BIGGER BROADBAND BENEFITS BUSINESS
3,100-mile fiber optic pipeline across North Carolina is ‘going to change our lives’

By Dale Neal
dneal@citizen-times.com

Forget all the froth of Beer City. Asheville can claim a new title as Gig City — as in gigabit per second broadband connections to the Internet.

A new fiber-optic broadband line running through downtown promises faster service at lower prices to homeowners while opening the door to new businesses, local observers say.

North Carolina can boast being the first Gigabit State after RST Fiber, a private company in Shelby, fired up a 3,100-mile fiber-optic pipeline that loops underground from Murphy to Manteo.

In the next 60 days, homeowners in Asheville will be among the first in the state to sign up for 1-gigabit uploads and downloads, starting at $99 a month. Businesses can contract for up to 100-gigabit speeds.

“This is the next generation, and North Carolina and Asheville are going to have it first,” said Dan Limerick, president and co-founder of RST Fiber.

A gigabit — 1,000 megabits per second speeds — blows past previous broadband standards and makes the original dial-up access to the Web — at a creaky 50 kilobits or half a megabit per second — seem as antiquated as a horse and buggy. Full-length high-definition movies that would have taken days to download via dial-up and hours via old DSL service over copper lines take minutes over new fiber-optic lines. Video can be streamed live without buffering or freezing on screen.

Video, in particular, is driving the demand for the faster gigabit service as more businesses Skype, use video conferencing or access protected networks to transfer massive data files. And at home, as residents play ever-higher-resolution video games and stream high-definition videos or movies.

“It’s infrastructure and not just entertainment,” Limerick said. “We’re building what the CEO of Cisco has called the Internet of Everything. The future is headed that way with everything connected by the Internet. Everything inside the home, all the appliances, the devices, are going to be smart. It’s going to change our lives.”

Gigabit service has already opened up in other cities. Google built fiber-optic networks in Kansas City and Austin, Texas, and is now looking at 34 other cities for the service, including Raleigh and Charlotte. Taxpayers in Chattanooga, Tenn., footed the bill for a publicly owned fiber-optic network that delivers broadband into individual homes while coaxing other businesses to come to town.

More options
Other providers welcome the pipeline and the prospect of in-
creased competition.

“We’re very supportive of RST entry into this marketplace,” said Hunter Goosmann, general manager of ERC Broadband based in Asheville. “I’m a nonprofit; part of our mission is to help expand broadband service to the mountains. RST is helping us fulfill that mission.”

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“Asheville is absolutely a leader in fiber-optic speeds. Charter is offering faster speeds in general, and AT&T is also responding with faster options. We have more options now.”

ERC is largely a “middle-mile” network that connects with the statewide MCNC broadband network.

Investing tens of millions of dollars in new fiber-optic lines, RST was able to leapfrog cable and telecom giants like AT&T, which announced plans to spend $14 billion to update legacy networks built on old copper and coaxial lines, now interwoven with new fiber-optic feeds.

“As soon as they start building out that last mile, AT&T and Charter are going to have to sharpen their pencils,” Goosmann predicted.

Getting the fiber to the doorstep remains the most difficult challenge for providers. Laying fiber lines to individual homes can be costly, particularly in the mountains, Goosmann said.

“That’s the hardest part. You kick the topsoil, and you have the granite underneath.”

Rather than bury all the lines through bedrock, providers rely on a combination network of aerial lines and wireless signals to get the broadband into the home.

Limerick said RST wants to use state-of-the-art wireless that will deliver a gigabit in both upload and download speeds.

RST offers synchronous upload and download speeds, meaning businesses can put up files or video on the Internet just as fast as they download it. Partnering with networking giant Cisco for the latest routers, switches and equipment, Limerick said RST has built a largely “future-proof network.”

**Economic opportunity**

RST is the brainchild of three Shelby natives, who saw the old economy crumble in their rural Cleveland County as textile and furniture plants closed under the pressure of global competition. Cleveland County’s unemployment rate was 11.3 percent as recently as January 2013.

“We felt we could generate more economic opportunity with better broadband,” Limerick said.

Limerick is a long-time entrepreneur whose father served as director of the Shelby Chamber of Commerce for 30 years. Randy Revels, the chief technology officer, has worked in the cable and IT industries for three decades.

Doug Brown made a career in publishing a satellite TV guide in the days of big antenna dishes.

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Bigger broadband means more business. “It’s going to help Asheville,” Goosmann said. “We have a lot of smaller tech businesses here who work with clients and customers elsewhere. With particularly that upload speed, those businesses are going to be able to do more.”

RST isn’t content to rest on faster laurels. By this summer, the company hopes to offer uncompressed 4K television and a la carte movies and videos.

As technology keeps improving, Limerick said the company hopes to upgrade the pipeline to reach speeds of a terabit per second, or 1,000 gigabits.

That kind of speed would enable RST’s pipeline to handle the massive databases at the National Climatic Data Center, all the servers at the Immedion data center in Biltmore Park, Mission Hospital’s systems, public schools and indeed all businesses in Buncombe County “without batting an eye,” said Art Mandler.

