

A close-up photograph of a bundle of fiber optic cables. The cables are arranged in a fan shape, with their ends pointing towards the right. The ends of the cables are glowing with a bright, warm light, creating a bokeh effect. The background is a solid, clear blue color. The text "Fiber Optics" is written in a large, bold, blue font with a slight shadow, and "In Rutherford County" is written below it in a smaller, dark blue font.

Fiber Optics

In Rutherford County



Presenters

- Rhonda Owens, Rutherford County Information Technology Director
- Benny Hendrix, Rutherford County School Chief Operations Officers/Chief Information Officer
- John Condrey, Rutherford County Manager
- Julie Scherer, Rutherford County Finance Officer
- Beth Miller, Rutherford County Attorney
- Amanda King, PANGAEA Board Co-chairman
- Jim Brown, Foothills Connect Past Chairman or Paul Martin, Foothills Connect Current Chairman

In the Beginning

- In 2005, Golden LEAF awarded PANGAEA a grant worth \$400,000 to connect 19 of the school facilities in the County back to the central office in Forest City which produced what we know now as a 62 mile School/Government fiber network in Rutherford County.
- A backbone of fiber was completed through the middle of the county from Rutherfordton Elementary School to the Ellenboro Elementary with a fiber link to each of the 19 school facilities.
- Included in this grant, Wireless was to be installed at Sunshine and Pinnacle Elementary Schools which would connect those schools back to the Central Office to make the connection complete for all 21 facilities.

Creating Economic Vitality

- September 2007, Golden LEAF awarded \$1.45 million to Rutherford County to build a 38 mile Emergency Services Fiber network that would attach to and extend the existing network.
- One of the requirements of this grant was that \$300,000 would be used to complete the school fiber links.
- Another \$300,000 grant from the State School Connectivity Funds was used to run fiber instead of wireless to Sunshine and Pinnacle Elementary Schools.
- In addition, the Rutherford County Schools paid \$380,000 of which 72% was from E-Rate.
- Without the partnership of Golden LEAF, e-NC Authority, Rutherford County Schools, PANGAEA, and Rutherford County Government, the schools would most likely not have high speed broadband.

