BUSINESS
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Technology Supports Growth at Upper Mountain Research Station

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SMART RURAL COMMUNITY

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Growth can begin with a seed or a service. This October issue of *Business Connections* includes a combination of agricultural and technological content, and reflects our commitment to helping all kinds of businesses grow.

Smart Farm Technology Meets Growing Needs, as you'll discover on page 3. This includes a wide variety of devices, equipment and software—all powered by robust broadband connections, such as the ones provided by SkyLine/SkyBest.

The agricultural theme continues on pages 4 and 5 with a **Business Spotlight on Upper Mountain Research Station**. Located in Ashe County, its 454 acres are home to a diverse research program, studying topics ranging from Christmas trees to cattle. SkyLine/SkyBest has been privileged to provide communications services to UMRS since 1958 and brought game-changing fiber internet to its facility in 2014.

Does Your Business Have a Technology Plan? We hope it does, for reasons you'll learn on page 6. Technology remains the focus on page 7, with a look at why **We're in a Transformative Era for Fiber Deployment** due to federal funding and the evolution of fiber technology.

Whether your business grows seeds in the soil or grows services for your customers, we're here to support you. Contact SkyLine/SkyBest, and let's get growing!

Sincerely,

Kim Shepherd

Kim Shepherd
Chief Executive Officer

ON THE COVER:
(Front row, L to R) SkyLine/SkyBest Business Sales Executive Haleigh Seamon, SkyLine/SkyBest Inside Sales Coordinator Hollie Brown, Upper Mountain Research Station Superintendent Tracy Taylor, SkyLine/SkyBest Business Sales Executive Zara Worley and SkyLine/SkyBest Inside Sales Coordinator Robin Miller.

(Back row, L to R) Upper Mountain Research Station employees, Alex Addison, Jimmy Church, Martin McVey, Nathan Davis, John Council, SkyLine/SkyBest Business Sales Technical Consultant Justin Dalton, Upper Mountain Research Station employees Matthew Carson and Eddie Burns.

Photo credit for local images: Todd Bush

Smart Farm Technology
Meets Growing Needs

It optimizes use of natural resources, increases crop yields and more

According to a United Nations report, the current world population of 7.6 billion is expected to reach 8.6 billion in 2030 and 9.8 billion in 2050. To meet the demands of this growing population, the agricultural industry will increasingly use smart technology in the next few decades.

By farming smarter, growers can significantly increase efficiency, with greater output (crop yields) produced for less inputs (seed/fertilizer) per acre of land. They can also reduce the percentage of manual labor, lower financial costs, preserve natural resources and minimize the impact of climate change.

Smart technology in agriculture includes a wide variety of devices, equipment and software—all powered by robust broadband connections, such as the ones provided by SkyLine/SkyBest. Here are examples in key categories:

Real-Time Kinematic Technology (RTK) is a technique that enhances the accuracy of Global Navigation Satellite System positioning by using a fixed base station and a mobile rover. RTK can achieve centimeter-level precision, which is ideal for applications such as precision agriculture, surveying and mapping.

Precision Agriculture (PA) is a farming management concept based on observing, measuring and responding to inter-field and intra-field variability in crops. PA is also sometimes referred to as precision farming, satellite agriculture, as-needed farming and site-specific crop management.

Autonomous Machinery refers to self-driving farm equipment that performs its duties without an operator sitting in the cab. Autonomous tractors have been designed to process and calculate their own position and speed, and to avoid obstacles in the field such as humans, animals and objects.

Farm Management Software automates business management, record keeping and accounting for farms and agribusiness.

Water Management Technology is a new generation of irrigation hardware designed to help growers make better use of their water resources. For example, onboard center-pivot cameras and aerial surveillance now keep track of insect and disease pressure in real time while the machine also monitors overall crop health through measures of nitrogen uptake.

The SkyLine/SkyBest fiber network can support these applications in our service area. Call us at 1-844-SKYBEST to discuss the internet needs of your farm or ranch, including Wi-Fi network installation on your property.

Upper Mountain Research Station's Tracy Taylor and Nathan Davis show SkyLine/ SkyBest's Zara Worley the Fraser Fir Christmas Tree Nursery.

Upper Mountain Research Station

For 80 years, this land has produced answers

Tracy Taylor is superintendent of North Carolina State University's Upper Mountain Research Station. His interest in the 454 acres of land in Ashe County took root when he was a child and his grandfather, Dan Taylor, was the superintendent.

"I worked at UMRS as a seasonal employee in high school, joined the permanent staff in 2006 and was promoted to superintendent in 2013. I continue to guide the station to meet farmers' ever-changing needs," said Taylor.