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“What happens when bandwidth becomes that available, the wholesale cost drops. That means I can charge my customers less or give them more, and all the bandwidth-hungry businesses can do more.”

Mandler sees the future and possibilities evolving with the faster technology that’s making Internet access as common and as necessary as electricity.

“It’s this global thing we’re doing, connecting everything to everything,” he said.

HOW FAST IS FAST?

A virtual trip from Asheville to the main Internet point of presence or hub in Atlanta on a fiber-optic broadband pipeline takes literally less than a blink of eye, experts said. Try 3 milliseconds from Asheville’s Patton Avenue to Atlanta’s Peachtree Avenue. Meanwhile, it took your eye about 300 milliseconds to blink while reading this sentence.

To test your provider’s upload and download speeds, click on www.speedtest.net.

FIND MORE ONLINE

» For more information on RST Fiber, visit www.rstfiber.com.
RST Fiber, based in Shelby, has built a fiber-optic network over thousands of miles and across all of North Carolina. SPECIAL TO THE CITIZEN-TIMES

Randy Revels, RST Fiber's chief technology officer, talks with Dan Limerick, the company CEO. SPECIAL TO THE CITIZEN-TIMES
IMPROVING SCHOOL TECHNOLOGY

District ordering new laptops for teachers; high school teachers to test Chromebooks

By Stephanie Creech
Times Managing Editor

All teachers and certified staff working in the school district's three traditional high schools and in the district's elementary schools will be receiving new laptop computers.

The Wilson County Board of Education Monday night approved spending up to $400,000 to buy 675 laptops and protective bags. The district is awaiting completion of the formal request for proposals process before deciding upon the vendor. Estimated cost of each laptop is about $500. Bulson said they expect the request for proposals process to close in the next week or so.

Daniel Vogelman, assistant superintendent for technology and accountability for Wilson County Schools, and Wynn Smith, executive director of technology, outlined for board members during the Accountability/Technology Committee meeting Monday morning how this upgrade for teachers is needed. Vogelman said about 80 percent of the technology teachers use in the classroom is more than 10 years old. Teachers need updated computers in order to effectively upload, access and use digital content now available on.

See TECHNOLOGY, Page 9A

The laptops should be distributed to teachers in June before the district's summer professional development conference, which will have a number of technology sessions.

"Teachers will be learning to use Google Docs software that will save the district money because loading each laptop with Microsoft Office software would cost about $80 per machine, according to Vogelman.

Using Google Docs will allow for more sharing of material between teachers. Teachers will basically have about a half year to learn to use Google Docs.

TRYING CHROMEBOOKS

In addition to updating computers teachers use, the district is moving toward implementing 1 to 1 technology in all three of the traditional high schools.

Hunt High School has had 1 to 1 technology for seven years now. But Bulson said it's a huge expense to keep the aging laptops students there use going. Bulson also added that the buy-in from teachers and students at Hunt was never achieved at the level wanted. He attributed the issues at Hunt to the lack of persistent training for staff.

Now, district leaders want to purchase and equip every student in the traditional high schools with Chromebooks. The district has ordered 40 Chromebooks that will be tested by members of the E-Learning Committees at each high school to see if they deliver the functionality needed. The kickoff for high school leadership teams will be Thursday.

Chromebooks look like laptops but lack a hard drive. Students will save all of their work in the virtual cloud. But each Chromebook does have a USB port so documents can be downloaded and transferred if needed.

Vogelman said they looked at iPads and tablets and laptops before deciding Chromebooks offer the best balance between affordability and functionality.

If the teams trying out the Chromebooks decide they are what students need, then the district will provide a classroom set of Chromebooks for teachers at each high school to checkout and use with their students during the fall of next school year.

If the district pushes forward with the 1 to 1 movement, all students at the traditional high schools could have a school-issued Chromebook by January 2015.

Bulson told the board that a lease agreement for the Chromebooks, which would cost the district about $299 each, would have to be approved. Plus, Bulson reiterated that he will not bring the board a request to finance the Chromebooks and the rollout wouldn't happen.
next school year unless
the money is available. He
won't know if the money
will be available until the
local, state and federal bud-
gets are completed.
It's possible the 1 to 1
rollout would have to wait
until the fall of 2015.
The district allows
students at Fike and Bed-
dingfield high schools to
use their personal laptops
at school. But there is no
eXisting 1 to 1 technology
program at those schools.
In addition to school-is-
issued laptops, Hunt seniors
have had access to school-
issued iPads. But Smith
said not many seniors use
them so there's enough
iPads for Hunt teachers to
check out sets from the me-
dia center for use in their
classrooms.
Vogelman said it will be
up to the E-Learning Com-
mittee members to decide
but it's possible the iPads at
Hunt could be moved down
to the elementary school
level.
Wilson Early College
Academy is not included
in this 1 to 1 movement
because WECA already
has 1 to 1 technology. Plus,
WECA's staff receives ex-
tensive technology training
through the North Carolina
New Schools Project. So
in many ways, Bulson de-
scribed what's proposed
as "almost a leveling of the
playing field" between the
traditional high schools
and WECA.
WECA teachers will be
trained on Google Docs
this summer.
Between April and June,
high school leadership
teams will be undergo-
ing training by the Friday
Institute at North Carolina
State University. This train-
ing should help teachers
learn to better use Home
Base tools and resources
and should help better
prepare teachers for us-
ing digital learning in their
classrooms. The Friday
Institute training is being
paid for via grant funds the
district received, according
to Smith.
Smith said they are cur-
cently evaluating digital
content to purchase using
grant funds. The plan is to
hire teachers this summer
to write some digital con-
tent, too.