Broadband Advisory Team

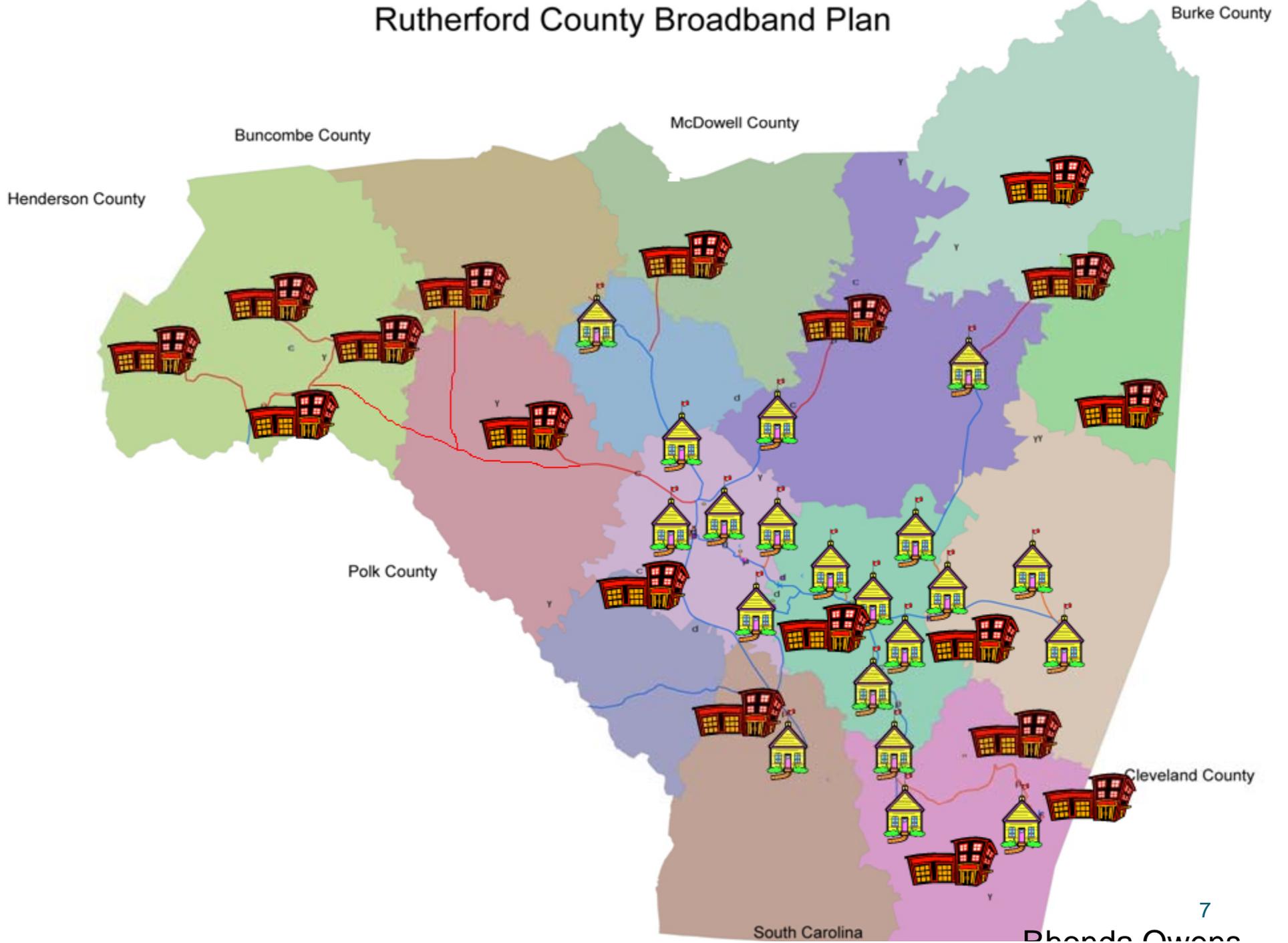
- John Condrey, Rutherford County Manager, appointed a broadband advisory team that would oversee the completion of the GoldenLEAF grant. Here is a list of those members:
- John Condrey, Rutherford County Manager
- Gail Strickland, Rutherford County Information Technology Director, retired
- Tim Will, Foothills Connect Executive Director
- Benny Hendrix, Rutherford County Schools Chief Technology Officer and Foothills Connect Board Member
- Jim Edwards, Isothermal Planning and Development Commission Executive Director and PANGAEA board member
- Kerry Giles, Rutherford County Marketing Director, Chairman of e-Rutherford, and PANGAEA board member
- Ron Walters, PANGAEA Executive Director
- Stu Davidson, PANGAEA Operations Manager
- Julie Scherer, Rutherford County Finance Officer
- Paula Roach, Rutherford County Assistant Finance Officer
- Hazel Haynes, Rutherford County Clerk to the Board
- Roger Hollifield, Rutherford County Fire Marshall
- Chris Tate, Rutherford County Communications Center Assistant Director
- Rhonda Owens, Rutherford County Information Technology Director, and PANGAEA board member
- Jai Doherty, Rutherford County Senior IT Analyst
- Peter Gaulin, Rutherford County Senior IT Analyst, Emergency Service Fiber Network Project Manager, and Foothills Connect board member

Rutherford County Schools (RCS)

Benny Hendrix, COO/CIO

- Broadband Team
 - Team Approach from many County interests
 - Team discussed and came to consensus on plans
 - Many months of planning work before any new fiber was added
 - Consulted e-NC group throughout process
- Multi-Interest
 - Integrity of RCS Wide Area Network
 - Access for Students of RCS
 - Access for Teachers/Employees of RCS

