

BEYOND TOBACCO

Project Purpose

Greene County is a small rural county in eastern North Carolina. Driving through Greene County, one sees expansive farmland, deserted and decaying tobacco barns, livestock operations, and rural scenery. **Predominantly agrarian, Greene County has been ranked as the county most dependent on tobacco production in the state, and the second most tobacco dependent county in the nation.** Generations of Greene County farmers have harvested and sold flue-cured tobacco, and enjoyed the prosperity of the state's \$14.8 billion industry.

In recent years, the tobacco industry has seen significant decline in popularity and prosperity. US tobacco sales plunged from \$47.7 million in 1990 to only \$18.9 million in 2000, and the numbers continue to plummet. As the demand for tobacco has fallen, the number of unemployed has risen. In 2003, the unemployment rate in North Carolina was 6.5%, or 0.5% above the national average. In rural Greene County, almost 15% of the total population lost their jobs between 1998 and 2002 alone.

The economy in North Carolina is clearly changing and workers must adapt to a new economic order. For the first time, long-term tobacco farmers are looking at an economic future beyond tobacco. A 1999 survey showed that an unprecedented 30% of North Carolina farmers expected to give up tobacco farming in their lifetime, and 68% were interested in expanding to other enterprises. But, are the residents of Greene County prepared for a future beyond tobacco?

The US Department of Commerce estimates that 95% of all new jobs created require significant computer skills. In 2000, North Carolina ranked 45th in the nation in terms of the percentage of households with computers and 46th nationally in the percentage of households with Internet access. In Greene County, less than 40% of the households have access to a broadband network.

According to the North Carolina Rural Center, by the year 2005, US businesses will demand that 75% of workers will have one to two years of education beyond high school. In Greene County, a 2002 survey showed that 34.6% of adult workers have less than a high school education and only 8.2% have a Bachelor's degree or higher.

The State of North Carolina and Greene County, in particular, have charted a course to counter these disheartening statistics. In his 2001 inaugural address, North Carolina Governor Michael Easley announced an agenda that includes the promotion of economic prosperity with an aggressive development strategy designed to bring high-skilled jobs and a high-tech infrastructure, and the development of a workforce prepared to meet the demands of a global economy. The leadership in Greene County knew that in order to be a part of any State strategy, they would have to take local-level steps to boldly go where they had never gone before – namely, to create a technology-friendly infrastructure accessible to the entire county.

In 2003, Greene County initiated an innovative and grassroots approach to education by providing every middle school and high school student and teacher with an Apple laptop computer. Project iTech aims to prepare the workforce of the future through bilingual technology training beginning at the middle school level. Students research school subjects, compile data, and investigate training and higher education options. Their parents and siblings also receive instruction and benefit from evening use of guided and non-guided technology.

The **Beyond Tobacco** proposal will build upon the existing benefits of Project iTech and expand Project iTech to connect low-income working people and struggling small businesses in Greene County to economic opportunity. With TOP support, we propose to develop a robust wireless broadband network through which we will provide new online resources to help parents and small businesses to move beyond their traditionally tobacco-focused jobs and small business opportunities. Specifically, our proposal includes:

- **Creation of a Broadband Wireless Network** - Though Project iTech focused primarily on equipping students with access to technology, **Beyond Tobacco** will expand this impact to bring technology to students, parents, and all members of the community. Utilizing Motorola Canopy™ technology, Greene County will create a secure, flexible, reliable wireless solution for extending broadband networks.
- **Development of Online Resources:**

Entrepreneurial Opportunities on the Farm - In conjunction with NCSU Cooperative Extension, we propose to create an online resource which captures and organizes alternative options for tobacco land and machinery. Services will include but will not be limited to online farm accounting instruction on Quick Books or similar programs, budgets for new crop production that would enable the farmer to determine the feasibility of alternative crops, links to product markets and value added resources, links to capital, grants and other financing opportunities, connection to the Chicago Board of Trade to contract crop/livestock futures, participation in a Virtual Farmers Market, and establishment of an agricultural equipment “E-Bay”.

For example, a farm family that currently envisions little prosperity beyond tobacco can utilize technology to learn about alternative crops, such as kenaf or specialty crops for the bio-pharmaceutical industry, contract with markets to sell their product, obtain “touch of the button” information on innovative growing and harvesting methods, and communicate with other farm families to keep abreast of farming technologies. Wives can create an agricultural cooperative to sell food products and crafts.