MIDDLE SCHOOLS

The current school year
is the second year of the
district's 1 to 1 iPad pro-
gram in the middle schools.
Every middle school stu-
dent has a school-issued
iPad to use. Vogelman said
the district has one more
year on the initial three-
year lease of the iPads.
Starting in April or May,
the advisory committee for
the iPad project will meet
and discuss what's working
and what needs to be done
to make the iPad project
better.
Then next school year,
the advisory committee will
have conversations about
what they want to do mov-
ing forward in terms of if
the district should continue
to use iPads or if the dis-
trict should look at some
other device.

ALL WIRELESS

Elm City Elementary
School was the last school
in the district to go to wire-
less Internet. That school
received wireless service in
December.
Over the past few years,
the district has moved to a
Windows operating system
from Novell. It's switched
to the state's content filter-
ing system called Zscales.
The district receives its In-
ternet service from North
Carolina Research and
Education Network but
still uses Greenlight for its
wide area network service.
Next school year, middle
and high school students in
the district could be issued
Gmail accounts instead of
using Groupwise for email.
Gmail accounts are free.
Bigger broadband benefits business

3,100-mile fiber optic pipeline across North Carolina is 'going to change our lives'

Mar. 22, 2014

RST Fiber, based in Shelby, has built a fiber-optic network over thousands of miles and across all of North Carolina. / Special to the Citizen-Times

Written by
Dale Neal

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Video, in particular, is driving the demand for the faster gigabit service as more businesses Skype, use video conferencing or access protected networks to transfer massive data files. And at home, as residents play ever-higher-resolution video games and stream high-definition videos or movies.

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Audience provided by Nielsen/NetRatings

**Highlights: NC, NORTH CAROLINA, North Carolina, MCNC**
Shelby firm's statewide fiber network makes NC a 'gigabit state'

By WRALTechWire

SHELBY, N.C. — RST Fiber on Tuesday activated a North Carolina-wide fiber optic network covering some 3,100 miles, thus making North Carolina a "gigabit state."

Gigabit refers to the high-speed access the network can provide and is a term often used to refer to Google Fiber's broadband efforts.

Offering up to 100-gigabit per second Internet access, the North Carolina company says it has deployed a network to support the "Internet of Everything" as described by Cisco CEO John Chambers.

The privately held, Shelby-based company is using Cisco gear to help light up the network, which is all underground.

"The network we have built is what Cisco CEO John Chambers describes as the "Internet of Everything,"" said Dan Limerick, one of three co-founders of RST Fiber.

"Our goal is to ensure that communities across the Tar Heel state and the upstate of South Carolina will have access to ultra-high-speed broadband and many other fiber-delivered services a network like this can provide, helping to level the economic and educational playing field for everyone," he added.

"We firmly believe that fiber infrastructure is the future. While Google is building in metropolitan cities like Kansas City, Mo., Austin, Texas and Provo, Utah, RST has established a statewide backbone connecting the larger metro areas, in addition to reaching a large number of rural communities. We're also deploying carrier-class, cutting-edge WiFi capable of delivering one-gigabit symmetrical wireless service network-wide."

Google Fiber has listed the Research Triangle and Charlotte metro areas as candidates for its next round of gigabit networks.

A consortium of local governments and universities also are planning a North Carolina Next Generation Network to cover the Triangle as well as parts of the Triad.

The North Carolina Research and Education Network already operates a fiber-based network across the state, but it is for non-business use. MCNC, which is based in RTP, operates the network.

However, private firms can lease unused fiber that is part of NCREN. RTI Fiber is one of NCREN's customers.

RST plans to offer a variety of services over the network in addition to high-speed Internet.

Other services that can be supported over the latest version of Internet protocol technology will include:

- uncompressed 4K television
- VoIP (voice over internet protocol)
- online education
- telemedicine
- HD video security/surveillance
- a la carte movies and programming

Video and TV services are expected to be added by the end of the second quarter, according to RST.

Limerick launched the company along with Doug Brown and Randy Revels. All are natives of Cleveland County, where Shelby is located.
County will hire broadband consultant

Dennis: ‘Stop giving our water away’

BY RITCHIE STARNES
News Editor

Economic development dominated the Stanly County Board of Commissioners’ annual strategic planning retreat Friday.

Bolstering broadband, a high-capacity transmission for Internet services, throughout the county was among the most important components for economic development. In its second and final action of the day, the board unanimously approved funding a consultant to help identify how to bring broadband here.

Stanly County is one of 18 counties across the state that is not benefiting from the efforts of Microelectronics Center of North Carolina (MCNC) to bring high-speed broadband capabilities for economic development.

“I don’t know how we got left off,” Lindsey Dunevant, commission vice chairman, said.