Rutherford County Broadband Plan





Fiber Network Agreements

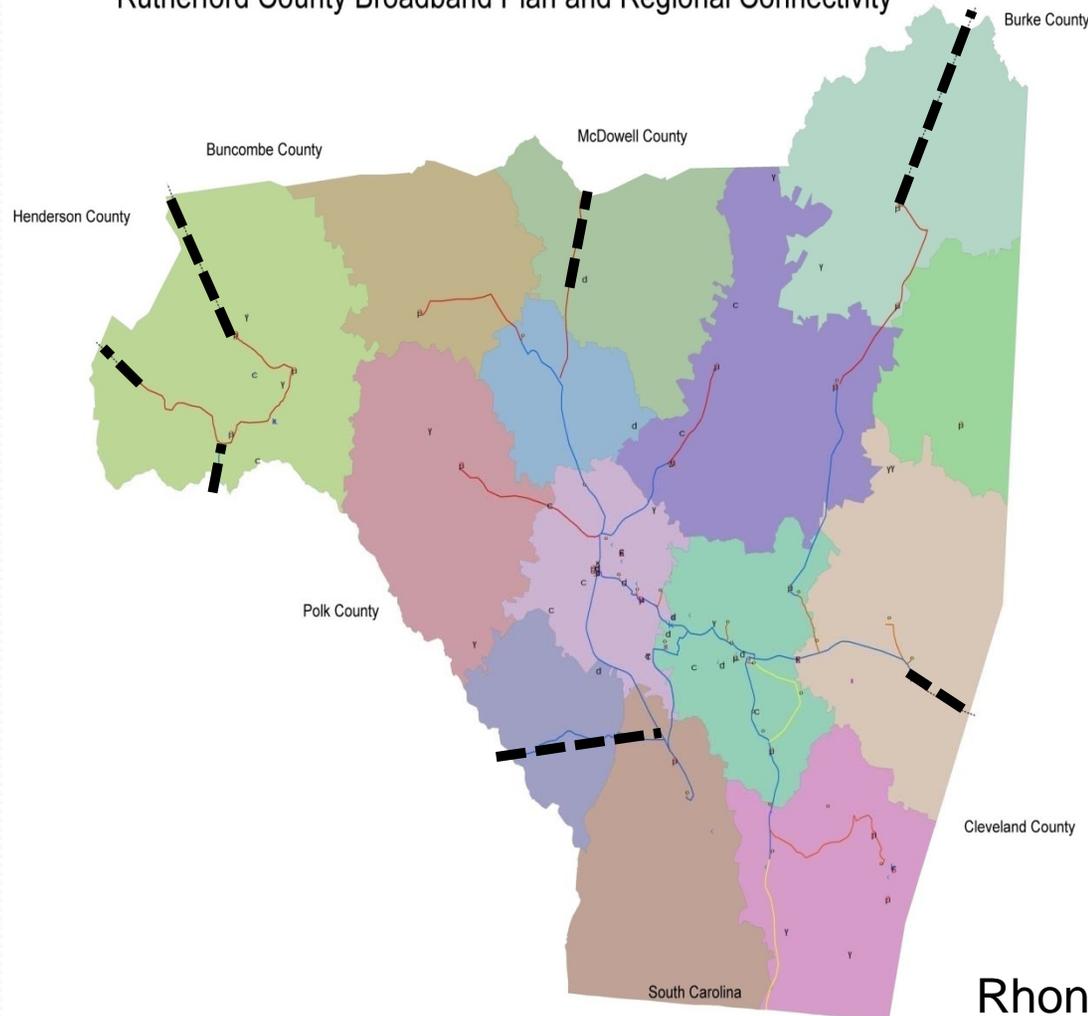
- In November 2007, an agreement between Rutherford County and PANGAEA was signed which supported the 62 mile School/Government Fiber Network. The original owner of this fiber is PANGAEA with Rutherford County negotiating IRU (Indefeasible Right to Use) fibers in the main backbone and in the fiber routes to each school.
- There was a three year restriction of use on the Government fibers stating these fibers could only be used for Governments uses only. That restriction will be lifted on November 5, 2010 and will give the County the right to use these fibers for whatever we deem necessary.
- The agreement before you today is only supporting the Emergency Services Fiber Network that is attached to the backbone with no restrictions of use and will expire November 5, 2010.

Changes from your current draft in your agenda

- In section **1. Delivery and Acceptance of County Network**. Section (a) in the third sentence strike the words “third party” from the phrase “any and all third party claims...”
- Based on a recommendation from e-NC Authority, in section **3. Grant of IRU and 5. Monthly Service Fees, Pole Attachment Fees: Payment**. Section 3(b) and section 5(a) respectively, we have changed the phrase “per fiber mile” to “per route mile of the fiber sheath”

This map shows the potential for a regional fiber network between 7 surrounding counties. For the succession of this type of network, there has to be a unity of management, one point of contact and PANGAEA is the most logical to be that center point.

