action reasonably protects the affordability of basic local exchange telephone service, as such service is defined by the Commission, and reasonably assures the continuation of quality local exchange telephone service; and (ii) find that such action will not unreasonably prejudice or disadvantage any class of telephone company customers or telephone service providers, including the new entrant and any incumbent local exchange telephone company, and is in the public interest. Except as provided in subsection A of § 15.2-2160, all local exchange certificates granted by the Commission after July 1, 2002, shall be to provide service in any territory in the Commonwealth unless the applicant specifically requests a different certificated service territory. The Commission shall amend the certificated service territory of each local exchange carrier that was previously certificated to provide service in only part of the Commonwealth to permit such carrier's provision of local exchange service throughout the Commonwealth beginning on September 1, 2002, unless that local exchange carrier notifies the Commission prior to September 1, 2002, that it elects to retain its existing certificated service territory. A local exchange carrier shall only be considered an incumbent in any certificated service territory in which it was considered an incumbent prior to July 1, 2002.

2. A Commission order, including appropriate findings of fact and conclusions of law, denying or approving, with or without modification, an application for certification of a new entrant shall be entered no more than 180 days from the filing of the application, except that the Commission, upon notice to all parties in interest, may extend that period in additional 30-day increments not to exceed an additional 90 days in all.

3. The Commission shall (i) promote and seek to assure the provision of competitive services to all classes of customers throughout all geographic areas of the Commonwealth by a variety of service providers; (ii) require equity in the treatment of the certificated local exchange telephone companies so as to encourage competition based on service, quality, and price differences between alternative providers; (iii) consider the impact on competition of any government-imposed restrictions limiting the markets to be served or the services offered by any provider; (iv) determine the form of rate regulation, if any, for the local exchange services to be provided by the applicant and, upon application, the form of rate regulation for the comparable services of the incumbent local exchange telephone company provided in the geographical area to be served by the applicant; and (v) promulgate standards to assure that there is no cross-subsidization of the applicant's competitive local exchange telephone services by any other of its services over which it has a monopoly, whether or not those services are telephone

Notwithstanding the provisions of N.C. Gen. Stat. § 62-2(b1), any broadband services provider that provides voice grade communication services within a defined service territory or franchise area, and elects to provide broadband services outside its service territory or franchise area, may provide such voice grade service as an incident to such broadband service without violating its service territory restrictions or franchise agreement.

2008

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

MINUTES

MINUTES

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

Tuesday, January 27, 2009

The House Select Committee on High Speed Internet in Rural Areas met on Tuesday, January 27, 2009, in Room 544 of the Legislative Office Building at 10:00 A.M. The following members were present: Chairman Bill Faison; Representatives Angela Bryant, Jim Gully, Phillip Haire, Thom Tillis, Joe Tolson, and Roger West. Staff in attendance: Brenda Carter, Barbara Riley, Karlynn O'Shaughnessy, Heather Fennell and Peter Capriglione. House Sergeant-at-Arms assisting: Fred Hines, Marvin Lee, Martha Gadison, and Judy Turner. The Agenda and Visitor Registration Sheet are attached. *(Attachment 1 and 2)*

The Chairman called the meeting to order. The purpose of the meeting was to adopt Findings and Recommendations and approve the Final Report to the Speaker and members of the House of Representatives.

The Chairman and Members of the committee went through the draft Report line by line and either adopted as recommended or amended or proposed Findings and Recommendations. The members adopted the Finding and Recommendations unanimously. The committee recommends three legislative proposals:

1. An act to expand the authority of the North Carolina department of transportation to locate and acquire right-of-way for the location, above or below ground, of fiber optic cable.
2. An act permitting certain broadband services providers that provide voice grade communications services within a defined service territory or franchise area to offer such voice grade service as an incident to broadband service outside the providers service territory or franchise area.
3. An act to create the Joint Legislative study committee on high speed internet in rural areas.

The draft report and final draft report are attached. *(Attachment 3 & 4)* In addition Rep. Wilkins' requested that certain documentation be added to the committee records which were made a part of the record. Mr. Marcus Trathen requested that the updated FCC status and information on how the stimulus package effects broadband be made a part of the record and it was. *(Attachment 5 &6)*

MCNC updated the committee on the North Carolina Research and Education Network (NCREN), showing that The University of North Carolina System has requested funding to complete the build-out of NCREN through the acquisition of Indefeasible Rights of Use (IRU) or other form of

ownership in rural areas of the State. This ownership of NCREN is said to be necessary due to the rapidly increasing bandwidth needs of research and education entities served by NCREN. This growth is apparently most evident in rural areas where bandwidth use for education and research has begun to exceed existing capacity. Leasing additional capacity in these areas is an inefficient and costly way for the State to scale to the increasing need. Funding of the request to build out NCREN should be given a high priority. MCNC, the operator of NCREN, should work with the e-NC Authority and other entities to make certain that the investment in the build-out of NCREN serves as the foundation for other investments in broadband infrastructure in rural areas.

Chairman Faison thanked the committee for all of the time and effort put into the committee's work and opened the floor for questions or comments.

With no further business to come before the committee Chairman Faison announced the final adjournment of the House Select Committee on High Speed Internet in Rural Areas. The meeting adjourned at 12:00 p.m.

Respectfully submitted,

Representative Bill Faison
Chair

Lavada Vitalis
Committee Assistant

ATTACHMENT 1

NORTH CAROLINA GENERAL ASSEMBLY
HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS
2008 SHORT SESSION

AGENDA

Tuesday, January 27, 2009
10:00 AM
Room 544, L0B

1. **Welcome**

   Representative Bill Faison, Chairman

2. **Committee Consideration of Final Report:**
   - **A. Proposed Findings**
   - **B. Proposed Recommendations for Legislation**
   - **C. Proposed General Recommendations**

3. **Adjournment**

ATTACHMENT 2

VISITOR REGISTRATION SHI

High Speed Internet in Rural Areas — **Name of Committee**

27 January 2009 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Mark Johnson	AT&T
Karen Walker	Person County citizen
Margaret LaRoe	Person County 384 Potluck Farm Rd Roxboro NC 27573
[illegible]	N.C. League of Municipalities
Joanna Wright	" NC Authority
Steve Brewer	EMBARQ
Marty Bocock	" "
Kaye Bryan	" "
Dwight Allen	Allen Law Offices, PLLC
Britton Allen	Allen Law Offices, PLLC
James Patterson	e n c Authority

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — **Name of Committee**

27 January 2009 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Deborah Watts	e NC Authority
Richard Kelly	" "
Ed Chas	NC DPI
Cary Edgar	The e-NC Authority
Charles Pittman	e-NC Authority
Angie Bailey	The e-NC Authority
Carol Torian	The e-NC Authority
John Merritt	McGuire Woods Consulting
Carole Woodward	NC Telecom Assoc.
Stan Pace	Verizon
Dana Simpson	Smith Anderson

VISITOR REGISTRATION SHEET

High speed Internet — 1/27/09

Name of Committee — Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Mary Trotter	Brooks Pierce
Jordan Schrader	press
Sarah Porper	OSBM
Allison Fowler	NC State Grange
Leslie Arnold	SOG Daily Bulletin
Dorenda Gatlings	e.NC Board of Directors
Bunny Sanders	Mayor, Town of Roper Broadband Advocate For Rural Comm
Fran Wescott	NC APT- OPEN/net
Ivy Hoffman	NC APT
Thomas Moore	Edmisten Hall

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — 27 January 2009

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Jean Kaplan	Graham, NC
Robert Osborne	Graham, NC
Sara Nelson	DOC
Fiona Morgan	Reporter, Independent Weekly
Lori Ann Harkins	LATTA
Mike McLaughlin	Lieutenant Governor's Office
Daniel Bacon	K+L GATES
Wendy Kelly	OZRO Wireless
Herb Crenshaw	AT+T

VISITOR REGISTRATION SHEET

High Speed Internet in Rural Areas — **Name of Committee**

27 January 2009 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Cheri Hobgood	Hester's Store Community, Roxboro, NC
Curtis Moore	Hurdle Mills Community Hurdle Mills NC
L Andrews	NCFB

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DRAFT

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS-REPORT TO THE SPEAKER AND MEMBERS OF THE HOUSE OF REPRESENTATIVES

January 27, 2009

TO THE SPEAKER AND MEMBERS OF THE HOUSE OF REPRESENTATIVES:

Attached for your consideration is the report of the House Select Committee on High Speed Internet in Rural Areas established by the Speaker of the House of Representatives pursuant to G.S. 120-19.6(a1) and Rule 26(a) of the Rules of the House of Representatives of the 2007 General Assembly.

Respectfully submitted,

Representative Bill Faison

Chair

House Select Committee on High Speed Internet in Rural Areas

PREFACE

The House Select Committee on High Speed Internet in Rural Areas was authorized by the Speaker of the House of Representatives on January 17, 2008. The charge of the committee was to study the availability of high speed internet access in rural areas. Also, the committee could:

1. Consider whether rural areas have adequate access to high speed internet and offer proposals to assure access to high speed internet in rural areas.
2. Examine the impact of high speed internet access on education, small businesses, and agriculture.
3. Evaluate the economic impact of high speed internet access for individuals, counties, and the State of North Carolina.
4. Identify technical issues associated with providing high speed internet access, including the availability of necessary equipment.
5. Identify the potential costs to internet providers.
6. Examine rate considerations, including whether customers will pay the total costs or whether the costs will be spread through the rate-making process.
7. Explore the impact of recent legislation allowing phone companies to provide cable service and high speed internet access.

The letter of authorization, which includes the full membership of the Committee, is included in Appendix A of this report.

Representative Bill Faison chaired the Committee. A committee notebook containing the committee minutes and all information presented to the committee will be filed in the Legislative Library by the end of the 2007-2008 biennium.

COMMITTEE PROCEEDINGS

The House Select Committee on High Speed Internet in Rural Areas met seven times. At each meeting the Committee provided interested parties an opportunity to be heard on the issues and received public comment. The meetings were well attended, the presentations were informative and insightful, and discussion was often spirited.

The committee heard testimony from North Carolina service providers of broadband technology (Providers), members of the e-NC authority, Windows on the World, MCNC, the State Library, Connected Nation, representatives from education and business, public officials, concerned citizens, and citizen advocacy groups. Everyone acknowledged the critical importance of high speed internet. The Providers see it as an important part of their future business plan, while citizens see it as a necessity for educating their children, conducting small businesses, and participating in the culture of the information age. Universally available high speed internet deployment is essential for North Carolina's economic growth and prosperity.

March 18, 2008 Meeting Summary

The first committee meeting of the House Select Committee on High Speed Internet in Rural Areas met on Tuesday, March 18, 2008, in Room 643 of the Legislative Office Building at 2:00 P.M. The Chairman called the meeting to order. Members, Staff, and Sergeant of Arms introduced themselves. Chairman Faison gave a brief synopsis of what the committee was supposed to do which is to get and understanding on the availability of high speed internet in the state. If it appears that there is something that needs to be done after the committee assesses what our current standing is then we would look at considering legislation that would facilitate getting everybody together in an effort to make sure the citizens in our state have access to high speed internet, since it is the new back bone of our economical and educational growth.

Jane Smith Patterson (Executive Director, E-NC Authority) and Joanna Wright (Senior Program Director for Intelligence, Communications and Outreach) were recognized to present to the committee. Mrs. Patterson's Presentation is available online and key points of her presentation are outlined in the minutes of the meeting.

The next speaker, Myra Best (Executive Director, Business Education Technology Alliance) was recognized to present on the joint report on information technology presented to the General Assembly in January of 2008. The report focused on how technology is being used in our public schools and how it can benefit educational instruction in the 21st century.

The last speaker of the day, Mark Johnson (CTO and VP operations and Infrastructure, MCNC) was recognized to present to the committee on the history of MCNC and the role the NCREN network plays in the connectivity of public schools within the state.

April 8, 2008 Meeting Summary

The second meeting of the House Select Committee on High Speed Internet in Rural Areas was held on Tuesday, April 08, 2008, in Room 1124 of the Legislative Building at 10:00 A.M.

Chairman Faison started the meeting off by reading a letter from a constituent in his district. The letter in brief spoke about the need of high speed internet in Caldwell and the appreciation of Embarq's investments.

The committees' first speaker, Charlie Pittman (Senior Program Director, Telecom & Technologies Convergence) was recognized to present to the committee. Mr. Pittman discussed the technical aspects of broadband transmission. He discussed high-speed service, the difference between copper wire and fiber, cable modem access to the Internet versus DSL/ADSL service and how companies were beginning to deploy fiber to the home.

The committee heard presentations from representatives of the service providers in the state. All presenters discussed the technology that was in place to access the Internet in their respective service areas, as well as their customer base and how that base was severed by each provider. The representatives for the services providers were:

Dwight Allen (Executive Vice President, NC Telephone Cooperatives Coalition/Carolina Link)
Jon Hamm (Mgr. Community Development and Public Affairs, Embarq)
Stan Pace (VP Public Policy and External Affairs, Verizon South)
Rob Smith (AT&T North Carolina)
Marcus Trathen (Brook, Pierce, McLendon, Humphrey & Leonard, LLP, Cable Association)
Robert Wells (Executive Director, NC Alliance of Independent Telephone Companies)

May 12, 2008 Meeting Summary

The third meeting of the House Select Committee on High Speed Internet in Rural Areas met on Monday May 12, 2008, in Room 421 of the Legislative Office Building at 2:00 P.M.

The committee heard presentation from Mr. Jim Baller, The Baller Herbst Law Group, on broadband technology. The report covered:

- The basics of broadband technology.
- What would be at stake if the United States does not keep pace with 21st century broadband technology.
- Where the United States stands in comparison to leading nations in the world in its deployment of broadband.
- The direction being taken the United States and North Carolina for broadband deployment
- He made recommendations to foster the deployment of broadband technology.

The committee then reviewed and acted on proposed legislation:

- A house resolution in support of the convening of the e-NC Authority's digital broadband summits passed the committee with a recommendation for enactment.
- An act to expand the authority of the North Carolina department of transportation to locate and acquire right-of-way for the location, above or below ground, of fiber optic cable passed the committee with a recommendation for enactment.
- An act requiring providers offering broadband internet services to annually provide reports and mapping information to the general assembly regarding service areas and availability of broadband services within those areas passed the committee with a recommendation for enactment.

October 22, 2008 Meeting Summary

The fourth meeting of the House Select Committee on High Speed Internet in Rural Areas met on Wednesday, October 22, 2008, in Room 421 of the Legislative Office Building at 3:00 P.M.

Two of the recommendations of the Committee prior to the Short Session passed the House. The resolution in support of the e-NC Broad Band Summits passed the House as did the act permitting Broadband cable in the DOT ROW. The later of these two did not pass the Senate. Additionally, the act requiring the providers to provide the Legislature reports and mapping locating broadband services in the State passed out of the Agribusiness Committee with a favorable report and then went to Utilities. The Act was not taken up or considered by the Utilities Committee.

Jane Smith Patterson (Executive Director, E-NC Authority) was recognized to present to the committee. Ms. Patterson's presentation addressed the *Broadband Summits* that were held in eight places across the State (Caswell County, Pasquotank County, Jackson County, Edgecombe County, Bladen County, Mecklenburg County, Chatham County, and Alleghany County). The theme that was taken from all the meetings was [that] "We want higher speed broadband". The lack of it affects the standard of living, education, and business growth. She presented information on two reports, *2007 High-Speed Internet Report*, and the *2008 Citizen Survey*. In North Carolina there are approximately 3 million households. Approx. 2 million have internet access, and approximately five hundred thousand do not have internet access. According to the survey 25% of Americans earning less that $20,000 subscribe to the internet, however, in North Carolina it is 49%. Nationally, 60% of Americans in the middle class subscribe to the internet, however, in North Carolina it is 79%. Moreover, 85% Americans earning over $100,000 a year subscribe to the internet, and in North Carolina it is 91% .

The second speaker, Joe Freddoso (President and CEO, MCNC) was recognized to present to the committee. Mr. Freddoso spoke about the North Carolina School Connectivity Program which was called K20 Connectivity Initiative which was MCNC's three year plan to work with the 115 Local Education Agencies (LEA.'s) that were not connected to a common backbone and were using the commercial internet. By connecting the LEA's to the NCREN network, the old LEA network was taken off of a "congested highway and put onto a HOV lane" that only runs NC education traffic. Now, the education traffic moves freely and you can do things simultaneously without constant interruption and clutter.

November 14, 2008 Meeting Summary

The fifth meeting of the House Select Committee on High Speed Internet in Rural Areas met on Friday, November 14, 2008, in Room 421 of the Legislative Office Building at 10:00 A.M.

The first speaker, Mr. Joe Freddoso (President and CEO, MCNC) was recognized to present to the committee. Mr. Freddoso gave an update on the LEA connectivity project. He stated that by the end of the 2008 calendar year all 115 North Carolina K12 Local Education Agencies (LEAs) would be connected to the North Carolina Research and Education Network (NCREN).

The second speaker, Mr. Herb Crenshaw (Director, External Affairs, AT&T) was recognized to present to the committee. Mr. Crenshaw informed the committee that the providers were in the final stages of negotiating a contract with Connected Nation.

After Herb Crenshaw's presentation Chairman Faison opened the floor for questions. Rep. Tolson moved for a motion to endorse the efforts of Connect the Nations and the providers. Rep. Harrell seconded the motion and it passed unanimously.

The third speaker, Mr. Bill Craigle (Alltel Wireless) was recognized to present to the committee. Mr. Craigle addressed mobile broadband technology and that is available to North Carolinians. This technology allows for internet access with speeds up to 1.3 mbps averaging 500 to 800kbps. He said that North Carolina ranks 10th in deployment. Mobile 3G would cost the state $321,226,500 with the growth of 107 new cell sites and 2,007 augmented cell sites. For clarification it was explained that Pre 3G is equivalent to dial-up, 3G is equivalent to 3x the amount of dial-up but less than DSL, and 4G will be close to DSL.

The fourth speaker, Prof. Kenneth Wilson (East Carolina University) was recognized to present to the committee. He spoke about survey findings tracking home computers and Internet access.

The last speaker, Jane Smith Patterson (Executive Director, E-NC Authority) was recognized to present to the committee. She addressed how the e-NC authority used information provided by Providers as well as actual subscriber survey information to pinpoint internet access. She said that 83.33% of composite households have some sort of access to the internet.

December 18, 2008 Meeting Summary

The sixth meeting of the House Select Committee on High Speed Internet in Rural Areas met on Thursday, December 18, 2008, in Room 544 of the Legislative Office Building at 10:00 A.M.

Our first speaker, Jane Smith Patterson (Executive Director, E-NC Authority) was recognized to present to the committee. Ms. Patterson reported the results of the Broadband Summits endorsed by the Committee.

The Honorable Representative Winkie Wilkins was recognized to introduce constituents from Person County to explain to the committee their frustration at not having broadband Internet access and their desire to have it made available.

The committee next heard from Speaker Hackney's constituents from Chatham County who expressed the same sentiments as Person county residents with not having access to broadband Internet technology.

Next Ms. Bunny Sanders expressed the concerns of the Windows on the World organization and that their findings of broadband access in rural areas were not consistent with the findings of the e-NC authority; the WoW numbers on availability indicated much lower availability. She too expressed the need for broadband access in rural areas and how it is vital to the economic and educational development for citizens in rural areas.

The fifth speaker, Mary Boone, State Librarian, was recognized to present to the committee. Her presentation focused on the technology that is used by the State Library and their commitment to providing information to the citizens of the State. Further she focused on how vital it is that all citizens have access to the information that is available through the State Library via the Internet.

The sixth speaker, Joe Mefford, Senior Broadband Consultant, Connected Nation, was recognized to present to the committee. Mr. Mefford explained the history of Connected Nation and its role mapping the availability of broadband access in certain states. He demonstrated how Connected Nation will use its technology in conjunction with the North Carolina broadband service providers to map the availability of broadband access in North Carolina.

The final speaker, Dwight Allen (Executive Vice President, NC Telephone Cooperatives Coalition/Carolina Link) was recognized to present to the committee. Mr. Allen spoke about potential legislation that the committee may consider for the upcoming 2009-2010 session that to allow "any broadband services provider that provides voice grade communication services within a defined service territory or franchise area, and elects to provide broadband services outside its service territory or franchise area, may provide such voice grade service as an incident

to such broadband service without violating its service territory restrictions or franchise agreement."

January 27, 2009 Meeting Summary

The final meeting of the House Select Committee on High Speed Internet in Rural Areas met on Tuesday, January 27, 2009, in Room 544 of the Legislative Office Building at 10:00 A.M.

The committee met to approve their final report to the Speaker and the House of Representatives.

DRAFT

FINDINGS AND RECOMMENDATIONS

Findings

1. North Carolina has made significant progress within the last decade towards having high speed broadband internet access for its citizens. However, large areas of North Carolina, both rural and not so rural, lack high speed broadband access. Functional use of the internet requires high speed broadband access.
2. The data that is currently made available by Providers lacks sufficient specificity to permit an independent third party assessment of the State's broadband deployment status and needs. The Providers have committed to remedy this problem by providing street address high speed broadband internet availability data to Connected Nation for mapping to be made available to the public. The carriers' positive efforts in this regard are deserving of acknowledgement and praise.
3. High-speed broadband Internet access is vital to educate both children and adults, facilitate economic development, and to provide for the health and welfare of the citizens of our State.
4. Great strides have been made in school connectivity. As of this report, all North Carolina LEAs have connectivity through the North Carolina Education and Research Network (NCREN). However, there is a great disparity between both the technology available in some schools in some counties and that available in others.
5. MCNC working in cooperation with the Committee, educators and the Providers has volunteered to provide money to fund a pilot project paying for home high speed broadband connection for students in 2-3 counties where high speed broadband internet access exists and the students have lap tops provided by their schools, to assess student and family home use and to encourage and foster family use.

6. Some publicly traded vendors are moving forward with new technologies in broadband deployment. However, their focus is on densely populated city and urban areas. Moreover, their business model makes deployment to rural areas in the foreseeable future unlikely.
7. The telephone coops have a business model for providing high speed broadband internet access to rural communities that allows them to provide fiber (very high speed broadband connectivity) to the home on a customer base that would not motivate publicly traded providers to provide any high speed broadband internet access.
8. Current State telephone franchise borders have a chilling effect on deployment of high speed broadband internet services. Although both State and Federal law permit anyone to deploy high speed broadband internet services anywhere, the ability of a Provider to bundle telephone services with high speed broadband internet services promotes high speed broadband internet deployment.
9. Current law permits the deployment of utilities such as electricity, telephone, water and sewer lines in the DOT right of way. However, high speed broadband internet is not a utility and current law does not authorize deployment of exclusively high speed broadband internet fiber/cable in the DOT right of way. Lack of the right to install exclusively high speed internet cables in the highway right of way has prevented high speed broadband internet deployment in some instances preventing connection of communities and/or households to broadband Internet access.
10. High speed broadband internet access is both an information age public highway and a public utility needed to provide access to 21st century technology and to meet 21st Century challenges. High speed broadband internet access has not yet been established as a public utility by State law although the public thinks of it as such and uses it as such.

11. Where high speed broadband internet access is available, the number of subscribers ("take rate") is generally less than 40%. Higher "take rates" would motivate private companies to expand high speed broadband internet infrastructure.
12. Access to a broadband infrastructure must be made both universally available and affordable.
13. The committee has taken public testimony that demonstrates a great need and desire for high speed broadband internet access in rural areas.

Recommendations

1. Legislation:
    a. House Bill 2412 to allow for DOT right of way access for high speed broadband internet cable installation came out of the Committee last year and passed the house in 2008 legislative session. It did not pass the Senate. The Committee endorses and recommends this legislation to the 2009-2010 Session.
    b. The carriers have recommended to the Committee legislation to modify G.S. 62 to allow "any broadband services provider that provides voice grade communication services within a defined service territory or franchise area, and elects to provide broadband services outside its service territory or franchise area, may provide such voice grade service as an incident to such broadband service without violating its service territory restrictions or franchise agreement." The Committee endorses and recommends this legislation to the 2009-2010 Session.
    c. The community thinks that high speed broadband internet service is a public utility and should be treated as such. The Committee endorses and recommends legislation declaring high speed broadband internet service to be a utility to the 2009-2010 Session.

DRAFT

d. The Committee believes that there remains much work to be done to provide high speed broadband internet access to rural areas and that a Study Committee should be appointed to this end to continue the work of the Committee between sessions. The Committee endorses and recommends this legislation to the 2009-2010 Session.

2. The Committee recommends that the State continue to form public private partnerships such as that proposed by MCNC to work with:
   a. local and county governments and entities, private institutions, educational institution and service providers to ensure that all aspects of high speed broadband internet access are developed and deployed to the greatest public advantage
   b. Providers and others to address the problem in the "take rate"
3. The Committee recommends that the State consider matching any funding that may be made available in the effort to deploy high speed broadband internet access to underserved rural areas of our state.
4. The Committee recommends that the state continue to provide money in the form of matching grants not only to the e-NC authority but other entities that work towards high speed internet broadband deployment for rural areas.
5. The Committee recommends that the e-NC authority work with other organizations to verify to availability of high speed broadband internet access in rural areas.
6. The Committee recommends that e-NC ensures all types of service providers are considered when issuing grant money.