*A Greene County farmer has made the transition to non-tobacco farming. He has invested in livestock and has constructed a greenhouse to grow organic produce, edible flowers, cut flowers and herbs. Currently, his home is 5 miles from his greenhouse, which is 7 miles from his roadside stands. Wireless technology and **Beyond Tobacco**'s online resources would allow him to research more efficient growing methods, check real time demand for his produce, and market more effectively – from home, greenhouse, or roadside stand.*

Non-Agricultural Entrepreneurial Opportunities - For those interested in non-farming opportunities, and in partnership with existing small business centers, Greene County will create an online tool that provides information and resources to form new, mobile businesses. This online tool will provide links to detailed information and resources that can be found on the ground and on the web, including practical, sector-leading guidance in starting a business, expanding a business, getting capital, and increasing sales. We will also create a place to share thoughts, ideas, and advice with an online chat room. Content that will be available at the “Entrepreneur Center” includes building a business plan, pricing goods and services, locating local, regional, state and federal resources, improving cash flow, coping with

growth, using technology to build business, training workers and handling human resource issues, protecting assets with insurance, and marketing on a small budget.

*Recently, downsizing at a local tobacco processing plant left another Greene County resident without a job. He transformed a hobby of making fishing lures into a small business and has been successful in marketing his product to local sporting goods stores. Now that he is ready to expand his business, **Beyond Tobacco's** Entrepreneur Center can help him write a business plan, build a web site, increase inventory, and ship from his home.*

Career Development Program for Alternate Living Wage Opportunities - To help the farm workers and others who are interested in additional employment opportunities, we will create a comprehensive, online career development program specifically tailored for lower-income workers in a changing economy. This online tool will help people to identify living wage jobs in their communities that match their skills and interests, map plans for setting and reaching these career goals through local training and educational opportunities with the ultimate goal of achieving economic self-sufficiency. Interactive, simple to use and easy to read, this resource will allow participants to take an interest inventory and browse through personal profiles of people in living wage jobs to learn about potential careers. Using the career development program, participants will be able to identify personal and professional skills and lifestyle needs, match skills and needs with existing careers and jobs, receive assistance in developing a resume, contact prospective employers and send resumes directly to human resource staff, explore and plan for educational and training opportunities, access moderated forums and bulletin boards, and archive interests, applications, resumes, contacts, education and training opportunities in a personalized notebook.

*A third Greene County resident was employed as a tobacco manufacturing plant engineer when he was laid off. A husband and father of four, he has been actively seeking a job outside the tobacco industry. The Job Center at the Community College offers several online resources, but is only open two days per week. The wireless network and career tools available through the **Beyond Tobacco** project would allow him to research new job opportunities, revise his resume, and access online training identified on the web site seven days a week – more than tripling the time he can currently spend on these activities.*

The **Beyond Tobacco** project will result in infrastructure deployment throughout Greene County, a significant and measurable increase in the technological skill level of the adult workforce (particularly in the agricultural arena through re-skilling and application of technology to existing work processes), and a definitive causal link between the investment in information technology and training and economic development benefits, such as job creation, increase in entrepreneurship, and increased economic wealth at the county and family levels.

Finally, while the **Beyond Tobacco** project will improve the economic well-being of rural tobacco farmers, the structure and content areas are fully transferable to other populations. Once implemented and proven effective, we expect this program to be replicated in other isolated, rural and/or agriculturally dependent areas which are struggling to adapt to a new economy. In addition, this project will have immediate impact on the counties surrounding Greene, as other farmers become aware of the changes this project has brought to their contemporaries.

Innovation

In an April 5, 2004 speech, President George W. Bush commended North Carolina, saying, “We’re in a period of historic economic change. It’s an economy where technology is transforming just about every job. We’ve got workers here (in North Carolina) who hold jobs that didn’t even exist a few decades ago. For an economy that was based upon tobacco, and, to a certain extent, textiles, you’re now on the leading edge of technological change.”

As the President noted, metropolitan areas of North Carolina are successfully moving into a technology-based economy. Unfortunately, Greene County and other rural counties are struggling to make this transition. Without significant and creative efforts to assist these rural counties, the digital divide that currently exists between metro and rural areas will continue to grow. The **Beyond Tobacco** project uses the power of innovative technology to bridge the divide and bring rural workers into the economic mainstream.