Rutherford County Broadband Plan and Regional Connectivity





Comments from Mark Sorrells, Golden LEAF Executive Director

From: Mark Sorrells [mailto:msorrells@goldenleaf.org]

Sent: Thursday, December 31, 2009 1:18 PM

To: John Condrey

Cc: Ted Lord; Dan Gerlach

Golden LEAF staff has discussed the terms of the proposed transfer with representatives of the County. We believe that the County has considered and taken reasonable steps to address questions raised by Golden LEAF; however, the decision regarding whether to enter the transaction rests with the County.

Diagram of a Fiber Optic cable

Contents of a Fiber Cable:

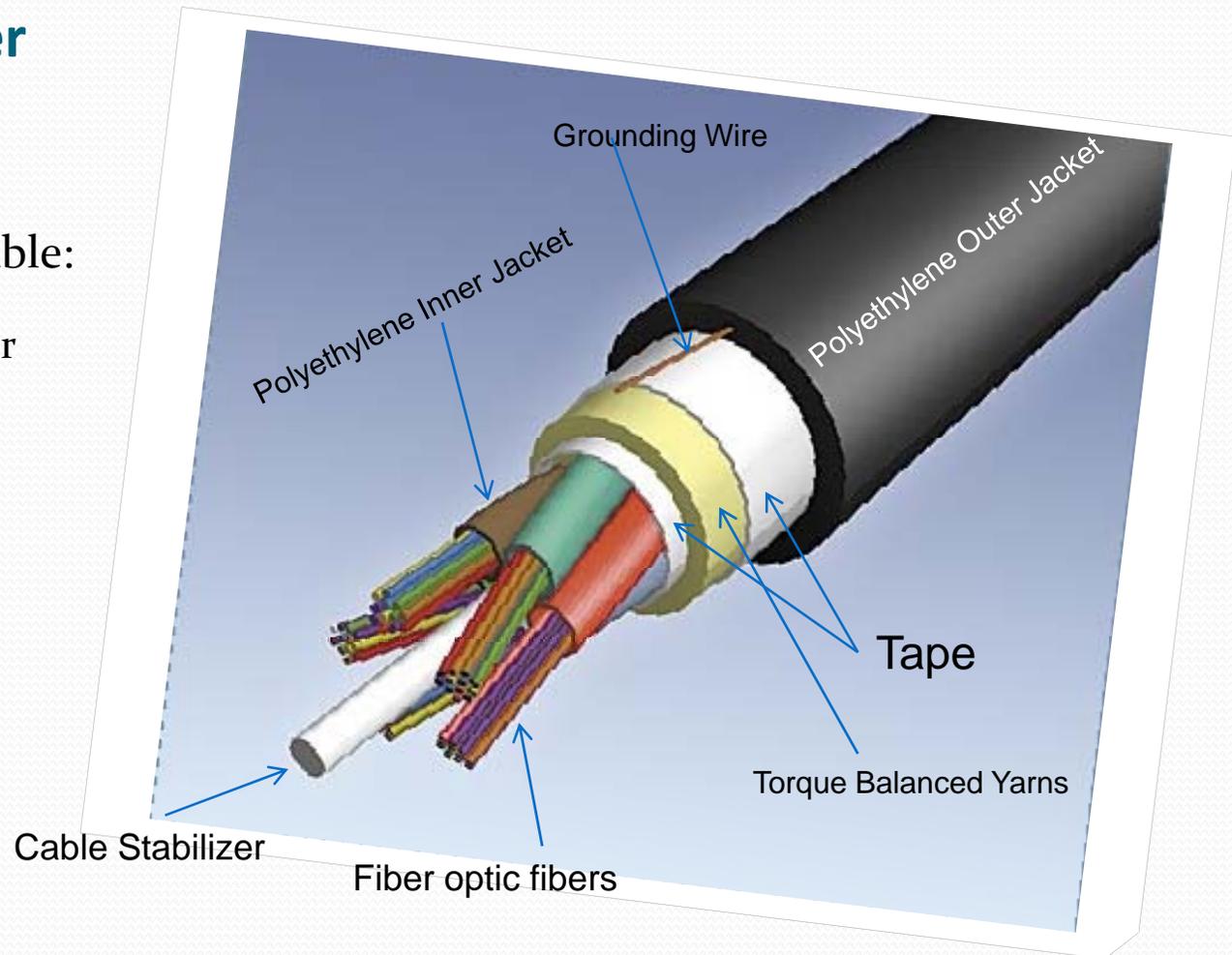
Polyethylene Outer/Inner Jackets

Tape

Torque Balanced Yarns

Fiber Optic Fibers

Cable Stabilizer



Ownership

- When the County was notified of the GoldenLEAF grant award for the Public Safety fiber network two years ago, conversations were held between the e-NC Authority, ONUG, and the Broadband Team itself, and it was decided that there would be more advantages to PANGAEA owning the fiber sheath with the County retaining the Indefeasible Right to Use (IRUs) the fibers themselves rather than the County retaining ownership of the entire network.
- This discussion was held early because the process we would use to move forward with the buildout of the network depended heavily upon it.
- Pros and cons of the County versus PANGAEA owning the sheath and the County having IRUs in the fiber were discussed.
- Many advantages to PANGAEA owning the sheath including unity of management and maintenance as well as liability, right-of-way, insurance, and pole attachment issues were pointed out.

Ownership continued

- As the Public Safety network is mainly comprised of “fingers” extending from PANGAEA’s already existing network and is very dependent upon it, a “unity of management and maintenance” concept of the entire network was thought to be very important.
- Other factors:
 - The County did not have pole attachment agreements, right of way agreements nor the staff expertise or capacity to manage and maintain fiber.
 - Discussion was beginning to occur in the legislature regarding local governments’ authority to own and operate fiber.
- Based on these discussions with e-NC, ONUG and the Broadband Team, the general consensus was that the County should move ahead with the sheath being owned by PANGAEA with the County retaining control of the IRUs.