APPENDIX A

Office of the Speaker
North Carolina House of Representatives
Raleigh, North Carolina 27601-1096

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

TO THE HONORABLE MEMBERS OF THE NORTH CAROLINA HOUSE OF REPRESENTATIVES

Section 1. The House Select Committee on High Speed Internet in Rural Areas (hereinafter "Committee") is established by the Speaker of the House of Representatives pursuant to G.S. 120-19.6(a1) and Rule 26(a) of the Rules of the House of Representatives of the 2007 General Assembly.

Section 2. The Committee consists of the 8 members listed below, appointed by the Speaker of the House of Representatives. Members serve at the pleasure of the Speaker of the House of Representatives. The Speaker of the House of Representatives may dissolve the Committee at any time.

Representative Bill Faison, Chair
Representative Angela Bryant
Representative Jim Gulley
Representative Phillip Haire
Representative James Harrell, III
Representative Thom Tillis
Representative Joe Tolson
Representative Roger West

Section 3. The Committee may examine the availability of high speed internet access in rural areas. The Committee may:

1. Consider whether rural areas have adequate access to high speed internet and offer proposals to assure access to high speed internet in rural areas.
2. Examine the impact of high speed internet access on education, small businesses, and agriculture.
3. Evaluate the economic impact of high speed internet access for individuals, counties, and the State of North Carolina.
4. Identify technical issues associated with providing high speed internet access, including the availability of necessary equipment.
5. Identify the potential costs to internet providers.
6. Examine rate considerations, including whether customers will pay the total costs or whether the costs will be spread through the rate-making process.
7. Explore the impact of recent legislation allowing phone companies to provide cable service and high speed internet access.
8. Study any other issue the Committee deems relevant.

Section 4. The Committee shall meet upon the call of its Chair. A quorum of the Committee shall be a majority of its members.

Section 5. The Committee, while in the discharge of its official duties, may exercise all powers provided for under G.S. 120-19 and Article 5A of Chapter 120 of the General Statutes.

Section 6. Members of the Committee shall receive per diem, subsistence, and travel allowance as provided in G.S. 120-3.1.

Section 7. The expenses of the Committee including per diem, subsistence, travel allowances for Committee members, and contracts for professional or consultant services shall be paid upon the written approval of the Speaker of the House of Representatives pursuant to G.S. 120-32.02(c) and G.S. 120-35 from funds available to the House of Representatives for its operations. Individual expenses of $5,000 or less, including per diem, travel, and subsistence expenses of members of the Committee, and clerical expenses shall be paid upon the authorization of the Chair of the Committee. Individual expenses in excess of $5,000 shall be paid upon the written approval of the Speaker of the House of Representatives.

Section 8. The Legislative Services Officer shall assign professional and clerical staff to assist the Committee in its work. The Director of Legislative Assistants of the House of Representatives shall assign clerical support staff to the Committee.

Section 9. The Committee may meet at various locations around the State in order to promote greater public participation in its deliberations.

Section 10. The Committee may submit an interim report on the results of the study, including any proposed legislation, on or before May 1, 2008, by filing a copy of the report with the Office of the Speaker of the House of Representatives, the House Principal Clerk, and the Legislative Library. The Committee shall submit a final report on the results of its study, including any proposed legislation, to the members of the House of Representatives on or before December 31, 2008, by filing the final report with the Office of the Speaker of the House of Representatives, the House Principal Clerk, and the Legislative Library. The Committee terminates on December 31, 2008, or upon the filing of its final report, whichever occurs first.

Effective this 17th day of January, 2008.

Joe Hackney
Speaker of the House of Representatives

1/17/2008 6:58 PM

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ATTACHMENT 4

HOUSE SELECT COMMITTEE
ON
HIGH SPEED INTERNET ACCESS IN RURAL AREAS

REPORT TO THE

NORTH CAROLINA

HOUSE OF REPRESENTATIVES

January 2009

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Legislative Proposal I:
A BILL TO BE ENTITLED AN ACT TO EXPAND THE AUTHORITY OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TO LOCATE AND ACQUIRE RIGHT-OF-WAY FOR THE LOCATION, ABOVE OR BELOW GROUND, OF FIBER OPTIC CABLE.

Legislative Proposal II:
A BILL TO BE ENTITLED AN ACT PERMITTING CERTAIN BROADBAND SERVICES PROVIDERS THAT PROVIDE VOICE GRADE COMMUNICATIONS SERVICES WITHIN A DEFINED SERVICE TERRITORY OR FRANCHISE AREA TO OFFER SUCH VOICE GRADE SERVICE AS AN INCIDENT TO BROADBAND SERVICE OUTSIDE THE PROVIDERS SERVICE TERRITORY OR FRANCHISE AREA.

Legislative Proposal III:
A BILL TO BE ENTITLED AN ACT TO CREATE THE JOINT LEGISLATIVE STUDY COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS.

APPENDIX A 23

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

January 27, 2009

TO THE SPEAKER AND MEMBERS OF THE HOUSE OF REPRESENTATIVES:

Attached for your consideration is the report of the House Select Committee on High Speed Internet in Rural Areas established by the Speaker of the House of Representatives pursuant to G.S. 120-19.6(a1) and Rule 26(a) of the Rules of the House of Representatives of the 2007 General Assembly.

Respectfully submitted,

Representative Bill Faison

Chair

House Select Committee on High Speed Internet in Rural Areas

PREFACE

The House Select Committee on High Speed Internet in Rural Areas was authorized by the Speaker of the House of Representatives on January 17, 2008. The charge of the committee was to study the availability of high speed internet access in rural areas. The committee was also authorized to:

1. Consider whether rural areas have adequate access to high speed internet and offer proposals to assure access to high speed internet in rural areas.

2. Examine the impact of high speed internet access on education, small businesses, and agriculture.

3. Evaluate the economic impact of high speed internet access for individuals, counties, and the State of North Carolina.

4. Identify technical issues associated with providing high speed internet access, including the availability of necessary equipment.

5. Identify the potential costs to internet providers.

6. Examine rate considerations, including whether customers will pay the total costs or whether the costs will be spread through the rate-making process.

7. Explore the impact of recent legislation allowing phone companies to provide cable service and high speed internet access.

The letter of authorization, which includes a listing of the full membership of the Committee, is included in Appendix A of this report.

Representative Bill Faison was appointed to chair the Committee. A committee notebook containing the committee minutes and all information presented to the committee will be placed on file in the Legislative Library.

COMMITTEE PROCEEDINGS

The House Select Committee on High Speed Internet in Rural Areas held seven meetings from March 2008 through January 2009. At each meeting the Committee provided interested parties an opportunity to be heard on the issues and received additional comments from the public. Among the parties presenting testimony were broadband services providers, representatives of the e-NC Authority, Windows on the World, MCNC, the State Library, Connected Nation, various education and business organizations, public officials, concerned citizens, and citizen advocacy groups. All the parties acknowledged the critical importance of high speed internet access. Service providers view high speed internet as an important part of their future business plan, while citizens see it as a necessity for educating their children, conducting their small businesses, and participating in the culture of the information age. Universally available high speed internet deployment is essential for North Carolina's economic growth and prosperity.

March 18, 2008 Meeting Summary

The Committee held its first meeting on March 18, 2008. The Chairman gave a brief overview of the Committee's charge to examine the availability of high speed internet in the State, and to consider the feasibility of legislation that would facilitate joint efforts to ensure that citizens in our State have access to high speed internet. The availability of high speed internet may become the new backbone of our economical and educational growth.

Jane Smith Patterson (Executive Director, e-NC Authority) and **Joanna Wright** (Senior Program Director for Intelligence, Communications and Outreach) presented information concerning e-NC and its efforts to increase broadband connectivity in this State.

Myra Best (Executive Director, Business Education Technology Alliance) provided information concerning a joint report on information technology presented to the General Assembly in January of 2008. The report focused on the use of technology in the State's public schools and how it can impact educational instruction in the 21st century.

Mark Johnson (CTO and VP, Operations and Infrastructure, MCNC) reviewed the history of MCNC and the role of the North Carolina Research and Education Network (NCREN) in the connectivity of public schools within the State. When first funded by the General Assembly in 1980, the Microelectronics Center of North Carolina (now known as MCNC) was

to be a catalyst for technology-based economic development throughout the State. Since that time, MCNC, a non-profit organization, has been committed to building partnerships among academic, research, government and business communities. NCREN provides internet, video, audio, data and computing network services to all 16 of North Carolina's public institutions that grant baccalaureate degrees, as well as the NC School of Science and Math. Currently, MCNC is teaming with North Carolina education, government and business communities to implement a plan to provide network services to K-12 schools and community colleges throughout the State.

April 8, 2008 Meeting Summary

The Committee held its second meeting on April 8, 2008.

Chairman Faison began the meeting by reading a letter from a constituent in his district stressing the need for high speed internet in Caldwell and expressing appreciation for provider investments in that area.

Charlie Pittman (Senior Program Director, Telecom & Technologies Convergence) presented information on the technical aspects of broadband transmission. Pittman explained the technology involved in high-speed internet service, the difference between copper wire and fiber, cable modem access to the Internet versus DSL/ADSL service and how companies are beginning to deploy fiber to homes.

The Committee heard additional presentations from representatives of various service providers across the State. The presenters described the technology that is being used to provide access to the Internet in their respective service areas. They each talked about their customer base and how those customers are served. The speakers were:

- **Dwight Allen** (Executive Vice President, NC Telephone Cooperatives Coalition/Carolina Link)
- **Jon Hamm** (Mgr. Community Development and Public Affairs, Embarq)
- **Stan Pace** (VP Public Policy and External Affairs, Verizon South)
- **Rob Smith** (AT&T North Carolina)
- **Marcus Trathen** (Brook, Pierce, McLendon, Humphrey & Leonard, LLP, Cable Association)
- **Robert Wells** (Executive Director, NC Alliance of Independent Telephone Companies)

May 12, 2008 Meeting Summary

The third meeting of the Committee was held on Monday May 12, 2008.

The Committee heard a presentation on broadband technology from Mr. Jim Baller, of the Baller Herbst Law Group. Mr. Baller described what may be at stake if the United States does not keep pace with 21st Century broadband technology. He also pointed out where the

United States stands in comparison to other leading nations in the world with regard to the deployment of broadband technology, and where the United States and North Carolina are heading with regard to broadband deployment. Baller recommended strategic efforts to foster the deployment of broadband technology.

The committee approved three legislative proposals for introduction in the 2008 Regular Session of the General Assembly:

- A House Resolution in support of the e-NC Authority in its convening of digital broadband summits in select areas of the State.
- An act to expand the authority of the North Carolina Department of Transportation to locate and acquire right-of-way for the location, above or below ground, of fiber optic cable.
- An act requiring providers offering broadband internet services to annually provide reports and mapping information to the General Assembly regarding service areas and availability of broadband services within those areas.

October 22, 2008 Meeting Summary

The fourth meeting of the Committee was held on Wednesday, October 22, 2008.

Two of the three legislative proposals approved by the Committee prior to the 2008 Short Session passed the House of Representatives. The resolution in support of the e-NC Broadband Summits was adopted by the House (HR 2411, Adopted 7/2/08). The proposal intended to permit broadband cable in DOT rights-of-way (HB 2412) received a favorable vote in the House. Although House Bill 2412 was not acted upon by the Senate, its provisions were enacted in House Bill 2314 (SL 2008-180). The act requiring that providers offering broadband internet services provide annual reports and mapping information to the General Assembly (HB 2453) was favorably reported from the House Agribusiness Committee and re-referred to the House Committee on Utilities; no further action was taken on the bill.

Jane Smith Patterson (Executive Director, e-NC Authority) reported on the *Broadband Summits* that were held in eight locations across the State (Caswell, Pasquotank, Jackson, Edgecombe, Bladen, Mecklenburg, Chatham, and Alleghany Counties). The message apparent from all the meetings is that citizens want access to high speed broadband services. The lack of broadband availability affects the standard of living, education, and business growth. Patterson presented information on two reports, *2007 High-Speed Internet Report*, and the *2008 Citizen Survey*. She told the Committee that of the approximately 3 million households in North Carolina, it is estimated that some 2 million have internet access, and approximately 500,000 households do not have access. According to the survey 25% of Americans earning less than

$20,000 subscribe to the Internet, however, in North Carolina the figure is 49%. Nationally, 60% of Americans in the middle class subscribe to the Internet; however, in North Carolina the number is 79%. Of Americans earning over $100,000 a year, 85% subscribe to the Internet; in North Carolina that number is at 91%.

Joe Freddoso (President and CEO, MCNC) presented information about the North Carolina School Connectivity Program, known as the K20 Connectivity Initiative. The program is MCNC's three-year plan to work with the State's 115 Local Education Agencies (LEAs) that were not connected to a common backbone and were using commercial internet services. According to Freddoso, by connecting the LEAs to the NCREN network, the schools were taken off a congested highway and put onto a fast-moving high occupancy vehicle lane that only runs North Carolina education traffic. Now, the education traffic moves freely and things can be done simultaneously without constant interruption and clutter.

November 14, 2008 Meeting Summary

The fifth meeting of the Committee was held on November 14, 2008.

Joe Freddoso (President and CEO, MCNC) returned to the Committee to provide an update on the LEA connectivity project, indicating that all 115 of North Carolina's K-12 Local Education Agencies (LEAs) were expected to be connected to the North Carolina Research and Education Network (NCREN) by the end of the 2008 calendar year.

Herb Crenshaw (Director, External Affairs, AT&T) informed the Committee that broadband services providers were in the final stages of negotiating a contract with Connected Nation, a non-profit organization that works in multiple states to engage community stakeholders, state leaders and technology providers to develop and implement technology expansion programs. After some discussion, the Committee endorsed the efforts of the service providers and Connected Nation to more clearly identify where broadband services are available/not available in the State.

Bill Craigle (Alltel Wireless) presented information concerning the availability of mobile broadband technology in North Carolina. The technology allows for internet access with speeds up to 1.3 mbps, averaging 500 to 800kbps. According to Craigle, North Carolina ranks 10th in deployment. Mobile 3G would cost the state $321,226,500 with the growth of 107 new cell sites and 2,007 augmented cell sites. For clarification it was explained that Pre-3G is equivalent to

dial-up, 3G is equivalent to 3 times the amount of dial-up but less than DSL, and 4G will be close to DSL.

Professor Kenneth Wilson (East Carolina University) presented survey findings tracking the use and availability of home computers and internet access.

Jane Smith Patterson (Executive Director, e-NC Authority) explained how the e-NC Authority uses information collected from service providers as well as actual subscriber survey information to pinpoint internet access. According to Patterson, 83.33% of composite households have some sort of access to the Internet.

December 18, 2008 Meeting Summary

The sixth meeting of the Committee was held on December 18, 2008.

Jane Smith Patterson (Executive Director, e-NC Authority) reported on the results of the 2008 Broadband Summits endorsed by the Committee.

Representative Winkie Wilkins introduced constituents from Person County to explain to the Committee their frustration at not having access to broadband internet services and their desire to have the services made available to their community. Additional comments were heard from Chatham County constituents of Speaker Joe Hackney, expressing the same concern about the lack of access to broadband internet services.

Bunny Sanders expressed the concerns of the Windows on the World organization, stating that their findings on broadband availability in rural areas are not consistent with the findings of the e-NC Authority. Windows on the World numbers on availability indicate much lower availability. Sanders expressed the need for broadband access in rural areas and stressed its importance in the economic and educational development of citizens in those areas.

Mary Boone (State Librarian) described the technology used by the State Library and spoke about the library's commitment to providing information to the citizens of the State. Boone stressed how vital it is that all citizens have access to the information that is available from the State Library via the Internet.

Joe Mefford (Senior Broadband Consultant, Connected Nation) explained the history of Connected Nation and described its role in mapping the availability of broadband access in various states. Mefford demonstrated the ways in which Connected Nation will use its technology in conjunction with North Carolina's broadband services providers to map the availability of broadband access in this State.

Dwight Allen (Executive Vice President, NC Telephone Cooperatives Coalition/Carolina Link) proposed that the Committee consider legislation that would specify that any broadband services provider that provides voice grade communication services within a defined service territory or franchise area, and elects to provide broadband services outside its service territory or franchise area, may provide voice grade service as an incident to broadband service without violating its service territory restrictions or franchise agreement.

January 27, 2009 Meeting Summary

The House Select Committee on High Speed Internet in Rural Areas met on January 27, 2009 to adopt its findings and recommendations and approve its final report to the Speaker and members of the House of Representatives.

A subsequent update from MCNC on the North Carolina Research and Education Network (NCREN), indicated that The University of North Carolina System has requested funding to complete the build-out of NCREN through the acquisition of Indefeasible Rights of Use (IRU) or other form of ownership in rural areas of the State. This ownership of NCREN is said to be necessary due to the rapidly increasing bandwidth needs of research and education entities served by NCREN. This growth is apparently most evident in rural areas where bandwidth use for education and research has begun to exceed existing capacity. Leasing additional capacity in these areas is an inefficient and costly way for the State to scale to the increasing need. Funding of the request to build out NCREN should be given a high priority. MCNC, the operator of NCREN, should work with the e-NC Authority and other entities to make certain that the investment in the build-out of NCREN serves as the foundation for other investments in broadband infrastructure in rural areas.

FINDINGS AND RECOMMENDATIONS

Findings

1. The Committee finds that within the last decade North Carolina has made significant progress towards having high speed broadband internet access for its citizens. However large areas of North Carolina, both rural and otherwise, still lack high speed broadband access. Functional use of the Internet requires high speed broadband access.

2. The Committee finds that data currently made available by broadband services providers lacks sufficient specificity to permit an independent third party assessment of the State's broadband deployment status and needs. It is imperative that the State develop the precise knowledge of where high speed broadband access is unavailable, at the granular census block level and in a publicly verifiable manner, to ensure that the State has the information necessary to meet federal criteria and to direct federal economic stimulus funding to unserved or underserved rural areas. Broadband services providers have committed to providing street address high speed broadband internet availability data to Connected Nation for mapping to be made available to the public, and the Committee acknowledges their positive efforts in this regard.

3. The Committee finds that high-speed broadband internet access is vital to the education of both children and adults, and that it serves to facilitate economic development and to provide for the health and welfare of all the citizens of our State.

4. The Committee finds that great strides have been made in school connectivity. By April 2009, all North Carolina LEAs are expected to have connectivity through the North Carolina Education and Research Network (NCREN). However, available technology still varies from school to school and from county to county.

5. The Committee finds that MCNC, in cooperation with the Committee and with educators and broadband services providers, has volunteered to fund a pilot project that will pay for a home high speed broadband connection for students in two to three select counties. The pilot projects will be designed to assess student and family home computer use and to encourage

and foster family computer use. The pilot projects will be set up in areas where high speed broadband internet access is available and where students are provided laptops by their schools.

6. The Committee finds that some publicly traded vendors are moving forward with new technologies in broadband deployment. However, the focus is generally on densely populated city and urban areas; the vendors' business model makes deployment to rural areas in the foreseeable future unlikely.

7. The Committee finds that telephone cooperatives have a business model for providing high speed broadband internet access to rural communities that allows the cooperatives to provide fiber (very high speed broadband connectivity) to the home on a customer base that would not motivate publicly traded vendors to provide high speed broadband internet access.

8. The Committee finds that current State telephone franchise borders have a chilling effect on the deployment of high speed broadband internet services. Although both State and federal law permit any service provider to deploy high speed broadband internet services in any location, the ability of a broadband services provider to bundle telephone services with high speed broadband internet services promotes high speed broadband internet deployment.

9. The Committee finds that current law permits the deployment of utilities such as electricity, telephone, water and sewer lines in Department of Transportation (DOT) rights of way. However, high speed broadband internet is not a utility and current law does not authorize deployment of exclusively high speed broadband internet fiber/cable in DOT rights of way. Lack of statutory authorization to install exclusively high speed internet cables in the highway right of way has impeded high speed broadband internet deployment, in some instances preventing connection of communities and/or households to broadband internet access.

10. The Committee finds that high speed broadband internet access is both an information age public highway and public utility necessary to provide access to 21st Century technology for meeting 21st Century challenges. High speed broadband internet access has not yet been

established as a public utility under State law, although the public thinks of broadband service as a public utility and uses it in the same manner.

11. The Committee finds that where high speed broadband internet access is available, the number of subscribers ("take rate") is generally less than 40%. Higher "take rates" would motivate private companies to expand the high speed broadband internet infrastructure.

12. The Committee finds that access to a broadband infrastructure must be made both universally available and universally affordable.

13. The Committee finds, based upon public testimony in its meetings, that there is both a great need and a great desire for high speed broadband internet access in rural areas.

Recommendations

1. The Committee recommends legislation that will allow access to DOT rights of way for the installation of high speed broadband internet cable. (Legislative Proposal I)

2. The Committee recommends that the General Assembly amend State law pertaining to utility franchises to allow certain broadband services providers to provide voice grade communication service as an incident to such broadband service without violating otherwise applicable service territory restrictions or franchise agreements. (Legislative Proposal II)

3. The Committee recommends the appointment of an interim study committee to continue its focus on issues that impact the availability of high speed broadband internet access in rural areas. (Legislative Proposal III)

4. The Committee recommends that the State continue to form public-private partnerships, working with:
    - **Local and county governments and entities, private institutions, educational institution and service providers** to ensure that all aspects of high speed broadband internet access are developed and deployed to the greatest public advantage.
    - **Broadband services providers and others** to address the problem in the "take rate." for high speed internet access.

5. The Committee recommends that the State consider matching any federal or private funding that may be made available in the effort to deploy high speed broadband internet access to underserved rural areas of our State.

6. The Committee recommends that the State continue to provide money in the form of matching grants not only to the e-NC Authority but to other entities that work toward deployment of high speed internet broadband service in rural areas.

7. The Committee recommends that the e-NC Authority work with other organizations to verify the availability of high speed broadband internet access in rural areas.

8. The Committee recommends that the e-NC Authority consider all types of service providers when issuing grant money.

9. The Committee recommends that the State take appropriate steps to see that the necessary level of detail on high speed internet access in rural and underserved areas is available, as a means of ensuring the receipt of all funding made available as part of the federal economic stimulus package and to enhance the ability of policy makers to target those funds to the areas of highest need.

LEGISLATIVE PROPOSAL I

BILL DRAFT 2009-RFz-3

A BILL TO BE ENTITLED

AN ACT TO EXPAND THE AUTHORITY OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TO LOCATE AND ACQUIRE RIGHT-OF-WAY FOR THE LOCATION, ABOVE OR BELOW GROUND, OF FIBER OPTIC CABLE.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 136-18(2) reads as rewritten:

"**§ 136-18. Powers of Department of Transportation.**

The said Department of Transportation is vested with the following powers:

...

(2) To take over and assume exclusive control for the benefit of the State of any existing county or township roads, and to locate and acquire rights-of-way for any new roads that may be necessary for a State highway system, and subject to the provisions of G.S. 136-19.5(a) and (b) also locate and acquire such additional rights-of-way as may be necessary for the present or future relocation or initial location, above or below ground, of telephone, telegraph, broadband communications, electric and other lines, as well as gas, water, sewerage, oil and other pipelines, to be operated by public utilities as defined in G.S. 62-3(23) and which are regulated under Chapter 62 of the General Statutes, by providers of broadband service as defined in G.S. 62-3, or by municipalities, counties, any entity created by one or more political subdivisions for the purpose of supplying any such utility services, electric membership corporations, telephone membership corporations, or any combination thereof, with full power to widen, relocate, change or alter the grade or location thereof and to change or relocate any existing roads that the Department of Transportation may now own or may acquire; to acquire by gift, purchase, or otherwise, any road or highway, or tract of land or other property whatsoever that may be necessary for a State highway system and adjacent utility rights-of-way: Provided, all changes or alterations authorized by this subdivision shall be subject to the provisions of G.S. 136-54 to 136-63, to the extent that said sections are applicable: Provided, that nothing in this Chapter shall be construed to authorize or permit the Department of Transportation to allow or pay anything to any county, township, city or town, or to any board of commissioners or governing body thereof, for any existing road or part of any road heretofore constructed by any such county, township, city or town, unless a contract has already been entered into with the Department of Transportation."

...

SECTION 2. This act is effective when it becomes law.

LEGISLATIVE PROPOSAL II

BILL DRAFT 2009-RVz-1

A BILL TO BE ENTITLED

AN ACT PERMITTING CERTAIN BROADBAND SERVICES PROVIDERS THAT PROVIDE VOICE GRADE COMMUNICATIONS SERVICES WITHIN A DEFINED SERVICE TERRITORY OR FRANCHISE AREA TO OFFER SUCH VOICE GRADE SERVICE AS AN INCIDENT TO BROADBAND SERVICE OUTSIDE THE PROVIDERS SERVICE TERRITORY OR FRANCHISE AREA.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 62-113 is amended by adding a new subsection (c) to read:

"(c) Any broadband services provider that provides voice grade communication services within a defined service territory or franchise area, and elects to provide broadband services outside its service territory or franchise area, may provide such voice grade service as an incident to such broadband service without violating its service territory restrictions or franchise agreement."