From Christmas Trees to Cattle

Founded in 1944, UMRS has an elevation of 3,200 feet, making it the highest research station in the state. Given its colder climate, much of the research has been on cold tolerance and forage management. The variety of research reflects the diversity of agriculture in the mountains of Northwestern North Carolina and includes:

- **Christmas Trees** - Northwestern North Carolina is the major producer of the Fraser Fir Christmas tree. UMRS research focuses on Fraser Fir issues such as needle retention, shearing practices, integrated pest management and post-harvest quality. A transplant production program is underway to produce a high quality, disease-free transplant in a shorter time than in traditional outdoor settings. UMRS also has a Fraser Fir seed orchard using genetically advanced material from the breeding program at NCSU.

- **Burley Tobacco** - Studies have included projects in breeding, fertilization, insect control, disease prevention, weed control and no-till system development.

- **Pumpkins** - Researchers run a variety trial each year while other research involves fertility, spacing, timing, and disease monitoring.

- **Forage** - Livestock work is centered on the utilization of forage, and management- intensive grazing experiments are conducted with the cattle.

- **Livestock** - UMRS has a resident herd of beef cattle and houses cattle from other stations during the summer months. Cool temperatures and quality forage lead to a higher conception rate in dairy and beef cattle, therefore increasing the number of calves and reducing feed costs.

Technology Supports Growth

To support the research program, UMRS has 33 buildings, eight permanent employees and two seasonal workers. UMRS also has a strong working relationship with SkyLine/SkyBest, having been a customer since 1958.

> " *In 2013 we were using paper and pencil to collect research data and decided to migrate to electronic data collection. SkyLine/SkyBest installed fiber in 2014, and we covered the bulk of our land mass with wireless internet.* "

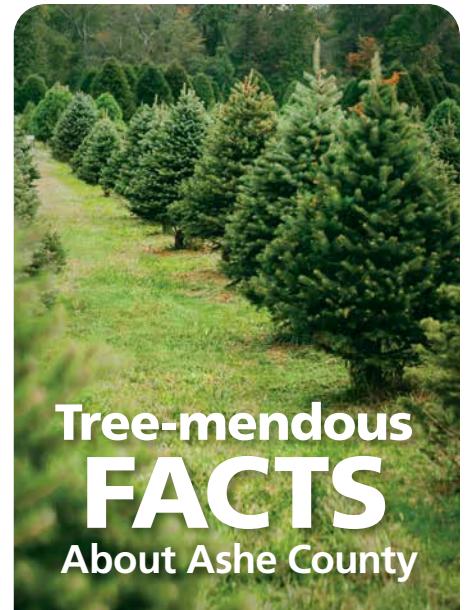— TRACY TAYLOR, SUPERINTENDENT, UPPER MOUNTAIN RESEARCH STATION

"In 2013 we were using paper and pencil to collect research data and decided to migrate to electronic data collection. SkyLine/SkyBest installed fiber in 2014, and we covered the bulk of our land mass with wireless internet. We later increased our internet speed to 600 Mbps, which made a significant difference in the speed of the Wi-Fi in the field. All our data is now collected and recorded in the field, and every keystroke is saved to the cloud instantly," said Taylor.

He added, "We use GPS guidance in our tractors for spraying, fertilizing, etc. The internet service makes our GPS devices more accurate when mapping our fields and laying out research plots. Before our internet upgrade, we only had internet service in our main office. With the increased speed of fiber, we're pulling the internet into five additional buildings. We also have cameras in remote areas of the station, for security reasons and to keep an eye on our animals."

In addition to fiber internet, SkyLine/SkyBest provides a hosted VoIP system to UMRS. What does Taylor appreciate about it? He replied, "These days everyone carries a cell phone. The VoIP system allows our office manager to transfer a call to any of our staff members even when they're not in the office. When I travel, calls can be transferred to me just as if I were on the station. I also like the voicemail messages coming to my email. It's a handy way to manage them."

Taylor noted that UMRS has experienced very few issues with either the internet or phone service. However, when he calls SkyLine/SkyBest, someone will come out the same day if needed.

"Customer service is second to none," he said.

SkyLine/SkyBest's Justin Dalton works with Tracy Taylor and Martin McVey from UMRS on the increased speed of SkyBest Fiber Internet Service.

Tree-mendous FACTS
About Ashe County

Home to roughly
12,000 acres
of Christmas trees

Approximately
20 million
Christmas trees
are in production

Ashe County has sent
7 Christmas trees
to the White House,
more than any other
U.S. county

Trees and greenery
contribute over
$85 million
annually to
Ashe County's economy

Its Christmas tree
farms provide more than
700 local jobs
year round

Does Your Business Have a
Technology Plan?

