

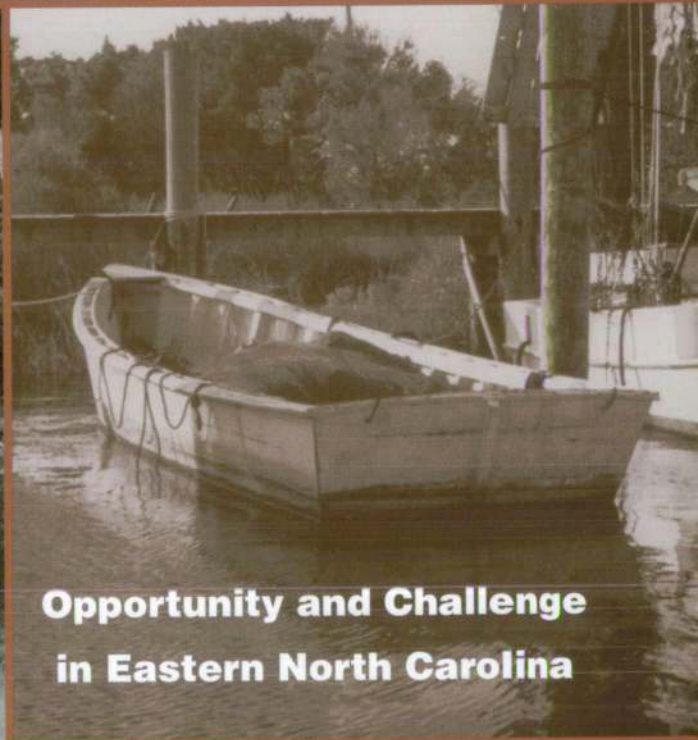
North
Carolina

Insight

\$16

DECEMBER 2001

VOL. 19, NO. 3-4



**Opportunity and Challenge
in Eastern North Carolina**

What About the East?



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The Center was formed in 1977 by a diverse group of private citizens "for the purpose of gathering, analyzing, and disseminating information concerning North Carolina's institutions of government." It is a nonpartisan organization guided by a self-elected Board of Directors and has individual and corporate members across the state.

Center projects include the issuance of special reports on major policy questions; the publication of a magazine called *North Carolina Insight*; joint productions of public affairs programs with WUNC-FM, WPTF-AM, the N.C. Radio News Network, and Time Warner Cable; and the regular participation of members of the staff and the Board in public affairs programs around the state. An attempt is made in the various projects undertaken by the Center to synthesize the thoroughness of scholarly research with the readability of good journalism. Each Center publication represents an effort to amplify conflicting ideas on the subject under study and to reach conclusions based on sound rationalization of these competing ideas.

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NORTH CAROLINA INSIGHT is a magazine published by the North Carolina Center for Public Policy Research, Inc. (a nonprofit, tax-exempt corporation), Suite 701, 5 W. Hargett St., P.O. Box 430, Raleigh, N.C. 27602. Telephone (919) 832-2839. Annual membership rates: Individual, \$36; Organizational, \$50; Supporting, \$100; Corporate, \$200; Full-Service, \$250; Corporate Donor, \$300; Supporting Corporate, \$500; Patron, \$1000; Benefactor, \$2000. Third class postage paid at Raleigh, N.C. Copyright 2001 by the North Carolina Center for Public Policy Research, Inc. Articles may not be reprinted without permission. Graphic design by Carol Majors. Production by PUBLICATIONS UNLIMITED. Printed by Theo. Davis Sons, Inc., Zebulon, N.C. The Center is supported in part by grants from the Z. Smith Reynolds Foundation, as well as by 11 other foundations, 190 corporate contributors, and almost 900 individual members across the state. The views expressed in this publication are those of the authors and are not necessarily those of the Center's Board of Directors or staff. Published December 2001. Printed on recycled paper.

Cover photos by Karen Tam (top) and Sue Avera Booker

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*The North Carolina Center for Public Policy Research
wishes to thank
the Cemala Foundation of Greensboro,
the James M. Cox Foundation of Atlanta, Georgia,
and the Weyerhaeuser Company Foundation of Federal Way,
Washington, and New Bern, North Carolina,
for their generous support of this special issue of Insight
on Issues Affecting Eastern North Carolina.*

Foreward

by Mike McLaughlin

Eastern North Carolina—that vast stretch of geography lying between the state capital and the sea—represents a great deal of what is special about the Tar Heel state, but it also plays host to some of the state's thorniest problems. For the region as a whole, education levels and per capita income are lower. The region is generally less developed and more dependent on low-wage agriculture and manufacturing jobs than the Piedmont. Two pillars of the region's agricultural economy—tobacco and pork—are plagued by low prices and controversy, and low-wage manufacturing is forever in danger of being relocated to countries where wages are even lower. The region's pristine coastline attracts both tourist dollars and retirees, but the tourism jobs are generally low-paying and population growth in a few coastal hot spots strains the local infrastructure. Meanwhile, the region has been pounded by natural disasters, the most recent and most devastating being Hurricane Floyd, which in September 1999 dropped 21 inches of rain in a 24-hour period, claiming 52 lives and destroying thousands of homes.

Even before Floyd hit, the North Carolina Center for Public Policy Research had decided to devote a theme issue of its magazine, *North Carolina Insight*, to the plight of the east. To begin the discussion, the Center wanted to address the topic of why Eastern North Carolina's future matters to the rest of the state. To write this article, the Center selected Tom Lambeth, the recently retired, long-time director of the Z. Smith Reynolds Foundation in Winston-Salem, N.C., and a former aide to the late Governor Terry Sanford (1961–65). Few know North Carolina like Lambeth, who has devoted his career to addressing the kinds of problems he outlines in this essay.

This edition of *Insight* is the first of a two-part examination of issues affecting Eastern North Carolina. Part II will examine the role of the military in the East, jobs in Eastern North Carolina, and the plight of Eastern North Carolina agriculture. In addition, the Center will consider whether there is the need for a Marshall Plan for Eastern North Carolina.

Photos in Lambeth essay by architect Ligon Flynn / Courtesy Cape Fear Museum, Wilmington.

Why Eastern North Carolina's Future Matters to the Rest of the State

by Tom Lambeth



More than 35 years ago, Governor Terry Sanford, my boss at the time, spoke to a high school in Wayne County. He described Eastern North Carolina as a giant just waiting to be awakened. In the spring of 2000, many of us gathered at Mount Olive College in that same county. We had come together for Project EAST 2000: The New Direction, a venture that sought to give new impetus to economic development in the region. What we heard and what we said that morning revealed how far we were from a giant fully awakened.

I spoke that day on the work of the Rural Prosperity Task Force on which I had served that past year and which had only recently completed its work. I asked in my remarks (as I am certain some in the audience had wondered) why someone from the western Piedmont was there to talk about economic development in the East. It was a question members of the commission from other parts of the state also had been asked during that year of work.

Why is what happens "east of I-95" important to people from Sylva and Hickory and Winston-Salem and Charlotte? Why should the occupants of chrome and glass towers surrounded by prosperity care about their flood-ravaged, economically challenged neighbors far to the east?

I believe the answer is simple and compelling, and I stated it at the opening session of the task force in Raleigh in the winter of 1999. "If you are sitting in a boat and it springs a leak, it really doesn't matter whether it is in your end of the boat; if it goes down, all aboard will drown." In an interdependent state, in a global economy, in a time of regional and national economic competition, stagnation in any one part of North Carolina has an impact on all of the state; even the prosperous will pay some of the price. We will be less than we might be. As the boat goes down, we will realize that the end without the leak, the end with the new seat and the recently painted sides, sinks almost as fast as the more vulnerable end.

This is not to ignore the emotional answer, the romantic answer; which is that many of us west of Interstate 95 have roots deep in that other part of North Carolina where the state began. Mine goes back almost three centuries, and I am not unique among residents of the Piedmont or Western North Carolina. In a region characterized by a sense of time and place, by what has been described as "certain manner of knowing how to live," where you come from is important.

Yet the strongest argument for doing what we must do to avoid stagnation or decay in Eastern

North Carolina is an economic one. If one looks at comparisons with national benchmarks—from educational achievement to hourly wage to business growth—Piedmont North Carolina reaches or exceeds the U.S. average. It is in the geographic extremes of the state that the negative superlatives prevail, and the impact of this on Eastern North Carolina is simply devastating.

In the East, commodity prices are at 30-year low, tobacco is under fire, manufacturing layoffs are increasing, and the new plant some may have hoped was coming from Ohio or Indiana just doesn't exist. Add to that the greatest natural disaster in the history of the state, and you have a true picture of the extraordinary challenge confronting the hundreds of thousands of people who live in this part of North Carolina.

The changing economic development pattern is itself a daunting challenge. The old "buffalo hunt"—the term used to describe the luring of a plant from another state—is truly over. We ran out of buffalo. Even when new industry can be brought to the region, it may offer only a small lift, although even small lifts are welcomed and important. For example: the new satellite plant which will supply argon and nitrogen to Nucor Corporation in Hertford County is a \$15 million investment, and that is good; but it will only employ three people, and this is a region which needs a lot of good paying jobs. So the state needs to look hard at strategies that will build on existing small businesses. For Eastern North Carolina, the potential of heritage tourism is an exciting and potentially fertile field to plow. It also has the attraction of promoting protection of the environment while promoting economic development.

It would compound economic and personal tragedy for the region to be caught in what some would believe is a necessary choice between protection of the environment and encouragement of economic growth. What may be gained initially by unregulated growth may soon become a net economic loss as the environment is so damaged that it becomes less attractive to visitors as well as to those who live there already.

The opportunity to exploit—in a positive sense—the historic and cultural heritage of Eastern North Carolina in ways that attract tourists in increasing numbers pays off beyond the local jobs that it creates. Hotels, motels, service stations, and those who work for them all along Interstate 40 and

Tom Lambeth is the former executive director of the Z. Smith Reynolds Foundation.

Interstate 85 in other parts of the state will benefit as well. Resultant tax revenues enhance the strength of the East, while relieving pressure on the rest of the state to contribute to the region's well-being. Failure to pursue this economic development opportunity or bad state policy that damages the environment of the region will be a missed economic opportunity for all of North Carolina.

The late George Autry, the long-time head of MDC Inc. in Chapel Hill and an eloquent and thoughtful architect of many of the wise policies that offer hope for rural Eastern North Carolina as well as the rural South, wrote that "education is the antidote to poverty." It is interesting that the two events I mentioned at the beginning of this piece, events that focused attention on the needs of Eastern North Carolina and that occurred more than

three decades apart, both happened on the campuses of educational institutions.

Yet this is the region where more educational deprivation is found than in any other part of North Carolina. It is here that we find the majority of low-wealth counties and the greatest numbers of under-performing schools. We have identified the antidote, and we find it woefully low in supply. No strategy for improving the economic and social well-being of Eastern North Carolina can succeed without significant, perhaps massive, investment in improved public schools.

Recently, several national funders have announced investments in major efforts to study the "achievement gap"—a disparity in educational attainment that has clear racial patterns. That may be fine, but it really doesn't take much documenta-





tion. You can do it for yourself: just take a map of North Carolina and put an overlay on top which identifies those counties where public school student performance is low and then place on top of the first overlay another which measures poverty. You will find, with rare exception, that the counties are the same and that a disproportionate number of them are in Eastern North Carolina.¹

For North Carolina to go into the competitive economic market with so much of its population denied the opportunities that a first class education provides is no different than an army moving into battle with many of its soldiers unarmed. Once again, lack of a skilled work force in Eastern North Carolina will cause problems for the rest of the state.

That fact—the need for educational improvement and for special attention to the needs of rural North Carolina as a whole and to rural Eastern

North Carolina especially—collides with other facts. The state confronts a major revenue deficit that makes maintaining present commitments difficult and initiating new commitments even more difficult. It is also a simple political fact that Eastern North Carolina, which for much of our history dominated state politics, no longer has that kind of power.

Legislative action to redraw General Assembly districts based on the 2000 census means a majority of the legislature's 170 members will come from urban counties, most of them west of Smithfield. Already urban North Carolina, largely outside the East, is organizing a local government caucus. The legislative members from those counties will probably not be far behind in organizing a regional caucus.

It is important for this newly powerful group from urban areas to understand how important are

the rural areas of North Carolina where most of the geography, if not the population, is located. Here are our greatest environmental treasures, here most of our natural resources, here most of what is left of agriculture—itsself waiting for a new awakening. The diversity that has characterized North Carolina and been one of its greatest strengths—diversity in geography, in people, in economy—is threatened if both our population and our attention are concentrated unnecessarily.