Technology

In Phase One, Wavelength will engineer, deploy and manage an innovative, completely seamless last mile solution for Greene County that delivers broadband to 100% of the families participating in the iTech project and an overwhelming majority of the remaining citizens. Phase One will demonstrate the ability to reach remote areas by initiated service in Walstonburg, an area in Greene County that currently has no broadband service. This phase will include the availability of commercial grade service to the planned industrial park, residential service to all homes and local farms, and Wi-Fi walk-about service covering Main Street Walstonburg.

The **Beyond Tobacco** broadband network will be built around an existing fiber optic and microwave backbone that is readily expandable to meet the future needs of Greene County. The system will feed multiple delivery platforms that, when complete, will enable broadband to be available virtually everywhere in the county. **One of the key components of the network will be the use of the, not yet released to the general public, Motorola 900 MHz final mile product. This innovative product will be deployed as part of a Beta Test Program with the cooperation of the Motorola Canopy Group.** Wavelength will also include the creation of Wi-Fi “hot zones” throughout the county wherever groups of people congregate. The availability of universal broadband and the hot zones will strengthen the community and will protect the citizen’s rural way of life while delivering them to the forefront of a knowledge-based economy.

This initial deployment will be limited in scope only and will demonstrate how the broadband network will be deployed throughout the remainder of Greene County. The network will be a model that shows rural communities nationwide a successful way to bring broadband to all of their citizens. Key results from the creation of the **Beyond Tobacco** network includes broadband availability to all iTech families, support development of county wide e-strategies including improvement of connectivity, increased access, lower costs, enhanced human capacity development, knowledge creation and sharing, fostering enterprise, jobs and entrepreneurship, strengthening of universal participation in global economies, and support of local content and applications development.

Online Resources

The **Beyond Tobacco** online resources will be developed in response to the needs of a changing rural economy, and advances thinking and practice in workforce transition in three ways. First, it

builds on the successes and learns from the failings of other programs. Unlike programs which bring technological infrastructure to rural areas, like the Nebraska CyberSeed project, or which offer primarily entrepreneurial assistance, like the New York City Public Library and the Minnesota Rural Partners, the **Beyond Tobacco** project is unique in that it will both create a technological network and will utilize that network to collect, develop and organize online resources to aid low-income, rural workers in improving their economic situation. In addition, building on the success of the Bay Area Video Coalition, the **Beyond Tobacco** project will personalize participants' career and business development experience.

Second, the **Beyond Tobacco** project will synthesize existing resources to create an inventive one-stop portal for users. Our team recognizes that many tools and resources currently exist online, but are difficult to find and access for those unfamiliar with technology. Our portal will provide step-by-step direction to these resources. Furthermore, through this program, Greene County residents can develop skill sets to enhance their professional viability, and can build, enhance or reconfigure their on- or off-farm businesses – all from one starting point, and all from their own homes.

Third, while other projects, such as the Tennessee Jubilee project, assists rural entrepreneurs, our team is intimately familiar with the unique issues facing a tobacco-dependent workforce and proposes to develop online content tailored to Greene County's workers. Like the ACEnet project in Ohio, **Beyond Tobacco** will encourage economic development collaboration among participants. Unlike ACEnet, this project will offer a range of economic development ideas and opportunities – from organic crops to free-range livestock to non-agricultural businesses. The team-generated content will help tobacco farmers consider their agricultural and non-agricultural employment options, and provide detailed assistance for transitioning from a tobacco-based livelihood.

The **Beyond Tobacco** project will change lives. Families whose current vision of the future includes only a declining tobacco market and dimming economic prospects, will be able to truly consider many other non-tobacco options for themselves and their children in just a few short years.

Community Involvement

No man is an island and neither is Greene County. Despite its rural, agrarian, almost insular history, Greene County is reaching out to local and national partners, and soliciting community, regional, state, and federal input and support for the **Beyond Tobacco** project. The County government has teamed with the Greene County Board of Education, NCSU Cooperative Extension, Lenoir Community College, North Carolina's Eastern Region, Wavelength and One-Economy Corporation to establish a unique partnership for success. This diverse team combines local familiarity with national expertise – a grassroots framework with cutting edge innovation – to ensure the **Beyond Tobacco** project will be initially successful and ultimately sustainable.