Ownership continued

- The true value of the fiber network lies within the fiber strands themselves or the IRUs, which the county has complete control over. The asset actually lies within the use of the fiber, not the sheath that the fibers are contained in.
- An IRU interest is a form of **acquired capital** in which the grantee possesses an exclusive and irrevocable right to use the facility for all, or almost all, of its useful life.
- An IRU allows the holder to negotiate long-term availability of capacity and investments in IRUs are typically capitalized as an asset.
- An IRU is one of the most common methods of conveying assets in the telecommunications industry.
- The value of the IRU as opposed to the value of the sheath is further evidenced as, regardless of which party holds the actual title, the IRU purchaser obtains a right to use the facility, and is allowed to treat its investment in the facility as a capital cost, rather than as an expense.

Ownership continued

- Advantages to PANGAEA owning the sheath with management and maintenance responsibilities based on a fee arrangement and the County having Indefeasible Rights of Use (IRUs):
 - Unity of management and maintenance on the entire network.
 - The 38 miles of fiber consists of numerous fingers branching off the original 62 mile PANGAEA network at many different locations. This structure results in a high level of dependency on the original network.
 - PANGAEA already has pole attachment agreements in place with discounted fee arrangements. PANGAEA must own the sheath in some of the agreements. Pangaea has experience in obtaining right-of-way agreements associated with fiber.
 - County does not have expertise, experience, or staff necessary to maintain and manage fiber.
 - Liability insurance will continue to be held by PANGAEA.

Ownership continued

- This initial agreement will end November 5, 2010 and is renewable at that time. The county can choose to end the management and maintenance services agreement with PANGAEA and ownership of the sheath as well as the fiber will come back to the County with consideration of \$10 being paid to PANGAEA.
- Should PANGAEA stop doing business, both agreements include provisions providing that all fibers in Rutherford County would revert to Rutherford County.
- The agreement prohibits PANGAEA from using the fiber as collateral for loans or any other lien arrangements.