If those of us in the Piedmont and the West hear people in the East talking about the need for improved highway access to people and economy, we ought to hear more than just a cry of implied neglect. Think about it. A truck can travel on Interstate 40 from Wilmington to Los Angeles and never pass under a stoplight; yet the same truck moving from Raleigh to Morehead City on U.S. 70 will pass under more than 100 stoplights and pass more than 900 driveways emptying into that roadway. That is more than a symbolic impediment to economic development. What is more important to understand, however, is that the port that one finds at the end of U.S. 70 is important to businesses in the Piedmont and Western North Carolina, and the lack of rapid movement on that highway has an impact on the economies of these regions just as it does on the East.

It seems to me that as we deal with these issues in any part of North Carolina, we are forced to deal with what we think about North Carolina as a whole; as one community with a common destiny. The dangers of a state divided by economic opportunity, or with development that is vibrant in one region and dormant in another are as obvious as division along lines of race or gender or economic status. Both the governor and the General Assembly leadership and Erskine Bowles as Chair of the Rural Prosperity Task Force have warned of the danger of allowing the emergence of two North Carolinas. Governor Mike Easley, in his inaugural address, eloquently committed to avoiding such a division.

The Z. Smith Reynolds Foundation in preparing its most recent annual report asked more than a score of the state's citizens to tell us what being a North Carolinian meant to them. Among these men and women were both natives and recent arrivals, and they came from all parts of the state, but there were remarkable similarities in much of what they said. For all of them the sense of community, the sense of common ownership of natural resources, the commitment to education, the belief in the possibilities of all people were impor-

tant in answering the question that had been posed.

If people in the Piedmont and west do not understand what they hold in common with Eastern North Carolina, if there is not some sense of common fate, then we will squander an opportunity for greater economic gain for all parts of North Carolina. Worst of all, when asked, "What does it mean to be a North Carolinian?" we may someday get the response, "Which North Carolina?"

One of the great moments of the Rural Prosperity Task Force's trip around North Carolina was in Kenansville when State Senator John Kerr (D-Wayne) spoke to us of his concerns about the infrastructure of that region. He spoke as passionately about water and sewer as any advocate I have ever heard. Then he spied me, a representative of that "big" foundation from the Piedmont. He told the group that the state could not let these basic needs go unmet while there were funders spending money on things like modern dance. "Remember," he said, "If you can't flush, you can't dance!"

Senator Kerr had a valid point (although the foundation I then helped run was not very big on modern dance either), and we ought not forget it soon. It will not serve North Carolina well if those of us in urban North Carolina regard eastern and western regions as those places we drive through to reach the beach or the mountains. It will serve none of us well, nor will it help us conquer the future, if we want any part of North Carolina to remain quaint, pristine, and poor. I am convinced that we can build a state and an eastern part of it where we can both flush and dance.

How we deal with the challenges of rural North Carolina and specifically of Eastern North Carolina is another of those opportunities to prove either that government works or does not work. This may have an importance even beyond the immediate goal of economic development and, thus, empowerment for that part of our state.

The opportunity to prove that government works relates to the very foundation of American democracy. In our response to the challenges of regional differences, we may confront at the state level an attitude that has characterized much of our national public policy debate in recent years. It is one that makes it difficult to make our deeds match our dreams. It is one whose legacy is increased cynicism about the viability of democracy and its institutions.

The most significant moment in the U.S. Constitutional Convention of 1787, I believe, was when the convention, at the urging of Gouverneur Morris of Pennsylvania, decided not to begin the

document with the preferred, "We the delegates of the sovereign states of North Carolina, New York, etc.," but rather, "We the people."

While "We the people" was little more than a goal in 1787, that notion that the people can control their destiny as a state or a nation has largely been achieved. Yet many would abandon this idea to the cries of politicians who decry popular government as some monster in a cave. This kind of talk, however innocent its origins, does what no foreign enemy has ever been able to do—it makes us doubt our ability to solve problems; it absolves us of responsibility. We aren't responsible for bad things that happen because that monster in the cave did it. No need to vote, no need to complain, no need to organize to make things better.

In Eastern North Carolina, there are historic doubts to overcome. For many years, people in that region often have felt that state government is more distant than just the drive from Roanoke Island to Raleigh. Worst than that, children in the region have often sensed some disadvantage inherent in their geography. Teachers in local schools reported some years ago that having their students work on local history had a positive effect on self-esteem. Many seemed to assume that history was something that happened somewhere else. With a legacy of economic and political disappointments compounded by a devastating natural disaster, the idea that people can join together to make things better is a difficult one to sell. People in the East must first believe that they can make a difference, that they can control events around them, that they can have some influence over the future of their region.

There is another handicap that was recently articulated by leaders from Eastern North Carolina, perhaps most effectively by former N.C. Supreme Court Justice Phil Carlton of Pinetops. That is the fact that "Eastern North Carolina" does not exist as a governmental or nonprofit entity. We use the term to designate 40 or so counties on and east of I-95, but there is no existing officially sanctioned governmental or non-governmental entity that encompasses that region. It is unlikely that real progress will be made until that issue has attention and some governmental or private group is given region-wide responsibility for bringing those counties and their people along to share in the economic growth of the rest of North Carolina.

What does one say in response to the argument that this is all about the free market, that efforts to somehow spark economic growth in one region are in the end artificial? Well, the truth is that the growth of the Piedmont is not without its own ex-

amples of government incentives, both federal and state; much of it funded by people from all over North Carolina, including those who do not live in the Piedmont. I believe these have been wise investments and that people in the East benefited when the idea of a Research Triangle Park was conceived and implemented, when Charlotte became a banking center, or when FedEx decided to move to the Triad. And, Western North Carolina has benefited immensely from investments made through the Appalachian Regional Commission. Those in the East have an argument to make that their time has come to show that economic incentives for their development can pay off for other parts of North Carolina as well.

If we have poor schools in one part of North Carolina, if health problems are more serious in one part of North Carolina, if low paying wages are more prevalent in one part of North Carolina, it is likely that the more prosperous parts of the state will find the victims of these conditions moving into their community. These people will be good citizens in their new communities, but there is an economic impact both on the community to which they have moved and on the one from whence they have come. Finding the kind of opportunities that would allow them to live where they started if they chose to do so likely would have a more positive impact on the state as a whole.

The simple fact is that in 2001 you cannot isolate regions of the state either into prosperity or decay. Hurricane Floyd and the resulting flooding is for us a dramatic example of how what happens in one part of North Carolina influences what happens on the rest. Projects of importance to Hickory and Statesville and Greensboro found funds not available to them because of the costs of the flood.

While much of this sounds like it is about geography—and of course in a real sense it is—it is mostly about people. When the Rural Prosperity Task Force was announced many months ago, Senate President Pro Tempore Marc Basnight (D-Dare) told of speaking to a rural high school graduation in Hyde County. He asked those students who were graduating to raise their hands if they were planning to stay in that community. Not a single hand went up. Just cold-blooded dollars and cents judgment says that draining off such a valuable resource as our young people from any part of North Carolina would be a tragedy for all its parts.

The litany of problems that characterize our discussions of the issues affecting Eastern North Carolina is almost certainly necessary if we are to respond to those problems, but there is danger in

that exercise as well. We may see that part of North Carolina as just a problem. The truth is that it is a wonderful opportunity for demonstrating that when we come together as a people, when we pay more than lip service to our democratic values, we can accomplish much.

As a part of North Carolina, the East is an asset to be prized, not a sore to be hidden from view. When John White described the new colony of Roanoke and the land beyond as the "goodliest land under the cope of heaven," he was describing Eastern North Carolina. So if there is continuity in our story as a state, it is one of people and place and possibility, and it is a continuity that those in Mecklenburg and Davidson counties inherit just as much as those in Pender and Martin.

This is the goodliest land not just because of its natural beauty, which is what John White saw those centuries ago. It is a goodly land because of the strength of heart and hand and head of those who live here. None of us who live in any part of North Carolina and who love this state can afford to squander such a resource. We cannot waste these good people. ☐☐

FOOTNOTE

¹ Excluding state institutions and charter schools, the N.C. Department of Public Instruction labeled 13 public schools low performing for the 2000–2001 school year. Of these, 10 were located in Eastern North Carolina counties, all of which had poverty rates in excess of 18 percent.



How Does the East Compare to the Rest of North Carolina?

by Joanne Scharer

Eastern North Carolina has long been thought of as less developed, more agrarian, and more impoverished than the Piedmont or western regions of the state, but how does the region really stack up? In this article, the Center takes a hard look at the latest available data on population, unemployment rates, income, poverty, literacy, and education levels. Our findings? Though the gap is less than one might expect based on image alone, Eastern North Carolina clearly is behind both the Piedmont and the west on a number of different indicators. Population growth in the East is the weakest of the three regions, though the East is growing overall. Indeed, the 2000 U.S. Census finds only three North Carolina counties—Bertie, Edgecombe, and Washington—to have lost population during the decade of the 1990s. All are in Eastern North Carolina. That's an improvement over the 1980s, when 19 North Carolina counties lost population, and 14 of those were in the East, but the new figures still show that most of the state's weakest counties in terms of population growth are in Eastern North Carolina.

As was also true in the 1980s, some of the decade's biggest winners in population growth in the 1990s are Eastern counties along the coast, which helped to boost the overall growth rate. Other areas of strong growth include Pitt County, home of East Carolina University, and Harnett, and Hoke counties, which are affected by growth around military installations. Still, the region's overall growth rate of 16.1 percent ranks well below the state growth rate of 21.4 percent.

Average unemployment rates for eastern counties, at 5.5 percent, are higher than the state average of 3.6 percent and exceed the average unemployment rates for the Piedmont and mountain counties. Manufacturing jobs are disappearing at a faster clip than in the industrialized Piedmont, though not as fast as in the mountain region. These are generally being replaced by lower-paying service-sector jobs.

Per capita income and wages are also lower in the East than either the Piedmont or the West, and the poverty rate is dramatically higher. Eastern North Carolina counties had the lowest average per capita income of any region in the state in 1989 at \$13,505. The East was still the poorest region of the state from a per capita income standpoint 10 years later in 1999, when per capita income reached \$20,536. Indeed, per capita income is 22 percent higher in the Piedmont (\$25,088) and 9 percent higher in the mountain region of the state (\$22,409).

At 17.6 percent, the average poverty rate for eastern counties greatly exceeds the North Carolina average of 12.6 percent and the U.S. average of 13.3 percent. The statistics for individual counties within the region, however, vary greatly. Tyrrell County has the highest poverty rate in the region at 25.7 percent while Dare County has the lowest at 8.1 percent.

Eastern North Carolina also lags the state as a whole in terms of education. As a region, the East has the lowest levels of literacy in the state. The East also lags the other two regions of the state in the percentage of residents with high school and college degrees, and the region's high school dropout rate is the highest of the state's three regions as well. The 1999–2000 statewide dropout rate was 6.43. The school systems in the eastern counties had an average dropout rate of 6.85—higher than the state average and the highest of the three regions. The Piedmont counties' average also was higher than the state average at 6.55, while mountain counties had the lowest average and were lower than the state at 6.04. The East's network of community colleges for providing job training appears to be solid, though its relative low standing in education means more must be done in work force preparedness.

Despite making progress on a number of fronts, the East lags the rest of the state on almost every indicator. North Carolina enjoyed a period of robust growth during the 1990s, and in some ways the East merely looked poorer by comparison. On the whole, the region has failed to close the gap on the rest of the state.

In early August 1900, while looking for a place to try out their ideas in aviation, Orville and Wilbur Wright of Dayton, Ohio, received a letter from William Tate of Kitty Hawk, North Carolina. "If you decide to try your machine here and come, I will take pleasure in doing all I can for your convenience and success and pleasure, and I assure you you will find a hospitable people when you come among us," wrote Tate. Because of the welcome reception and the assistance of the people of coastal North Carolina, Orville Wright made the first successful flight at Kitty Hawk on December 17, 1903.¹

The first flight may have represented the greatest single moment in the history of Eastern North Carolina since the first English settlers set foot on Roanoke Island in 1585. The achievement on the windswept dunes of North Carolina's easternmost shore heralded huge advances in aviation, transportation, and communication. Yet one could argue that nearly 100 years after this historic event, the region that was truly first in flight, Eastern North

Carolina, is still struggling to get off the ground economically. "Eastern North Carolina has some of the same problems or opportunities as the western part of the state," says Wayne Daves, executive director of policy and workforce development for the state's Workforce Development Commission. "However, Eastern North Carolina is more rural, the counties are larger with more land mass, and there are fewer employment opportunities," adds Daves.