SECTION 2. This act is effective when it becomes law.

LEGISLATIVE PROPOSAL III

BILL DRAFT 2009-RFz-4

A BILL TO BE ENTITLED

AN ACT TO CREATE THE JOINT LEGISLATIVE STUDY COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS.

The General Assembly of North Carolina enacts:

SECTION 1. There is created the Joint Legislative Study Committee on High Speed Internet in Rural Areas. The Committee shall consist of 16 members, 8 of whom shall be appointed by the Speaker of the House of Representatives and 8 of whom shall be appointed by the President Pro Tempore of the Senate. The Speaker of the House of Representative shall designate one Representative as Cochair and the President Pro Tempore of the Senate shall designate one Senator as Cochair. Vacancies of the Committee shall be filled by the same appointing authority that made the initial appointment. The Committee shall meet on the call of its House and Senate Cochairs. A quorum of the Committee shall be a majority of its members.

SECTION 2. The Committee shall examine the availability of high speed internet access in rural areas. In conducting its study the Committee may:

1. Consider whether rural areas have adequate access to high speed internet and offer proposals to assure access to high speed internet in rural areas.
2. Examine the impact of high speed internet access on education, small businesses, and agriculture.
3. Evaluate the economic impact of high speed internet access for individuals, counties, and the State of North Carolina.
4. Identify technical issues associated with providing high speed internet access, including the availability of necessary equipment.
5. Identify the potential costs to internet providers.
6. Examine rate considerations, including whether customers will pay the total costs or whether the costs will be spread through the rate-making process.
7. Explore the impact of recent legislation allowing phone companies to provide cable service and high speed internet access.
8. Study any other issue the Committee deems relevant.

SECTION 3. While in the discharge of its official duties, the Committee may exercise all powers provided for under G.S. 120-19 and G.S. 120-19.1 through G.S. 120-19.4. Members of the Committee shall receive per diem, subsistence, and travel allowance as provided in G.S. 120-3.1, G.S. 138-5 or G.S. 138.6, as appropriate. With the prior approval of the Legislative Services Commission, the Legislative Services Officer shall assign professional and clerical staff to assist the Committee in its work. The House of Representatives' and Senate's Directors of Legislative Assistants shall assign clerical staff to the Committee. The Committee may contract for professional, clerical, or consultant services as provided by G.S. 120-32.02. The Committee may meet in the Legislative Building or Legislative Office Building and may meet at various locations around the State in order to promote greater public participation in its deliberations.

SECTION 4. The Committee shall submit a final report to the 2011 Session of the General Assembly and may submit interim reports as it deems necessary. The Committee shall terminate upon filing its final report or upon the convening of the 2011 General Assembly, whichever comes first.

SECTION 5. This act is effective when it becomes law.

APPENDIX A

Office of the Speaker
North Carolina House of Representatives
Raleigh, North Carolina 27601-1096

HOUSE SELECT COMMITTEE ON HIGH SPEED INTERNET IN RURAL AREAS

TO THE HONORABLE MEMBERS OF THE NORTH CAROLINA HOUSE OF REPRESENTATIVES

Section 1. The House Select Committee on High Speed Internet in Rural Areas (hereinafter "Committee") is established by the Speaker of the House of Representatives pursuant to G.S. 120-19.6(a1) and Rule 26(a) of the Rules of the House of Representatives of the 2007 General Assembly.

Section 2. The Committee consists of the 8 members listed below, appointed by the Speaker of the House of Representatives. Members serve at the pleasure of the Speaker of the House of Representatives. The Speaker of the House of Representatives may dissolve the Committee at any time.

Representative Bill Faison, Chair
Representative Angela Bryant
Representative Jim Gulley
Representative Phillip Haire
Representative James Harrell, III
Representative Thom Tillis
Representative Joe Tolson
Representative Roger West

Section 3. The Committee may examine the availability of high speed internet access in rural areas. The Committee may:

9. Consider whether rural areas have adequate access to high speed internet and offer proposals to assure access to high speed internet in rural areas.
10. Examine the impact of high speed internet access on education, small businesses, and agriculture.
11. Evaluate the economic impact of high speed internet access for individuals, counties, and the State of North Carolina.
12. Identify technical issues associated with providing high speed internet access, including the availability of necessary equipment.
13. Identify the potential costs to internet providers.
14. Examine rate considerations, including whether customers will pay the total costs or whether the costs will be spread through the rate-making process.
15. Explore the impact of recent legislation allowing phone companies to provide cable service and high speed internet access.
16. Study any other issue the Committee deems relevant.

Section 4. The Committee shall meet upon the call of its Chair. A quorum of the Committee shall be a majority of its members.

Section 5. The Committee, while in the discharge of its official duties, may exercise all powers provided for under G.S. 120-19 and Article 5A of Chapter 120 of the General Statutes.

Section 6. Members of the Committee shall receive per diem, subsistence, and travel allowance as provided in G.S. 120-3.1.

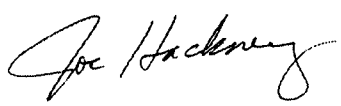
Section 7. The expenses of the Committee including per diem, subsistence, travel allowances for Committee members, and contracts for professional or consultant services shall be paid upon the written approval of the Speaker of the House of Representatives pursuant to G.S. 120-32.02(c) and G.S. 120-35 from funds available to the House of Representatives for its operations. Individual expenses of $5,000 or less, including per diem, travel, and subsistence expenses of members of the Committee, and clerical expenses shall be paid upon the authorization of the Chair of the Committee. Individual expenses in excess of $5,000 shall be paid upon the written approval of the Speaker of the House of Representatives.

Section 8. The Legislative Services Officer shall assign professional and clerical staff to assist the Committee in its work. The Director of Legislative Assistants of the House of Representatives shall assign clerical support staff to the Committee.

Section 9. The Committee may meet at various locations around the State in order to promote greater public participation in its deliberations.

Section 10. The Committee may submit an interim report on the results of the study, including any proposed legislation, on or before May 1, 2008, by filing a copy of the report with the Office of the Speaker of the House of Representatives, the House Principal Clerk, and the Legislative Library. The Committee shall submit a final report on the results of its study, including any proposed legislation, to the members of the House of Representatives on or before December 31, 2008, by filing the final report with the Office of the Speaker of the House of Representatives, the House Principal Clerk, and the Legislative Library. The Committee terminates on December 31, 2008, or upon the filing of its final report, whichever occurs first.

Effective this 17th day of January, 2008.



Joe Hackney
Speaker of the House of Representatives

1/17/2008 6:58 PM

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Information Systems Division
919-715-7840

Clerk
Lavada Vitalis
919-715-3019

To the honorable Chairman Rep. Bill Faison and honorable members of the House study committee on broadband access:

On Monday, January 26, 2009, I met at length with Elizabeth and Karl Allen, a hearing impaired couple. To me, they represent one of the very best reasons for the immediate expansion of broadband access in Person County.

The Allens reside at 751 Hugh Woods Rd. in rural Person County. They reside in the Allensville Community. The address is about five miles outside Roxboro and is in an area that is currently unserved by DSL and cable. They have been through all the hardships of attempting to operate with dial-up Internet service.

In our meeting, I was able to communicate to some extent with Mrs. Allen. She reads lips and was able to converse with me. I understood about 75 percent of what she said. At other times, she and I conversed through handwritten notes. Mr. Allen communicates through sign language. Because of their inability to hear, the Allens have various communication needs, some of which could be met through DSL access.

Some of their needs follow:

*Video phone service would be a boon to this couple. Video phone service requires the presence of high-speed Internet.

*The Allens have three children, two of whom are of school age. All three children are capable of hearing. Mr. and Mrs. Allen related to me the difficulties they often encounter when the children attempt to relay to them the contents of telephone calls. It should also be noted here that the two older children are respectively in the fifth grade and the fourth grade. High-speed Internet would be an asset to them in their education process.

*Mr. and Mrs. Allen are specialty farmers and would like to be able to use the Internet to promote their products. They raise rabbits and Christmas trees. They also have apple and pear orchards. Mr. Allen also has a worm farm—fishing worms. Promotion of any business through dial-up Internet service just does not work well. The Allens attempted to do that when Mr. Allen was earlier in the drywall business. The Allens are convinced that the business failed primarily because its promotion through dial-up Internet was unreliable.

*Mrs. Allen, in particular, would like to take educational courses on-line. Again, this is something that simply does not work well with a dial-up connection.

My meeting with the Allens was a pleasurable experience for me. It occurred to me that these are exactly the folks that I need to help and would like to help. I am certain that members of the committee carry similar feelings.

After my meeting with the Allens had ended, I had a specific thought that continued to whir through my mind. What if they had some dire emergency—an emergency that called

Rep. W. A. Wilkins,

I love this informations + passion.

Sincerely,

Elizabeth S. Allen

for some type of assistance quickly? What if the children were not at home at the time? Would a 911 communicator be able to glean the needed information from Mrs. Allen?

I am including with this document Mrs. Allen's handwritten permission that allows me to share the couple's information with you. Also included you will find some handwritten information from Alma Allen, who is Karl Allen's mother. Other inclusions are notes and addresses of other people in the area of Hugh Woods Road. Those other Hugh Woods Road residents are also asking for the presence of high-speed Internet connectivity.

My request of you is that the committee will choose to make all of this information part of the committee's record.

All of this is respectfully submitted by:

Rep. W. A. (Winkie) Wilkins
N. C. House District 55

Elizabeth was working with Vocation Rehab to get a job. One of the requirements was to have high speed internet in her home in order to get the job. She went to Embarq several time to talk with them and explain her situation. They told her it would be two or three years before they would have lines for high speed internet in this area.

After several visits they called me and discussed this and told me that Elizabeth would need to have a credit card or rather I could give them my credit card number so they could charge three hundred dollars to my card and they would take their payment against my card if they didn't get their bill. I declined this request.

Vocation Rehab had given Elizabeth a note explaining the need for her having high speed internet for this job. And she had letters from several neighbors expressing the need for high speed services but nothing helped. Elizabeth didn't get the job.

Enfaq

I receive advertisement every week through the mail about signing up for your High Speed Internet. You have been sending this out several years. I've been trying to get this for my computer since I first got your mail out advertisement, and still waiting.

The High Speed Internet here would be appreciated very much. Also make use of Computer use more efficent.

Your help in this matter will be much appiecated.

Sincerely,

Edna B. Miller
601 High Woods Rd
Rodboro, N.C.

We would really like the embarq services in our area.

Chuck Nelson
718 Hugh Wood's Rd
Roxboro NC, 27574

336-504-9786

We would be interested. Debbie Slaughter
90 Hugh Woods Rd.
Roxboro NC 27574
336-597-3232

Betty & Elmo Slaughter
90 Hugh Woods Rd
336-597-3231

Embargo

Hi my name is Almalee Allen. I live with my parents and would like high speed Internet, so I can use it for my homework assignments researching the subject for my teacher. Please put the service on our area soon as possible.

751 Hugh woods Rd.
Roxboro, NC 27574

Timothy K. Smith at 1137 Hughwoods Rd.
asked about bundling service's a year ago.
would love to see this at our adress.
597-3977.

Frank Nance 330-9933
1095 Hughwoods Rd.
Would like to be able to get the
internet.

Judy Smith 1137 Hugh Woods Rd.
597-3977 Would like to be able to get Internet.

Pearl H. Ferrell - 968 Hugh woods Rd.
would like to be able to get internet
336-599-5897

Esther Ogle 902 Hugh Woods
Rd
would like to be able to get
internet 336-597-5227.

Embargo,

Hi, my name is Mona Allen. I Live with my parent and would like to have high speed internet so I can use my home work assigment researching the subject for my teacher. Please put the service on our area soon as possible. It's very important for our education.

751 Hugh Woods Rd.
Roxboro, NC
27574

Embarq

I also live on Hughwood's road and would like to see the local long distance internet + the Dish packages available also.

Gary D. Powell

1227 Hughwood Rd
Roxboro, N.C. 27574
336-597-3358

I would like to have access to the 3 in 1 Bundle for my home as well as our Business- farming.

Tina Porterfield
554 Hugh Woods Rd
Roxboro NC 27574
336-599-9197

Jamia & Son Staples

We need to hook up to internet & embarq should bundle their service like Charter & Time Warner. Just because we live in the ~~So~~ country we need these services as well.

Regards

Cheryl Mercadante
1200 Hugh Woods Rd
Roxboro NC 27574
336-599-8813

ATTACHMENT 6

NEWS

Federal Communications Commission
445 12th Street, S.W.
Washington, D. C. 20554

News Media Information 202 / 418-0500
Internet: http://www.fcc.gov
TTY: 1-888-835-5322

This is an unofficial announcement of Commission action. Release of the full text of a Commission order constitutes official action.
See MCI v. FCC. 515 F 2d 385 (D.C. Circ 1974).

FOR IMMEDIATE RELEASE
January 16, 2009

NEWS MEDIA CONTACT:
Mark Wigfield at (202) 418-0253
Email: Mark.Wigfield@fcc.gov

FEDERAL COMMUNICATIONS COMMISSION RELEASES DATA ON HIGH-SPEED SERVICES FOR INTERNET ACCESS

High-Speed Connections to the Internet Increased by 20% in the Second Half of 2007

Washington, D.C. – The Federal Communications Commission (FCC) today released new data on high-speed connections to the Internet in the United States. Twice a year, all facilities-based broadband providers are required to report to the Commission basic information about their service offerings and types of customers pursuant to the FCC's local telephone competition and broadband data gathering program (FCC Form 477). Statistics released today reflect data as of December 31, 2007.

For reporting purposes, ***high-speed lines*** are connections that deliver services at speeds exceeding 200 kilobits per second (kbps) in at least one direction, while ***advanced services lines*** are connections that deliver services at speeds exceeding 200 kbps in both directions. High-speed lines encompass advanced services lines. Commencing with the June 2005 data, we collect and report more detailed information about the speeds of in-service lines, provide finer distinctions among technologies, and collect and analyze information about the availability of high-speed Digital Subscriber Line (DSL) connections from incumbent local exchange carriers (incumbent LECs) and high-speed cable modem service from cable TV system operators. Also commencing with the June 2005 data, providers with fewer than 250 high-speed connections in service to end users in a particular state are no longer excused from reporting data for that state.

1) High-Speed Lines

- High-speed lines increased by 20% during the second half of 2007, from 101.0 million to 121.2 million lines in service, following a 22% increase, from 82.8 million to 101.0 million lines, during the first half of 2007. For the full twelve-month period ending December 31, 2007, high-speed lines increased by 46% from 82.8 million to 121.2 million (or 38.4 million lines) compared to a 62% increase, from 51.2 million to 82.8 million lines (or 31.6 million lines), in the twelve-month period ending December 31, 2006.

- Of the 121.2 million total high-speed lines reported as of December 31, 2007, 74.0 million served primarily residential end users. Cable modem service represented 47.8% of these lines while 35.8% were asymmetric DSL (ADSL) connections, 0.1%

were symmetric DSL (SDSL) or traditional wireline connections, 2.3% were fiber connections to the end user premises, and 14.0% used other types of technology including satellite, terrestrial fixed or mobile wireless (on a licensed or unlicensed basis), and electric power line.

- High-speed ADSL increased by 1.9 million lines during the second half of 2007, fiber connections increased by 0.4 million lines, and cable modem service increased by 2.1 million lines. For the full twelve-month period ending December 31, 2007, ADSL increased by 4.0 million lines, fiber connections increased by 0.8 million lines, and cable modem service increased by 4.5 million lines.

2) **Advanced Services Lines**

- Advanced services lines, which deliver services at speeds exceeding 200 kbps in both directions, increased by 15% during the second half of 2007, from 69.6 million to 80.2 million lines, compared to a 16% increase, from 59.8 million to 69.6 million lines, during the first half of 2007. For the full twelve-month period ending December 31, 2007, advanced services lines increased 34% from 59.8 million to 80.2 million (or 20.4 million lines).

- Of the 80.2 million advanced services lines reported as of December 31, 2007, 56.4% were at least 2.5 mbps in the faster direction and 43.5% were slower than 2.5 mbps in the faster direction.

- Of the 80.2 million advanced services lines, 69.1 million served primarily residential end users. Cable modem service represented 50.7% of these lines while 32.6% were ADSL connections, 0.1% were SDSL or traditional wireline connections, 2.4% were fiber connections to the end user premises, and 14.1% used other types of technology including satellite, terrestrial fixed or mobile wireless (on a licensed or unlicensed basis), and electric power line.

3) **Geographic Coverage**

- As a nationwide average, we estimate that high-speed DSL connections were available to 82% of the households to whom incumbent LECs could provide local telephone service as of December 31, 2007, and that high-speed cable modem service was available to 96% of the households to whom cable system operators could provide cable TV service.

- Providers list the Zip Codes in which they have at least one high-speed connection in service to an end user, and over 99% of Zip Codes were listed by at least one provider. Our analysis indicates that more than 99% of the nation's population lives in those Zip Codes. The most widely reported technologies by this measure were high-speed mobile wireless (with at least some presence reported in 94% of Zip Codes), satellite (in 93% of Zip Codes), ADSL (in 87% of Zip Codes), and cable modem service (in 66% of Zip Codes). ADSL and/or cable modem connections were reported to be present in 91% of Zip Codes.

The summary statistics released today also include state-by-state information, and population density and household income information ranked by Zip Codes. As additional information becomes available, it will be posted on the Commission's Internet site. Note that, on June 12, 2008, the Commission adopted a Report and Order (FCC 08-89) and Order on Reconsideration (FCC 08-148) that together revise the Form 477 reporting requirements. The changes will become effective upon review and approval by the Office of Management and Budget.

The report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, SW, Washington, DC. Copies may be purchased by calling Best Copy and Printing, Inc. at (800) 378-3160. The report can also be downloaded from the Wireline Competition Bureau Statistical Reports Internet site at www.fcc.gov/wcb/stats.

- FCC -

Wireline Competition Bureau contacts: James Eisner and Suzanne Mendez at (202) 418-0940, TTY (202) 418-0484.

High-Speed Services for Internet Access: Status as of December 31, 2007

Industry Analysis and Technology Division
Wireline Competition Bureau
January 2009

This report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, SW, Washington, DC. Copies may be purchased by contacting Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-B402, Washington, DC 20554, telephone (800) 378-3160, or via their website at www.bcpiweb.com. The report can also be downloaded from the Wireline Competition Bureau Statistical Reports Internet site at www.fcc.gov/wcb/stats.

High-Speed Services for Internet Access: Status as of December 31, 2007

Congress directed the Commission and the states, in section 706 of the Telecommunications Act of 1996, to encourage deployment of advanced telecommunications capability in the United States on a reasonable and timely basis.[1] To assist in its evaluation of such deployment, the Commission instituted a formal data collection program (FCC Form 477) to gather standardized information about subscribership to high-speed services, including advanced services, from wireline telephone companies, cable system operators, terrestrial wireless service providers, satellite service providers, and any other facilities-based providers of advanced telecommunications capability.[2]

We summarize here information from the seventeenth semi-annual data collection, thereby presenting a snapshot of subscribership as of December 31, 2007.[3] High-speed lines connecting homes and businesses to the Internet increased by 20% during the second half of 2007, from 101.0 million to 121.2 million lines in service, following a 22% increase, from 82.8 million to 101.0 million lines, during the first half of 2007. For the full twelve-month period ending December 31, 2007, high-speed lines increased by 46% (or 38.4 million lines). The presence of high-speed service subscribers was reported in all 50 states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the Virgin Islands, and in nearly 100% of the Zip Codes in the United States.

Twice a year, all facilities-based providers of high-speed connections to end users are required to report to the Commission basic information about their service offerings and types of customers.[4] Prior to June 2005, providers with fewer than 250 high-speed lines (or wireless

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[1] *See* §706, Pub.L. 104-104, Title VII, Feb. 8, 1996, 110 Stat. 153, reproduced in the notes under 47 U.S.C. § 157. We use the term "high-speed" to describe services that provide the subscriber with transmissions at a speed in excess of 200 kilobits per second (kbps) in at least one direction. "Advanced services," which provide the subscriber with transmission speeds in excess of 200 kbps in each direction, are a subset of high-speed services.

[2] *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717 (2000); *Local Telephone Competition and Broadband Reporting,* WC Docket No. 04-141, Report and Order, 19 FCC Rcd 22340 (2004). During this data gathering program, qualifying entities file FCC Form 477 each year on March 1 (reporting data for the preceding December 31) and September 1 (reporting data for June 30 of the same year). The first data collected by Form 477 were data as of December 31, 1999. An updated Form 477, and instructions for that particular form, for each specific round of the data collection may be downloaded from the FCC Forms website at www.fcc.gov/formpage.html.

[3] Statistical summaries of the earlier Form 477 data collections appeared in *Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146, Second Report, 15 FCC Rcd 20913 (2000) (*Second 706 Report*), available at www.fcc.gov/broadband/706.html, and in previous releases of the *High-Speed Services for Internet Access* report, available at www.fcc.gov/wcb/stats.

[4] The terms "broadband connections" (which is used as a synonym for "high-speed connections" in the Form 477 program) and "facilities-based provider" are defined on the first page of the Form 477 instructions that are available at www.fcc.gov/formpage.html, and the term "end users" is defined on the third page. Facilities-based providers report information about high-speed connections they provide directly to their own end-user customers and also high-speed connections they provide to Internet Service Providers for resale to end users.

channels) in service in a particular state were not required to report data for that state.[5] Small providers of high-speed connections, many of whom serve rural areas with relatively small populations, were therefore underrepresented in the earlier data. Including these providers resulted in a substantial one-time increase in the number of holding companies and unaffiliated entities reporting information about high-speed connections from December 31, 2004 to June 30, 2005.[6]

The data reported for December 31, 2007 include detail about the information transfer rates ("speeds") of the reported connections and a breakdown of high-speed connections by type of technology.[7] The reported data also enable us to estimate, for individual states, the extent to which Digital Subscriber Line (DSL) high-speed connections provided by incumbent local exchange carriers (incumbent LECs), and cable modem high-speed service provided by cable system operators, are available to households residing in the areas these companies serve.

Readers can draw the following broad conclusions from the data summarized in this report:

- High-speed lines (or wireless channels) connecting homes and businesses to the Internet at speeds that exceed 200 kbps in *at least one* direction increased from 101.0 million lines to 121.2 million lines during the second half of 2007. For the full twelve-month period ending December 31, 2007, high-speed lines increased by 38.4 million, from 82.8 million lines to 121.2 million lines. See Table 1 and Chart 1.

- ADSL lines increased by 1.9 million lines during the second half of 2007, fiber connections increased by 0.4 million lines, and cable modem service increased by 2.1 million lines. For the full twelve-month period ending December 31, 2007, ADSL increased by 4.0 million lines, fiber connections increased by 0.8 million lines, and cable modem service increased by 4.5 million lines. See Table 1.

- Of the 121.2 million total high-speed lines, 30.1% were cable modem, 24.3% were ADSL, 0.7% were symmetric DSL (SDSL) or traditional wireline, 1.5% were fiber to the end user premises, and 43.3% used other technologies.[8] See Chart 2.

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[5] High-speed lines reported in voluntary submissions of data prior to June 2005 represented less than 0.05% of total reported high-speed lines. As of June 30, 2005, filers with fewer than 250 lines in a state (including some entities that previously made voluntary submissions) represented about 0.2% of total reported high-speed lines.

[6] The nationwide number of holding companies and unaffiliated entities reporting high-speed lines increased from 552 as of December 31, 2004 to 1,270 as of June 30, 2005. See Table 7.

[7] Some Internet-access connections that telephone companies, cable system operators, and wireless service providers offer do not meet the 200 kbps criterion for reporting high-speed connections to the Commission, but may nevertheless meet the needs of the subscribers who select them over a more expensive service option.

[8] Providers are instructed to report a high-speed connection in the (mutually exclusive) technology category that characterizes the last few feet of distribution plant to the subscriber's premises. In addition to cable modem, ADSL, SDSL, traditional wireline when used for Internet access, and optical carrier (fiber to the end user) connections, reporting entities specify satellite, terrestrial fixed wireless (licensed or unlicensed), terrestrial mobile wireless (licensed or unlicensed), electric power line, or "all other" technology. See additional notes following Chart 10.

- Lines connecting homes and businesses to the Internet at transmission speeds that exceed 200 kbps in *both* directions increased from 69.6 million lines to 80.2 million lines during the second half of 2007. For the full twelve-month period ending December 31, 2007, they increased by 20.4 million, from 59.8 million lines to 80.2 million lines. See Table 2 and Chart 3.

- Of the 80.2 million lines which were faster than 200 kbps in *both* directions, 45.1% were cable modem, 31.5% were ADSL, 1.1% were SDSL or traditional wireline, 2.3% were fiber to the end user premises, and 20.1% used other technologies. See Chart 4.

- Of the 121.2 million total high-speed lines, 74.0 million were designed to serve primarily residential end users. Cable modem represented 47.8% of these lines while 35.8% were ADSL, 0.1% were SDSL or traditional wireline connections, 2.3% were fiber to the end user premises, and 14.0% used other technologies. See Table 3 and Chart 6. For state-specific data, see Table 13.