The Greene County Board of Education, currently sponsoring the iTech Project, will provide laptops through the grant period and will work extensively with Wavelength to ensure that service is available to all iTech families. Wavelength will develop a wireless beta infrastructure for Greene County, with accessible hot zones for all county residents.

The NCSU Cooperation Extension will work with One Economy Corporation to develop a digital bridge to provide online resources and training modules for the farm community. The Extension is knowledgeable about the challenges facing rural tobacco farmers nationally and will solicit input from and support among Greene County farmers through open forums and one-on-one brainstorming sessions. With the project's launch, the Extension staff will provide technical expertise to One Economy in developing the online content, and will assist in training and marketing the project to farmers.

One Economy Corporation will produce a multimedia, interactive, online application that will inform Greene County residents of employment alternatives and will assist them in taking action to change their economic situation. In this, One Economy will work with the Extension to ensure that the online content responds directly to the diverse needs of the Greene County workforce. One Economy will also provide initial and follow-up training and technical assistance to the **Beyond Tobacco** Project Coordinator.

The Lenoir Community College Small Business Development Center and the Greene County Chamber of Commerce Small Business Incubator will provide county residents with **Beyond Tobacco** online resources that can facilitate entrepreneurial opportunities and success. The Greene County Government will employ one fulltime **Beyond Tobacco** Project Coordinator to manage the project, coordinate and facilitate training at the Business Incubator, and provide mobile training opportunities throughout the county. The Chamber of Commerce Director will provide office space and utilities and oversee the Project Coordinator's activities.

The University of North Carolina School of Government has developed the evaluation criteria for the project and will collect data and document the project's outcomes. Finally, North Carolina's Eastern Region, a thirteen-county state-supported economic development partnership that includes Greene County, will assist with symposiums to disseminate information to assist other counties or regions with replication of the successful model.

The Greene County government has assembled a broad collaboration to build a sustainable project. In addition to the above mentioned partners, the **Beyond Tobacco** project has the support of U.S. Congressman Frank Ballance, Senator John H. Kerr, III, Representative Edith D. Warren, NC Department of Commerce Secretary James T. Fain, III, University of North Carolina School of Government, Lenoir Community College, Greene County Public Schools, NCSU Cooperative Extension Service, Greene County Alliance of Mayors, One Economy Corporation, Wavelength and North Carolina's Eastern Region.

Process Evaluation ? **Beyond Tobacco** will include two forms of evaluation and outcomes measurement. The first form will be an ongoing process evaluation to provide an internal checks and balances to maintain efficient and effective practices. It will focus on the deployment of broadband infrastructure as well as the development and use of the **Beyond Tobacco** applications, in terms of accuracy and integrity, and end-user comprehension. In addition, a sample of the participants will be surveyed to determine if the **Beyond Tobacco** application provides accurate, timely information and reduces the interaction costs (time, energy, travel, etc.) of traditional capacity-enhancing skill-based training. In all three areas of process evaluation, the manner of data collection will involve needs assessment of the current status of each component followed by a series of post-tests. Primarily, frequencies will be used to establish the linkages between the baseline data and the post-tests. However, some cross-tabulations and regressions may be performed to further highlight the intricacies of the project.

Impact Evaluation – **Beyond Tobacco** will also require an impact evaluation to determine the results of the project on the lives of the citizens in Greene County. One of the central longitudinal measures of this study will be to determine if the investment in technological infrastructure and training result in economic benefits for the community, as well as for the individual familial units. This measure will include the assessment of successful economic development efforts, employer surveys to determine if their employment needs are being met by the labor force in Greene County, and measures of transition between lower-paying agricultural jobs and higher-paying service or manufacturing jobs. **This longitudinal study will be the first of its kind to measure the rhetoric commonly associated with technological enhancement as an economic development tool.** However, such longitudinal measures require more than the three-year project lifecycle to manifest. Accordingly, this project will develop the baseline measures of the economic indicators in Greene County, as well as collect two data points (Y2 and Y3) in order to begin the longitudinal study. By partnering with the University of North Carolina’s School of Government, the longitudinal study will continue after the traditional timeline for the **Beyond Tobacco** project has ended.