In 1980, the General Assembly approved funding for MCNC to help promote technology-based eco-
^{- See COUNTY, 3A

onomic development across the state.

Over the last five years, MCNC has expanded the reach of its services to non-profit and university hospitals, public safety and libraries. Through two Broadband Technology Opportunities grants and other private investments, MCNC is investing more than $140 million in a network infrastructure to meet increased demands.

“If we don’t get on board with this, we’ll ensure that we’re going backward,” Dunevant said.

Paul Stratos, director of Stanly County Economic Development Commission, suggested that county leaders keep spending money toward development in an effort to remain competitive in pursuing new industry and expansion.

Commissioners said they are prepared to spend money from the county’s fund balance to address economic development, since the consensus remains that the county cannot thrive on its residential tax base and limited commercialization.

In addition to broadband, the board identified the need to continue to enhance the county’s water and sewer capabilities. A contract is in the works for the county to buy Oakboro’s wastewater treatment plant while also expanding exist-
ing water lines.

Talks to extend sewer capacity to the Badin business park slowed when commissioners decided to request that property owner Alcoa share in the expense.

“We need to invest our money in areas where we have absolute control,” Commission Chairman Tony Dennis said.

Economist Michael Wolf started the retreat session by forecasting slow economic growth of about 2 percent.

“We don’t see growth coming back until 2015,” Wolf said.

Manufacturing, new jobs and wages remain stagnant, too, he added.

His projections prompted commissioners to express frustration about Stanly County frequently becoming shortchanged in terms of growth when the county serves as a catalyst for others.

“We’ve got to stop giving our water away,” Dennis said.

“I can sit in the dark, but I’m going to need a drink of water within 48 hours,” he added, referring the value of water in terms of development.

Stanly County sells water to Union and Cabarrus counties where there has been significant growth.

“It’s (water) our gold mine. Why don’t we mine it?” Dennis said.

Dunevant agreed.

“We’ve got to find out how to hang on to the assets that we have,” Dunevant said.

Commissioner Josh Morton said it is not fair that economically-robust counties prefer that Stanly remain a bedroom community.

“We cannot survive on a residential tax base,” Morton said.

“We need to stop playing patsy to metro counties.”

In the only other action of the day, the board voted to put a sales tax referendum on the November ballot. A proposed 1/4 percent sales tax increase could be used to fund the county’s emergency medical system and schools.

(Miss the sales tax story? See the Feb. 23 print edition of The Stanly News & Press.)

To submit story ideas, contact Ritchie Starnes at (704) 982-2121 ext. 28 or email ritchie@stanlynewspress.com.
“We’ve got to stop giving our water away. I can sit in the dark, but I’m going to need a drink of water within 48 hours.”

— County Commission Chairman Tony Dennis, referring to the value of drinking water in terms of development
Students@Work gives glimpse into today's workforce

By WRALTechWire
Tags: Broadband, Internet, MCNC, STEM education, Telecommunications and Wireless

Editor's note: The Broadband Report is a regular feature in WRALTechWire.

RESEARCH TRIANGLE PARK, N.C. – Classrooms can be microcosms of society. This week, students will get a chance to gain a perspective of the real world and put to use what they've learned in the classroom in the workplace.

About 24,000 middle school students in all 100 North Carolina counties will be taking part in job shadowing and job mentoring programs this week across the state.

Students@Work Week (March 3-7) is a joint initiative between the N.C. Department of Public Instruction and the North Carolina Business Committee for Education (NCBCE). The goal is to raise North Carolina's graduation rate by offering middle school students a look at future opportunities in the local workplace.

"Thanks to hard work from teachers and students, North Carolina recorded its highest-ever high school graduation rate in 2012-13," said State Superintendent of Public Instruction June Atkinson. "Our state's business community also plays a vital role in encouraging students to graduate by offering job shadowing and internship experiences that help them connect what they are learning in school to their career goals for the future."

About 24,000 middle school students in all 100 North Carolina counties will be taking part in job shadowing and job mentoring programs all next week.

Along with hundreds of other businesses and organizations, MCNC will be participating in the program by hosting 20 students in a job shadowing program at the MCNC campus in Research Triangle Park. MCNC is the technology non-profit organization that owns and operates the North Carolina Research and Education Network, or NCREN.

Students from Neal Middle School in Durham will spend the day connecting what they are learning in the classroom with the real world of work in their communities. They also will be joined by administrators from the Southern School of Energy and Sustainability (SES) Magnet School (grades 9-12 in Durham) as many students from Neal potentially could attend the school for high school.

After being welcomed by MCNC's President and CEO Joe Ferdinando, students will hear a brief overview of what the Internet is and how people use it in today's work place. Afterwards they will divide into groups for a hands-on network lab that will demonstrate how IP packets are routed across the Internet, thus sending content and information to a user.

There will also be a tour of MCNC's data center, the network operations center and the video operations center. The data and network operations tours will reinforce concepts learned during the lab while the video operations tour provides a behind-the-scenes look at interactive conferencing for a better understanding of the preparation required to setup the type of videoconference the students will participate in while at MCNC.