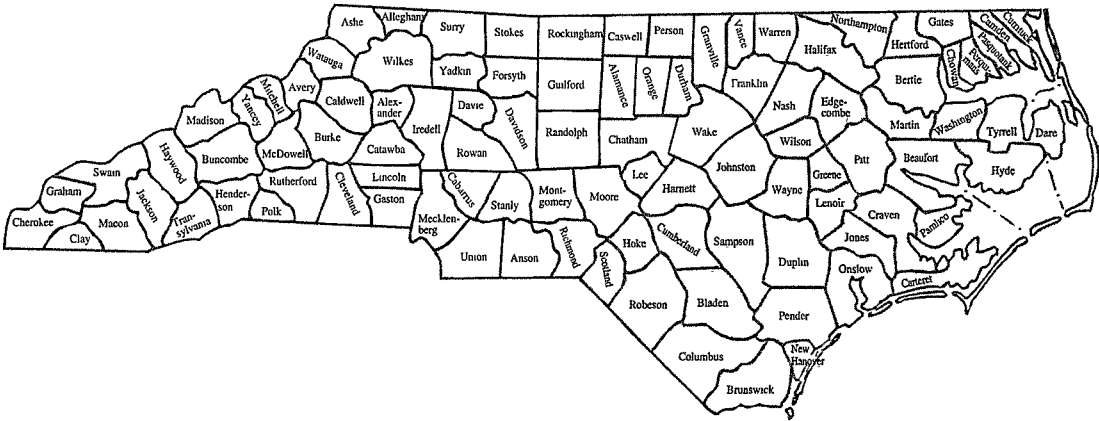
Likewise, the final report of the state's Rural Prosperity Task Force, a group established by former Governor Jim Hunt, N.C. House Speaker Jim Black, and Senate President Pro-Tem Marc Basnight in July 1999 to address the needs in rural areas of the state, declared, "North Carolina's diversity is its strength—and its challenge. Rural North Carolinians living near urban centers face a different set of challenges than those in more remote locations. Communities in the mountains face a different geographical challenge than those surrounded by wetlands."² Besides some of the inherent differences of Eastern North Carolina, many of the counties down east are struggling to rebuild after the devastation caused by Hurricane Floyd in September of 1999.

Joanne Scharer is a public policy consultant living in Durham, N.C.



Karen Tam

Table 1. The Counties of Eastern North Carolina



- | | |
|----------------|-----------------|
| 1. Beaufort | 21. Hyde |
| 2. Bertie | 22. Johnston |
| 3. Bladen | 23. Jones |
| 4. Brunswick | 24. Lenoir |
| 5. Camden | 25. Martin |
| 6. Carteret | 26. Nash |
| 7. Chowan | 27. New Hanover |
| 8. Columbus | 28. Northampton |
| 9. Craven | 29. Onslow |
| 10. Cumberland | 30. Pamlico |
| 11. Currituck | 31. Pasquotank |
| 12. Dare | 32. Pender |
| 13. Duplin | 33. Perquimans |
| 14. Edgecombe | 34. Pitt |
| 15. Gates | 35. Robeson |
| 16. Greene | 36. Sampson |
| 17. Halifax | 37. Scotland |
| 18. Harnett | 38. Tyrrell |
| 19. Hertford | 39. Washington |
| 20. Hoke | 40. Wayne |
| | 41. Wilson |

With such contrasts in mind, the North Carolina Center for Public Policy Research decided to analyze a number of social and economic variables to bring into focus the opportunities and challenges facing the 41 counties of the North Carolina coastal plain. This article examines population growth, unemployment rates, income, poverty, literacy, and education levels, with the intent of highlighting some of the region's strengths and pinpointing areas in which it may need to improve.³

THE NUMBERS

Population Growth

Nearly 2.4 million (2,389,225) people live in the counties that comprise Eastern North Carolina. The population in these counties has grown 16.1 percent since 1990, compared to a statewide growth rate of 21.4 percent.⁴ Population growth may be thought of as an indirect proxy for regional or county economic conditions. Presumably, people will migrate from areas of economic decline to areas of economic prosperity so that a relatively high population growth generally indicates a flourishing local economy. Though the eastern part of the state lacks some of the wealth and amenities of the Piedmont, its residents like their quality of life, and the region is growing (see *Eastern North Carolina: A Diverse Collection of People and Places*, pp. 17-19).

The growth rate for the region is buoyed by explosive growth in five coastal counties (Brunswick, Currituck, Dare, New Hanover, and Pender) and two counties affected by growth of military bases (Hoke and Harnett counties near the Army's Fort Bragg and Pope Air Force Base). Each of these counties experienced growth in excess of 30 percent, and in three cases, the growth exceeded 40 percent. Meanwhile, the three North Carolina counties that lost population in the 1990s—Bertie, Edgecombe, and Washington counties—are all located in the East.

Employment

Many of North Carolina's 100 counties are facing the transition from a low-skilled local manufacturing economy to a technology-based global economy. And some eastern counties have never developed much of a manufacturing base to begin with, continuing to rely primarily on agriculture. The result is higher unemployment rates for the region than for the state as a whole.

A county's unemployment rate reflects the economic condition of that county by indicating what percent of the county's labor force currently is out of work and therefore without a steady income. A high unemployment rate in any one year may be the result of a plant closing, while chronically high unemployment may mean that there is a greater need for job development. Statewide, the 2000 average unemployment rate hovered at 3.6 percent.⁵ In the eastern counties, the 2000 average unemployment rate was notably higher at 5.5 percent, ranging from 2.2 percent in Johnston County to 10.6 percent in Columbus County and 9.7 percent in Tyrrell County (see Table 2). Unemployment in the Piedmont and mountain counties was lower at 3.8 and 4.6 percent respectively. Because unemployment rates vary from year to year, the Center used N.C. Employment Security Commission data to calculate an average unemployment rate for the years 1990-2000. Again, the rate was highest in the East, at 6.1 percent, compared to 5.1 percent for the mountain counties and 4.4 percent for the Piedmont.

The number of jobs in North Carolina increased by 28 percent from 1989 to 1999.⁶ Similarly, the average change in employment for the counties in the eastern part of the state was 26 percent during that same period. While employment grew overall, all regions in the state experienced declining employment in the manufacturing sector. However, the state's loss (-7.5 percent) was not as great as the loss of manufacturing employment in Eastern North Carolina counties (-10.3 percent). The Piedmont counties fared best with less than a 3.3 percent average loss in manufacturing employment, while the mountain counties suffered most severely with an average manufacturing employment loss of 12.4 percent.

The latest data, as well as anecdotal evidence, indicate that the loss of manufacturing jobs continues apace, with textile and apparel production jobs moving offshore and tobacco manufacturing jobs disappearing altogether. These changes appear to have hit Eastern North Carolina particularly hard. In Robeson County, where the 2000 jobless rate averaged 9.0 percent, more than 1,000 manufacturing jobs were lost in 2000 alone, according to press accounts maintained in a data base by the Employment Security Commission of North Carolina. These included the loss of 240 jobs in Saint Pauls due to the closing of Carolina Mills Plant #25, which manufactured yarn, and the closing of an apparel manufacturer, Gerber Children's Wear Inc., costing 360 jobs in Lumberton.



Karen Tam

Noah Woods, a Robeson County commissioner and second vice president of the N.C. Association of County Commissioners, notes that high unemployment is forcing county residents to upgrade their skills. "Right now, there is a correlation with the higher unemployment rates and increased enrollment at the community college (Robeson County Community College)," says Woods. "People are enrolling to retrain and retool themselves so they can get jobs. Higher unemployment is forcing a lot of people who didn't have technical skills to get those."

While manufacturing employment decreased across the state, employment in the services sector increased by nearly two-thirds—64 percent. In the East, services employment grew by nearly 115,000 jobs, or 70 percent. The Piedmont and the western

regions experienced similar growth. The increase in service sector employment reflects the move from more labor intensive and sometimes higher paying manufacturing jobs to service jobs. While some jobs in the service industry (such as accounting or computer programming) pay high wages and require advanced skills, others are low paying and offer limited opportunity. Furthermore, most of the higher-paying jobs tend to cluster around already developed and more economically stable urban areas.⁷ The state's population growth and growing economy brought an increase in construction industry jobs over the last decade. In fact, construction industry employment grew at a faster rate in Eastern North Carolina (45 percent) than it did in the state as a whole (39 percent) and even outpaced the burgeoning Piedmont (38 percent).

***I come into the silent, small town
As quietly as memory. It is a cross of streets
Nailed once through the heart by a stoplight.***

—JAMES APPLEWHITE
"THE GIFT"



With a higher unemployment rate, Eastern North Carolina's employment statistics may be less promising than other regions in the state. However, economic development officials see a silver lining to higher unemployment at a time when many counties in the state are having difficulty filling jobs with qualified people. "We still have a relatively high unemployment rate compared to the rest of the state," says Leonard Kulick, marketing director for North Carolina Eastern Region (formerly the Global TransPark Regional Partnership), one of the state's seven regional economic development partnerships. "As far as Eastern North Carolina is concerned, that's a very positive thing," adds Kulick, who believes that companies in need of workers will find an ample supply in Eastern North Carolina. "Labor is tight all over, and companies are looking for people with skills."

Regional economic development officials say when companies come calling, they are able to provide enough skilled workers to satisfy the need. "We have plenty of workers in the northeast," says Vann Rogerson, marketing director for the Northeast Partnership, which is comprised of 16 counties in the Northeast corner of the state—some of them among the state's poorest. "Nucor had 5,400 applications for 350 jobs [Hertford County]. Fineline Boats had 800 applications for 85 jobs [Northampton County]. AAA's call center in

Halifax County had three times the applicants needed for jobs. And we've had success with all kinds of other job skills including workers for a software company in Edenton, and workers for a display company and an equestrian supply company in Washington. In all these cases, we have held successful job fairs for our company clients, and all have been satisfied with the worker pool that the [Eastern] region has provided."

And employment statistics don't necessarily provide a complete picture. "In some cases, the numbers may not look very strong, but you will find areas of strength and competitive advantages [in Eastern North Carolina]," says Jonathan Morgan of Regional Technology Strategies, a nonprofit in

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"The litmus test that both the biblical and republican traditions give us for assaying the health of a society is how it deals with the problem of wealth and poverty."

—ROBERT BELLAH ET AL.

HABITS OF THE HEART

Eastern North Carolina: A Diverse Collection of People and Places

Birthplace of aviation, pork barbecue with vinegar and pepper sauce, and even, arguably, the dance step known as the shag, Eastern North Carolina is far more than a flat place in the landscape on the way to the coast. Indeed, the 41 counties of the North Carolina Coastal Plain present a diverse collection. The region plays host to most of the state's tobacco crop, a goodly portion of its pork industry, and nearly all of the state's military establishment.

Small towns from Bear Grass to Burgaw support a rural lifestyle where time ticks by at a slightly slower pace, yet the East also is home to the second most densely populated county in the state—New Hanover. The county seat is Wilmington, which also happens to be the capital of the state's movie industry. There, a tourist can stroll the promenade along the Cape Fear River, tour historic homes, and even find a latte worth licking her lips over. And on certain summer evenings, she can watch the rockets' red

glare bursting over the Battleship North Carolina, berthed in safe harbor on the Cape Fear River.

The battleship is just one of a broad range of state historic sites in the East, which lays legitimate claim to a number of firsts for both the state and nation. The first English settlers in the New World attempted to establish a colony on Roanoke Island in Dare County, an effort commemorated in the outdoor drama, "The Lost Colony." North Carolina's colonial capital was located in the Eastern North Carolina town of New Bern, and at the turn of the 20th Century, the Wright brothers chose the windswept Outer Banks to launch man's first flight.

Less well known but still significant are the many stops along the Historic Albemarle Tour, which features a number of state historic sites and towns in close proximity to the massive Albemarle Sound. These include the Newbold-White House, dating to 1730 and the oldest

—continues



Karen Tam

People and Places, *continued*

standing brick house in the state, and Hope Plantation in Windsor, site of two National Register historic homes: the 1803 home of Governor David Stone and the 1763 King Bazemore House. But the most sobering stop on the tour may be Somerset Plantation, dating to 1860 and one of only four large-scale plantations in North Carolina. There, some 300 slaves worked the fields of Washington County and the descendants of those slaves still gather for reunions.