Management and Maintenance Fees

- Fees paid to PANGAEA for the management and maintenance of the network will cover the responsibilities outlined in Attachment B of the agreement, the Service Level Agreement in Attachment C, and the Maintenance Specifications in Attachment D and will include the following:
 - 24 hour a day/7 day a week availability for monitoring, support and repair,
 - Personnel on site for emergency unscheduled maintenance within four hours of becoming aware of an event,
 - Routine maintenance, liability insurance, pole attachment contract negotiation, network operations including planning and mapping, and regulatory reporting.

Management and Maintenance Fees

continued

- PANGAEA may request and the County may allow an IRU to be released to PANGAEA for business purposes.
- This requires written County approval.
- If this occurs, the County's management and maintenance fees will be decreased by a pro rata amount and PANGAEA will remit to the County 10% of gross revenues that it receives on use of the fiber.



PANGAEA BOARD MEMBERS

Amanda King	King Law Offices
Jeff Byrd	Tryon Daily Bulletin
Jim Edwards	Isothermal Plan & Dev
Joe Crowder	St. Luke's Hospital
Jim Bross	Rutherford Cty. Hospital
Kerry Giles	Ruth. Cty. Econ. Dev. Comm.
Harry Grymes	Mountain 1 st Bank
Keven McCammon	Blue Ridge Design
Rhonda Owens	Rutherford County IT Director
Marche Pittman	Polk County IT Director



Who is PANGAEA?

- Non profit company founded in 2003 by grant from Rural Internet Access Authority (e-NC)
- Have received \$2.5 million in funding to build 125 mile fiber network
- Polk and Rutherford Counties
- 46 customers, 92 locations



PANGAEA's Mission

- Build an open and cost effective fiber optic network and deliver affordable, high speed internet connectivity
- Enhance economic development: attract businesses, create jobs and provide platform for innovation
- Improve quality of life: improve education, increase value of government and improve health care
- Ameliorate the Digital Divide: provide low cost bandwidth to mass market internet service providers to encourage market entry



PANGAEA's Funding Partners

Rural Internet Access Authority	Polk Cty. Community Foundation
Polk County Government	Polk County Schools
Cooper Riis Healing Farm	AdvantageWEST
Rutherford Cty. Government	Rutherford Cty. Schools
Foothills Connect	Z. Smith Reynolds Foundation
Golden LEAF Foundation	DukeNet



PANGAEA's Key Customers

DukeNet Comm.	ICC – Both Campuses
Isothermal Plan & Dev	NC Info. Tech. Services
Polk Cty. Chamber	Polk Cty. Government
Polk Cty. Library	Polk Cty. Schools
RPM Health District	Rutherford Cty. Gov't.
Rutherford Cty. Schools	St. Luke's Hospital
Towns of Tryon, Rutherfordton, Forest City, Lake Lure	Cooper Riis Healing Farm and Pavillon