- Of the 74.0 million lines that were faster than 200 kbps in *both* directions, 69.1 million lines were designed to serve primarily residential end users. Of these, cable modem represented 50.7% while 32.6% were ADSL, 0.1% were SDSL or traditional wireline, 2.4% were fiber to the end user premises, and 14.1% used other technologies. See Table 4 and Chart 8.

- Of the 80.2 million reported high-speed lines that were faster than 200 kbps in *both* directions as of December 31, 2007, 56.4% were at least 2.5 mbps in the faster direction and 43.5% were slower than 2.5 mbps in the faster direction. See Table 5.

- Incumbent LECs or their affiliates reported 97.1% of ADSL connections, 90.9% of fiber-to-the-premises connections, 81.5% of the mobile service subscribers whose wireless device is capable of operating on a high-speed mobile wireless network, and 34.2% of traditional wireline connections. When all technologies are considered, incumbent LECs reported 59.6% of total high-speed connections. See Table 6.

- High-speed lines were reported in all 50 states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the Virgin Islands. See Table 9 and, for historical data, Tables 10 - 12.

- As a nationwide average, we estimate that high-speed DSL connections were available to 82% of the households to whom incumbent LECs could provide local telephone service, and that high-speed cable modem service was available to 96% of the households to whom cable system operators could provide cable TV service. See Table 14.

- The Commission's data collection program requires providers to list the Zip Codes in which the provider has at least one high-speed connection in service to an end user, and over 99% of Zip Codes were listed by at least one provider.[9] The most widely reported technologies by this measure were high-speed mobile wireless (with at least some presence reported in 94% of Zip Codes), satellite (in 93% of Zip Codes), ADSL (in 87% of Zip Codes), and cable modem service (in 66% of Zip Codes). ADSL and/or cable modem connections were reported to be present in 91% of Zip Codes.[10] See Tables 15 and 16. For state-specific data, see Table 17.

- Our analysis indicates that more than 99% of the country's population lives in the more than 99% of Zip Codes where a provider reports having at least one high-speed service subscriber. Moreover, numerous competing providers report serving high-speed subscribers in the major population centers of the country. See the map that follows Table 16.

- High population density has a positive association with reports that high-speed subscribers are present, and low population density has an inverse association. For example, high-speed subscribers were reported to be present in more than 99% of the most densely populated Zip Codes and in 90% of Zip Codes with the lowest population densities.[11] See Table 18.

- High median household income also has a positive association with reports that high-speed subscribers are present. In the top one-tenth of Zip Codes ranked by median household income, high-speed subscribers are reported in 99% of Zip Codes. By contrast, high-speed subscribers are reported in 92% of Zip Codes with the lowest median household income. See Table 19.

As other information from the Commission's data collection program (FCC Form 477) becomes available, it will be included in future reports on the deployment of advanced telecommunications capability and in publications such as this one. Note that, on June 12, 2008, the Commission adopted a Report and Order (FCC 08-89) and Order on Reconsideration (FCC 08-148) that together revise the Form 477 reporting requirements.[12] The changes will become

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[9] Lists of Zip Codes with number of service providers as reported in the FCC Form 477 filings are made available at www.fcc.gov/wcb/stats in a format that honors requests for nondisclosure of information the reporting entities assert is competitively sensitive.

[10] The 91.0% figure includes Zip Codes with either ADSL subscribers reported, cable modem subscribers reported, or both. In 61.0% of Zip Codes, both ADSL and cable modem subscribers have been reported. In 25.6% of Zip Codes, there are ADSL subscribers reported but no cable modem subscribers, and in 4.4% of Zip Codes there are cable modem subscribers reported but no ADSL subscribers reported.

[11] For this comparison, we consider the most densely populated Zip Codes to be those with more than 3,147 persons per square mile (the top decile of Zip Codes) and the least densely populated Zip Codes to be those with fewer than 6 persons per square mile (the bottom decile).

[12] Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on *Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, Report and Order, 23 FCC Rcd 9691 (2008); Order on Reconsideration, 23 FCC Rcd 9800 (2008).

effective upon review and approval by the Office of Management and Budget.

We invite users of this information to provide suggestions for improved data collection and analysis by:

- Using the attached customer response form,
- E-mailing comments to James.Eisner@fcc.gov or Suzanne.Mendez@fcc.gov,
- Calling the Industry Analysis and Technology Division of the Wireline Competition Bureau at (202) 418-0940, or
- Participating in any formal proceedings undertaken by the Commission to solicit comments for improvement of FCC Form 477.

Table 1

High-Speed Lines [1]

(Over 200 kbps in at least one direction)

Technology [2]	2000	2001	2002	2003	2004	2005	2006		2007	
	Dec	Dec	Dec	Dec	Dec	Dec	Jun	Dec	Jun	Dec
ADSL	1,977,101	3,947,808	6,471,716	9,509,442	13,817,280	19,515,483	22,584,255	25,412,883	27,561,867	29,451,719
SDSL and Traditional Wireline	1,021,291	1,078,597	1,216,208	1,305,070	1,468,566	878,973	948,134	1,030,698	1,071,996	886,269
SDSL	-	-	-	-	-	368,782	337,412	344,759	319,987	293,974
Traditional Wireline	-	-	-	-	-	510,191	610,722	685,939	752,009	592,295
Cable Modem	3,582,874	7,059,598	11,369,087	16,446,322	21,357,400	26,558,206	29,174,494	31,981,705	34,404,368	36,497,284
Fiber [3]	63,206	91,921	108,541	116,390	159,653	448,257	685,823	1,035,677	1,403,729	1,850,695
Satellite and Wireless	112,405	212,610	276,067	367,118	549,621	3,812,029	11,872,998	23,344,106	36,560,869	52,474,070
Satellite	-	-	-	-	-	426,928	495,365	571,980	668,803	791,142
Fixed Wireless	-	-	-	-	-	257,431	361,113	484,377	586,813	705,014
Mobile Wireless	-	-	-	-	-	3,127,670	11,016,520	22,287,749	35,305,253	50,977,914
Power Line and Other	-	-	-	-	-	4,571	5,208	4,776	5,420	5,274
Total Lines	6,756,877	12,390,534	19,441,619	27,744,342	37,352,520	51,217,519	65,270,912	82,809,845	101,008,249	121,165,311

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Some historical data have been revised. See additional notes following Chart 10.

Chart 1

Total High-Speed Lines

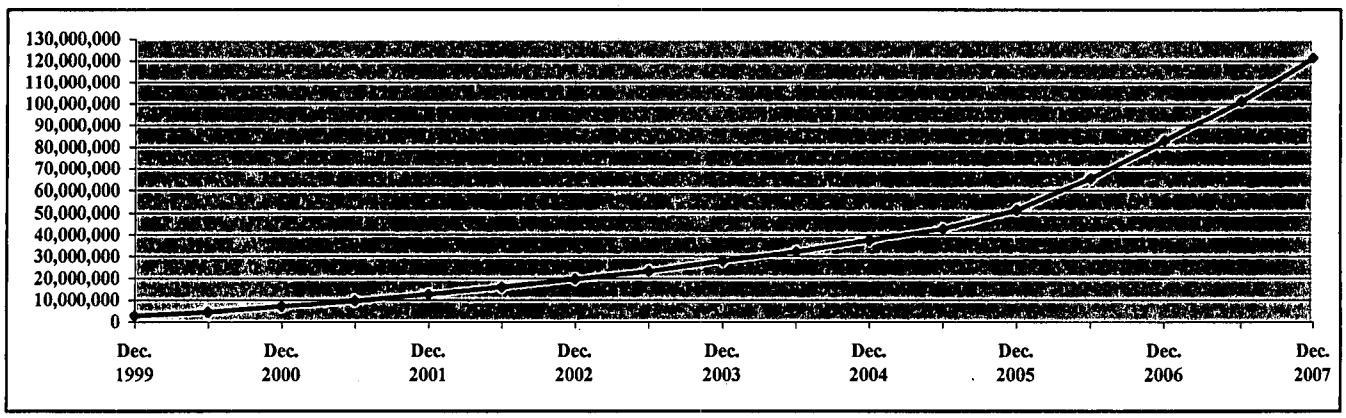


Chart 2

High-Speed Lines by Technology as of December 31, 2007

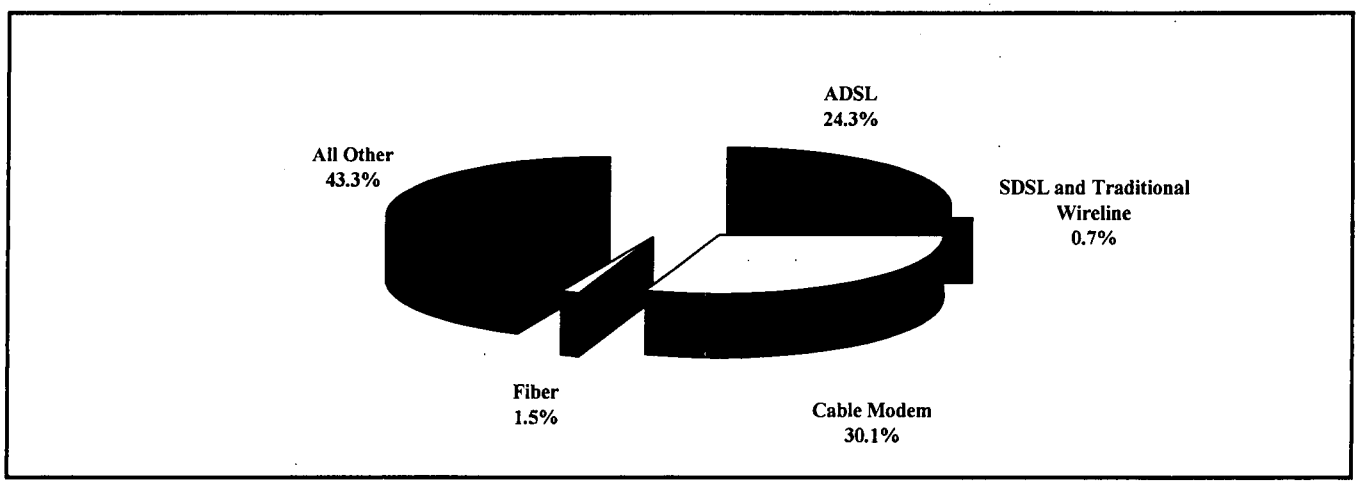


Table 2
Advanced Services Lines [1]
(Over 200 kbps in both directions)

Technology [2]	2000	2001	2002	2003	2004	2005	2006		2007	
	Dec	Dec	Dec	Dec	Dec	Dec	Jun	Dec	Jun	Dec
ADSL	675,366	1,369,143	2,178,394	3,037,474	5,695,548	15,921,336	18,310,957	21,144,159	23,426,407	25,244,128
SDSL and Traditional Wireline	1,021,291	1,078,597	1,216,208	1,305,070	1,468,566	874,261	946,874	1,029,782	1,071,280	886,188
SDSL	-	-	-	-	-	368,736	336,586	344,739	319,348	293,974
Traditional Wireline	-	-	-	-	-	505,525	610,288	685,043	751,932	592,214
Cable Modem	2,193,609	4,394,778	8,342,234	15,327,247	20,891,624	26,293,596	28,878,587	31,594,111	33,935,733	36,155,563
Fiber [3]	63,200	84,206	108,192	115,633	157,127	447,235	684,729	1,034,317	1,401,641	1,847,181
Satellite and Wireless	26,906	75,341	65,929	73,222	106,616	338,635	2,275,154	4,982,675	9,801,378	16,094,910
Satellite	-	-	-	-	-	36,331	27,489	36,026	57,202	73,747
Fixed Wireless	-	-	-	-	-	220,268	333,209	455,741	554,316	673,951
Mobile Wireless	-	-	-	-	-	82,036	1,914,456	4,490,908	9,189,860	15,347,212
Power Line and Other	-	-	-	-	-	4,501	5,209	4,776	5,420	5,274
Total Lines	3,980,372	7,002,065	11,910,957	19,858,646	28,319,482	43,879,564	51,101,510	59,789,820	69,641,859	80,233,244

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Some historical data have been revised. See additional notes following Chart 10.

Chart 3
Advanced Services Lines

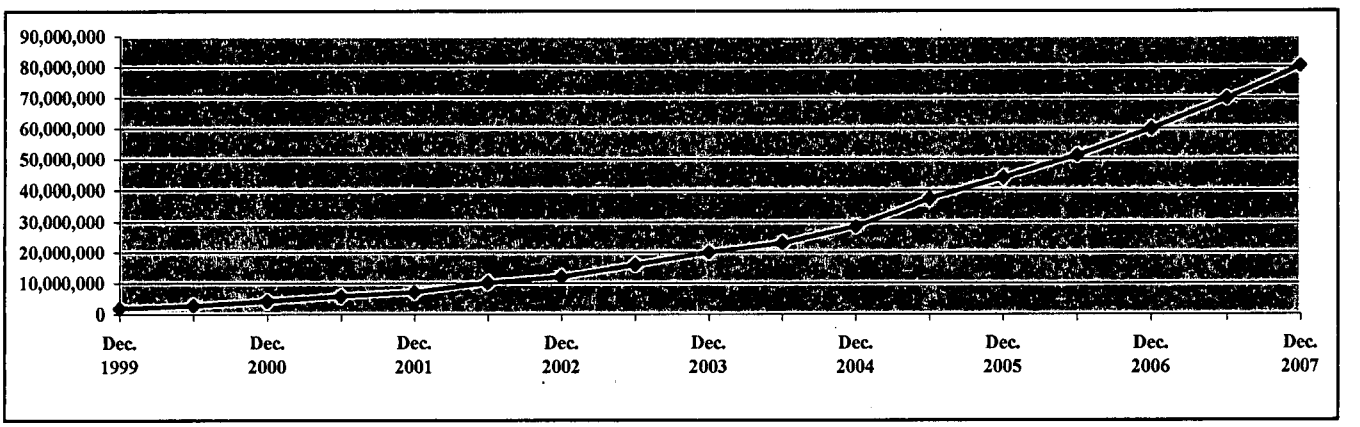


Chart 4
Advanced Services Lines by Technology as of December 31, 2007

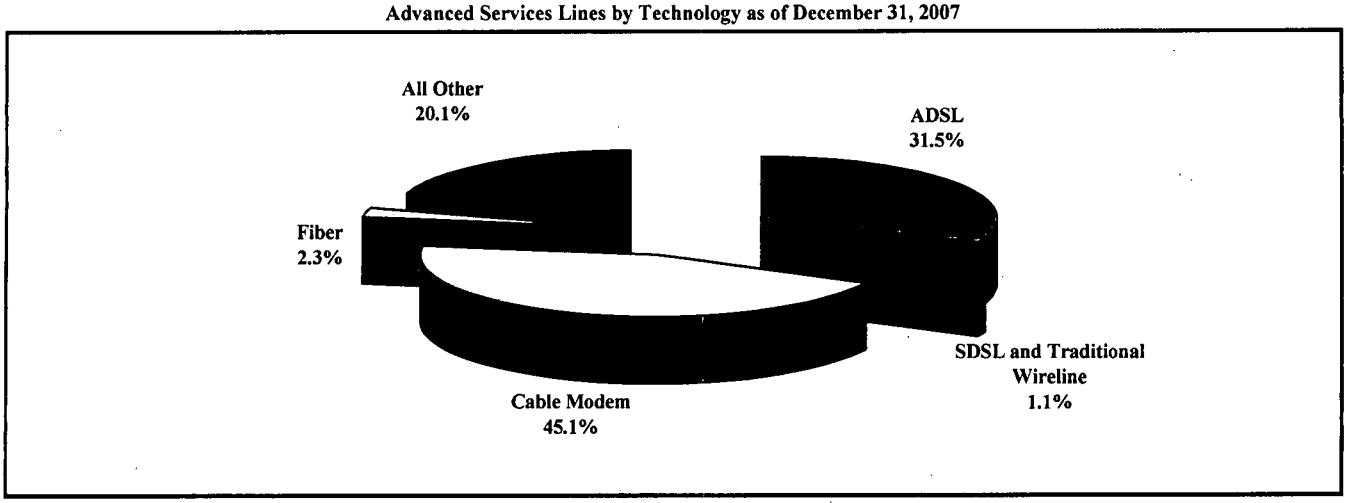


Table 3
Residential High-Speed Lines [1]
(Over 200 kbps in at least one direction)

Technology [2]	2000	2001	2002	2003	2004	2005	2006		2007	
	Dec	Dec	Dec	Dec	Dec	Dec	Jun	Dec	Jun	Dec
ADSL	1,594,879	3,615,989	5,529,241	8,909,027	13,119,326	17,370,508	20,152,290	22,768,500	24,731,180	26,477,656
SDSL and Traditional Wireline	176,520	139,660	213,489	289,764	419,215	129,444	112,017	117,708	117,522	99,953
SDSL	-	-	-	-	-	122,220	102,605	105,012	105,029	82,659
Traditional Wireline	-	-	-	-	-	7,224	9,412	12,696	12,493	17,294
Cable Modem	3,294,546	7,050,709	11,342,512	16,416,364	21,270,158	25,714,461	28,365,648	31,118,079	33,336,493	35,332,613
Fiber [3]	1,994	4,139	14,692	19,830	34,959	213,479	442,027	763,394	1,153,058	1,684,136
Satellite and Wireless	102,432	194,897	256,978	341,864	422,623	532,391	1,840,060	3,572,231	6,598,757	10,376,966
Satellite	-	-	-	-	-	320,142	382,047	455,936	530,357	626,466
Fixed Wireless	-	-	-	-	-	203,179	301,293	424,374	523,180	642,641
Mobile Wireless	-	-	-	-	-	9,071	1,156,720	2,691,921	5,545,220	9,107,859
Power Line and Other	-	-	-	-	-	4,550	5,093	4,711	5,347	5,159
Total Lines	5,170,371	11,005,396	17,356,912	25,976,850	35,266,281	43,964,834	50,917,135	58,344,623	65,942,357	73,976,483

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Small business lines were included in totals through December 2004.
Some historical data have been revised. See additional notes following Chart 10.

Chart 5
Residential High-Speed Lines

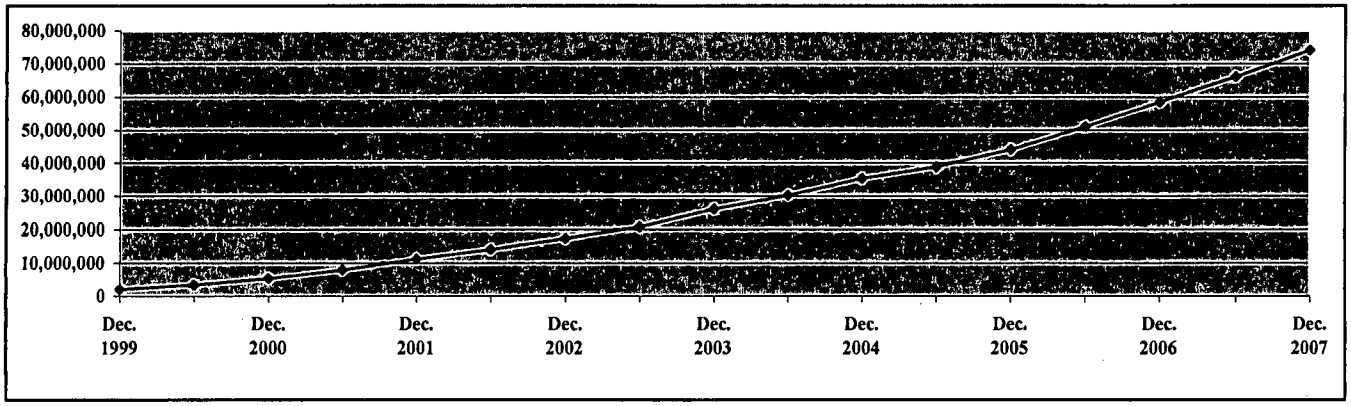


Chart 6
Residential High-Speed Lines by Technology as of December 31, 2007

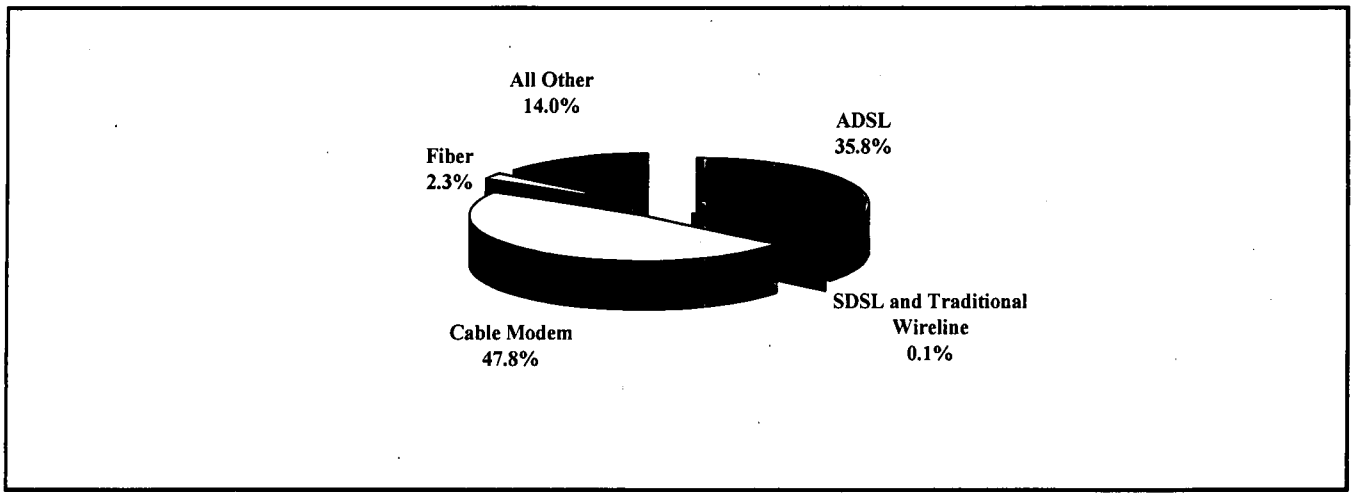


Table 4
Residential Advanced Services Lines [1]
(Over 200 kbps in both directions)

Technology [2]	2000	2001	2002	2003	2004	2005	2006		2007	
	Dec	Dec	Dec	Dec	Dec	Dec	Jun	Dec	Jun	Dec
ADSL	393,246	1,243,996	1,827,547	2,437,059	5,026,367	14,242,291	16,416,522	18,878,873	20,875,941	22,555,758
SDSL and Traditional Wireline	176,520	139,660	213,489	289,764	419,215	125,116	111,935	117,652	116,966	99,925
SDSL	-	-	-	-	-	122,220	102,580	105,002	104,517	82,659
Traditional Wireline	-	-	-	-	-	2,895	9,355	12,650	12,449	17,266
Cable Modem	2,177,328	4,388,967	8,322,157	15,297,289	20,811,704	25,533,423	28,121,912	30,770,517	32,916,212	35,026,467
Fiber [3]	1,992	3,523	14,408	19,074	33,189	212,862	441,128	762,083	1,151,109	1,681,895
Satellite and Wireless	17,043	58,113	47,903	51,944	84,465	204,703	1,449,299	3,114,987	6,074,880	9,770,874
Satellite	-	-	-	-	-	25,117	15,055	23,334	35,319	47,743
Fixed Wireless	-	-	-	-	-	170,515	277,524	399,732	494,341	615,272
Mobile Wireless	-	-	-	-	-	9,071	1,156,720	2,691,921	5,545,220	9,107,859
Power Line and Other	-	-	-	-	-	4,481	5,093	4,711	5,347	5,159
Total Lines	2,766,130	5,834,258	10,425,505	18,095,131	26,374,940	40,322,876	46,545,889	53,648,823	61,140,455	69,140,078

For data through December 2004, only those providers with at least 250 lines per state were required to file.
Small business lines were included in totals through December 2004.
Some historical data have been revised. See additional notes following Chart 10.