In addition, it will allow models of re-tooling and skill set enhancement to be tested in a rural, traditionally agrarian-based community that is facing increasing challenges due to globalization and sector transference. The impact evaluation will focus on the outcomes of the citizens’ use of the **Beyond Tobacco** website and its training offerings, measured through citizen surveys. In addition, the agrarian sector will be surveyed in order to ascertain the impact of the training on their daily operations, and to determine the impact of re-skilling and technological enhancement efforts. **Beyond Tobacco** is based upon the knowledge, skills, and professional norms associated with community capacity building and economic development. It also recognizes the unique opportunities of the Internet to strengthen communities and enhance individual access to skill set enhancement and lifelong learning.

Feasibility

Beyond Tobacco is feasible in large part because of the strength of local, regional, and national partners that compose the team. Greene County has amassed significant resources to ignite the transformation of its economy through the deployment of a wireless Internet network and the aggregation of information and resources to support every resident. Success of the **Beyond Tobacco** project relies on the families’ access to hardware and the Internet. Project iTech has succeeded in distributing hardware to student homes, reaching more than 25% of the population. One Economy has partnerships that will make it possible for more families to receive hardware in their homes.

Wavelength’s partnership with Motorola will design and deploy a high-speed network. Understanding the ingredients that make this network feasible is part of the innovation of this approach. Rural communities traditionally struggle to present sufficient demand to deploy telecommunication infrastructures, particularly copper or fiber land-based networks. Project iTech establishes a basis of “demand aggregation” that provides a critical mass of users that desire high-speed Internet access.

The second key ingredient is the use of non-land based delivery systems. This dramatically changes the cost structure of network operations. Traditional land-based delivery systems were considered and found to be such an economic burden that the project would not be sustainable.

Without these two main ingredients, it would not be feasible to deliver services to low population density, rural communities.

Wavelength operates a network that begins at the National Access Point (NAP) in Miami. The Internet bandwidth is then carried over fiber-optic lines to Kinston, NC. In Kinston, the network changes from a land-based network to a microwave-based network. The microwave network delivers Internet bandwidth on to Hookerton and Greenville, NC. The **Beyond Tobacco** network is able to build from this existing network base. As the balance of the phases are built to cover the rest of Greene County, the **Beyond Tobacco** portion will be upgraded to take advantage of the additional network resources as they become available.

Network systems are engineered to take advantage of layers of security that many land-based networks do not have, thus safeguarding the privacy of users. Having universal access to broadband at both homes and farms along with the community hot zones will provide a new level of connectivity and all of the benefits this brings. This is accomplished in a way that encourages information access and sharing but does not destroy the rural lifestyle that the citizens enjoy.

A complete network plan that involves a combination of approaches and describes the innovations needed to address access in rural areas, particularly those that involve topology and vegetation such as that found in eastern North Carolina, is provided in the Appendix.

Our team is singularly equipped to implement this network and the applications. Wavelength and One Economy Corporation have the proven expertise to create the network and applications. Wavelength will provide necessary equipment and system upgrades while One Economy will support the project with technical assistance. One Economy has successfully helped organizations bring computers and broadband into the homes of low-income people, building on the technology to connect families to content they can use to improve their lives. To date, One Economy has worked with 19 cities, touching more than 300,000 people every month.

The local partnership of the Cooperative Extension, Chamber of Commerce, and County Government has long-established relationships with the county's citizens and will provide project oversight. Lenoir Community College and North Carolina's Eastern Region will provide regional support that extends to the state level with the NC Department of Commerce and the NC Community College System.

We have outlined an aggressive, yet realistic, timeline to implement this vision. Presented in more detail in the Appendix, infrastructure development will be complete by January 2005. Staff will be hired and functioning by May 2005. The applications will be developed and operational by July 2005 with a program launch planned for September 2005. With all of the pieces in place, we expect to have real impact in Greene County by the end of the grant period.

The goal of the **Beyond Tobacco** project is transformation of a rural county's future economy. This transformation will occur through a community-based program to provide broadband Internet access. The feasibility of this project revolves around the committed leadership of the community itself and its willingness to recognize its problems and find a creative and innovative path for its future. Greene County Government's success in engaging the necessary partners and making the initial commitment of resources in the direction of that vision will serve as a model for other rural communities throughout the United States.