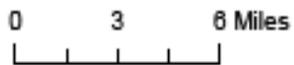
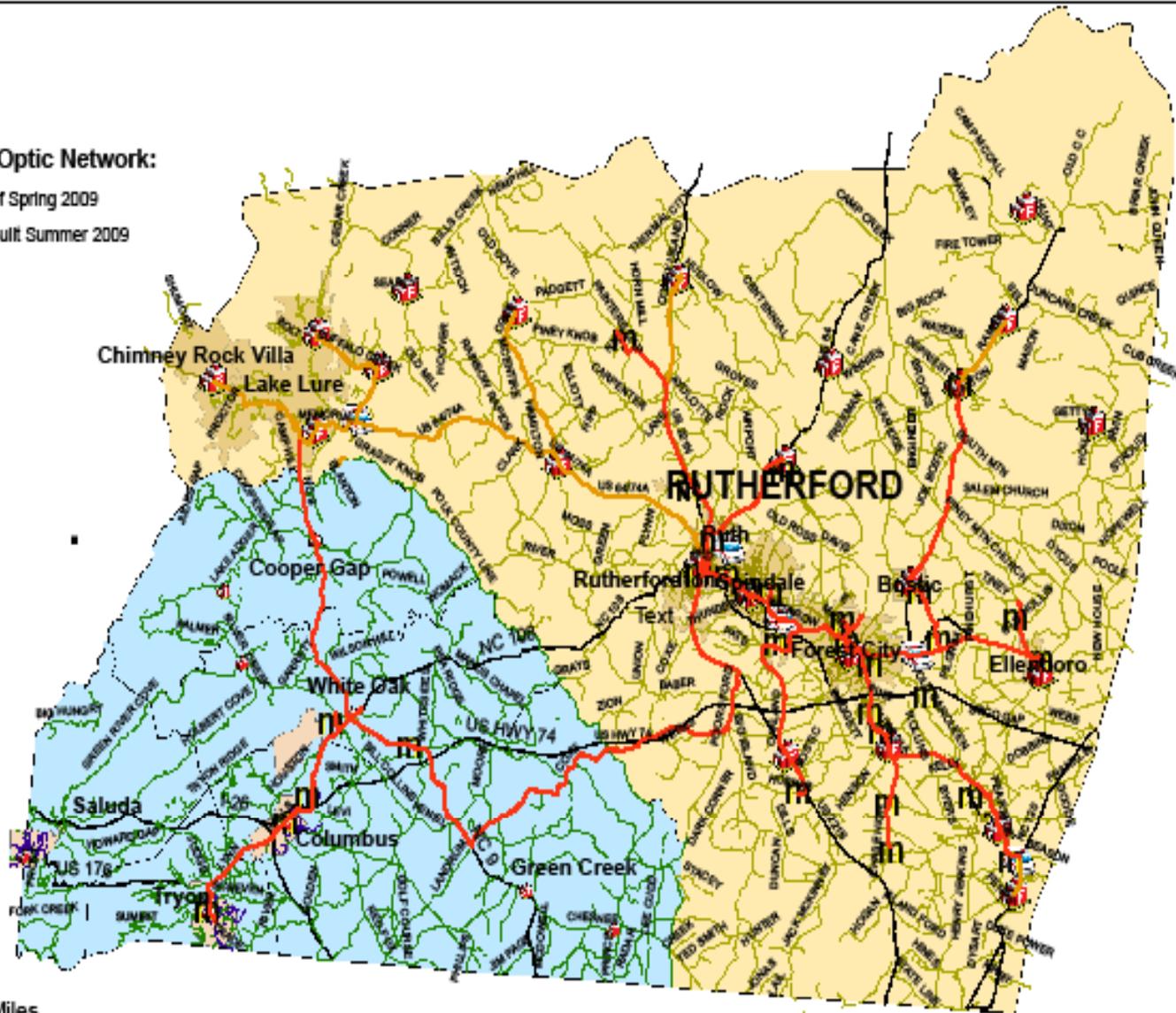


PANGAEA's Financial Health

- Funding: \$2.5 million since 2003
- Fiber Miles: 125
- 2009 Revenue: \$515k
- 2009 Cash Flow: \$20k (positive since 1Q09)
- Cash on Hand: \$265k (including \$200k emergency reserve fund)
- Debt: \$0
- Last Audit: December 2008

PANGAEA Fiber Optic Network:

-  Network as of Spring 2009
-  Extensions Built Summer 2009
-  Schools
-  Fire Depts
-  EMS



PANGAEA Internet : Summer 2009, Copyright, e-Polk, Inc.
Not for Distribution without Consent

Amanda King



Questions that have been asked

- What happens if PANGAEA goes Bankrupt? Should PANGAEA go into bankruptcy, the IRU agreement protects the County's right to the sheath to the fullest extent as possible.
- Marcus Trathen, an attorney from Raleigh specializing in Fiber agreements and issues, provided legal guidance on the best path for the county to insure its interest.



FOOTHILLS CONNECT BOARD MEMBERS

- Paul Martin, Board Chairman
- Maria Hunnicutt, Vice Board Chairman
- Bill Koonce, Secretary/Treasurer
- Fred Bayley, Past Chair
- William L. Morris
- Shirley Arrowood
- Jeff Gurr
- Brent Washburn
- Sandra McGriff
- Curtis Vance
- Bryan King
- Peter Gaulin
- Myra Cowan
- Benny Hendrix



Broadband Future

- As PANGAEA and Foothills Connect who are both non-profit have been supported by Foundations and grants , as they work together in the future offers a tremendous opportunity for expansion of broadband services with the support of the County.