Chart 7
Residential Advanced Services Lines

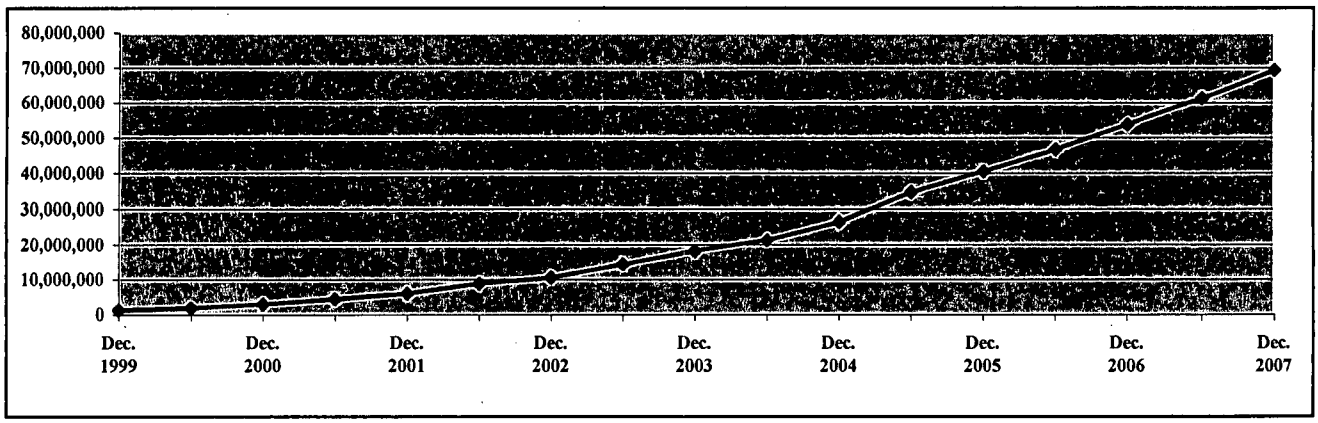


Chart 8
Residential Advanced Services Lines by Technology as of December 31, 2007

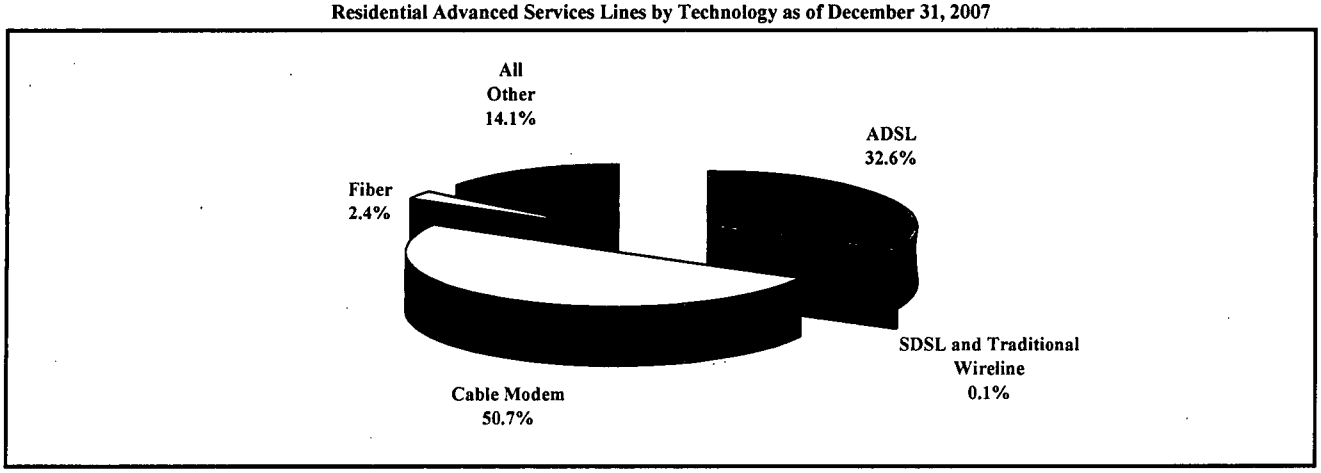


Table 5

High-Speed Lines by Information Transfer Rates [1]

As of December 31, 2007

Technology [2]	Exceeding 200 kbps in only one direction	Exceeding 200 kbps in both directions, and:				
		Greater than 200 kbps and less than 2.5 mbps in the faster direction	Greater than or equal to 2.5 mbps and less than 10 mbps in the faster direction	Greater than or equal to 10 mbps and less than 25 mbps in the faster direction	Greater than or equal to 25 mbps and less than 100 mbps in the faster direction	Greater than or equal to 100 mbps in the faster direction
ADSL	4,207,591	14,023,169	11,192,006	24,613	*	*
SDSL	0	292,566	1,251	*	*	0
Traditional Wireline	81	536,571	32,241	7,680	8,051	7,671
Cable Modem	341,721	3,879,526	28,315,879	*	*	0
Fiber	3,514	139,420	812,666	866,994	14,448	13,653
Satellite	717,395	*	*	0	0	0
Fixed Wireless	31,063	636,396	36,836	473	*	*
Mobile Wireless	35,630,702	*	0	*	0	0
Power Line and Other	0	*	*	0	*	0
Total Lines	40,932,067	34,930,315	40,394,418	4,765,239	121,870	21,412

* Data withheld to maintain firm confidentiality.

See notes following Chart 10.

Chart 9

Lines by Information Transfer Rates in the Faster Directions as of December 31, 2007

(Includes only lines exceeding 200 kbps in both directions)

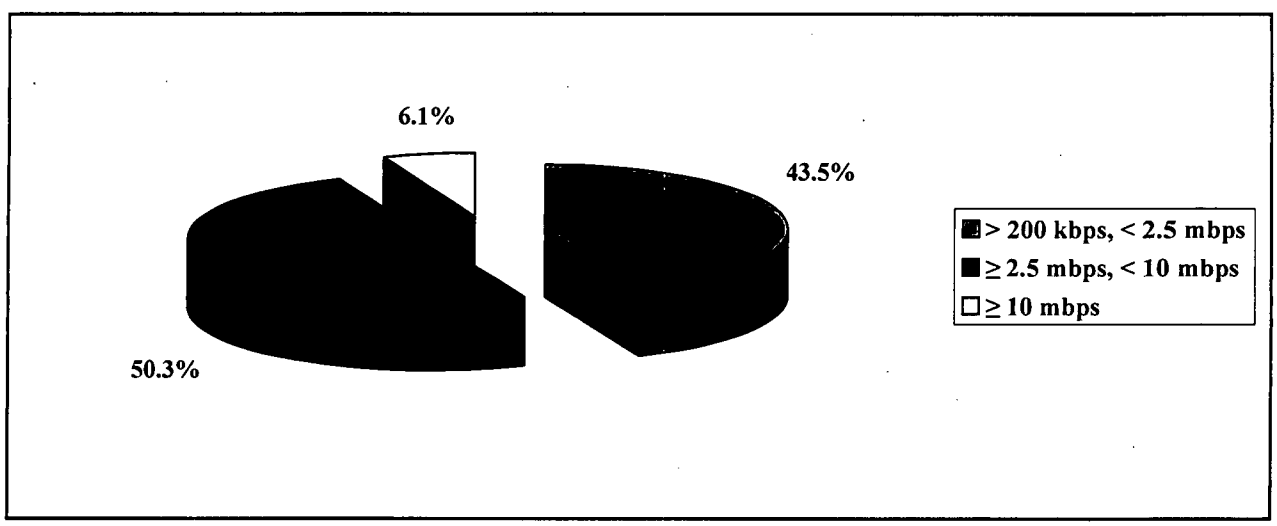


Table 6

High-Speed Lines by Type of Provider as of December 31, 2007 [1]

(Over 200 kbps in at least one direction)

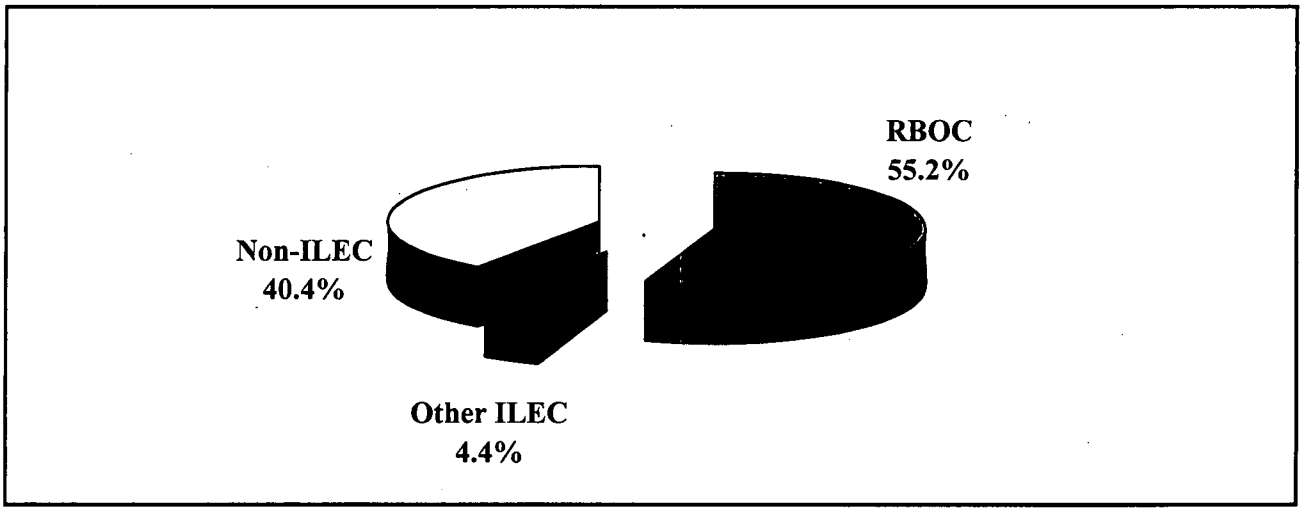
Technology [2]	Lines				Percent of Lines		
	RBOC [4]	Other ILEC	Non-ILEC [5]	Total	RBOC [4]	Other ILEC	Non-ILEC [5]
ADSL	23,511,357	5,072,800	867,562	29,451,719	79.8 %	17.2 %	2.9 %
SDSL	*	*	205,423	293,974	*	*	69.9
Traditional Wireline	182,876	19,630	389,789	592,295	30.9	3.3	65.8
Cable Modem	*	*	36,401,489	36,497,284	*	*	99.7
Fiber	1,616,587	64,827	169,281	1,850,695	87.4	3.5	9.1
Satellite	0	0	791,142	791,142	0.0	0.0	100.0
Fixed Wireless	*	*	679,952	705,014	*	*	96.4
Mobile Wireless	*	*	9,436,498	50,977,914	*	*	18.5
Power Line and Other	0	0	5,274	5,274	0.0	0.0	100.0
Total Lines	66,858,578	5,360,323	48,946,410	121,165,311	55.2 %	4.4 %	40.4 %

* Data withheld to maintain firm confidentiality.

See notes following Chart 10.

Chart 10

Share of High-Speed Lines by Type of Provider as of December 31, 2007



Notes for Tables 1 - 6 and Charts 1 - 10.

Advanced services lines, residential high-speed lines, and residential advanced services lines are estimated based on data reported on FCC Form 477. Therefore, figures may not add to totals due to rounding.

[1] High-speed lines are connections to end-user locations that deliver services at speeds exceeding 200 kbps in at least one direction. Advanced services lines, which are a subset of high-speed lines, are connections that deliver services at speeds exceeding 200 kbps in both directions. In Tables 2 and 4, we enumerate those reported high-speed lines that also qualify as advanced services lines. More detailed information about connection speeds is presented in Table 5. Line counts presented in this report are not adjusted for the number of persons at a single end-user location who have access to, or who use, the Internet-access services that are delivered over the high-speed connection to that location.

[2] The mutually exclusive types of technology are, respectively: Asymmetric digital subscriber line (ADSL) technologies, which provide speeds in one direction greater than speeds in the other direction; symmetric digital subscriber line (SDSL) technologies; traditional wireline technologies when used to provide equivalent Internet access functionality, including Ethernet service if delivered to the subscriber's location over copper (as opposed to optical fiber) plant; cable modem, including the typical hybrid fiber-coax (HFC) architecture of upgraded cable TV systems; optical fiber to the subscriber's premises (e.g., Fiber-to-the-Home, or FTTH); satellite and fixed and mobile terrestrial wireless systems, which use radio spectrum to communicate with a radio transmitter; electric power line; and other.

[3] Fiber lines included electric power line through December 2004.

[4] RBOC lines include lines owned by AT&T, Qwest and Verizon, and their affiliates.

[5] High-speed lines reported by non-ILEC affiliates of RBOCs are reported in the column for RBOC lines and are excluded from the column for non-ILEC lines. Lines reported by non-ILEC affiliates of ILECs other than the RBOCs are reported in the column for non-ILEC lines.

Table 7
Nationwide Number of Providers of High-Speed Lines by Technology
(Over 200 kbps in at least one direction)

	ADSL	Cable Modem	All Other [1]	Total
Dec 1999	28	43	65	105
Jun 2000	47	36	75	116
Dec 2000	68	39	87	136
Jun 2001	86	47	98	160
Dec 2001	117	59	122	203
Jun 2002	142	68	138	237
Dec 2002	178	87	169	299
Jun 2003	235	98	217	378
Dec 2003	274	110	246	432
Jun 2004	298	129	281	485
Dec 2004	352	147	312	552
Jun 2005	758	227	779	1,270
Dec 2005	820	242	835	1,347
Jun 2006	833	254	814	1,326
Dec 2006	857	279	880	1,394
Jun 2007	861	282	872	1,371
Dec 2007	854	290	901	1,393

For data through December 2004, only those providers with at least 250 lines per state were required to file. Some historical data have been revised.

[1] All other includes SDSL, traditional wireline, fiber, satellite, fixed and mobile wireless, and power line.

Chart 11
Historical Number of Reporting Providers of High-Speed Lines by Technology

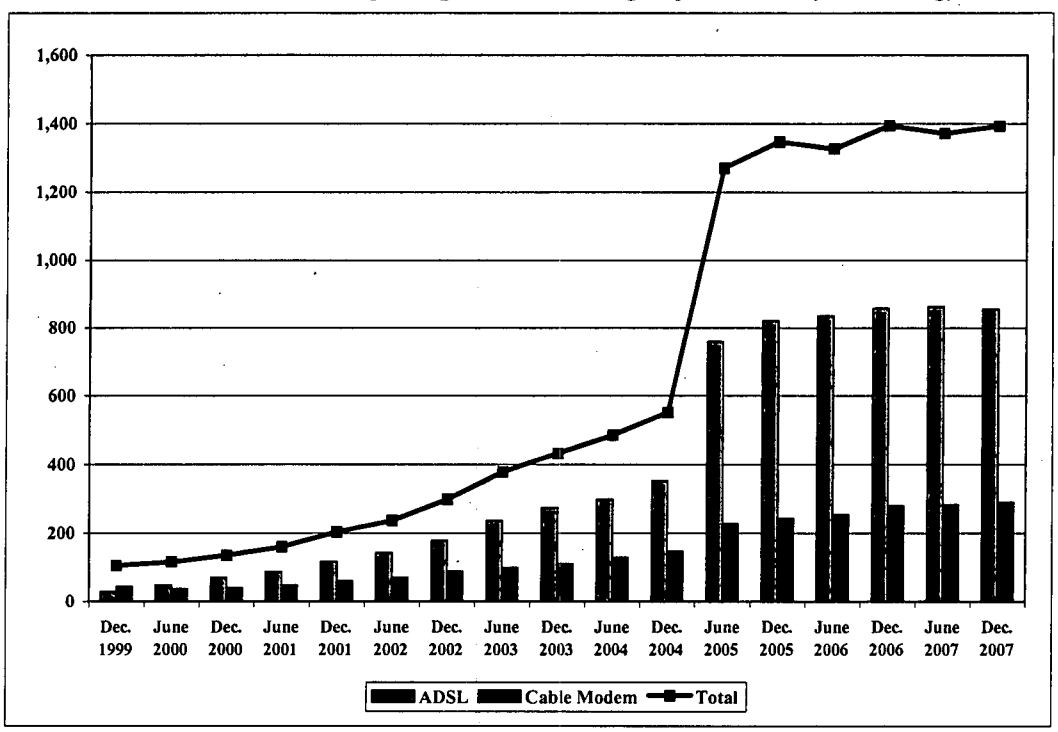


Table 8

Providers of High-Speed Lines by Technology as of December 31, 2007

(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total (Unduplicated)
Alabama	32	9	19	20	11	*	6	4	*	73
Alaska	10	5	5	*	*	*	7	*	0	20
American Samoa	*	*	0	0	0	0	*	0	0	*
Arizona	25	8	15	9	11	*	13	5	0	55
Arkansas	22	7	9	10	6	*	5	4	0	47
California	28	16	35	17	16	*	22	*	0	84
Colorado	29	13	18	12	10	*	17	7	0	67
Connecticut	9	8	12	6	6	*	0	4	0	30
Delaware	9	6	15	*	*	*	0	*	0	29
District of Columbia	13	8	15	*	5	*	*	*	0	30
Florida	30	14	34	15	20	*	11	4	*	78
Georgia	41	14	24	26	23	*	8	4	0	84
Guam	*	0	*	*	0	0	0	0	0	*
Hawaii	*	*	5	*	4	*	*	*	0	14
Idaho	24	8	13	7	12	*	14	4	0	49
Illinois	61	21	38	18	11	*	39	4	*	126
Indiana	43	12	26	13	19	*	28	*	*	89
Iowa	130	40	26	35	28	*	54	6	0	192
Kansas	40	15	14	26	18	*	24	4	0	82
Kentucky	31	10	14	19	11	*	13	4	0	73
Louisiana	21	8	15	10	11	*	6	5	*	50
Maine	15	10	11	4	6	*	*	*	0	29
Maryland	15	10	17	12	7	*	*	*	0	44
Massachusetts	16	11	22	7	7	*	*	*	0	46
Michigan	43	12	25	13	14	*	20	5	*	82
Minnesota	70	24	20	13	25	*	16	*	0	101
Mississippi	20	4	16	13	8	*	*	5	0	51
Missouri	45	21	19	17	12	4	26	4	*	95
Montana	17	7	9	4	7	*	10	*	0	36
Nebraska	35	14	13	15	4	*	22	4	0	68
Nevada	17	10	15	*	6	*	7	4	0	37
New Hampshire	19	9	14	5	5	*	*	*	0	37
New Jersey	21	14	32	7	9	*	*	*	0	51
New Mexico	22	8	9	6	4	*	6	4	0	39
New York	44	16	32	12	13	*	8	4	0	80
North Carolina	32	19	22	14	11	*	8	5	0	69
North Dakota	23	15	10	7	10	*	11	*	0	41
Northern Mariana Islands	*	0	*	*	*	0	*	0	0	*
Ohio	44	18	27	19	19	*	16	4	*	88
Oklahoma	40	8	21	10	9	*	16	4	0	74
Oregon	40	8	14	9	13	*	12	*	0	62
Pennsylvania	45	19	33	19	16	*	9	4	0	80
Puerto Rico	*	0	6	*	*	*	4	*	0	14
Rhode Island	10	6	11	*	5	*	0	*	0	23
South Carolina	24	7	19	14	11	*	4	4	0	46
South Dakota	24	9	10	7	11	4	9	*	0	44
Tennessee	29	13	16	12	10	*	6	5	0	68
Texas	65	22	35	26	21	*	48	6	0	138
Utah	14	10	11	*	8	*	10	5	0	39
Vermont	13	5	10	*	4	*	*	*	0	26
Virgin Islands	*	*	*	0	0	*	*	*	0	6
Virginia	26	11	26	14	13	*	12	4	*	67
Washington	30	10	23	14	18	*	21	*	*	72
West Virginia	13	4	10	7	*	*	4	*	0	32
Wisconsin	55	14	16	12	12	*	21	4	*	87
Wyoming	13	6	7	*	5	*	8	4	0	33
Nationwide	854	233	250	290	275	5	511	20	7	1,393

* Indicates one to three providers.

Table 9
High-Speed Lines by Technology as of December 31, 2007
(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total
Alabama	402,603	4,687	7,276	398,840	4,670	*	1,025	*	*	1,353,724
Alaska	67,386	7,555	472	*	*	*	9,683	*	0	171,257
American Samoa	*	*	0	0	0	0	*	0	0	*
Arizona	436,857	1,970	12,217	896,746	2,407	*	18,594	*	0	2,578,548
Arkansas	248,908	270	2,552	209,163	1,037	*	1,014	*	0	653,977
California	4,780,051	32,058	87,833	3,603,105	189,924	*	69,274	*	0	17,158,292
Colorado	573,387	2,662	16,787	604,247	2,539	*	25,186	*	0	2,269,027
Connecticut	*	3,120	4,896	550,019	2,385	*	0	*	0	1,837,729
Delaware	*	192	3,121	*	*	*	0	*	0	438,935
District of Columbia	*	2,142	2,900	*	918	*	*	*	0	420,251
Florida	2,046,084	7,681	56,426	2,543,384	168,491	*	39,328	*	*	7,415,862
Georgia	1,307,237	6,389	28,631	862,212	5,788	*	699	*	0	3,737,640
Guam	*	0	*	*	0	0	0	0	0	*
Hawaii	*	*	803	*	445	*	*	*	0	584,101
Idaho	142,440	379	1,617	123,067	972	*	40,949	*	0	613,110
Illinois	1,381,374	14,102	21,891	1,570,281	4,769	*	24,661	*	*	5,083,949
Indiana	635,507	3,932	8,931	439,417	41,861	*	11,965	*	*	2,267,037
Iowa	298,322	4,477	1,865	287,011	6,992	*	14,707	*	0	990,838
Kansas	235,919	4,558	5,782	366,557	4,202	*	16,327	*	0	987,350
Kentucky	367,452	4,860	4,864	434,900	2,895	*	3,094	*	0	1,161,667
Louisiana	333,076	1,289	4,990	485,349	19,031	*	2,516	*	*	1,286,450
Maine	117,393	3,595	5,061	179,398	2,980	*	*	*	0	396,074
Maryland	513,529	8,898	17,133	864,763	*	*	*	*	0	2,535,585
Massachusetts	*	5,803	17,457	1,135,807	*	*	*	*	0	3,140,383
Michigan	732,950	4,164	13,331	1,265,384	2,412	*	9,510	*	*	3,557,139
Minnesota	496,317	16,178	7,014	607,269	9,570	*	30,282	*	0	1,960,710
Mississippi	202,262	168	2,267	166,092	781	*	*	*	0	489,413
Missouri	682,572	5,727	11,367	497,878	3,569	*	8,157	*	*	1,865,899
Montana	103,798	2,974	884	83,006	443	*	8,234	*	0	433,903
Nebraska	135,305	3,707	1,021	251,699	565	*	11,929	*	0	633,593
Nevada	220,409	3,710	5,340	*	916	*	13,303	*	0	1,159,167
New Hampshire	99,602	2,222	5,300	239,605	*	*	*	*	0	637,954
New Jersey	734,903	4,798	21,009	1,538,490	*	*	*	*	0	4,923,248
New Mexico	200,497	360	1,946	126,692	874	*	2,729	*	0	661,684
New York	1,184,011	20,364	32,794	3,341,913	*	*	3,832	*	0	8,096,486
North Carolina	820,334	3,398	18,351	1,195,757	7,606	*	*	*	0	3,484,666
North Dakota	55,635	3,269	347	79,755	7,213	*	5,319	*	0	292,054
Northern Mariana Isl.	*	0	*	*	*	0	*	0	0	*
Ohio	1,024,412	4,415	14,368	1,498,317	7,349	*	19,417	*	*	4,612,073
Oklahoma	324,322	1,394	3,917	372,867	2,817	*	4,125	*	0	971,862
Oregon	355,563	12,644	5,946	531,258	*	*	25,988	*	0	1,566,567
Pennsylvania	1,191,348	17,049	21,628	1,398,950	*	*	8,369	*	0	5,148,613
Puerto Rico	*	0	1,151	*	*	*	5,027	*	0	470,663
Rhode Island	*	1,025	1,772	*	*	*	0	*	0	490,634
South Carolina	359,439	328	10,657	496,188	10,685	*	104	*	0	1,586,036
South Dakota	48,750	4,313	200	111,009	6,385	*	5,175	*	0	185,017
Tennessee	499,164	834	11,097	702,891	20,742	*	3,809	*	0	2,518,783
Texas	2,463,911	13,168	42,540	2,183,062	210,468	*	88,520	*	0	8,336,432
Utah	269,785	6,088	4,087	*	2,307	*	23,387	*	0	996,589
Vermont	72,006	*	2,336	*	457	*	*	*	0	240,251
Virgin Islands	*	*	*	0	0	*	*	*	0	18,996
Virginia	568,284	4,258	16,580	921,438	151,030	*	11,884	*	*	3,279,536
Washington	592,133	9,884	10,347	909,108	27,525	*	67,236	*	*	3,114,392
West Virginia	137,948	*	3,271	158,921	*	*	1,046	*	0	336,283
Wisconsin	528,196	14,626	7,640	675,737	5,325	*	11,640	*	*	1,729,165
Wyoming	52,602	1,729	157	*	338	*	3,742	*	0	260,191
Nationwide	29,451,719	293,974	592,295	36,497,284	1,850,695	791,142	705,014	50,977,914	5,274	121,165,311

* Data withheld to maintain firm confidentiality.