John Rollack, principal for the School of Computer and Technology Engineering at SES, and SES Principal Kenneth Barnes are scheduled to participate at MCNC and take questions from students about the school, the culture, academics as well as extracurricular activities.

Finally, students will be piled in a discussion of business etiquette focusing on many skills that will be useful in future employment, volunteer opportunities and even within the classroom.

"Students@Work is a great opportunity to introduce students to the world of networking technologies and related careers," said MCNC Director of Community Education and Communications Darlene Hoath. "MCNC is proud to work with NCBCE in this program as we remain committed to offering technologies and services that help students all over North Carolina access digital content and prepare them to live and work in a global economy."

The Students@Work initiative centers its efforts around middle school students because middle school is a crucial time for dropout prevention. The program helps to emphasize future career options as well as the importance of staying in school—before students enter the ninth-grade.

The Broadband Report is a regular feature in WRALTechWire. The next report will be posted on March 10, 2014.
COUNTY

Board seeks grant for broadband

BY RITCHIE STARNES

Stanly County leaders hope to tap into a federal grant that would help bring broadband to the area.

At its scheduled meeting Monday night the Board of County Commissioners unanimously approved applying for the broadband grant with the Federal Communication Commission under the Connect America initiative. Last month the board identified broadband, a high-capacity transmission for Internet services, as one of its top priorities toward economic development.

“This is one of the most important things we can be working on,” said Lindsey Dunevant, board vice chairman.

The FCC is offering grant funding to build broadband infrastructure in unserved and under-served areas. There is a focus on providing broadband services to anchor institutions such as schools, colleges/universities, libraries, public safety.

See GRANT, 5A

healthcare facilities, local governments and nonprofit agencies.

Commissioners said they hope to build its broadband infrastructure along the N.C. Highway 24-27 and N.C. 49 corridors.

Stanly County is one of 18 counties across the state that is not benefiting from the efforts of Microelectronics Center of North Carolina (MCNC) to bring high-speed broadband capabilities for economic development.

Randolph and Montgomery counties are also among those left out of the MCNC broadband initiative.

To submit story ideas, contact Ritchie Starnes at (704) 982-2121 ext. 28.
Trailwave Fiber Increases Northeast Georgia Residential Internet Speed to 1 Gigabit Per Second

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SOURCE Habersham Electric Membership Corporation

Northeast Georgia becomes the state’s first gigabit hub

CLARKESVILLE, Ga., March 21, 2014 /PRNewswire/ -- Habersham EMC is increasing residential internet service speed to 1 gigabit per second, adding Habersham, White, Rabun and some rural parts of Stephens and Hall counties to the nation's list of gigabit communities.

Photo - http://photos.prnewswire.com/prnh/20140321/PH88024-a

Photo - http://photos.prnewswire.com/prnh/20140321/PH88024LOGO-b

The Trailwave gigabit service is $99/month and provides access to speeds up to 500 times faster than the 1.3Mbps service offered to residents by other providers. In addition to the gigabit product, Trailwave also offers 50 Mbps residential internet service packages starting at $49.95.

"A cooperative is based on the idea of working every day for the good of our members," says Todd Pealock, CEO of Habersham EMC, "so it's simple: we want to bring the fastest, most abundant connectivity to our members."

The fiber-to-the-home (ftth) network is actively servicing approximately 1,800 customers, who could upgrade to gigabit service with only a phone call. HEMC intends to expand fiber service to all 25,000 homes based solely on customer demand.

"Outside of our current serviceable area, we will connect where there is the most demand," said Michael Foor, Trailwave Project Manager, "anyone in an extended area can get service faster by encouraging their neighbors to pre-register as well."

As a gigabit hub, Northeast Georgia can reach a broader list of business prospects, as well as support home-based remote workers and startups.

"While the network is benefiting the co-op and its members by enabling advanced electric grid communications, we also recognize it is a part of the complete infrastructure package we bring to both recruitment and internal economic development efforts," said Pealock, "we can compete with the best broadband communities anywhere in the country."

Trailwave has deployed Trailblazers into specific areas and neighborhoods to help educate residents about the benefits they can experience by making the switch. These individuals are local residents who are passionate about expanding local internet options.

Interested residents can learn more and register at trailwave.com.

Habersham Electric Membership Corporation is a non-profit, member-owned cooperative serving Northeast Georgia with clean, reliable, affordable energy and providing communications and security solutions since 1938.

In 2009, HEMC helped launch North Georgia Network Cooperative (NGN), the inaugural recipient of $33.5 million BTOP grant from the National Telecommunications and Information Administration. Combined with local and state funding, NGN lit the 1,100 mile fiber optic system across North Georgia in 2012.

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3/24/2014
Trailwave Fiber Increases Northeast Georgia Residential Internet Speed to 1 Gigabit Per Second

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SOURCE Habersham Electric Membership Corporation

Northeast Georgia becomes the state’s first gigabit hub

CLARKESVILLE, Ga., March 21, 2014 /PRNewswire/ -- Habersham EMC is increasing residential internet service speed to 1 gigabit per second, adding Habersham, White, Rabun and some rural parts of Stephens and Hall counties to the nation’s list of gigabit communities.