The plantation's prominence on the tour supports the notion that Easterners are unusually open. Indeed, they do not hide some of the uglier aspects of the region's past. Blackbeard the Pirate, for example, committed his last acts of barbarism off the coast of Ocracoke Island. His legend generates intense interest and produces sizable souvenir sales. More contemporary and genteel celebrities include big band leader Kay Kyser from Rocky Mount, Andy Griffith, who got his start at the outdoor drama "The Lost Colony" in Manteo, the late baseball pitching great Jim "Catfish" Hunter, who hailed from Perquimans County in the northeast, and the Perry brothers, Jim and Gaylord, two major league pitchers who hailed from Williamston.

As for its economy, the region remains more dependent on agriculture than the rest of the state. While well known for tobacco, hogs, poultry, and forest products, the East also depends heavily on peanuts, corn, and soybeans. Bell peppers, carrots, and cucumbers are heavily produced, as are fruits, including blueberries, strawberries, and watermelons. Indeed, Eastern North Carolina could be considered the state's farm belt, as most of the state's agricultural commodities are produced in its 41 counties. Among these commodities are forests used to produce a vast array of building materials and paper products.

Yet no crop has symbolized the region so much as the golden leaf, more formally known as brightleaf tobacco. The fact that a very valuable crop can be raised on a relatively small patch of land, that the government controls how much can be grown, and that the right to grow goes with specific plots of land that can be

rented to others at high prices, means tobacco has been woven into the fabric of the Eastern North Carolina and the lives and culture of its people. Storied for its labor-intensive production process, tobacco has produced generations of hardworking people who fiercely defend the crop despite its many critics. But as tobacco has fallen on relatively hard times, so have certain parts of the region that are most tobacco dependent.

A historic dependence on the farm way of life and the rich and productive quality of the land means agriculture will remain important to the East. Nonetheless, the region continues to develop its infrastructure to support a more diverse economy, including a mix of low-skill and more sophisticated manufacturing. Two interstate highways traverse Eastern North Carolina, I-95 running north to south and I-40 running east to west. State ports at Morehead City and Wilmington support the region's commerce, as does the 317-mile North Carolina Railroad, which links Morehead City to the Piedmont region of the state.

Despite a stubborn problem with illiteracy, the East also is about education. Five public universities—East Carolina, Elizabeth City State, Fayetteville State, the University of North Carolina at Pembroke, and the University of North Carolina at Wilmington call the region home, as do a number of private colleges and 27 branches of the state Community College System.

And perhaps the most important ingredient in the Eastern North Carolina mix is a basic natural resource—water. Rivers such as the Alligator, the Cape Fear, the Lumber, and the Neuse sweep slowly toward the sea, growing from tiny backwaters to vast swaths of waterscape as they progress. These provide home to broad varieties of fish and fowl, acres and acres of waterfront property, and incredible opportunities for waterborne recreation, including boating, sailing, water skiing, and, of course, fishing. At the end of all this flowing water is the Atlantic Ocean, where sandy beaches lay like a lace collar along the North Carolina coast.

To the delight of some and the chagrin of others, these beaches have been broadly discov-



Karen Tam

ered. Some of the fastest growing counties in the state—those with actual oceanfront footage—are located in the East. This has led to a building boom of some magnitude as counties like Brunswick, Carteret, Currituck, Dare, New Hanover, and Pender seem to grow by double digits every year (in reality it's only about half that much). The prosperity doesn't spread far inland, however, as North Carolina's only three counties that are losing population are also in the East, some of them—like Bertie and Washington—featuring beautiful waterfront property of their own. Easterners attribute this population drain to lack of economic opportunity in some parts of the region. Though less robust than much of the rest of the state, the prosperity picks up again in mid-sized cities such as Eliza-

beth City, Fayetteville, Goldsboro, Greenville, Kinston, New Bern, and Wilson.

And though Eastern North Carolina, as a region, is clearly less prosperous than the rest of the state, there is a healthy level of pride. The locals may insist that the shag was invented at Atlantic Beach, or that the East Carolina Pirates are the best Division I college football team in the state, but if you really want to start a fight in this neck of the woods, try putting red sauce on pit barbecue. Everyone down East knows the princely pork deserves only vinegar and pepper. Serve it up spicy, like the region itself.

—Mike McLaughlin

Mike McLaughlin is editor of North Carolina Insight.



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Carrboro, N.C., that assists governments, foundations, and other organizations in creating, implementing, and evaluating innovative regional economic development strategies, paying special attention to historically disadvantaged regions and populations. “There is a certain history or tradition of arts and crafts in the region that you don’t hear a lot about,” says Morgan. “This underground economy of sorts is part of the fabric of the region and definitely has positive social and economic implications.”

But despite some positive aspects to a relatively high unemployment rate in recruiting new industry and the fact that employment statistics do not cover every economic activity, high unemployment numbers cannot be viewed as an economic strength. After all, the statistics indicate real people who do not have jobs and thus may have trouble paying their bills and securing the necessities of life for themselves and their families. Indeed, the Center’s look at average unemployment rates from

1990–2000 indicates chronically high unemployment rates relative to the rest of the state and a long-standing need for enhanced job opportunities. Thus, the higher unemployment rates must be viewed as a challenge facing the East—one that suggests the need for even greater efforts to promote economic development and growth.

Income *Per Capita Income*

Income is an important indicator of economic welfare. However, per capita income can be biased by the presence of a small number of high-income individuals,⁸ especially as per capita income assesses income by place of residence (includes all people living in an area) rather than by place of work. For example, a county may have a low per capita income but a higher wage rate if it is a regional employment center attracting workers living in another county. In any case, the per capita income measure represents the amount of

economic resources available for individuals and families actually making their homes in the county.

North Carolina's per capita income increased by 60 percent between 1989 and 1999 compared to a 56 percent increase for the southeast United States and 54 percent for the nation as a whole (dollars not adjusted for inflation). The average per capita income increase in Eastern North Carolina counties was 52 percent (See Table 3).⁹ Northampton County experienced the highest increase in the East at 71 percent, while Greene County had the smallest increase at 24 percent. Although the per capita incomes of the counties in Eastern North Carolina increased, the average increase (52 percent) was still somewhat lower than the statewide increase (60 percent). The average increase in the eastern counties was similar to that in the Piedmont counties (55 percent) but more than 10 percent less than the mountain counties (64 percent). In the final analysis, Eastern North Carolina had the lowest per capita income of the state's three regions in 1989 at \$13,505. The East was still the poorest region of the state from a per capita income standpoint 10 years later in 1999, when per capita income reached \$20,536. Indeed, per capita income was 22 percent higher in the Piedmont (\$25,088) and 9 percent higher in the mountain region of the state (\$22,409).

Average Annual Wage

As noted above in the discussion on per capita income, wage indicators can skew the appearance of how much workers are earning in a community

as wage measures estimate income by place of work rather than place of residence. However, unlike per capita income, which measures all sources of income, the wage statistic shows a more realistic view of income earned as a result of employment. With this in mind, the wage indicator reveals more about the quality of jobs (i.e., high-skilled, high-paying) available in a county or region but not necessarily the quality of jobs of the people who actually live in that region.

North Carolina's average annual wage¹⁰ in 2000 was \$31,072 while the average wage in Eastern North Carolina counties was \$23,796, only 77 percent of the statewide average.¹¹ Average annual wages in the region ranged from a low of \$19,648 in Hyde County to a high of \$28,549 in New Hanover County—still well below the state average. Thus, wage statistics support the reputation of the East as a place of relatively low wages.

Poverty

The U.S. Census Bureau uses a set of money income thresholds that vary by size and composition to determine who is poor. If a family's total income is less than that family's threshold, then that family, and every individual in it, is considered poor. The poverty thresholds do not vary geographically, but are updated annually for inflation using the Consumer Price Index. By measuring the number and proportion of people with inadequate family incomes to supply food and other necessary goods and services, poverty¹² is a key indicator of difficult living conditions.

Unfortunately, the percentage of the population below the poverty threshold¹³ in each county is only available as part of the decennial census and North Carolina's economy has changed considerably since 1990. However, in recent years, the U.S. Census Bureau has calculated small area poverty estimates through the Small Area Income and Poverty Estimates Program with support from a consortium of federal agencies to provide more current estimates.¹⁴ Using these figures, the estimated percentage of people in poverty in N.C. in 1997 is 12.6 percent (13.3 percent in the U.S.) compared to the Eastern North Carolina county average of 17.6 percent in poverty (see Table 4, pp. 26–27).¹⁵

Tyrrell County has the highest poverty rate in the region and state at 25.7 percent while Dare County has the lowest at 8.1 percent. The average poverty rate in western North Carolina is 14.1 percent with the Piedmont having the lowest average at 11.8 percent.

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"The only thing poverty does is grind down your nerve endings to a point that you can work harder and stoop lower than most people are willing to. It chips away a person's dreams to the point that the hopelessness shows through, and the dreamer accepts that hard work and borrowed houses are all his life will ever be."

—RICK BRAGG

ALL OVER BUT THE SHOUTIN'

**Table 2. N.C. Average Unemployment Rates,
by County, 2000 and 1990-2000**

	2000 Average Unemploy- ment Rate	1990-2000 Average Unemploy- ment Rate		2000 Average Unemploy- ment Rate	1990-2000 Average Unemploy- ment Rate
Alamance	2.8%	3.8%	Davie	4.3%	3.6%
Alexander	2.3%	3.4%	Duplin*	5.0%	6.4%
Alleghany	7.1%	5.2%	Durham	2.3%	2.8%
Anson	6.6%	8.2%	Edgecombe*	7.5%	8.3%
Ashe	6.2%	7.6%	Forsyth	2.7%	3.5%
Avery	3.5%	5.9%	Franklin	2.6%	4.2%
Beaufort*	7.6%	7.3%	Gaston	6.1%	4.9%
Bertie*	9.2%	6.4%	Gates*	3.3%	3.3%
Bladen*	5.8%	7.3%	Graham	8.1%	12.9%
Brunswick*	4.5%	7.4%	Granville	4.1%	4.2%
Buncombe	2.6%	3.5%	Greene*	4.4%	4.4%
Burke	3.2%	4.1%	Guilford	2.9%	3.6%
Cabarrus	2.6%	3.5%	Halifax*	7.5%	8.1%
Caldwell	2.4%	3.8%	Harnett*	3.9%	4.3%
Camden*	2.5%	3.7%	Haywood	4.0%	5.3%
Carteret*	4.4%	5.1%	Henderson	2.1%	3.1%
Caswell	2.6%	3.7%	Hertford*	5.5%	6.4%
Catawba	2.2%	3.9%	Hoke*	8.0%	6.5%
Chatham	1.9%	2.8%	Hyde*	6.6%	8.4%
Cherokee	7.4%	8.1%	Iredell	3.3%	3.6%
Chowan*	4.0%	4.8%	Jackson	3.5%	5.5%
Clay	4.1%	6.0%	Johnston*	2.2%	3.3%
Cleveland	6.0%	5.8%	Jones*	5.3%	5.0%
Columbus*	10.6%	8.0%	Lee	4.1%	4.7%
Craven*	4.2%	5.0%	Lenoir*	5.5%	6.2%
Cumberland*	4.2%	4.9%	Lincoln	4.1%	4.3%
Currituck*	2.5%	3.2%	Macon	3.5%	4.7%
Dare*	5.1%	5.8%	Madison	3.3%	4.4%
Davidson	2.8%	3.7%	Martin*	9.5%	7.6%

Table 2, continued

	2000 Average Unemploy- ment Rate	1990–2000 Average Unemploy- ment Rate		2000 Average Unemploy- ment Rate	1990–2000 Average Unemploy- ment Rate
McDowell	4.6%	5.7%	Scotland*	7.4%	8.2%
Mecklenburg	2.5%	3.2%	Stanly	4.2%	5.2%
Mitchell	5.1%	7.3%	Stokes	3.2%	3.1%
Montgomery	4.1%	6.5%	Surry	4.3%	4.5%
Moore	3.9%	4.6%	Swain	12.5%	14.8%
Nash*	5.3%	5.6%	Transylvania	2.6%	3.6%
New Hanover*	3.5%	5.1%	Tyrrell*	9.7%	10.1%
Northampton*	6.5%	7.0%	Union	2.3%	3.2%
Onslow*	3.7%	4.2%	Vance	8.9%	8.2%
Orange	1.3%	1.9%	Wake	1.5%	2.3%
Pamlico*	3.7%	4.7%	Warren	7.7%	8.2%
Pasquotank*	3.8%	4.8%	Washington*	6.2%	7.1%
Pender*	4.8%	6.1%	Watauga	1.5%	2.8%
Perquimans*	3.6%	4.5%	Wayne*	4.0%	5.1%
Person	4.7%	6.2%	Wilkes	3.3%	4.0%
Pitt*	4.7%	4.9%	Wilson*	7.0%	8.7%
Polk	3.3%	2.8%	Yadkin	3.3%	3.5%
Randolph	3.1%	3.2%	Yancey	3.9%	6.6%
Richmond	6.6%	8.4%			
Robeson*	9.0%	8.5%	Eastern**	5.5%	6.1%
Rockingham	5.4%	5.6%	Piedmont	3.8%	4.4%
Rowan	4.8%	3.9%	Western	4.6%	5.1%
Rutherford	7.5%	6.1%	N.C.	3.6%	
Sampson*	4.0%	5.7%	U.S.	4.0%	

* Denotes Eastern county.