Table 10
High-Speed Lines by State
(Over 200 kbps in at least one direction)

State	2001	2002	2003	2004	2005	2006		2007	
	Dec	Dec	Dec	Dec	Dec	Jun	Dec	Jun	Dec
Alabama	138,979	227,888	352,215	410,054	531,350	615,510	898,850	1,118,302	1,353,724
Alaska	50,277	55,975	71,778	110,416	109,484	125,005	145,008	156,187	171,257
American Samoa	0	0	0	0	*	*	*	*	*
Arizona	248,172	367,322	532,161	745,957	1,039,445	1,392,711	1,832,564	2,192,644	2,578,548
Arkansas	66,377	100,089	157,959	220,051	302,881	363,933	431,530	529,530	653,977
California	1,971,228	2,960,664	4,084,382	5,294,566	7,337,217	9,395,265	11,894,864	14,458,874	17,158,292
Colorado	171,992	292,697	418,866	615,101	882,669	1,165,853	1,489,091	1,827,962	2,269,027
Connecticut	188,164	304,338	440,480	598,582	807,796	1,024,053	1,262,569	1,547,949	1,837,729
Delaware	25,955	50,380	68,210	91,975	132,399	157,648	273,734	353,763	438,935
District of Columbia	32,521	52,873	76,275	101,638	139,594	200,221	268,008	337,897	420,251
Florida	893,473	1,388,166	1,966,835	2,659,862	3,537,720	4,408,427	5,346,321	6,349,093	7,415,862
Georgia	402,259	635,776	906,217	1,205,282	1,610,750	2,054,171	2,547,165	3,087,975	3,737,640
Guam	0	0	0	*	*	*	*	*	*
Hawaii	*	*	*	*	*	294,612	417,674	486,337	584,101
Idaho	18,445	54,963	80,455	126,121	167,926	202,521	381,283	483,049	613,110
Illinois	395,843	704,780	1,056,170	1,497,803	2,159,932	2,666,304	3,538,857	4,310,744	5,083,949
Indiana	120,794	202,760	415,603	637,696	922,569	1,191,752	1,417,112	1,812,488	2,267,037
Iowa	82,024	121,053	191,464	266,794	394,359	446,187	657,102	826,217	990,838
Kansas	125,685	193,212	284,467	386,747	470,287	595,979	728,569	870,843	987,350
Kentucky	67,870	99,265	243,005	360,903	508,198	629,538	774,736	959,771	1,161,667
Louisiana	164,760	262,093	368,528	486,077	508,009	730,203	892,835	1,088,803	1,286,450
Maine	49,220	72,683	98,768	142,246	214,599	248,440	306,006	358,986	396,074
Maryland	250,580	380,538	565,857	782,757	1,120,826	1,492,484	1,813,960	2,172,522	2,535,585
Massachusetts	489,429	661,471	900,025	1,122,230	1,431,925	1,811,845	2,243,742	2,660,501	3,140,383
Michigan	427,110	633,490	840,855	1,088,090	1,557,918	1,917,892	2,430,869	2,969,105	3,557,139
Minnesota	195,327	330,635	480,122	645,505	855,752	1,057,576	1,312,900	1,579,346	1,960,710
Mississippi	35,203	80,452	115,973	168,393	219,552	262,671	332,307	399,571	489,413
Missouri	178,469	256,492	433,714	584,743	811,837	1,016,732	1,275,123	1,566,595	1,865,899
Montana	13,037	20,090	39,240	72,880	112,662	139,946	264,121	346,230	433,903
Nebraska	71,451	117,219	173,524	216,780	305,120	355,013	470,118	537,693	633,593
Nevada	109,300	158,508	246,714	343,111	474,019	614,151	792,950	1,060,542	1,159,167
New Hampshire	70,735	102,057	148,574	215,168	268,128	302,957	443,207	539,686	637,954
New Jersey	553,308	798,410	1,061,722	1,423,698	1,989,803	2,654,674	3,392,607	4,153,343	4,923,248
New Mexico	31,507	57,430	91,066	145,125	204,054	252,361	422,964	544,706	661,684
New York	1,109,662	1,623,989	2,152,711	2,688,731	3,660,500	4,854,803	5,669,523	6,800,348	8,096,486
North Carolina	357,380	593,609	841,572	1,119,805	1,482,930	1,914,822	2,366,079	2,893,582	3,484,666
North Dakota	6,082	20,024	31,571	47,957	96,314	108,476	131,348	144,994	292,054
Northern Mariana Isl.	0	0	0	0	*	*	*	*	*
Ohio	432,338	705,739	972,686	1,340,976	1,932,269	2,461,379	3,200,543	3,960,289	4,612,073
Oklahoma	111,918	193,123	282,596	387,456	502,984	569,398	657,940	781,549	971,862
Oregon	156,147	273,433	378,226	508,068	688,487	860,385	1,060,386	1,285,947	1,566,567
Pennsylvania	361,383	616,407	954,083	1,386,259	1,999,118	2,646,898	3,374,313	4,121,608	5,148,613
Puerto Rico	*	22,732	31,100	61,554	118,268	169,917	251,163	332,671	470,663
Rhode Island	63,284	88,701	121,027	164,034	221,901	276,141	349,994	416,053	490,634
South Carolina	135,165	222,980	310,906	415,844	549,019	646,344	1,041,762	1,308,281	1,586,036
South Dakota	9,585	18,060	28,557	40,286	124,243	138,621	154,738	164,627	185,017
Tennessee	236,514	368,242	470,092	628,846	847,025	1,153,432	1,574,022	2,036,625	2,518,783
Texas	806,853	1,312,096	1,883,228	2,551,963	3,467,504	4,357,437	5,554,547	6,863,269	8,336,432
Utah	71,804	120,313	161,283	236,287	313,854	471,137	638,618	818,665	996,589
Vermont	21,795	32,814	44,724	72,400	95,901	108,622	170,245	193,151	240,251
Virgin Islands	*	*	*	*	2,967	7,226	11,139	16,014	18,996
Virginia	281,793	450,389	702,245	981,832	1,367,465	1,792,817	2,197,693	2,689,907	3,279,536
Washington	335,667	485,063	672,247	889,368	1,219,631	1,575,375	2,015,564	2,481,537	3,114,392
West Virginia	32,848	78,980	100,937	155,397	205,984	245,669	268,746	306,449	336,283
Wisconsin	181,915	335,593	488,155	649,091	859,114	1,034,646	1,253,335	1,491,887	1,729,165
Wyoming	7,856	14,696	24,818	45,602	70,574	83,086	156,940	205,711	260,191
Nationwide	12,390,534	19,441,619	27,744,342	37,352,520	51,217,519	65,270,912	82,809,845	101,008,249	121,165,311

* Data withheld to maintain firm confidentiality.
Some historical data have been revised.

Table 11
ADSL High-Speed Lines by State
(Over 200 kbps in at least one direction)

State	2001	2002	2003	2004	2005	2006		2007	
	Dec	Dec	Dec	Dec	Dec	Jun	Dec	Jun	Dec
Alabama	34,785	56,860	112,274	135,282	220,657	268,970	314,640	356,830	402,603
Alaska	7,975	14,295	17,184	33,690	43,249	53,687	60,055	63,708	67,386
American Samoa	0	0	0	0	*	*	*	*	*
Arizona	53,489	72,324	87,263	136,260	207,727	276,261	365,228	405,724	436,857
Arkansas	22,240	35,594	60,435	100,987	149,878	180,883	200,129	226,842	248,908
California	928,345	1,485,309	2,065,780	2,700,380	3,592,220	4,001,529	4,342,556	4,582,000	4,780,051
Colorado	70,615	113,040	155,137	248,285	333,313	404,989	473,148	529,504	573,387
Connecticut	41,261	100,722	167,439	244,509	*	*	*	*	*
Delaware	*	*	*	16,490	*	*	*	*	*
District of Columbia	*	35,466	44,440	51,127	*	*	*	*	*
Florida	306,015	521,623	786,275	1,110,846	1,509,104	1,722,888	1,873,271	1,960,025	2,046,084
Georgia	172,556	305,004	452,567	636,170	890,128	1,008,705	1,126,082	1,218,885	1,307,237
Guam	0	0	0	*	*	*	*	*	*
Hawaii	*	*	*	*	*	*	*	*	*
Idaho	13,643	17,930	24,503	48,500	81,520	97,662	113,001	129,188	142,440
Illinois	110,448	300,497	466,052	707,771	979,709	1,094,088	1,211,763	1,299,358	1,381,374
Indiana	22,385	63,463	129,341	239,454	379,465	443,473	515,054	566,103	635,507
Iowa	13,193	29,161	48,226	88,707	150,890	189,178	233,039	270,222	298,322
Kansas	23,564	39,315	68,044	112,063	159,996	179,430	202,751	217,231	235,919
Kentucky	43,191	55,254	94,126	148,963	213,131	250,715	303,296	340,350	367,452
Louisiana	58,019	86,359	116,047	163,021	207,488	235,750	270,811	306,283	333,076
Maine	*	8,432	17,785	41,000	72,709	89,964	104,780	115,138	117,393
Maryland	79,997	115,687	152,906	249,379	379,316	450,019	489,553	512,156	513,529
Massachusetts	125,630	181,426	230,333	302,537	*	*	*	*	*
Michigan	52,505	111,182	175,202	299,861	463,373	533,835	606,616	668,725	732,950
Minnesota	67,527	98,316	134,914	188,181	276,439	330,736	394,686	449,452	496,317
Mississippi	*	*	41,740	71,993	105,874	128,585	154,179	180,281	202,262
Missouri	68,186	114,861	182,119	282,904	398,671	468,334	545,679	618,302	682,572
Montana	4,272	6,549	19,417	36,183	57,300	70,471	82,876	95,790	103,798
Nebraska	13,637	16,117	25,599	46,283	81,188	95,404	112,032	124,126	135,305
Nevada	17,598	36,662	61,014	93,145	139,938	168,086	190,202	207,051	220,409
New Hampshire	9,618	14,630	23,555	42,835	71,689	85,247	93,589	98,283	99,602
New Jersey	151,829	197,615	251,754	372,949	540,382	638,293	703,950	734,700	734,903
New Mexico	*	22,607	36,546	68,359	105,210	130,998	156,620	179,856	200,497
New York	285,814	391,686	497,071	641,321	861,452	1,002,972	1,103,960	1,181,851	1,184,011
North Carolina	65,582	124,031	210,958	340,520	488,533	561,102	648,001	724,936	820,334
North Dakota	4,849	8,826	14,034	23,874	32,000	38,729	46,346	51,096	55,635
Northern Mariana Isl.	0	0	0	0	*	*	*	*	*
Ohio	112,527	205,140	303,969	455,336	663,011	752,633	858,846	945,096	1,024,412
Oklahoma	39,978	65,378	106,031	158,490	222,048	246,899	277,282	301,523	324,322
Oregon	57,899	82,555	117,253	171,861	244,694	280,286	311,604	338,765	355,563
Pennsylvania	136,829	200,501	284,870	436,503	692,079	871,164	1,012,845	1,125,794	1,191,348
Puerto Rico	*	*	*	*	*	*	*	*	*
Rhode Island	*	*	*	*	*	*	*	*	*
South Carolina	18,686	38,293	77,599	128,042	205,529	242,548	284,892	322,858	359,439
South Dakota	2,869	6,308	11,635	18,357	26,168	32,763	39,684	45,772	48,750
Tennessee	42,571	74,034	116,785	193,879	293,915	348,344	396,928	446,551	499,164
Texas	300,752	486,833	772,697	1,104,776	1,513,639	1,733,423	1,997,483	2,180,136	2,463,911
Utah	33,306	57,025	76,466	113,033	160,313	189,240	222,307	249,683	269,785
Vermont	*	12,062	18,646	28,524	43,934	51,382	61,441	68,041	72,006
Virgin Islands	*	*	*	*	*	*	*	*	*
Virginia	65,298	96,805	144,584	254,355	384,243	446,448	505,285	547,941	568,284
Washington	140,273	200,189	262,149	338,321	427,451	491,409	533,668	569,397	592,133
West Virginia	*	*	*	39,566	69,390	86,507	104,637	123,645	137,948
Wisconsin	28,233	64,521	120,236	202,882	298,111	359,530	417,510	473,795	528,196
Wyoming	*	*	8,467	20,402	33,030	38,541	44,347	49,933	52,602
Nationwide	3,947,808	6,471,716	9,509,442	13,817,280	19,515,483	22,584,255	25,412,883	27,561,867	29,451,719

* Data withheld to maintain firm confidentiality.
Some historical data have been revised.

Table 12

Coaxial Cable High-Speed Lines by State

(Over 200 kbps in at least one direction)

State	2001	2002	2003	2004	2005	2006		2007	
	Dec	Dec	Dec	Dec	Dec	Jun	Dec	Jun	Dec
Alabama	83,933	144,259	207,397	233,004	285,177	310,548	342,340	374,029	398,840
Alaska	*	*		*	*	*	*	*	*
American Samoa	0	0	0	0	0	0	0	0	0
Arizona	151,916	251,373	396,960	549,613	679,284	761,419	838,455	850,307	896,746
Arkansas	*	*	86,441	106,055	137,105	148,940	183,503	205,349	209,163
California	786,789	1,179,204	1,706,217	2,213,138	2,734,659	2,956,932	3,155,718	3,410,983	3,603,105
Colorado	*	*	231,075	332,927	433,184	476,463	523,159	560,557	604,247
Connecticut	137,003	192,155	260,415	341,146	403,723	441,092	454,348	513,211	550,019
Delaware	*	*	*	*	*	*	*	*	*
District of Columbia	*	*	*	*	*	*	*	*	*
Florida	486,977	741,426	1,050,062	1,384,059	1,757,875	1,939,409	2,178,484	2,344,445	2,543,384
Georgia	156,142	243,142	361,127	468,027	583,884	649,583	742,552	802,047	862,212
Guam	0	0	0	0	0	0	0	0	*
Hawaii	0	*	*	*	*	*	*	*	*
Idaho	*	*	*	*	73,528	75,185	108,595	116,273	123,067
Illinois	204,202	316,169	494,110	691,214	955,518	1,042,272	1,332,023	1,465,869	1,570,281
Indiana	78,837	114,237	257,023	364,887	445,420	490,020	370,200	410,438	439,417
Iowa	63,788	83,994	131,073	163,293	219,803	225,190	234,266	267,712	287,011
Kansas	94,047	142,563	199,369	246,185	272,660	316,866	320,638	351,371	366,557
Kentucky	*	22,113	124,535	183,726	269,274	306,487	333,339	383,593	434,900
Louisiana	88,851	*	227,047	291,857	254,819	378,613	419,735	446,485	485,349
Maine	*	*	*	95,182	132,075	145,831	152,291	169,458	179,398
Maryland	143,174	241,264	385,408	501,144	592,283	637,405	781,120	829,473	864,763
Massachusetts	339,244	453,473	638,441	778,595	885,578	954,812	1,044,333	1,088,170	1,135,807
Michigan	329,697	472,405	611,131	733,511	953,786	1,019,338	1,103,040	1,197,105	1,265,384
Minnesota	113,900	212,126	317,853	404,135	493,783	518,063	541,116	570,874	607,269
Mississippi	12,998	40,276	61,163	80,210	104,363	114,140	135,965	151,539	166,092
Missouri	89,370	117,403	221,917	264,917	353,331	400,808	444,118	473,449	497,878
Montana	*	*	*	29,278	45,442	54,056	65,238	74,246	83,006
Nebraska	49,939	92,261	130,319	155,796	200,600	218,335	239,465	238,019	251,699
Nevada	*	*	*	*	*	*	*	*	*
New Hampshire	*	*	118,456	165,188	188,212	201,873	209,781	229,855	239,605
New Jersey	375,362	578,337	781,898	1,015,944	1,205,182	1,312,433	1,385,953	1,473,709	1,538,490
New Mexico	*	*	47,721	68,143	89,003	100,157	108,906	117,336	126,692
New York	780,473	1,185,233	1,597,556	1,976,663	2,444,565	2,765,476	2,967,028	3,164,178	3,341,913
North Carolina	239,107	406,024	559,276	691,904	861,990	963,651	1,040,513	1,134,075	1,195,757
North Dakota	*	*	13,030	17,307	54,772	57,722	70,878	76,353	79,755
Northern Mariana Isl.	0	0	0	0	0	0	0	0	*
Ohio	264,031	435,404	597,442	804,712	1,064,948	1,184,924	1,303,470	1,405,899	1,498,317
Oklahoma	*	*	*	*	261,585	284,184	312,500	347,813	372,867
Oregon	*	165,343	233,737	301,586	375,351	407,195	452,517	489,902	531,258
Pennsylvania	190,915	376,611	621,381	885,925	1,074,912	1,164,080	1,255,720	1,271,157	1,398,950
Puerto Rico	0	*	*	*	*	*	*	*	*
Rhode Island	*	*	*	*	*	*	*	*	*
South Carolina	96,559	159,944	209,889	252,646	326,370	368,338	417,584	459,110	496,188
South Dakota	*	7,916	11,042	14,103	88,812	92,860	100,155	100,903	111,009
Tennessee	158,120	252,596	308,630	386,258	460,235	506,143	601,889	662,520	702,891
Texas	427,324	740,469	1,019,623	1,320,225	1,617,513	1,692,433	1,944,069	2,081,963	2,183,062
Utah	*	*	*	*	*	*	*	*	*
Vermont	*	*	*	*	*	*	*	*	*
Virgin Islands	0	0	0	0	0	0	0	0	0
Virginia	182,591	320,154	517,924	681,914	817,100	892,955	877,235	906,252	921,438
Washington	*	246,627	367,321	498,934	660,159	725,832	806,126	862,049	909,108
West Virginia	*	65,542	78,018	108,585	128,133	145,450	144,569	155,867	158,921
Wisconsin	*	243,043	334,394	408,512	497,262	542,881	591,981	636,675	675,737
Wyoming	*	*	*	*	*	*	*	*	*
Nationwide	7,059,598	11,369,087	16,446,322	21,357,400	26,558,206	29,174,494	31,981,705	34,404,368	36,497,284

* Data withheld to maintain firm confidentiality.

Some historical data have been revised.

Table 13
High-Speed Lines by Type of End User as of December 31, 2007
(Over 200 kbps in at least one direction)

State	Residential	Business	Total
Alabama	808,291	545,433	1,353,724
Alaska	148,121	23,136	171,257
American Samoa	*	*	*
Arizona	1,451,169	1,127,379	2,578,548
Arkansas	532,171	121,806	653,977
California	9,843,965	7,314,327	17,158,292
Colorado	1,330,093	938,934	2,269,027
Connecticut	1,064,363	773,366	1,837,729
Delaware	223,672	215,263	438,935
District of Columbia	181,016	239,235	420,251
Florida	5,097,432	2,318,430	7,415,862
Georgia	2,296,983	1,440,657	3,737,640
Guam	*	*	*
Hawaii	338,668	245,433	584,101
Idaho	314,069	299,041	613,110
Illinois	3,274,074	1,809,875	5,083,949
Indiana	1,206,274	1,060,763	2,267,037
Iowa	581,263	409,575	990,838
Kansas	680,270	307,080	987,350
Kentucky	843,641	318,026	1,161,667
Louisiana	931,017	355,433	1,286,450
Maine	288,491	107,583	396,074
Maryland	1,672,064	863,521	2,535,585
Massachusetts	1,852,275	1,288,108	3,140,383
Michigan	2,160,962	1,396,177	3,557,139
Minnesota	1,210,079	750,631	1,960,710
Mississippi	384,772	104,641	489,413
Missouri	1,366,311	499,588	1,865,899
Montana	185,251	248,652	433,903
Nebraska	406,674	226,919	633,593
Nevada	730,495	428,672	1,159,167
New Hampshire	354,559	283,395	637,954
New Jersey	2,562,919	2,360,329	4,923,248
New Mexico	343,568	318,116	661,684
New York	5,059,401	3,037,085	8,096,486
North Carolina	2,081,708	1,402,958	3,484,666
North Dakota	137,207	154,847	292,054
Northern Mariana Islands	*	*	*
Ohio	2,634,429	1,977,644	4,612,073
Oklahoma	815,765	156,097	971,862
Oregon	1,006,057	560,510	1,566,567
Pennsylvania	2,852,177	2,296,436	5,148,613
Puerto Rico	413,322	57,341	470,663
Rhode Island	282,557	208,077	490,634
South Carolina	844,013	742,023	1,586,036
South Dakota	160,821	24,196	185,017
Tennessee	1,263,139	1,255,644	2,518,783
Texas	5,819,303	2,517,129	8,336,432
Utah	502,786	493,803	996,589
Vermont	133,503	106,748	240,251
Virgin Islands	16,977	2,019	18,996
Virginia	1,790,773	1,488,763	3,279,536
Washington	1,783,479	1,330,913	3,114,392
West Virginia	297,852	38,431	336,283
Wisconsin	1,285,065	444,100	1,729,165
Wyoming	109,748	150,443	260,191
Nationwide	73,976,483	47,188,828	121,165,311

* Data withheld to maintain firm confidentiality.

Table 14

Percentage of Residential End-User Premises with Access to High-Speed Services as of December 31, 2007

State	xDSL Availability Where ILECs Can Provide Telephone Service	Cable Modem Availability Where Cable Systems Can Provide Cable TV Service
Alabama	77%	92%
Alaska	77%	*
American Samoa	*	0%
Arizona	83%	99%
Arkansas	75%	73%
California	90%	99%
Colorado	88%	96%
Connecticut	*	100%
Delaware	*	*
District of Columbia	*	*
Florida	89%	97%
Georgia	92%	90%
Guam	*	0%
Hawaii	*	*
Idaho	80%	99%
Illinois	85%	98%
Indiana	80%	92%
Iowa	85%	90%
Kansas	83%	91%
Kentucky	86%	91%
Louisiana	81%	96%
Maine	69%	93%
Maryland	75%	99%
Massachusetts	*	100%
Michigan	71%	98%
Minnesota	86%	96%
Mississippi	72%	91%
Missouri	79%	97%
Montana	78%	88%
Nebraska	86%	93%
Nevada	89%	*
New Hampshire	62%	98%
New Jersey	86%	96%
New Mexico	82%	77%
New York	76%	99%
North Carolina	85%	96%
North Dakota	88%	82%
Northern Mariana Isl.	*	0%
Ohio	84%	98%
Oklahoma	80%	91%
Oregon	82%	95%
Pennsylvania	83%	93%
Puerto Rico	*	*
Rhode Island	*	*
South Carolina	82%	92%
South Dakota	80%	80%
Tennessee	82%	96%
Texas	80%	96%
Utah	87%	*
Vermont	69%	*
Virgin Islands	*	0%
Virginia	65%	97%
Washington	82%	98%
West Virginia	74%	84%
Wisconsin	81%	96%
Wyoming	81%	*
Nationwide	82%	96%

* Data withheld to maintain firm confidentiality.

xDSL includes both asymmetric and symmetric DSL. Each state-specific estimate is a weighted average of the availability percentages that ILECs or cable system operators report for the areas they serve. Reported xDSL availability is weighted by ILEC end-user switched access lines. Reported cable modem availability is weighted by cable TV subscribers. The weighted averages include ILECs or cable system operators that report no availability.

Table 15
Percentage of Zip Codes with High-Speed Lines in Service

Number of Providers	2000	2001		2002		2003		2004		2005		2006		2007	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec
Zero	26.8 %	22.2 %	20.6 %	16.1 %	12.0 %	9.0 %	6.8 %	5.7 %	4.6 %	2.0 %	1.0 %	0.7 %	0.4 %	0.1 %	0.2 %
One	22.7	20.3	19.3	18.4	17.3	16.4	14.9	13.8	12.5	9.3	5.6	3.7	2.4	0.9	1.3
Two	18.4	16.7	15.7	16.2	16.8	16.9	17.1	16.8	16.3	14.1	11.9	8.2	5.7	3.6	3.8
Three	10.9	13.2	13.1	13.3	14.4	14.0	14.9	14.9	15.1	15.0	14.8	11.3	8.9	7.0	6.7
Four	6.1	8.2	9.1	9.6	10.3	10.6	11.2	11.6	12.2	12.6	13.5	12.9	11.4	11.1	10.3
Five	4.0	4.9	6.1	6.9	7.3	7.7	7.8	8.4	8.9	9.7	10.3	12.2	12.5	13.6	12.8
Six	3.0	3.6	4.2	4.6	5.0	5.3	5.8	6.1	6.3	6.8	7.8	10.4	11.7	13.0	13.4
Seven	2.3	2.8	3.2	3.2	3.9	4.0	4.2	4.4	4.6	5.3	5.7	8.7	10.0	11.6	11.2
Eight	2.0	2.2	2.5	2.8	2.7	3.1	3.3	3.6	3.6	4.0	4.6	7.1	8.3	9.1	9.0
Nine	1.6	1.9	2.0	2.4	2.2	2.5	2.6	2.8	3.1	3.8	4.0	5.8	6.7	7.4	7.4
Ten or More	2.4	3.9	4.0	6.4	8.0	10.5	11.4	11.8	12.8	17.5	20.7	19.1	22.0	22.7	23.8

For data through December 2004, only those providers with at least 250 lines per state were required to file. Figures may not add up to 100% due to rounding.