Photo - http://photos.prnewswire.com/prnh/20140321/PH88024

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Read more news from Habersham Electric Membership Corporation.

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New fiber installation makes North Carolina a 'gigabit state' - with or without Google

Lauren K. Ohnesorge
Staff Writer, Triangle Business Journal
Email | Twitter

Thanks to Cleveland County-based RST Fiber, North Carolina is officially a 'gigabit state,' with or without Google Fiber.

The company, which manages and develops fiber-optic networks, announced it has activated its 3,100-mile underground fiber network across North Carolina.

So I decided to ask Joe Fredosos, CEO of Research Triangle Park-based Microelectronics Center of North Carolina (MCNC), what this means for the Triangle. After all, RST leased fiber from MCNC’s Golden LEAP Rural Broadband Initiative footprint for this project. Specifically, the MCNC fiber it leases includes a route that runs up Highway 401 through Fufquay-Varina and eventually fills into downtown Raleigh.

“Historically, this is more of a win for rural North Carolina than urban North Carolina,” he says.

RST’s fiber footprint crosses the state, both through its own investments and its lease on MCNC’s network, Fredosos says.

“RST, with Cisco’s help in providing optical gear, now has a plan to put its fiber into service,” he says, adding that the company will offer wholesale bandwidth services to providers.

Fredosos calls the initiative the type of activity MCNC intended to foster when its Golden LEAP Rural Broadband Initiative came about.

“A private sector, for-profit carrier using the network to offer high bandwidth services in areas of the state that would not see these services for generations if not for the MCNC investments and work,” he says. “We are seeing more high bandwidth offerings in more places in the state because of the GLRB.”

And RST’s fiber plans are “evidence” that it’s all starting to pay off, he says.

FEMA is scared that people will hoard the #1 MOST critical item in a crisis. [VIDEO]

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Why wait for Google? Gigabit Internet coming to Raleigh soon

By RICK SMITH, WRAL TechWire Editor

Tag: Broadband, Internet, Local Firms, Startups

RALEIGH, N.C. — Raleigh and parts of the Triangle won’t have to wait for Google Fiber in order to receive ultrafast Internet access as well as an alternative to cable and phone companies-delivered TV packages.

RST fiber, a company based in Shelby, N.C., plans to offer Internet service to homes at gigabit speeds as well as a cable TV service and super high-definition video in the Raleigh area within the next 60 days.

Internet service to homes will be priced at $99 a month. TV and other service pricing details are being worked out as the company signs deals with content providers.

While Google Fiber consists of a gigabit network in the Triangle and plans projects in other regions that would not scale these Network as sought by local governments and universities, RST says its statewide fiber optic network is now operational.

Raleigh will be one of its first service areas, following deployment over the next month in south Charlotte. Asheville will receive service by the same time frame, according to co-founder and CEO Dan Lemanick. Some areas of the Triangle outside of Raleigh also will be added to the RST network, but Lemanick did not specify locations.

"The 5G network is here," Lemanick said joyfully in an interview Monday. "This network will enable the Internet of Everything.

The latest wireless technology is described as "5G." Lemanick pointed out that the RST network provides high-speed internet as well as a variety of other services and is fiber-to-the-home wirelessly connect from network nodes into homes.

The Internet of Everything

John Chambers, chairman and CEO of network giant Cisco Systems, helped coin the Internet of Everything term, which includes all so-called smart devices, from phones to TVs to thermostats, that include Internet addresses and can be controlled over networks. Chambers has described the Internet of Everything as a $15 trillion billion opportunity.

RST, which privately held, utilizes Cisco technology to operate its network. Lemanick expects the network to support telemedicine, online education and a wide variety of other services that can benefit from faster connectivity.

The company is also using the latest Internet access technology, callediPON, which offers more security and the capacity to support what Google Fiber calls its "network of the future." The fiber optic network is now operational.

RST's network stretches from the coast to mountains and covers some 3,000 miles, thus making North Carolina a "gigabit state," Lemanick said. "It's the first such statewide network that we know of," he added.

Lemanick won't discuss how much the network has cost to build to this point other than to say he and his partners "have invested less than a nickel" in their launch fund.

Other fiber optic networks exist, generally in so-called rings around cities or neighborhoods, and Time Warner Cable has a multi-state fiber network backbone. However, RST is promising to deliver what other networks do not:

- Internet into the homes at gigabit speeds
- TV viewing based on what cars may rather than packages
- Uncompressed video, including so-called 4K which is nearly twice the resolution of standard high definition

A gigabit speed would be 100 times faster than a standard cable internet access, according to Google, citing a 2013 industry study. Google says the average American only experiences speeds of 9 megabits per second, while Google Fiber offers 1.000 Mbps "download and upload.

Leveraging North Carolina Research and Education Network

North Carolina's first statewide fiber backbone network went live in 2013 – the North Carolina Research and Education Network or NCERN. The fiber backbone connects the UNC system and University of North Carolina at Chapel Hill and Greensboro to the Golden LEAF economic group as well as federal funds. NCERN is run by UNC and is for non-commercial use. The network cost some $140 million.