** Regional figures used here are the mean rate for counties within each region and not an estimate of the percentage of persons unemployed for the entire region.

Source: North Carolina Employment Security Commission. Average annual rates for the period 1990–2000 were calculated by the N.C. Center for Public Policy Research using Employment Security Commission data.

Table 3. Per Capita Income by County in N.C., 1989 vs. 1999

County	1989	1999	% Change	County	1989	1999	% Change
Alamance	\$17,048	\$26,679	56.5%	Davie	\$19,173	\$29,473	53.7%
Alexander	14,780	22,478	52.1%	Duplin*	12,951	19,133	47.7%
Alleghany	12,959	26,021	100.8%	Durham	19,543	29,677	51.9%
Anson	13,183	21,511	63.2%	Edgecombe*	13,196	17,153	30.0%
Ashe	12,698	21,423	68.7%	Forsyth	21,397	32,775	53.2%
Avery	12,872	23,946	86.0%	Franklin	13,066	22,667	73.5%
Beaufort*	13,866	20,859	50.4%	Gaston	15,793	24,449	54.8%
Bertie*	11,770	19,283	63.8%	Gates*	12,684	18,586	46.5%
Bladen*	12,101	19,656	62.4%	Graham	9,675	18,116	87.2%
Brunswick*	13,108	20,178	53.9%	Granville	13,091	22,102	68.8%
Buncombe	16,880	27,393	62.3%	Greene*	14,228	17,698	24.4%
Burke	14,934	22,085	47.9%	Guilford	20,033	31,425	56.9%
Cabarrus	17,302	28,071	62.2%	Halifax*	12,255	19,377	58.1%
Caldwell	14,703	23,497	59.8%	Harnett*	12,121	19,705	62.6%
Camden*	13,830	21,115	52.7%	Haywood	14,616	22,301	52.6%
Carteret*	14,555	24,128	65.8%	Henderson	17,780	27,782	56.3%
Caswell	11,775	18,951	60.9%	Hertford*	11,407	18,161	59.2%
Catawba	18,211	28,253	55.1%	Hoke*	10,350	13,560	31.0%
Chatham	17,917	30,046	67.7%	Hyde*	13,476	17,613	30.7%
Cherokee	11,440	18,384	60.7%	Iredell	16,246	25,233	55.3%
Chowan*	13,702	21,711	58.5%	Jackson	12,905	22,097	71.2%
Clay	12,026	20,252	68.4%	Johnston*	15,372	24,085	56.7%
Cleveland	15,425	21,647	40.3%	Jones*	11,543	18,194	57.6%
Columbus*	12,354	19,815	60.4%	Lee	16,139	25,740	59.5%
Craven*	15,712	24,312	54.7%	Lenoir*	14,442	21,244	47.1%
Cumberland*	14,932	25,285	69.3%	Lincoln	15,591	21,781	39.7%
Currituck*	15,574	23,319	49.7%	McDowell	12,807	20,491	60.0%
Dare*	16,572	24,566	48.2%	Macon	13,854	22,559	62.8%
Davidson	15,875	24,365	53.5%	Madison	11,862	19,582	65.1%

Table 3, continued

County	1989	1999	% Change	County	1989	1999	% Change
Martin*	\$12,882	\$18,770	45.7%	Scotland*	\$12,543	\$20,182	60.9%
Mecklenburg	21,604	37,321	72.8%	Stanly	15,099	22,816	51.1%
Mitchell	12,621	20,519	62.6%	Stokes	14,895	21,170	42.1%
Montgomery	12,908	21,440	66.1%	Surry	15,755	23,465	48.9%
Moore	18,894	29,820	57.8%	Swain	10,336	17,104	65.5%
Nash*	16,927	24,088	42.3%	Transylvania	15,576	24,473	57.1%
New Hanover*	16,594	27,731	67.1%	Tyrrell*	11,945	16,581	38.8%
Northampton*	11,445	18,539	70.7%	Union	16,396	23,522	43.5%
Onslow*	13,943	23,157	66.1%	Vance	13,726	20,168	46.9%
Orange	19,734	29,500	49.5%	Wake	21,874	35,759	63.5%
Pamlico*	14,545	21,919	50.7%	Warren	10,651	16,991	59.5%
Pasquotank*	14,164	20,791	46.8%	Washington*	12,979	18,906	45.7%
Pender*	13,398	17,605	31.4%	Watauga	13,155	22,122	68.2%
Perquimans*	11,579	18,938	63.6%	Wayne*	13,043	20,050	53.7%
Person	13,981	21,835	65.2%	Wilkes	14,797	23,455	58.5%
Pitt*	15,385	23,239	51.0%	Wilson*	15,573	24,550	57.6%
Polk	20,275	30,729	51.6%	Yadkin	15,395	22,222	44.3%
Randolph	15,596	23,721	52.1%	Yancey	12,333	19,277	56.3%
Richmond	12,699	20,032	57.7%				
Robeson*	10,939	17,391	59.0%				
Rockingham	14,885	21,616	45.2%	Eastern**	\$13,505	\$20,536	52.1%
Rowan	15,277	22,820	49.4%	Piedmont	\$16,149	\$25,088	55.3%
Rutherford	13,826	20,751	50.1%	Western	\$13,779	\$22,409	63.7%
Sampson*	13,738	19,815	44.2%	N.C.	\$16,539	\$26,417	59.7%

* Denotes Eastern county.

** Regional per capita income totals here reflect the mean per capita income for counties within a region, while statewide figures reflect the average per capita income for the entire population.

Source: U.S. Bureau of Economic Analysis, Regional Economic Information Systems,
<http://fisher.lib.virginia.edu/reis>.

Table 4. Poverty Rates by County, 1997 Projected Estimates

County	1997 Estimate of the Percent of Persons in Poverty	County	1997 Estimate of the Percent of Persons in Poverty
Alamance	8.8%	Davie	7.8%
Alexander	10.1	Duplin*	18.4
Alleghany	14.2	Durham	12.4
Anson	18.3	Edgecombe*	21.9
Ashe	15.5	Forsyth	10.8
Avery	15.3	Franklin	13.5
Beaufort*	17.4	Gaston	12.0
Bertie*	22.9	Gates*	15.4
Bladen*	18.8	Graham	18.3
Brunswick*	14.0	Granville	12.3
Buncombe	12.3	Greene*	16.1
Burke	11.8	Guilford	11.2
Cabarrus	8.0	Halifax*	23.6
Caldwell	11.2	Harnett*	14.7
Camden*	12.2	Haywood	13.7
Carteret*	11.8	Henderson	11.4
Caswell	14.3	Hertford*	23.1
Catawba	9.3	Hoke*	18.1
Chatham	7.7	Hyde*	24.8
Cherokee	17.0	Iredell	9.2
Chowan*	18.7	Jackson	16.1
Clay	15.2	Johnston*	12.3
Cleveland	13.2	Jones*	18.0
Columbus*	20.5	Lee	12.9
Craven*	13.8	Lenoir*	18.6
Cumberland*	15.5	Lincoln	10.6
Currituck*	10.8	McDowell	11.6
Dare*	8.1	Macon	13.2
Davidson	10.1	Madison	16.7

Table 4, continued

County	1997 Estimate of the Percent of Persons in Poverty	County	1997 Estimate of the Percent of Persons in Poverty
Martin*	20.1%	Scotland*	18.8%
Mecklenburg	9.7	Stanly	10.8
Mitchell	13.4	Stokes	10.3
Montgomery	16.0	Surry	11.8
Moore	10.9	Swain	20.9
Nash*	13.7	Transylvania	12.4
New Hanover*	13.0	Tyrrell*	25.7
Northampton*	23.1	Union	8.9
Onslow*	14.6	Vance	19.3
Orange	10.5	Wake	7.8
Pamlico*	16.8	Warren	23.4
Pasquotank*	19.0	Washington*	20.5
Pender*	15.0	Watauga	14.5
Perquimans*	19.5	Wayne*	16.6
Person	11.6	Wilkes	13.3
Pitt*	17.7	Wilson*	18.7
Polk	8.7	Yadkin	10.1
Randolph	8.8	Yancey	15.6
Richmond	18.2		
Robeson*	22.8	Eastern**	17.6%
Rockingham	12.1	Piedmont	11.8%
Rowan	11.8	Western	14.1%
Rutherford	13.7	North Carolina	12.6%
Sampson*	17.5	United States	13.3%

* Denotes Eastern county.

** Regional figures are averages of the poverty rates of counties within the region.

Source: U.S. Census Bureau.

Table 5. N.C. Poverty Rates by County, 1980 and 1990

County	1980 Percent of Persons in Poverty	1990 Percent of Persons in Poverty	County	1980 Percent of Persons in Poverty	1990 Percent of Persons in Poverty
Alamance	10.4%	8.9%	Davidson	10.6%	9.8%
Alexander	8.8%	9.8%	Davie	10.9%	8.4%
Alleghany	19.6%	20.1%	Duplin*	23.1%	19.1%
Anson	16.1%	17.7%	Durham	14.0%	11.9%
Ashe	22.8%	18.4%	Edgecombe*	20.2%	20.9%
Avery	18.0%	14.6%	Forsyth	11.6%	10.5%
Beaufort*	21.0%	19.5%	Franklin	20.3%	14.5%
Bertie*	29.4%	25.9%	Gaston	10.5%	10.6%
Bladen*	25.6%	21.9%	Gates*	19.7%	15.7%
Brunswick*	19.8%	15.4%	Graham	19.6%	24.9%
Buncombe	12.9%	11.4%	Granville	17.3%	13.5%
Burke	10.1%	10.1%	Greene*	25.3%	19.1%
Cabarrus	9.3%	8.1%	Guilford	11.1%	10.1%
Caldwell	10.4%	10.8%	Halifax*	29.5%	25.6%
Camden*	16.1%	16.1%	Harnett*	19.3%	17.5%
Carteret*	14.0%	11.6%	Haywood	15.6%	12.7%
Caswell	19.5%	16.2%	Henderson	12.3%	10.5%
Catawba	8.2%	7.1%	Hertford*	24.3%	25.0%
Chatham	9.1%	9.7%	Hoke*	20.9%	21.1%
Cherokee	22.2%	20.4%	Hyde*	28.3%	24.0%
Chowan*	24.0%	17.7%	Iredell	10.1%	9.4%
Clay	22.8%	18.0%	Jackson	19.3%	16.7%
Cleveland	13.2%	11.0%	Johnston*	17.9%	14.3%
Columbus*	26.5%	24.0%	Jones*	21.8%	20.2%
Craven*	18.5%	13.6%	Lee	13.5%	14.7%
Cumberland*	17.2%	14.4%	Lenoir*	19.9%	20.0%
Currituck*	18.3%	10.1%	Lincoln	9.7%	9.6%
Dare*	11.3%	8.3%	McDowell	11.8%	11.4%

Table 5, continued

County	1980 Percent of Persons in Poverty	1990 Percent of Persons in Poverty	County	1980 Percent of Persons in Poverty	1990 Percent of Persons in Poverty
Macon	17.2%	16.5%	Sampson*	21.2%	20.7%
Madison	25.8%	20.4%	Scotland*	17.3%	18.6%
Martin*	24.1%	22.3%	Stanly	10.5%	11.0%
Mecklenburg	10.9%	9.6%	Stokes	12.6%	9.8%
Mitchell	16.8%	16.0%	Surry	13.7%	11.4%
Montgomery	14.2%	14.4%	Swain	25.9%	27.6%
Moore	13.7%	11.1%	Transylvania	12.9%	13.5%
Nash*	19.9%	13.6%	Tyrrell*	25.2%	25.0%
New Hanover*	15.2%	14.0%	Union	10.3%	8.4%
Northampton*	28.1%	23.6%	Vance	21.0%	19.6%
Onslow*	16.9%	12.1%	Wake	10.0%	8.4%
Orange	15.1%	13.9%	Warren	30.5%	28.2%
Pamlico*	20.6%	18.9%	Washington*	21.7%	20.4%
Pasquotank*	17.7%	19.8%	Watauga	22.7%	21.5%
Pender*	21.3%	17.2%	Wayne*	17.9%	15.2%
Perquimans*	24.4%	21.6%	Wilkes	13.8%	13.3%
Person	16.6%	13.0%	Wilson*	20.0%	19.7%
Pitt*	23.5%	22.1%	Yadkin	14.3%	12.0%
Polk	13.7%	9.6%	Yancey	23.4%	18.7%
Randolph	8.9%	8.3%			
Richmond	15.2%	16.8%			
Robeson*	24.9%	24.1%	Eastern**	21.3%	18.8%
Rockingham	12.8%	12.2%	Piedmont	13.2%	11.9%
Rowan	9.7%	9.4%	Western	17.4%	15.9%
Rutherford	13.7%	12.3%	North Carolina	14.8%	12.9%

* Denotes eastern counties

** Regional figures are averages of the poverty rates of counties within the region.

Source: U.S. Census Bureau

—continued from page 21

Higher poverty rates in Eastern North Carolina counties parallel their relatively lower per capita incomes and wages. Indeed, poverty rates exceed 20 percent in 11 of the 41 Eastern counties, and all but five counties exceed the statewide average of 12.6 percent. Thus, Eastern North Carolina is, on the whole, the poorest region in the state.