Think strategically about hardware, software and technical support

A technology plan is similar to a business plan, financial plan or human resources plan, in that it helps you tie a specific area of your business to overall business goals. A technology plan can help you think about the future, allowing you to prepare for your company's upcoming needs and grow as technology changes over time. Your company needs a technology plan, no matter its size or offerings, and whether or not it specializes in technology.

Benefits of a Technology Plan

With a technology plan, your company can proactively adapt to, and keep up with, technological advances, which is beneficial in a number of ways:

- You'll be more likely to meet technology goals if you have them. A technology plan is where you can record such goals and track their progress.

- Your business will have the right equipment to meet new customer demands.

- You'll be ahead of the technology curve, signaling to customers that you're competent in other areas of your business as well.

- You'll have a budget for purchasing new technology, so these expenses won't come as a surprise and throw off your finances.

- Your business may attract younger workers to whom up-to-date technology is not just an added bonus, but expected.

- You may save money. By not planning ahead, you risk having technology that becomes obsolete and needs to be replaced every few years. Thinking ahead and investing in better equipment can also result in fewer problems and less time and money needed to deal with them.

How to Get Started

The first step in building a technology plan is to assess your company's current technology. Ask for feedback from both customers and employees to see what needs to be improved. Look for areas of your business that could use more technology to make the work more efficient. Also, look for places where you may have technology that you don't need (for example, printers in a paperless office).

Next, think about what you want to accomplish in your business and how technology can help. Set goals accordingly. Make sure to consider the feasibility of the goals, including how much time and money it will take to complete each one. Consider what technology might be needed if your company grows and how technology may change over time.

After you create the plan, it's time to start implementation. Don't forget to revisit and revise it each year.

Technology plans help businesses reach their goals. For more information about how SkyLine/SkyBest can help meet your technology needs, call 1-844-SKYBEST.

We're in a Transformative Era for
Fiber Deployment

The Fiber Broadband Association estimates that nearly as much fiber will be deployed in the U.S. between 2024 and 2029 as has been deployed throughout history. This infrastructure transformation is being driven by significant federal investments combined with innovations in technology and changes in consumer demand.

In 2023, promised federal funding for infrastructure began flowing, injecting new vigor into broadband expansion and infrastructure modernization. The $1.2 trillion Infrastructure Investment and Jobs Act provides money for fiber network projects in areas not yet served by broadband and includes a separate provision for underserved locations in high-cost areas. An estimated 11.8 million locations—households and businesses, rural and urban—are considered either unserved or underserved.

The Infrastructure Investment and Jobs Act isn't the only program helping to fund broadband projects. The Broadband, Access and Deployment (BEAD) program provides $42.45 billion to expand high-speed internet access through the planning and deployment of broadband infrastructure in all 50 states, and the Rural Digital Opportunity Fund (RDOF) is awarding $20.4 billion worth of funding to expand broadband connectivity to the most rural areas of the country.

Another factor in the growth of fiber deployment is the evolution of fiber technology, which continues to provide faster speeds, lower latencies, improved resiliency, greater security and more flexible applications. For example, a record-breaking 800 Gbps data rate was recently transmitted at a distance of 4,887 miles using a single wavelength of light.

Remote working during the pandemic caused demand for high-speed network connectivity to increase, and it's continued to climb since. In the business world, there's been an explosion of data-intensive applications such as cloud computing, generative AI and the Internet of Things (IoT), which all rely on fast and reliable data transmission. In addition, consumers are engaged in more data-heavy leisure activities like video streaming and online gaming.

SkyLine/SkyBest has been deploying fiber in our service areas since 2004 and continues to expand the reach of our fiber network. To learn what fiber-optic internet speeds are available to your business, call 1-844-SKYBEST.

Tips for Using ChatGPT at Your Business

ChatGPT is a generative AI chatbot, developed by OpenAI, that can develop responses to almost any written prompt. It uses advanced machine learning techniques to "learn" language from huge amounts of online data.

There are many ways to use ChatGPT at work. For example, ChatGPT can function as a writing assistant and provide a rough draft of a customer email, newsletter article, social media post or blog. It can also help you digest a highly technical or complex topic by giving you a succinct, clear overview in layman's terms.

However, there are potential pitfalls to using ChatGPT, so follow these best practices:

- Fact-check and proofread. ChatGPT knows a lot about almost everything. Even so, it's not perfect. Always fact-check the output of ChatGPT and proofread to catch any writing errors. Remember, it's a starting point and not finished text.

- Push the program. If you're not satisfied with an answer from ChatGPT, give it a revised prompt and ask it to try again to better match your desired outcome.

ChatGPT is free to use, and you can access it by visiting chat.openai.com and creating an OpenAI account.
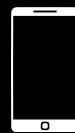
SkyLine **SkyBest**
Hosted Voice

Zara Worley

Haleigh Seamon

Cost Savings

Scalable

Mobile

Robust Features