However, NCORN does have so-called "dark fiber" to commercial providers such as RST, and much of the Shelby-based network utilizes the NCERN backbone.

Joe Fredrick, CEO at MNCIC, is very familiar with the RST network and said that businesses as well as consumers will have access to a wide variety of services.

"RST has a foot footprint that traverses the state, through their own infrastructure, and through the use of fiber on the Golden LEAF Rural Broadband Initiative (GLRB) footprint. RST, with Cisco's help in creating optical gear, now has a plan to pull into fiber service and beginning to offer fiber-to-the-premises services, video and other services to consumers and businesses across the state," Fredrick told WRAL TechWire.

"In addition they will offer wholesale bandwidth services to (other providers) statewide.

Reaching Rural Areas, More Choice Are Motivators

RST launched in 2012 and has constructed a part of its own fiber loop while leasing from other providers. Lemanick said the company launched with the promise of bringing high-speed Internet and related services to rural areas that have been bypassed.

"This is not about making money, although we expect to make money," Lemanick said.

Another driver is the ability to deliver TV and entertainment geared to consumers' wishes rather than through packages offered by such companies as Time Warner Cable and U-verse from AT&T.

"Why would I want 250 channels," Lemanick said. "We want people to pick what they really want for news, sports and entertainment.

RST also wanted to build a network in the IPv6 technology in order to support more rapid growth and use of Internet devices, he added.

Our time, Lemanick said the company will expand to "middle mile" offerings – extension of the fiber backbone into communities and neighborhoods. "The last mile" to consumers will be WiFi.

Business connectivity also will be offered, but each package will be priced individually based from fiber hubs and expected demand, Lemanick added.

A Payout for MNCIC's Network Bet

Fredrick said RST's commitment to rural areas is a payoff on the bet MNCIC placed in expanding NCERN across the state.

"This is the peak of actively MNCIC contemplated in the commercial sector when we built the BBT (Broadband Broadband Opportunities Program) funded GLRB," he explained. "Apart a private sector, for profit carrier by far, the network offers high bandwidth services in areas where limited broadband service exists for generations due to the MNCIC investments and work.

We are seeing more high-bandwidth offerings in more places in the state because of the GLRB's RST's footprint around the state and now their detailed plans to light this fiber floor is evidence that the GLRB/TBOP investment is beginning to pay dividends.

Lemanick said he entered RST along with Doug Brown and Randy Revell. We are natives of Charlotte County, where Shelly is located. Revell is a longtime Time Warner Cable engineer who designed the RST network and serves as the company's chief technology officer.

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FOCUS ON THE CLASSROOM

Universities team up to link teachers with hands-on tools

BY JACKIE STARKEY

PINE KNOLL SHORES — Science has found a new way into local classrooms, fresh from the source, thanks to the second annual Science Research and Education Network event, SciREN, hosted Thursday night at the N.C. Aquarium at Pine Knoll Shores.

Organized by a group of local university students, 120 educators got the chance to speak with locals from the marine community, while grabbing lesson plans and classroom-ready materials.

"This is about bringing that focus back to science in our classrooms," said Kerry Irish UNC Institute of Marine Science communications and outreach coordinator.

See Science / Page 2A

"It really provides for those teachers who have many other things to cover, or are unsure on a topic, or simply just don’t have the materials and time to cover areas of interest."

Arrayed as a science fair for professionals, teachers had the chance to stroll the aquarium connecting with researchers studying topical interests on the Crystal Coast.

The event, co-sponsored by the UNC IMS and Duke University’s Nicholas School of the Environment Duke Marine Lab, expanded to run the length of the aquarium this year.

Eighty area scientists showcased booths with their studies, furnishing educators with pre-made lesson plans and experiment ideas.

"There is an interest in scientists in getting their science out to the public," said SciREN founder Ethan Theuerkauf. "So I think something like this ... makes it efficient to come to one place and talk to a lot of teachers."

Booths and topics included marine parasitology by Joe Morton, marine protected areas by Stacy Zhang, remotely operated vehicles by N.C. Science House representative Patrick Curley and more.

"I really wanted to gather some lesson plans and activities I can use in the classroom," said Patricia Rodriguez, a biology teacher at Croatan High School. "Mainly, because what I’ve found is when I present (the students) with peer-reviewed articles and things that are locally based, they have a greater interest. It makes it relevant for them."

Area researchers providing real-time data and information gathering from areas students are familiar with spike interest she said, connecting students who might otherwise show disinterest in the sciences.

"It’s worth my time to come to these events," said Maria Ostendorff, a seventh grade life science teacher at Ravenscroft private school in Raleigh. "I was looking for things that we could incorporate in our science in Raleigh ... we have all kinds of water issues going on there right now."
In January, a handful of the scientists attended a teacher-led workshop, aimed at information sharing to aid in the construction of classroom materials.

"They were really responsive. They listened to us and then went back to their homes and did all of the hard work and produced the lesson plan," said Ms. Rodriguez, who assisted with the January seminar. "It was just seamless."

The evening seeks to enrich the student experience, while relieving the burden of educators to become experts in all fields, said Ms. Irish, by instead utilizing the existing scientific community.