That Eastern North Carolina should be relatively poor compared to the rest of the state should come as no surprise. The same was true in 1990, when the U.S. census put the average rate for counties within the region at 18.8 percent, and in 1980, when the rate was 21.3 percent (see Table 5, pp. 28–29). Indeed, the East's long-standing reputation for relative poverty is well deserved. Robeson County Commissioner Noah Woods says the impact of persistent poverty runs deep. "We tend to have a higher proportion of money going to social services, especially with job losses and the slower economy, and that hurts money for education and puts a larger burden on the taxpayer," says Woods. "If we could divert that to education, it would really help."

Education

More than ever before, securing a job with a livable wage requires that workers, whether urban or rural, be well-educated and well-trained. Workers with no education or training beyond high school are increasingly at risk of spending their working lives working for low wages that may not provide for their individual or family needs and may result in a life of poverty. Furthermore, communities with a less skilled work force stand at a growing disadvantage in generating and retaining the kinds of economic development that can improve the standard of living of their residents.¹⁶ While states and communities tend to invest in highways and infrastructure for economic and quality of life improvements, the ultimate source of economic improvement is the human mind.¹⁷

Literacy

Estimating literacy levels has always been difficult. One obvious difficulty is that "test-

ing" the entire population is not feasible. Another is that relying on self-reported information provides questionable data. Furthermore, changes in what constitutes literacy and what kinds of literacy are needed in different contexts also make it difficult to use the information that is available. For example, 100 years ago people were said to be literate if they could sign their names. Today, an increasingly technological society has greater and more rigorous literacy demands. People must be able to read, write, do math, and think critically in the contexts of their work, families, and communities at levels far more advanced than even a generation ago.¹⁸

In 1993, the Educational Testing Service (ETS), under contract from the U.S. Department of Education, surveyed 26,000 adults across the country to profile the English literacy of adults based on their performance on a wide array of tasks that reflect the types of materials and demands adults encounter in daily life. ETS used the results from the test group to generalize about the English literacy of adults nationally. The study, called the National Adult Literacy Survey, made several important contributions to knowledge of literacy, including the creation of their new, outcomes-based definition of literacy: "Literacy is using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential." As a result of the national survey, the North Carolina Literacy Resource Center has been able to estimate literacy levels in North Carolina. Level 1 is comprised of adults having serious difficulties with literacy and needing significant literacy instruction; level 2 is made up of adults who may perform well in everyday literacy tasks but could still benefit from literacy instruction; and levels 3–5 describe adults with sufficient literacy to function in society. The latest estimates show that Eastern North Carolina has the greatest problem with

illiteracy of any region of the state (see Table 6, pp. 34–35). More than a fourth of Eastern North Carolina residents (29 percent) function at level 1, a percentage quite a bit higher than the Piedmont (22 percent) and the mountain region (19 percent). Statewide, 22 percent of adults in North Carolina have serious literacy difficulty

***"In every child who is born, under
no matter what circumstances,
and of no matter what parents,
the potentiality of the human race
is born again. . . ."***

—JAMES AGEE AND WALKER EVANS
LET US NOW PRAISE FAMOUS MEN



Karen Tam

(level 1). Likewise, the percentage of adults in the eastern counties scoring sufficient literacy levels (levels 3–5) is 10 percent less than the statewide average and 8 percent less than the other regions in the state.

Of course, there are regional bright spots. Dare County in the coastal northeast, for example, has among the best literacy rates in the state. Carteret County, another coastal county, also has relatively strong literacy rates. However, these are high-growth counties with well-educated newcomers arriving daily, and they are exceptions to the general rule. Why is the literacy problem more pronounced in Eastern North Carolina? Experts suggest the potent combination of poverty and isolation. “There are some pockets in Eastern North Carolina where the rural and isolated quality of life contribute to literacy problems,” says Mary Dunn Siedow, director of the North Carolina Literacy Resource Center. All of North Carolina’s 58 community colleges have basic skills programs to provide educational opportunities for adults 16 years or older who are out of

school and to address the needs of adults who do not have a high school diploma or who lack sufficient mastery of basic education skills. But some colleges have broad service areas supporting several counties. For example, the smallest community college in the East, College of the Albemarle, serves a huge geographic area consisting of seven counties surrounding a huge body of water called the Albemarle Sound. Because of such a wide service area, transportation to literacy programs can be an obstacle. “Services are spotty in some areas,” says Siedow. “Getting out near the people is the tough part.”

Statewide, North Carolina’s literacy levels are similar to the nation as a whole. But the fact that literacy levels aren’t necessarily improving raises concern. “The old explanation that lots of people are older and therefore less educated than today’s youth doesn’t fit anymore,” says Siedow. “We’ve been talking about this for 40 years, so I say to myself, ‘What’s going on here?’ Somehow, we’re replenishing a portion of the population that can’t read or write.”

**"We've been talking about this
[literacy] for 40 years, so I say to
myself, 'What's going on here?'
Somehow, we're replenishing a
portion of the population
that can't read or write."**

—MARY DUNN SIEDOW

LITERACY EXPERT

High School Dropouts

The state's 117 local school systems play a crucial role in educating and training tomorrow's workforce.¹⁹ With this in mind, the number of high school dropouts also influences the educational background and employability of a population. In today's fast-paced technology-based job market, many companies and organizations require employees to have at least a high school diploma, if not a college degree. With literacy levels lower in the Eastern counties than the state as a whole, the region also lags when it comes to high school dropout rates (see Table 7, pp. 36–37). The 1999–2000 statewide dropout rate was 6.43. The school systems in the eastern counties had the highest average dropout rate at 6.85, with the Piedmont counties average also being higher than the state rate at 6.55 while mountain counties had the lowest average and lower than the state at 6.04.²⁰ Among the eastern counties, Tyrrell County had the lowest dropout rate at 1.64 percent, while Washington County had a dropout rate of 3.86 percent. At the other extreme, Hyde County had the highest dropout rate in the East and statewide at 12.42 percent.

High School and College Graduates

In 1990, almost 78 percent of Americans over the age of 25 were high school graduates. Unfortunately, North Carolina trailed the nation with only 70 percent of Tar Heels over the age of 25 being high school graduates. The 41 counties in Eastern North Carolina were even farther behind at 64 percent, a little lower than the Piedmont (66 percent) but higher than the western counties (62 percent) (See Table 8).²¹ While more than two-thirds of North Carolina's residents over the age of 25 had graduated from high school, fewer than one-fifth (17 percent) were college graduates. Only 11 per-

cent of the residents in Eastern North Carolina were college graduates, which is lower than both the Piedmont and mountain regions at 14 and 13 percent, respectively. North Carolina's college graduation rate wasn't as far behind the national rate of 21 percent. These data are based on the 1990 census. The U.S. Bureau of the Census does not release county-level data for the 2000 census until the spring of 2002.

Work Force Preparedness

A July 2000 investment opportunity report about Eastern N.C. in *Site Selection* magazine noted the state's reputation as an "outstanding place to do business." The report—sponsored by the North Carolina Department of Commerce—asserted that one of the reasons for North Carolina's success is that the state has one of the country's "most highly regarded industry training programs through its Community College system." The report also maintained that the state "has the Southeast's largest manufacturing labor force and one of the country's friendliest labor climates" and "has some of the nation's top institutions of higher learning."²²

"We are well blessed with community colleges in Eastern North Carolina," says Wayne Daves of the Workforce Development Commission. "We have a comprehensive array of workforce development programs [at the community colleges]." Of the 58 community colleges in N.C., 27 are located in Eastern North Carolina. Table 9 lists the community colleges located in these counties and the counties in the region they serve.²³

In addition to the 27 community colleges located Down East, five of the 16 universities that comprise the University of North Carolina system are located in Eastern North Carolina counties. These universities include East Carolina University, Elizabeth City State University, Fayetteville State University, the University of North Carolina at Pembroke, and the University of North Carolina at Wilmington.

To compete for high-quality, high-paying jobs, Eastern North Carolina's citizens must have the education and training needed to succeed. However, the quality of the work force is perhaps the most complex, long-term economic development challenge. Furthermore, it is difficult to assess statistically a region's work force preparedness beyond examining such statistics as high school and college graduation rates, high school dropout rates, and basic literacy skills of a population. Eastern North Carolina has a substantially greater problem

with illiteracy than the rest of the state, and its percentage of high school and college graduates over age 25 is lower than that of the Piedmont and mountain regions. However, the East's high school dropout rate is only slightly higher than that of the Piedmont, suggesting that the region's education deficit may ultimately right itself.

And, like the rest of the state, the East has a full range of programs in place to improve the quality of its work force. Still, many local officials readily admit there is more work to be done. "Most of the school systems [in Eastern North Carolina] are putting in more technology, and when all of that is meshed together the work force is going to be extremely great," says Robeson County Commissioner Noah Woods, who is also a retired school administrator.

The programs available to students in public schools and community colleges lend some insight as to how North Carolina addresses work force development issues. For example, the state's Tech Prep program offers high school students a seamless educational program that begins in the 9th grade and continues through high school into the community college and ends with a student obtaining a two-year associate degree, two-year certificate, or completion of a two-year registered apprenticeship. The program aims to prepare students to enter the high-wage, highly technical, and rapidly changing career fields available in the present and future workplace. In addition to programs such as Tech Prep, in September 1999 the N.C. Board of Community Colleges and the N.C. State Board of Education approved a statewide articulation agreement that allows high school students to obtain credit for introductory community college courses that they've essentially completed at the high school level. "Kids coming out of high school these days have had computers since kindergarten," says Stephen Athans, former Associate Director of the Tech Prep Program and currently Director of Resource Development, Proprietary School Licensing, and SACS (Southern Association of Colleges and Schools) Criteria for the Community College System. "They can make those computers walk and talk." The statewide articulation agreement frees students to graduate sooner or take advanced courses better preparing them for the workplace.

Another recent shift implemented by the Community College System, moving to a semester rather than quarterly schedule, has also opened more doors for educational advancement. The move essentially makes it easier for community college students to transfer to one of the state's 16

universities. In addition, since 70 percent of the state's public high schools operate on a block schedule, which is more compatible with the community college's schedule, high school students can take concurrent classes at the community colleges. This option is especially beneficial to some of the smaller and less wealthy school systems in Eastern North Carolina. In a similar way, the community college system's new Huskins Program enables community college instructors to visit high schools to teach a college level course or for a school system to transport a high school class to a local community college to complete a college course.

The community colleges also offer customized training for new and expanding industry, a program that paid off when Regulator Marine, a boatbuilder in the Chowan County town of Edenton, opted to double its work force in 1999. "Because there simply aren't people with boatbuilding skills walking the streets of Edenton, we had to come up with some way of selecting and training unskilled people," says Joan Maxwell, the company's vice president. "So our community college—College of the Albemarle—helped us take people with virtually no skills and, in six months time, give them a trade."²⁴

Athans says Eastern North Carolina is making positive efforts in work force development. However, the lack of big industry in the area does pose some disadvantages compared to the urban areas of the state. "Bigger schools have been at it a little longer and have big companies that are really working hard," says Athans. "Like in Duplin County, hog farmers just aren't out there [working with community college programs]," Athans adds.