Chart 12
Percent of Zip Codes with High-Speed Providers

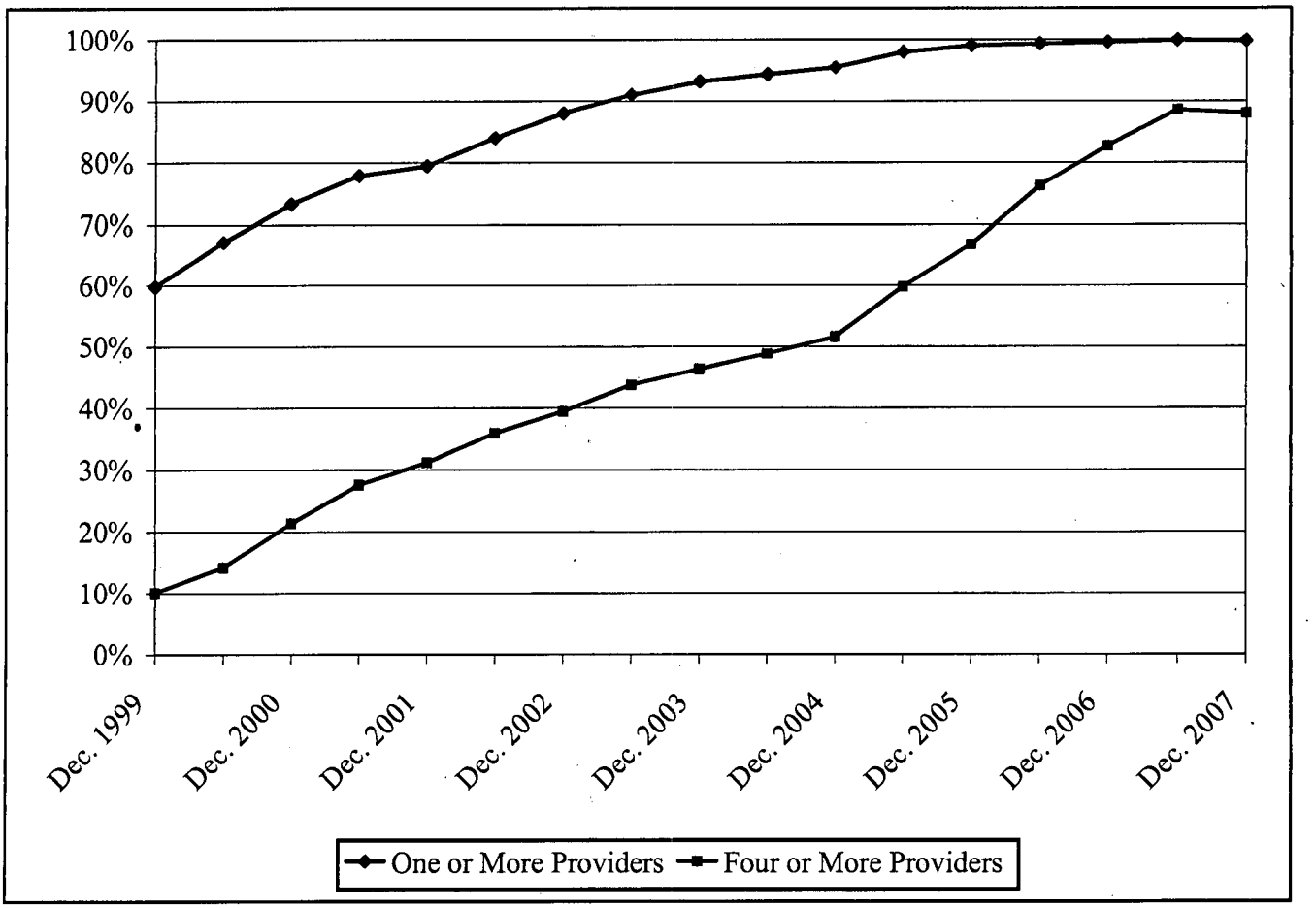


Table 16

Percentage of Zip Codes with High-Speed Lines in Service by Technology as of December 31, 2007

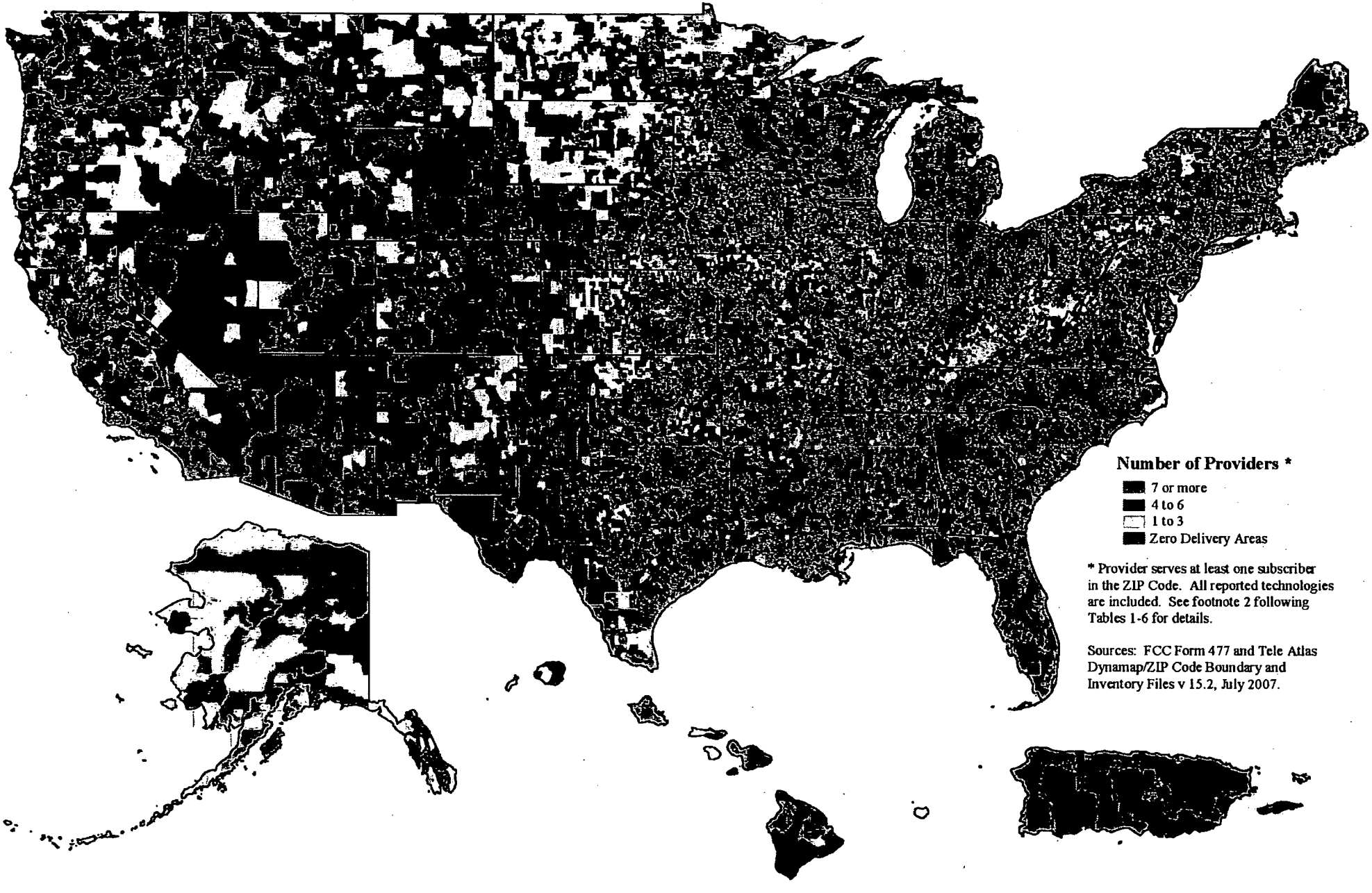
Technology	Number of Providers										
	Zero	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten or More
ADSL	13.4	37.5	20.4	10.9	7.2	5.0	2.8	1.5	0.9	0.3	0.2
SDSL	60.9	20.0	7.0	5.0	3.7	2.0	0.9	0.3	0.2	0.0	0.0
Cable Modem	34.2	56.5	8.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fiber	63.2	19.4	10.6	4.6	1.6	0.5	0.1	0.0	0.0	0.0	0.0
Satellite	7.0	22.4	50.1	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fixed Wireless	74.0	20.0	4.9	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Mobile Wireless	6.0	27.5	31.8	29.6	4.9	0.2	0.0	0.0	0.0	0.0	0.0
Power Line and/or Other [1]	85.1	12.0	2.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADSL and/or Cable Modem	9.0	23.7	21.6	15.9	10.4	7.3	5.2	3.3	1.8	1.1	0.7
All Technologies	0.2	1.3	3.8	6.7	10.3	12.8	13.4	11.2	9.0	7.4	23.8

Figures may not add up to 100% due to rounding.

[1] Other includes high-speed lines provided over traditional wireline facilities such as T-carrier and also lines provided over any technology that is not specified in the table.

High-Speed Providers by 5-Digit Geographical ZIP Code

(As of December 31, 2007)



Prepared by the Federal Communications Commission,
Wireline Competition Bureau, Industry Analysis and Technology Division

Table 17
Percentage of Zip Codes with High-Speed Lines in Service as of December 31, 2007
(Over 200 kbps in at least one direction)

	Number of Providers										
	Zero	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten or More
Alabama	0 %	1 %	1 %	3 %	7 %	12 %	15 %	15 %	12 %	10 %	24 %
Alaska	0	15	35	22	15	6	1	1	4	0	0
Arizona	0	0	1	1	6	9	10	10	6	10	46
Arkansas	0	2	8	10	18	21	15	10	5	7	3
California	0	0	3	5	10	9	8	7	7	8	43
Colorado	0	0	2	4	7	8	9	10	12	8	40
Connecticut	0	0	0	3	7	14	17	14	13	9	25
Delaware	0	0	2	2	3	12	21	9	17	5	29
District of Columbia	0	0	0	4	4	0	4	0	0	0	88
Florida	0	0	0	0	1	4	7	9	9	11	58
Georgia	0	0	1	3	6	12	14	13	9	7	33
Hawaii	0	1	4	9	16	18	16	10	17	9	1
Idaho	0	1	4	10	10	16	18	9	10	6	17
Illinois	0	2	4	9	12	15	12	9	8	7	21
Indiana	0	1	3	5	11	15	14	13	10	9	18
Iowa	0	1	3	8	12	15	17	13	10	8	14
Kansas	0	1	6	10	12	13	13	10	9	9	17
Kentucky	4	10	10	13	11	14	12	8	7	3	8
Louisiana	0	1	1	3	8	15	22	12	7	7	24
Maine	2	3	8	11	18	14	16	12	7	4	5
Maryland	0	0	2	5	8	16	13	10	7	5	34
Massachusetts	0	0	0	2	3	11	16	14	11	9	33
Michigan	0	0	0	2	6	10	15	16	12	9	28
Minnesota	0	3	8	12	14	13	12	9	7	4	18
Mississippi	0	0	1	3	11	18	16	12	9	7	22
Missouri	0	2	5	10	13	16	15	10	8	7	14
Montana	0	2	6	19	27	16	10	4	7	3	6
Nebraska	0	1	4	9	17	16	20	12	8	5	8
Nevada	0	0	1	5	13	12	12	10	5	12	31
New Hampshire	0	0	0	2	4	15	24	20	13	8	13
New Jersey	0	0	0	1	2	4	8	9	11	12	52
New Mexico	0	2	3	10	15	21	16	10	5	5	14
New York	0	0	2	5	10	12	13	12	9	7	29
North Carolina	0	0	1	2	4	11	17	17	13	9	25
North Dakota	0	2	19	27	23	15	6	2	3	1	2
Ohio	0	0	0	1	2	8	16	17	16	12	28
Oklahoma	0	1	6	10	18	16	11	8	11	8	11
Oregon	0	2	4	13	16	13	10	9	6	4	22
Pennsylvania	1	2	7	8	11	14	12	10	7	6	22
Puerto Rico	0	0	0	2	2	7	21	34	21	13	1
Rhode Island	0	0	1	1	8	8	12	15	15	15	24
South Carolina	0	0	1	3	7	10	16	12	11	12	28
South Dakota	0	3	16	24	19	14	9	6	3	1	4
Tennessee	0	1	2	6	10	15	15	11	8	7	24
Texas	0	0	1	4	7	10	12	13	12	10	29
Utah	0	1	4	3	14	15	10	10	5	5	32
Vermont	0	0	3	9	19	17	19	14	9	5	4
Virginia	0	1	2	6	12	15	16	14	7	5	22
Washington	0	0	4	6	10	12	10	10	7	8	33
West Virginia	1	6	13	17	20	15	13	6	3	4	2
Wisconsin	0	1	1	5	8	20	19	14	8	6	18
Wyoming	0	0	1	7	14	15	20	13	9	4	16
Nationwide	0 %	1 %	4 %	7 %	10 %	13 %	13 %	11 %	9 %	7 %	24 %

Table 18
High-Speed Subscribership
Ranked by Population Density

Persons per Square Mile [1]	Percentage of Zip Codes with at Least One High-Speed Subscriber							Percentage of Population that Resides in Zip Codes with High-Speed Service						
	Dec 2001	Dec 2002	Dec 2003	Dec 2004	Dec 2005	Dec 2006	Dec 2007	Dec 2001	Dec 2002	Dec 2003	Dec 2004	Dec 2005	Dec 2006	Dec 2007
More Than 3,147	98.1 %	98.7 %	98.9 %	99.1 %	99.2 %	99.5 %	99.6 %	99.8 %	100.0 %	100.0 %	100.0 %	99.9 %	99.9 %	99.9 %
947-3,147	97.3	98.2	98.5	98.7	99.3	99.7	99.7	99.7	100.0	99.9	99.9	99.9	99.9	99.9
268-947	95.8	97.9	98.8	99.1	99.3	99.5	99.6	99.5	99.9	100.0	100.0	100.0	100.0	100.0
118-268	93.3	96.7	97.9	98.2	99.2	99.3	99.2	99.1	99.7	99.8	99.8	99.8	99.8	99.9
67-118	89.3	95.0	97.5	98.0	98.8	99.0	98.9	97.1	99.1	99.7	99.7	99.8	99.8	99.7
41-67	83.3	91.5	96.0	97.5	98.8	99.1	99.3	94.4	97.8	99.0	99.3	99.5	99.5	99.6
25-41	73.1	87.6	92.6	95.5	98.1	98.6	98.7	87.6	95.6	97.7	98.5	99.3	99.5	99.4
15-25	61.2	77.8	88.0	91.4	96.6	97.8	97.8	80.4	90.8	95.7	96.8	98.9	99.1	99.2
6-15	52.1	69.4	82.7	86.2	95.8	97.2	97.5	76.2	86.4	93.2	95.0	98.4	98.7	98.8
Fewer Than 6	43.3	59.7	73.5	74.8	88.3	89.8	90.3	67.9	80.9	88.9	91.8	96.2	96.8	96.9

Table 19
High-Speed Subscribership
Ranked by Household Income

Median Household Income [1]	Percentage of Zip Codes with at Least One High-Speed Subscriber							Percentage of Population that Resides in Zip Codes with High-Speed Service						
	Dec 2001	Dec 2002	Dec 2003	Dec 2004	Dec 2005	Dec 2006	Dec 2007	Dec 2001	Dec 2002	Dec 2003	Dec 2004	Dec 2005	Dec 2006	Dec 2007
$53,494 to $291,938	96.8 %	98.3 %	98.7 %	98.8 %	99.1 %	99.4 %	99.4 %	99.6 %	99.9 %	99.9 %	99.8 %	99.8 %	99.8 %	99.8 %
$43,617 to $53,478	91.7	95.3	97.4	97.6	98.7	99.0	99.0	99.3	99.8	99.9	99.9	99.9	99.9	99.9
$38,396 to $43,614	84.9	92.1	96.0	96.7	98.6	99.0	99.1	98.6	99.5	99.8	99.8	99.9	99.9	99.9
$34,744 to $38,395	79.9	88.2	94.0	95.0	98.2	98.7	98.7	97.6	99.1	99.6	99.7	99.8	99.9	99.9
$32,122 to $34,743	78.2	87.1	92.5	94.3	97.9	98.7	98.8	97.6	98.9	99.4	99.6	99.9	99.9	99.9
$29,893 to $32,121	75.5	85.6	91.8	93.8	98.2	98.6	98.8	96.8	98.5	99.3	99.4	99.8	99.8	99.8
$27,542 to $29,892	75.2	85.4	91.8	93.6	97.7	98.4	98.5	96.5	98.3	99.2	99.4	99.7	99.8	99.8
$24,855 to $27,541	71.8	83.2	89.8	92.6	97.6	98.2	98.3	95.6	98.1	98.9	99.2	99.6	99.6	99.7
$21,645 to $24,855	70.0	83.1	90.1	92.9	97.2	98.2	98.4	95.0	97.9	99.0	99.3	99.7	99.8	99.7
$0 to $21,644	62.7	74.5	81.9	83.3	90.1	91.3	91.6	95.1	97.5	98.6	99.0	99.4	99.5	99.5

[1] Persons per square mile and median household income are presented in decile groups. Each decile group contains 10% of the reported geographic Zip Codes for which the demographic information, as of the year 2000, is available in Demographic Power Pack, Current Year Update (2000), MapInfo Corporation.

Senate Broadband Stimulus Plan

$9 billion allocated for broadband – to be housed at NTIA

- $200 million competitive grants for expanding public center capacity at libraries and community centers.
- $250 million competitive grants for programs to encourage "sustainable adoption of broadband service" – helping people understand benefits of broadband and giving them access to equipment.
- $350 million for broadband mapping
- Expected to include tax credits for broadband build-out and possibly broadband tax credit bonds.

House Broadband Stimulus Plan

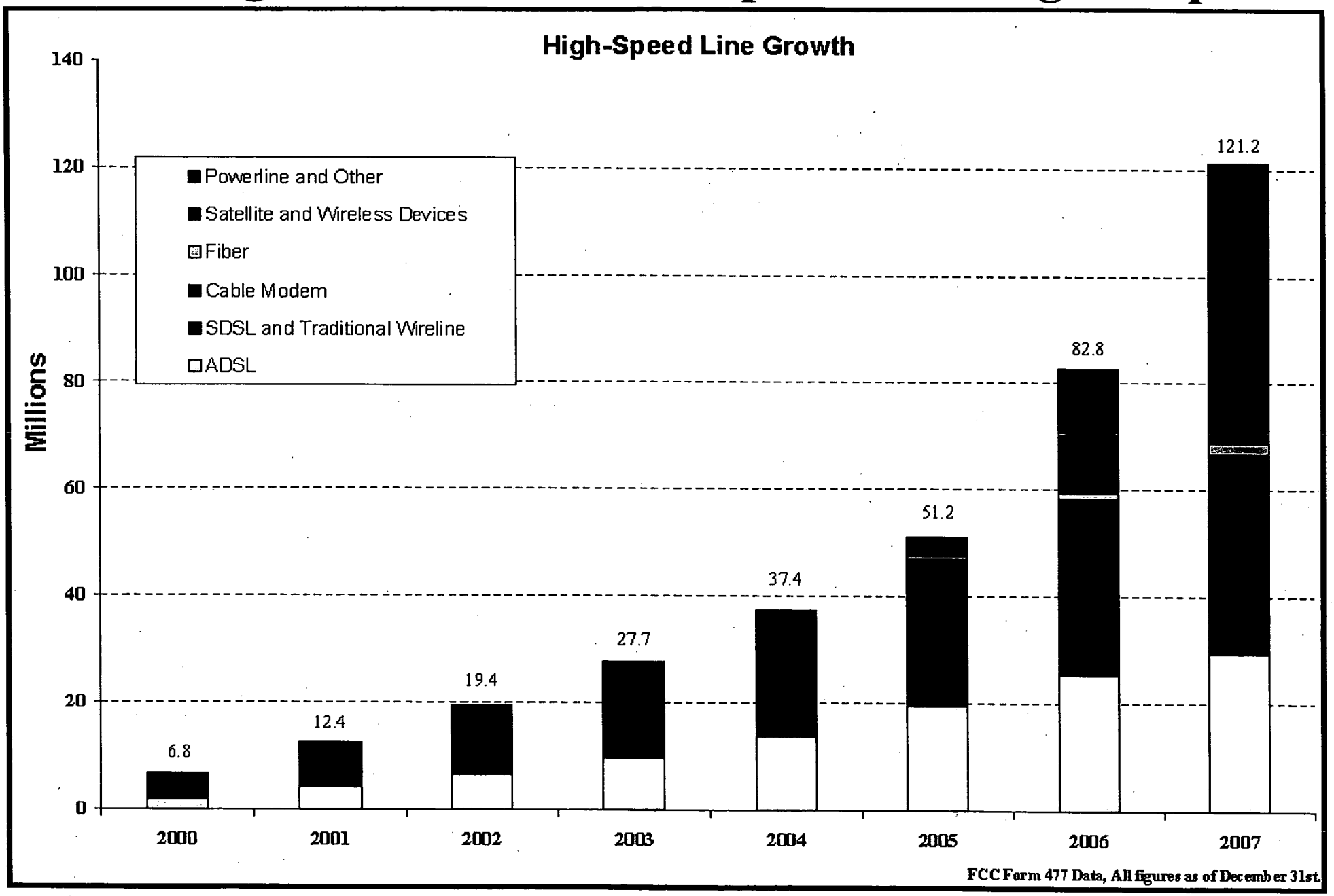
$850 billion economic recovery package.

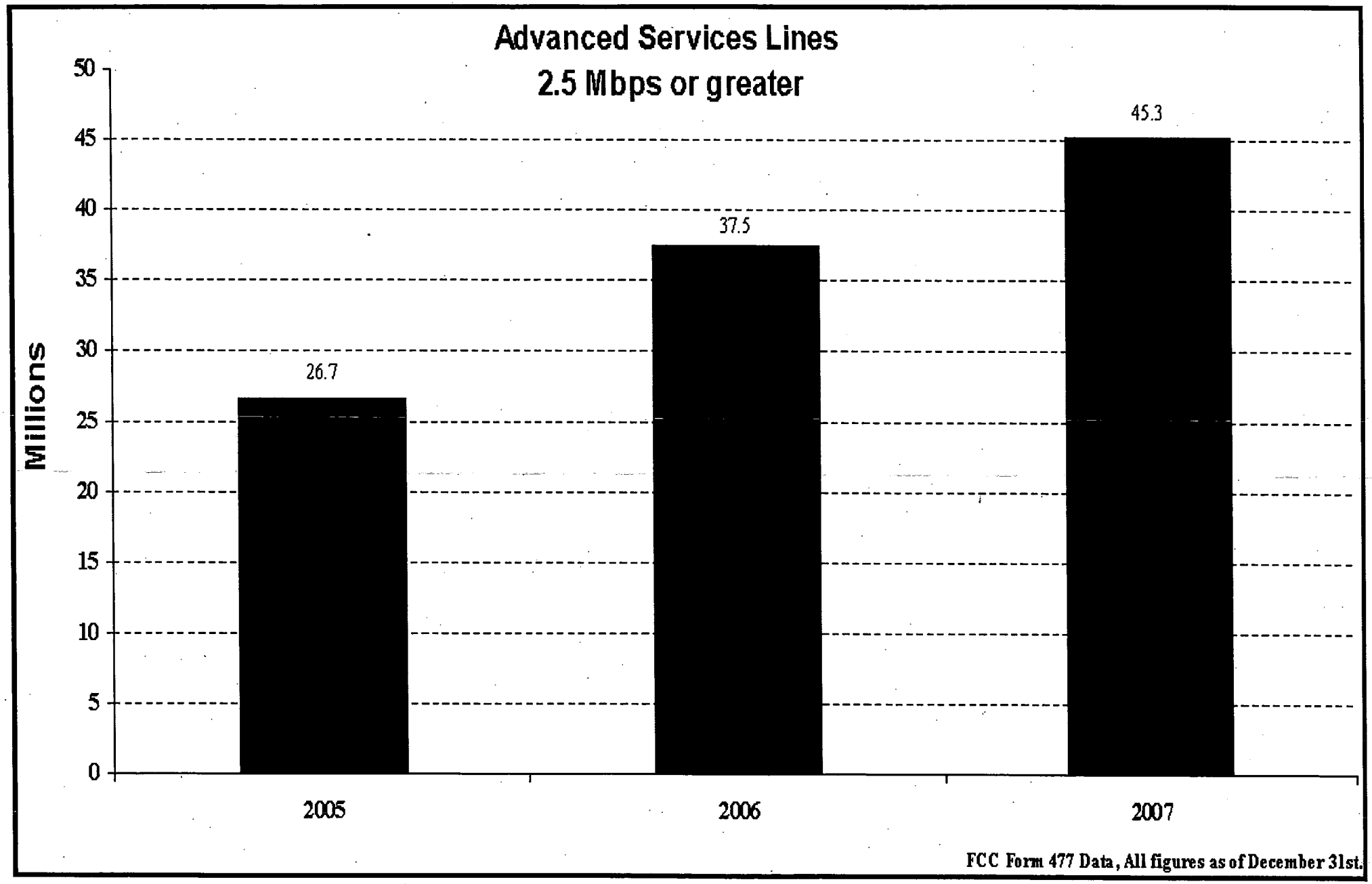
$6 billion allocated for broadband.