Ms. Rodriguez said she found several activities over the course of the event that mesh well with state biology standards she has to instruct on anyway.

"I'm excited to just throw it at them and say 'test drive this. Tell me what you think,'" she said.

Beyond providing for educators, the event focuses on creating relationships between area teachers and scientists.

"It's kind of a win-win for scientist and teachers," said Charles Bangley, a researcher and PhD student at Eastern Carolina University. "The scientist, we get more outreach for our research projects and then teachers, they need all the help they can get."

Mr. Bangley who works on shark tagging project out of ECU, prepped a lesson using the shark's locator pings to allow high schoolers to study the migration patterns and movements of several species, and explore the environmental impact of the creatures.

"(This) is a great way to really bridge that gap between research and the teaching of the science," he said.

Local marine biologist and business owner, Jess Hawkins, came out to SciREN to spread the word to teachers about his Crystal Coast Ecotours and field trip opportunities he could provide.

"What better way (to educate) than to let teachers know what's available to them," he said. "We raised our kids here, the schools system is great. What a great idea to try and connect future generations with the marine labs and the government institutions here."

The opportunities to meet and greet, supplying teachers with possible classroom visitors and field trip options are a valuable aspect to SciREN, organizers said.

"I love to go to these workshops because of the networking. You get good materials, but talking to other teachers is just invaluable," said Ms. Ostendorff.

Mr. Theuerkauf partnered with UNC IMS PhD student Justin Ridge last year to host the first SciREN as a viable connector between the disciplines.

"It was a real effort to let people know we have a very science-rich area right here, in Carteret County," said Ms. Irish.

As for the pilot event and the locals that attend, the show will go on next year with SciREN 2015.

Duke University Marine Lab grad student Yasmine von Dassow, left, describes sensory biology of Invertebrates to St. Paul's Catholic School's Samantha Hamill, of New Bern, as she peers into a microscope. (Dylan Ray photo)
Dr. Johanna Rosman, left, with the Institute for Marine Sciences, sits with a group of teachers as grad student Jie Gao pours different colored batches of water into each other at different temperatures to illustrate salinity levels on Thursday at the N.C. Aquarium at Pine Knoll Shores during SciREN, a scientific research and education network seminar. (Dylan Ray photo)
Tina West with Craven County Schools, far left, chats with UNC Institute of Marine Sciences technician Emily Pickering about data collection along the sea floor on artificial reefs off of the N.C. coast and how to make a connection with students and retention of the information. (Dylan Ray photo)
Philanthropy

- Triangle-area Belk stores are partnering with Durham Habitat’s Playhouse Program. The program is a collaborative effort of local corporations, the community and Habitat volunteers who together build and donate playhouses for local families and service organizations that work with children. Belk has donated $2,500 for each playhouse to offset the cost of building materials to fund the construction of actual Habitat projects. The finished playhouses will be on display at each participating store until Belk’s “Charity Day” on May 3rd. After their public display, the four playhouses will be donated to SAFEchild, Marbles Kids Museum, Durham’s Partnership for Children, and InterAct.

- The American Advertising Federation, Raleigh-Durham Chapter announced that Capitalist will be the title sponsor of What We Do, You Can Tool, a program to connect high school students with professionals in advertising related businesses.

- Fifteen attorneys from Cranfill Sumner & Hartzog participated in the N.C. Bar Association’s annual 4ALL Statewide Service Day. Attorneys in eight locations answered calls to provide legal information and referral resources to callers with North Carolina related matters.

- The Eno River Unitarian Universalist Fellowship donated $5,275 to two organizations that help LGBT youths and work to prevent and end homelessness. INSIDEeUT received $2,147 and Housing for New Hope was given $3,128.

- The Research Triangle Regional Partnership announced the initial sponsors for the 2014 State of the Research Triangle Region event on May 22 at the Sheraton Imperial in Durham. This year’s presenting sponsors are PNC and the Research Triangle Foundation. Duke Energy is a platinum sponsor, and EDGE is a gold sponsor. Silver sponsors include Biogen Idec, Electric Utilities of North Carolina, NAI Carolantic and Siemens. Bronze sponsors are Bank of America, Berkshire Hathaway HomeServices York Simpson Underwood Realty, Blue Cross and Blue Shield of North Carolina, Campbell University, Cisco, Piedmont Natural Gas and Raleigh Economic Development. First Citizens Bank, Kilpatrick Townsend & Stockton and MCNC are networking sponsors.

- The Just in Queso Foundation, Tijuana Flats’ nonprofit organization, raised $860,000 in 2013, including $319,066 through its two primary annual campaigns. The organization raised $250,000 for the Breast Cancer Research Foundation by selling pink tacos and hot sauce at all Tijuana Flats restaurants. Additionally, more than $2 million was raised for the local communities where Tijuana Flats restaurants are located and team members have collectively donated over 5,000 hours of volunteer service. Organizations that benefit from funds include Kids Beating Cancer, the Headstart program, our military overseas and others.

News about philanthropic efforts should be sent to Business News Desk, The News & Observer, 25 S. McDowell St., Raleigh, NC 27601 or email arue@newsobserver.com.