—continues on page 40

***"If you have never been hungry,
you can never know the either/or
agony created by a single sorghum
biscuit—either your brother gets it
or you do. And if you do eat it,
you know in your bones you have
stolen the food straight from his
mouth, there being so little for
either of you."***

—CHARLES JOHNSON
MIDDLE PASSAGE

**Table 6. 1998 Estimates of Levels of Adult Literacy in N.C.,
by County**

County	Level 1	Level 2	Levels 3-5	County	Level 1	Level 2	Levels 3-5
Alamance	20%	31%	49%	Duplin*	32%	36%	32%
Alexander	16	37	47	Durham	24	23	53
Alleghany	21	40	39	Edgecombe*	35	37	28
Anson	33	36	31	Forsyth	21	26	53
Ashe	21	38	41	Franklin	28	36	36
Avery	18	34	48	Gaston	20	34	46
Beaufort*	27	34	39	Gates*	35	35	30
Bertie*	42	39	19	Graham	21	40	39
Bladen*	33	37	30	Granville	31	35	34
Brunswick*	24	31	45	Greene*	33	36	31
Buncombe	18	27	55	Guilford	21	25	54
Burke	19	34	47	Halifax*	38	38	24
Cabarrus	18	32	50	Harnett*	25	34	41
Caldwell	18	37	45	Haywood	18	32	50
Camden* **				Henderson	18	27	55
Carteret*	18	28	54	Hertford*	38	36	26
Caswell	33	38	29	Hoke*	34	38	28
Catawba	16	30	54	Hyde* **			
Chatham	22	29	49	Iredell	19	31	50
Cherokee	21	36	43	Jackson	15	30	55
Chowan*	31	34	35	Johnston*	23	33	44
Clay	22	34	44	Jones*	32	Not Available	
Cleveland	22	34	44	Lee	24	29	47
Columbus*	31	36	33	Lenoir*	30	35	35
Craven*	23	29	48	Lincoln	17	35	48
Cumberland*	24	28	48	McDowell	19	35	46
Currituck*	19	36	45	Macon	20	32	48
Dare*	12	26	62	Madison	19	37	44
Davidson	17	34	49	Martin*	34	37	29
Davie	18	32	50	Mecklenburg	20	22	58

Table 6, continued

County	Level 1	Level 2	Levels 3-5	County	Level 1	Level 2	Levels 3-5
Mitchell	21%	39%	40%	Stanly	20%	34%	46%
Montgomery	27	39	34	Stokes	17	37	46
Moore	22	27	51	Surry	19	36	45
Nash*	26	33	41	Swain	23	36	41
New Hanover*	20	25	55	Transylvania	19	30	51
Northampton*	42	39	19	Tyrrell* **			
Onslow*	18	31	51	Union	17	32	51
Orange	15	18	67	Vance	33	37	30
Pamlico*	28	31	41	Wake	17	19	64
Pasquotank*	29	33	38	Warren	41	40	19
Pender*	28	33	39	Washington*	33	37	30
Perquimans*	30	35	35	Watauga	12	27	61
Person	25	34	41	Wayne*	26	32	42
Pitt*	23	29	48	Wilkes	20	38	42
Polk	21	31	48	Wilson*	30	33	37
Randolph	15	37	48	Yadkin	19	34	47
Richmond	28	36	36	Yancey	21	35	44
Robeson*	27	36	37				
Rockingham	24	36	40				
Rowan	21	32	47	Eastern	29	34	38
Rutherford	21	35	44	Piedmont	22	32	46
Sampson*	29	35	36	Mountain	19	34	46
Scotland*	30	35	35	North Carolina	22	30	48

* Denotes Eastern county.

** Counties marked with two asterisks (**) have populations too small to calculate reliable estimates.

Source: Mary Dunn Siedow, Ed.D., "Literacy in North Carolina, 1998 Edition," North Carolina Literacy Resource Center, Raleigh, N.C. found at www.nclrc.state.nc.us/home/reports/litnc98.htm. Level 1 represents the lowest level of literacy, Level 2 the next lowest, and Levels 3-5 the highest. See page 30 for a more detailed explanation of these levels.

**Table 7. Dropout Rates in Grades 9–12, 1999–2000,
for All 117 School Districts in N.C.**

School System	1999–2000 Grades 9–12 Dropout Rate	School System	1999–2000 Grades 9–12 Dropout Rate
Alamance-Burlington	7.31%	Currituck*	8.73%
Alexander	6.77	Dare*	5.91
Alleghany	6.29	Davidson	5.53
Anson	9.09	Lexington City	7.17
Ashe	7.91	Thomasville City	5.99
Avery	7.65	Davie	5.66
Beaufort*	6.95	Duplin*	5.32
Bertie*	6.00	Durham	6.08
Bladen*	4.64	Edgecombe*	8.55
Brunswick*	8.49	Forsyth	6.42
Buncombe	7.21	Franklin	8.85
Asheville City	5.60	Gaston	7.53
Burke	7.28	Gates*	7.53
Cabarrus	5.48	Graham	5.93
Kannapolis City	6.20	Granville	8.15
Caldwell	6.43	Greene*	7.28
Camden*	8.99	Guilford	5.97
Carteret*	6.31	Halifax*	7.27
Caswell	7.48	Roanoke Rapids City*	5.29
Catawba	6.03	Weldon City*	4.87
Hickory City	10.50	Harnett*	7.83
Newton-Conover	2.85	Haywood	6.23
Chatham	7.92	Henderson	5.74
Cherokee	5.49	Hertford*	8.03
Chowan/Edenton*	5.34	Hoke*	9.53
Clay	7.86	Hyde*	12.42
Cleveland	5.48	Iredell-Statesville	6.91
Kings Mountain	7.81	Mooreville City	4.86
Shelby City	6.20	Jackson	5.83
Columbus*	7.53	Johnston*	6.36
Whiteville City*	6.13	Jones*	5.65
Craven*	6.62	Lee	5.71
Cumberland*	5.05	Lenoir*	7.61

Table 7, continued

School System	1999-2000 Grades 9-12 Dropout Rate	School System	1999-2000 Grades 9-12 Dropout Rate
Lincoln	7.61%	Rutherford	9.23%
McDowell	7.24	Sampson*	3.82
Macon	6.97	Clinton City*	7.19
Madison	5.11	Scotland*	7.93
Martin*	7.27	Stanly	4.92
Mecklenburg	6.82	Stokes	6.54
Mitchell	3.44	Surry	6.83
Montgomery	8.14	Elkin City	1.99
Moore	5.15	Mount Airy City	2.60
Nash-Rocky Mount*	7.74	Swain	6.11
New Hanover*	5.83	Transylvania	6.38
Northampton*	7.43	Tyrrell*	1.64
Onslow*	6.65	Union	5.41
Orange	4.73	Vance	8.79
Chapel Hill-Carrboro	1.15	Wake	4.14
Pamlico*	5.02	Warren	10.96
Pasquotank*	6.86	Washington*	3.86
Pender*	7.62	Watauga	6.01
Perquimans*	8.62	Wayne*	4.89
Person	6.30	Wilkes	6.71
Pitt*	7.83	Wilson*	7.89
Polk	3.00	Yadkin	5.39
Randolph	8.12	Yancey	5.95
Asheboro City	7.60		
Richmond	6.71	Eastern	6.85%
Robeson*	10.18	Piedmont	6.55%
Rockingham	5.53	Western	6.04%
Rowan-Salisbury	6.61	North Carolina**	6.43%

* Denotes Eastern school system. City school systems are included beneath the county in which they are located.

Source: North Carolina Department of Public Instruction.

Note: Beginning with the 1998-99 dropout reporting, students who withdrew from school to pursue community college GED or adult high school diploma programs were counted as dropouts.

**Table 8. Percentage of Persons Over Age 25 Who Are
High School and College Graduates in N.C., 1990**

County	Percent High School Graduates	Percent College Graduates	County	Percent High School Graduates	Percent College Graduates
Alamance	67.9%	14.6%	Davidson	64.2%	10.0%
Alexander	59.0%	7.9%	Davie	69.6%	14.7%
Alleghany	52.6%	9.0%	Duplin*	56.4%	6.6%
Anson	60.8%	7.3%	Durham	78.9%	33.4%
Ashe	55.6%	8.1%	Edgecombe*	58.5%	8.1%
Avery	62.2%	12.4%	Forsyth	77.6%	24.1%
Beaufort*	65.9%	10.8%	Franklin	62.4%	9.2%
Bertie*	54.9%	8.0%	Gaston	60.9%	10.8%
Bladen*	56.4%	7.7%	Gates*	60.9%	7.4%
Brunswick*	69.2%	10.7%	Graham	56.9%	10.0%
Buncombe	74.5%	19.1%	Granville	62.0%	9.6%
Burke	60.1%	10.6%	Greene*	59.2%	8.9%
Cabarrus	67.4%	12.3%	Guilford	76.1%	24.8%
Caldwell	56.8%	8.9%	Halifax*	53.9%	8.6%
Camden*	66.2%	10.1%	Harnett*	64.0%	9.5%
Carteret*	75.5%	16.2%	Haywood	68.0%	12.8%
Caswell	55.0%	6.6%	Henderson	76.2%	19.5%
Catawba	66.7%	14.2%	Hertford*	58.1%	10.7%
Chatham	70.0%	19.5%	Hoke*	55.7%	8.4%
Cherokee	59.9%	8.0%	Hyde*	60.0%	7.7%
Chowan*	63.3%	12.2%	Iredell	66.5%	11.8%
Clay	62.9%	12.6%	Jackson	68.7%	19.7%
Cleveland	63.5%	11.1%	Johnston*	64.6%	11.1%
Columbus*	59.4%	9.1%	Jones*	62.4%	8.1%
Craven*	75.9%	15.1%	Lee	72.4%	14.3%
Cumberland*	80.3%	16.6%	Lenoir*	62.9%	11.5%
Currituck*	67.7%	8.2%	Lincoln	62.0%	10.5%
Dare*	81.0%	21.4%	McDowell	58.5%	8.1%

Table 8, continued

County	Percent High School Graduates	Percent College Graduates	County	Percent High School Graduates	Percent College Graduates
Macon	66.7%	13.2%	Sampson*	61.3%	8.1%
Madison	56.4%	11.3%	Scotland*	60.7%	13.6%
Martin*	58.3%	9.5%	Stanly	62.1%	9.4%
Mecklenburg	81.6%	28.3%	Stokes	62.8%	7.3%
Mitchell	55.3%	9.2%	Surry	57.3%	9.4%
Montgomery	55.3%	7.8%	Swain	59.0%	9.9%
Moore	74.3%	19.9%	Transylvania	72.1%	17.9%
Nash*	65.1%	13.7%	Tyrrell*	58.0%	7.6%
New Hanover*	78.1%	21.2%	Union	69.0%	13.2%
Northampton*	52.8%	8.8%	Vance	57.1%	9.5%
Onslow*	83.0%	13.4%	Wake	85.4%	35.3%
Orange	83.6%	46.1%	Warren	53.7%	7.1%
Pamlico*	65.9%	11.6%	Washington*	60.6%	8.7%
Pasquotank*	67.4%	14.4%	Watauga	72.0%	27.4%
Pender*	64.6%	11.6%	Wayne*	71.2%	12.7%
Perquimans*	61.2%	8.8%	Wilkes	54.1%	8.8%
Person	63.2%	7.6%	Wilson*	62.2%	14.4%
Pitt*	71.0%	21.9%	Yadkin	58.9%	7.1%
Polk	69.6%	20.1%	Yancey	60.7%	10.0%
Randolph	62.0%	9.1%			
Richmond	60.4%	7.9%	Eastern	64.2%	11.3%
Robeson*	57.0%	11.0%	Piedmont	66.2%	14.4%
Rockingham	59.2%	8.8%	Western	62.3%	12.7%
Rowan	66.0%	11.7%	N.C.	70.0%	17.4%
Rutherford	59.4%	9.8%	U.S.	77.6%	21.3%

* Denotes Eastern county.

Source: U.S. Census Bureau, 1990.

Note: Only done for counties at the decennial census. County-level results are typically released two to three years after the completion of the census.