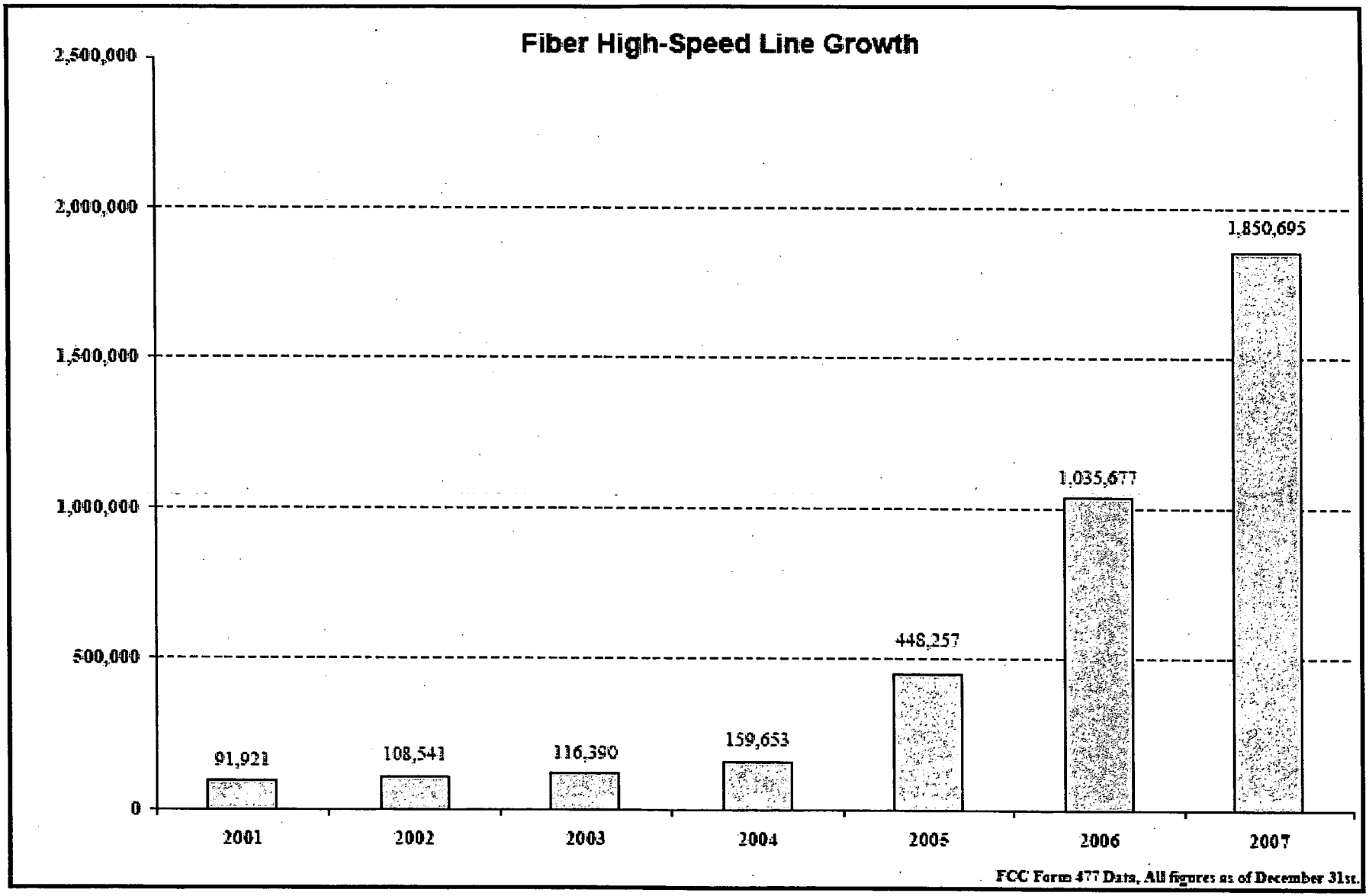
- $2.8 billion administered by Rural Utilities Service of Agriculture Department.
- $2.8 billion administered by NTIA of Commerce Department. $1 billion for wireless / $1.8 billion for Broadband Deployment Grants.
    - 25% to unserved areas. 75% to underserved areas. FCC to review definitions of "unserved" and "underserved" within 45 days. Each state required to submit a report to NTIA defining which geographic regions in the state are priority areas for broadband deployment. Bill includes "open access" conditions.
- $350 million for broadband mapping (the Broadband Data Improvement Act).

No use of tax incentives for broadband.

Increasing Broadband Subscription and Higher Speeds

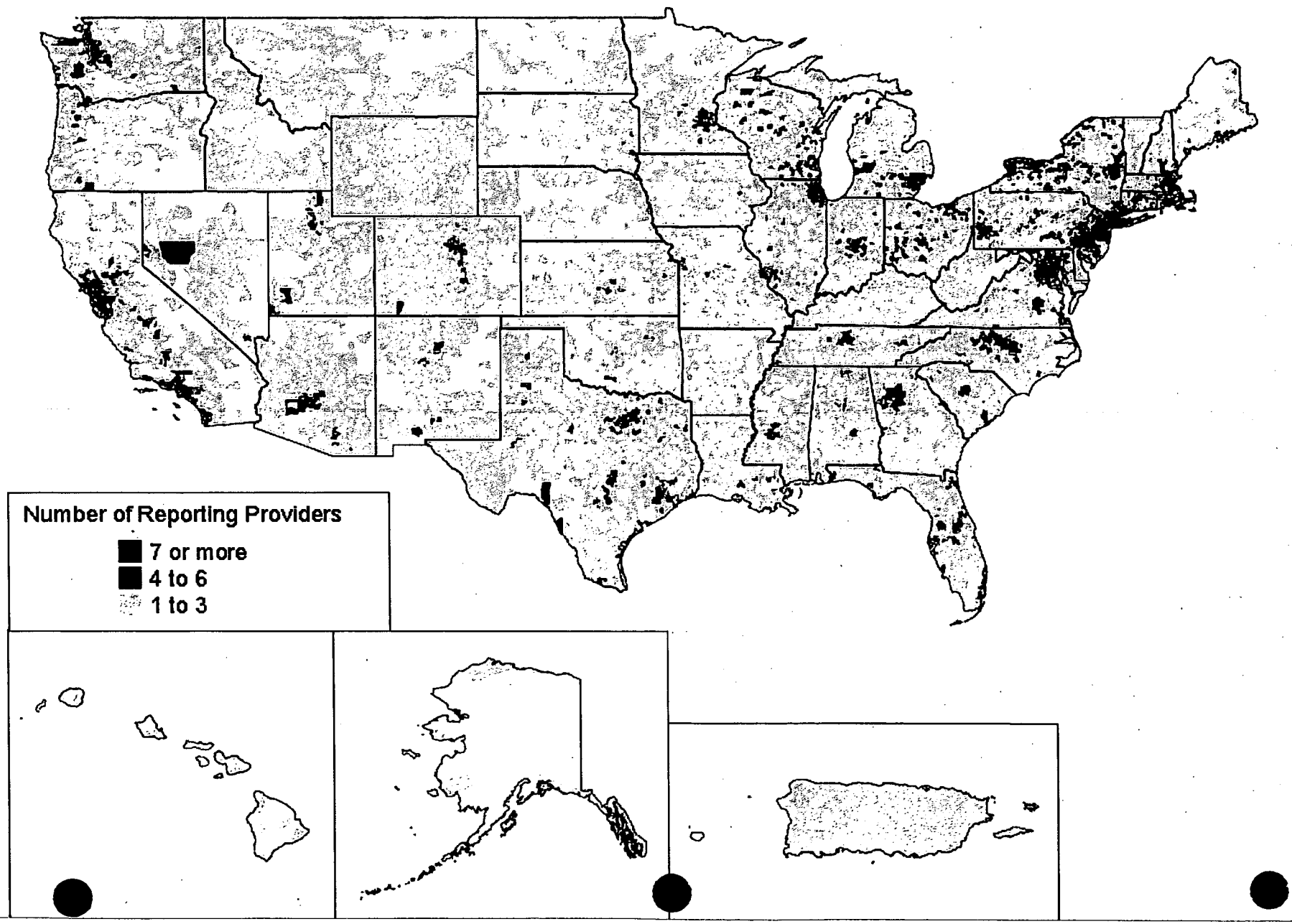



Advanced Services Lines
2.5 Mbps or greater
Millions
50
45
40
35
30
25
20
15
10
5
0
26.7
37.5
45.3
2005
2006
2007
FCC Form 477 Data, All figures as of December 31st.

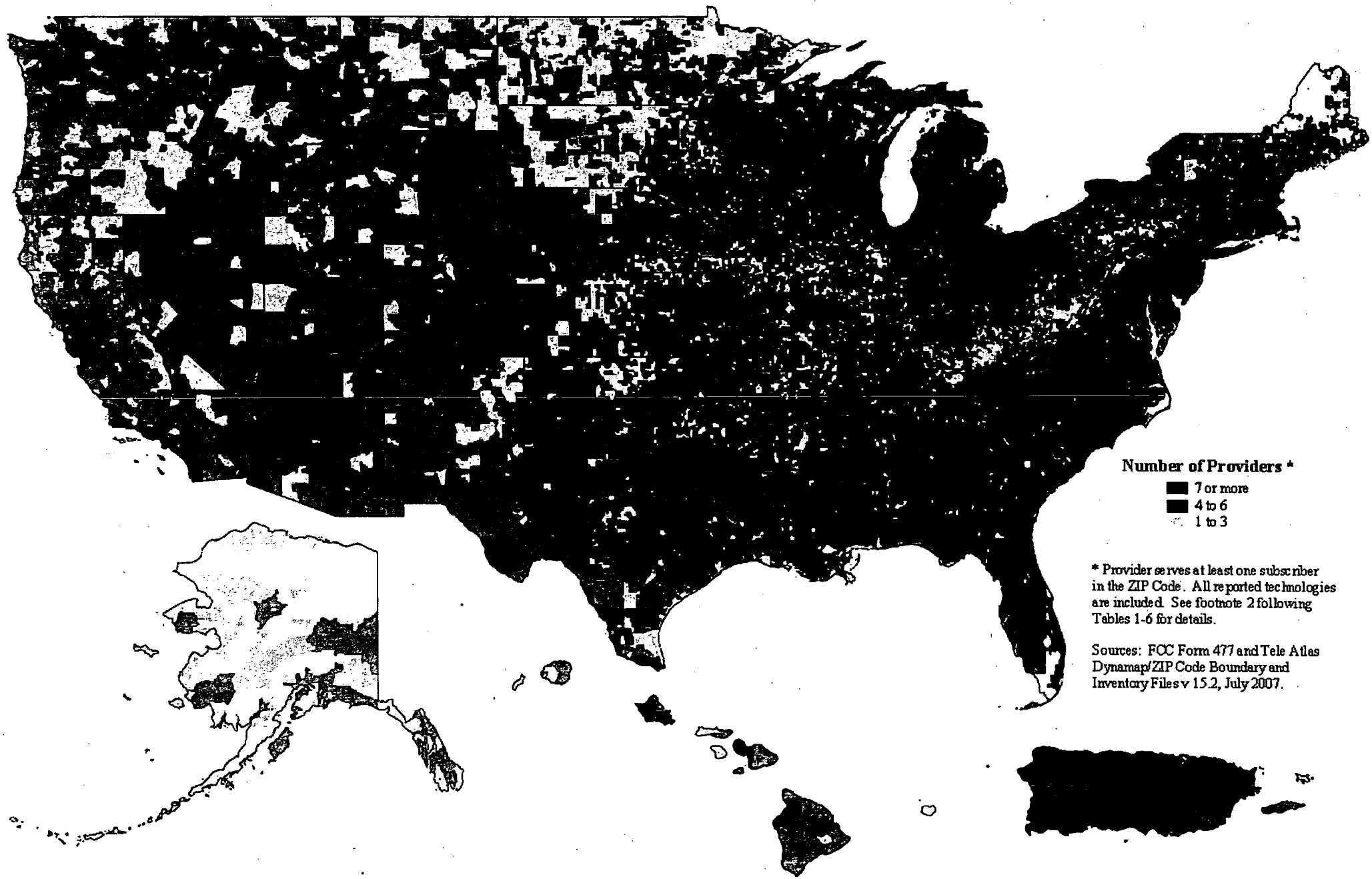

Fiber High-Speed Line Growth
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
91,921
108,541
116,390
159,653
448,257
1,035,677
1,850,695
2001
2002
2003
2004
2005
2006
2007
FCC Form 477 Data, All figures as of December 31st.

High-Speed Providers by Zip Code

(As of December 31, 2000)

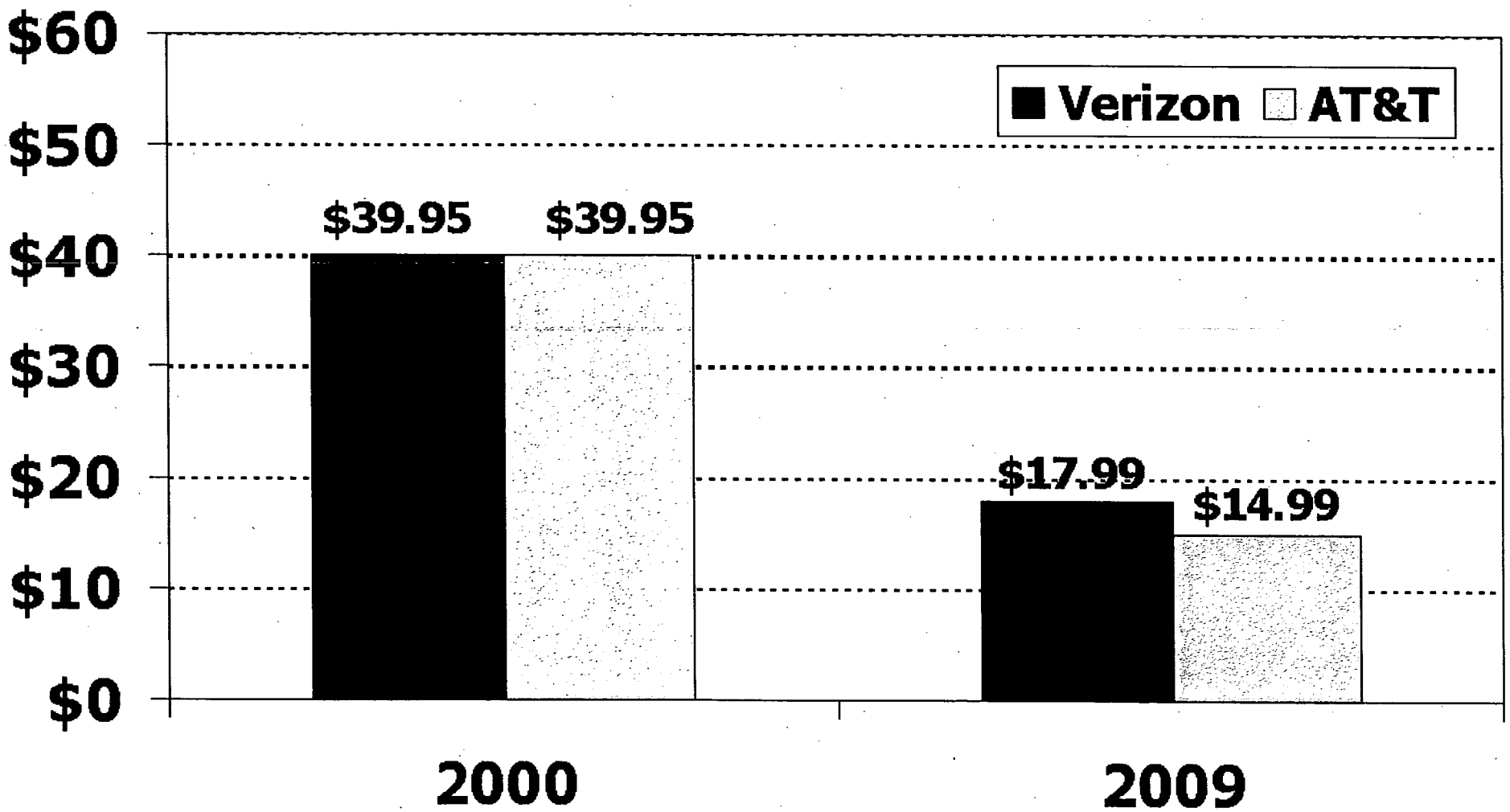


High-Speed Providers by 5-Digit Geographical ZIP Code
(As of December 31, 2007)



Prepared by the Federal Communications Commission,
Wireline Competition Bureau, Industry Analysis and Technology Division

DSL Price Drop

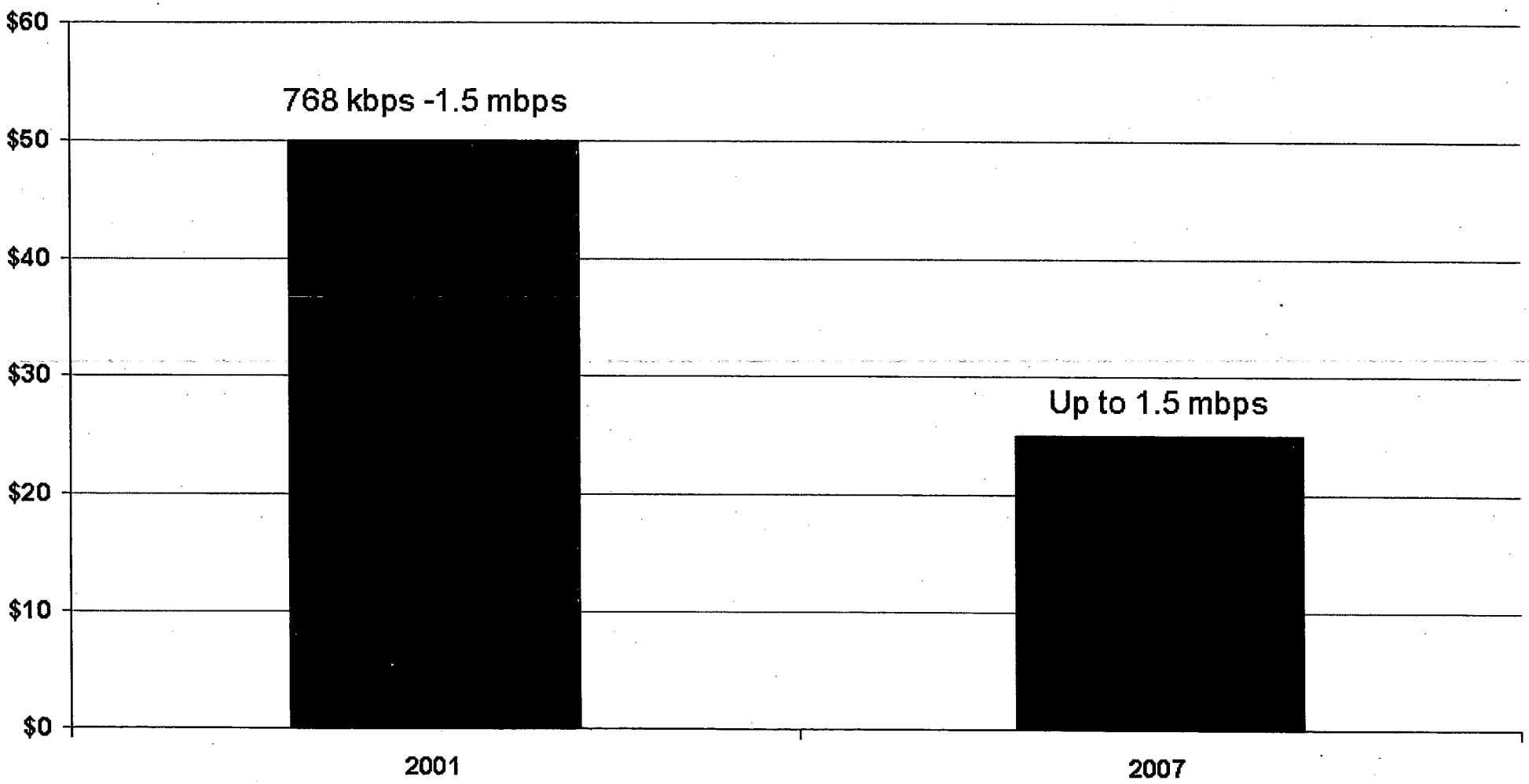


Source: Communications Daily, Feb. 15, 2000; Newsday, Dec. 4, 2000 and company Web sites 2009

Wireline Broadband Prices and Speeds

Declining Prices, Increasing Speeds

(Maximum Advertised Price by Downstream Speed Tier)

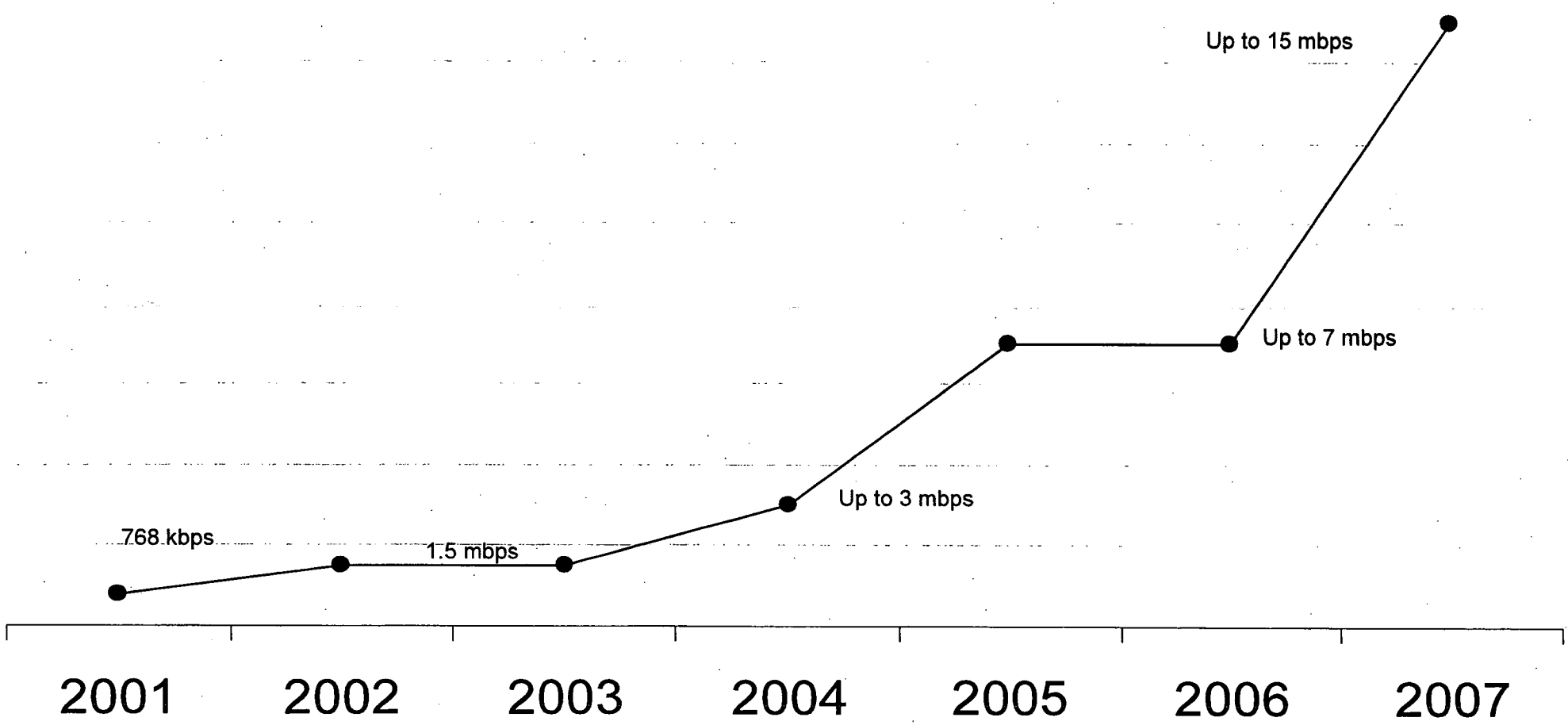


Source: USTelecom: The Broadband Association, *Wireline Broadband Pricing 2001-2007*, June 2008

Wireline Broadband

Increasing Speeds for $50

(Speeds based on Maximum Advertised Price Downstream Speed Tier)



Source: USTelecom: The Broadband Association, *Wireline Broadband Pricing 2001-2007*, June 2008

Reporting Broadband Connections: Speed Tiers

Old Tiers
Faster Direction
> 200 kbps, <2.5 mbps
≥ 2.5 mbps, <10 mbps
≥ 10 mbps, < 25 mbps
≥ 25mbps, < 100 mbps
≥ 100 mbps

New Tiers	
Download	Upload
>200 kbps, < 768 kbps	< 200 kbps
	>200 kbps, < 768 kbps
≥ 768 kbps,< 1.5 mbps	≥ 768 kbps,< 1.5 mbps
≥ 1.5 mbps,< 3 mbps	≥ 1.5 mbps,< 3 mbps
≥ 3 mbps,< 6 mbps	≥ 3 mbps,< 6 mbps
≥ 6 mbps,< 10 mbps	≥ 6 mbps,< 10 mbps
≥ 10 mbps,< 25 mbps	≥ 10 mbps,< 25 mbps
≥ 25 mbps,< 100 mbps	≥ 25 mbps,< 100 mbps
≥ 100 mbps	≥ 100 mbps

WIRELINE COMPETITION BUREAU

January 15, 2009