Table 9. Community Colleges (CC) in Eastern North Carolina

Community College	Eastern North Carolina County Served	Community College	Eastern North Carolina County Served
1. Beaufort CC	Beaufort Hyde Tyrrell Washington	13. James Sprunt CC	Duplin
2. Bladen CC	Bladen	14. Johnston CC	Johnston
3. Brunswick CC	Brunswick	15. Lenoir CC	Greene Lenoir Jones
4. Cape Fear CC	New Hanover Pender	16. Martin CC	Bertie Martin
5. Carteret CC	Carteret	17. Nash CC	Nash
6. Central Carolina CC	Harnett	18. Pamlico CC	Pamlico
7. Coastal Carolina	Onslow	19. Pitt CC	Pitt
8. College of the Albemarle	Camden Chowan Currituck Dare Gates Pasquotank Perquimans	20. Richmond CC	Scotland
9. Craven CC	Craven	21. Robeson CC	Robeson
10. Edgecombe CC	Edgecombe	22. Roanoke-Chowan CC	Hertford
11. Fayetteville Tech	Cumberland	23. Sampson CC	Sampson
12. Halifax CC	Halifax Northampton	24. Sandhills CC	Hoke
		25. Southeastern CC	Columbus
		26. Wayne CC	Wayne
		27. Wilson Tech	Wilson

Source: North Carolina Community College System, Raleigh, N.C.


—continued from page 33

Conclusion

Perhaps Eastern North Carolina won't host another event that will measure up to Orville Wright's revolutionary first flight. The region still offers the same spirit of hospitality, resilience, and hard work as those who welcomed and assisted the Wright brothers nearly a century ago. And, the broader regional numbers hide some strong economic success stories, such as that of New Hanover County, where unemployment is relatively low and

both population growth and per capita income exceed the state average. The State Port at Wilmington provides an economic engine for the county, as does the movie industry, a well-developed manufacturing base, and beaches that are popular with tourists and retirees. Indeed, New Hanover is one of eight coastal counties with ocean-front real estate, most of them marked by strong population growth and development. Counties along the eastern region's coastal rivers and sounds also have natural resources that provide for future growth. In addition, counties like Craven and

neighboring Pitt—home of East Carolina University, and military-dependent counties such as Cumberland, Onslow, and Wayne provide hubs of economic activity.

However, set against these assets are some stark numbers. As a region, Eastern North Carolina is last in per capita income, lowest in wages paid, highest in poverty, and highest in unemployment. And some may argue it remains first in flight since the few North Carolina counties still losing population are located in the East. In addition, the East faces a bit of an education deficit compared to the rest of the state, with fewer high school and college graduates and a greater problem with illiteracy. The challenges of finding high-quality jobs for the region's residents, of increasing incomes and reducing poverty, and of continuing to prepare a young work force and re-train an older one are not easy to meet. But Eastern North Carolina must meet these challenges if the region is to ascend on a flight of its own. 

FOOTNOTES

¹ Information provided by the First Flight Centennial Commission, a part of the North Carolina Department of Cultural Resources, Raleigh, N.C. on the Internet at www.firstflightnc.com/first.cfm.

² "North Carolina Rural Prosperity Task Force Report," North Carolina Rural Prosperity Task Force, Raleigh, N.C., February 21, 2000, p. 9.

³ The N.C. Center for Public Policy Research previously took a detailed look at U.S. Census Bureau data to paint a statistical portrait of the state's population in Ken Otterbourg and Mike McLaughlin, "North Carolina's Demographic Destiny: The Policy Implications of the 1990 Census," *North Carolina Insight*, Volume 14, No. 4, August 1993, pp. 2-49.

⁴ U.S. Census Data from the N.C. Office of State Budget, Planning, and Management on the Internet at www.demog.state.nc.us/ctyncest.html.

⁵ Employment Security Commission of N.C. on the Internet www.esc.state.nc.us/econ_data/publications.asp.

⁶ U.S. Bureau of Labor Statistics, Regional Economic Information Systems, Washington, D.C., <http://fisher.lib.virginia.edu/reis>.

⁷ North Carolina Rural Economic Development Center, "Choices for a New Century." December 1999, p. 20.

⁸ Per capita personal income of a county is defined as the income received by, or on behalf of all residents. It includes income from all sources: labor income, proprietor's income, government transfer payments (those due to poverty and those which are age-related such as Social Security), and dividends, interest, and rent.

⁹ U.S. Bureau of Economic Analysis, Regional Economic Information System, Washington, D.C. On the Internet at <http://fisher.lib.virginia.edu/reis>

¹⁰ North Carolina's average annual wage is the total county average annual wage for all reporting units. Wages and salaries include all reported income, including gross wages and salaries, bonuses, tips and other gratuities. Wages and salaries do not include employer contributions to old age, survivors' and disability insurance (OASDI), health insurance, unemployment insur-

ance, workers' compensation, and private pension and welfare funds. Employment Security Commission of North Carolina on the Internet at jobs.esc.state.nc.us/lmi/ew/EW2000A/ctyindx.htm.

¹¹ N.C. Employment Security Commission, Labor Market Information Division on the Internet at jobs.esc.state.nc.us/lmi/ew/EW2000A/ctyindx.htm

¹² The official poverty definition counts money income before taxes and does not include capital gains and noncash benefits (such as public housing, Medicaid, and food stamps). Poverty is not defined for people in military barracks, institutional group quarters, or for unrelated individuals under age 15 (such as foster children).

¹³ In 1997, the poverty threshold ranged from \$8,183 for an individual to \$32,566 for nine persons or more. On the Internet at www.census.gov/hhes/poverty/threshld/thresh97.html.

¹⁴ Estimates of income and poverty derived from models that employ the administrative record data currently at hand are much less precise than those derived directly from the "long form" which was sent to approximately one-sixth of the nation's households as part of the 1990 Census. Thus, for most counties, the model-based estimates for 1993 and 1995 are less statistically precise than the census estimates were for 1989. In gauging the margin of error by the average relative width of the 90-percent confidence interval, the width of the 90-percent confidence interval is expressed as a fraction of the estimate. The margins of error associated with the decennial census estimates are strongly related to the population size of the county, while that relationship is much less strong for the model-based estimates. Thus, the model estimates have a smaller margin of error for small counties than the census, while the opposite is true for large counties.

¹⁵ 1997 Small Area Income and Poverty Estimates, U.S. Census Bureau, Washington, D.C., June 2001.

¹⁶ "North Carolina Rural Prosperity Task Force Report," North Carolina Rural Prosperity Task Force, Raleigh, N.C., February 21, 2000, p. 41.

¹⁷ Stephen Moore, "Why Capital Matters," paper published in "Unleashing America's Potential: A Report of the National Commission on Economic Growth and Tax Reform," The National Commission on Economic Growth and Tax Reform, Washington, D.C., January 1996, on the Internet at zeus.townhall.com/taxcom/moore1.html.

¹⁸ Mary Dunn Siedow, "Literacy in North Carolina, 1998 Edition," North Carolina Literacy Resource Center, Raleigh, N.C., on the Internet at www.nclrc.state.nc.us/home/reports/litnc98.htm.

¹⁹ Thomas D. Rowley and David Freshwater. "Are Workers in the Rural South Ready for the Future?" *Rural Development Perspectives*, The Economic Research Service, U.S. Department of Agriculture, Washington, D.C., October 1999, Vol. 14, No. 3, p. 30.

²⁰ "North Carolina Public Schools Statistical Profile: 2001," North Carolina Department of Public Instruction, Raleigh, NC, pp. 35-37.

²¹ U.S. Census Bureau, Washington, D.C., 1990

²² Tim Venable, "Eastern North Carolina: Open for Business," Site Selection Investment Opportunity Report, *Site Selection Magazine*, Conway Data, Inc. Atlanta, Georgia, July 2000 on the Internet at www.siteselection.com/features/2000/july/eastnc/. "Friendly labor climate refers to the state's low unionization rate and the fact that North Carolina is a right-to-work state."

²³ North Carolina Community College System Map on the Internet at www.ncccs.cc.nc.us/colleges_map.htm.

²⁴ Lawrence Bivins, "Everybody's Talking—North Carolina's Northeast garners lots of media attention for attracting new industries and hordes of tourists," *North Carolina*, N.C. Citizens for Business and Industry, Raleigh, N.C., April 2001, pp. 33-34.



Does Eastern North Carolina Have the Infrastructure Needed for Growth?

by Leslie Boney III

Executive Summary

Depending on how one defines it, infrastructure can include everything from forests to shopping malls to personal computers. But increasingly, the “basic infrastructure” cited by people of Eastern North Carolina as essential to their future falls into six categories: water and sewer, highways, affordable housing, high speed Internet access, shell buildings, and natural gas. How does Eastern North Carolina stack up in these six categories? Is the existing infrastructure sufficient, or does the region need a greater investment in these basics to ensure a prosperous future? To answer these questions, the Center takes a detailed look at each of the six areas.

Water and Sewer: *In 1998, North Carolina voters approved \$800 million in water and sewer bonds, and a goodly portion of those funds flowed to Eastern North Carolina—58 percent of the total granted so far. However, the East still has many small towns without water and sewer facilities at all, and many others that are operating at capacity. Due to the region’s high water table, septic tanks are not always an option. Hurricane Floyd and the ensuing flooding helped expose the magnitude of the problem, with some town systems spilling raw sewage into public waterways. Despite the magnitude of the 1998 bond issue—among the largest in state history at the time—the available funding has only begun to touch the need, which approaches \$1.5 billion in the East.*

Highways: *Highways remain a crucial infrastructure need across Eastern North Carolina, as the ability to move goods conveniently and quickly is a key selling point in economic development. Eastern North Carolina has made strides in this area and in recent years has competed well for available funds. The region currently could be characterized as behind but closing the gap. Interstate Highway 40’s completion to the coast has opened up new swaths of development and major improvements are completed or are on tap for intrastate highways throughout the region. Statistically, the counties in the Department of Transportation’s three Eastern North Carolina regions have a greater percentage of the Intrastate System to be completed than the remainder of the state. But plans call for those counties to get more funding for more paving than other regions by 2008. By then, nearly every county in the region will have at least one intrastate-level highway. Three counties, however—Hoke, Hyde, and Pamlico—remain off the beaten path in terms of their highway capacity and may stay that way for the near future. And despite existing and scheduled*

improvements, there are still areas of need—such as upgraded highway access to the state port at Morehead City and interstate-level highways to serve the Global TransPark in Kinston.

Affordable Housing: *In the wake of Hurricane Floyd and resulting flooding, the issue of affordable housing has approached a near crisis for Eastern North Carolina. State estimates are that the flood damaged more than 67,000 homes, nearly 8,000 of which were destroyed. These included thousands of rental units, which are more likely to be occupied by lower-income individuals. The U.S. Department of Housing and Urban Development's first survey of housing after the flood estimates that more than 135,000 people in the 41 Eastern North Carolina counties live in housing that is either unaffordable, inadequate, or overcrowded. Buyout programs are proceeding slowly, and the rental market has been hit hard. However, even before the flood, affordable housing was an issue, squeezing the budgets of persons in important but low-paying positions such as teaching and public safety and working a hardship on the poor. One study found that in only 14 of 41 counties are average monthly rents lower than 25 percent of average household income, a standard measure of rental housing affordability.*

Internet Access: *Compared to other regions of the state, Eastern North Carolina generally has fewer people who own home computers or are connected to the Internet. One study found that only 11 of the 41 counties meet or exceed the state average of having at least 62.1 percent of their population within range of possible high-speed Internet access. That same study indicated that 57 percent of the people in one part of Eastern North Carolina don't necessarily believe that home access to the Internet is a worthwhile goal. The Rural Internet Access Authority has been allocated \$30 million dollars by the N.C. General Assembly and has received a commitment from the state's three largest telephone companies (BellSouth, Sprint, and Verizon) and various telephone cooperatives to make high-speed Internet access available throughout North Carolina by the end of 2003. Whether this funding will be enough to accomplish the task remains a question, and the East has further to go to become fully wired than the rest of the state.*

Shell Buildings: *Speculative buildings, or "shells," constructed by counties to lure industry are viewed by some as an increasingly necessary tool in the economic development tool kit. Eastern North Carolina is among the leaders in the construction of shell buildings. Nearly half (19 of 41 counties) have built a*

shell building or have one on the drawing board. While shell buildings are not universally popular and may not be necessary in some areas, many Eastern North Carolina economic development officials laud them as a way to get prospects to look at their counties and to increase their chances of success.

Natural Gas Availability: *Persons involved in economic development also say many deals hinge on whether natural gas is available in a county. This is primarily an issue to the 20 North Carolina counties currently without natural gas service. Of these counties, 14 lie in Eastern North Carolina. Winfall Mayor Fred Yates laments that his tiny Perquimans County town doesn't have natural gas service, but he's glad that nearby Hertford County does. Without it, Nucor Corporation wouldn't have considered the poor rural county for a new steel mill. Now, a few fortunate Winfall residents are commuting to the \$60,000 jobs the mill created. The good news for the unconnected counties is that with the help of a \$200 million state bond issue in 1998, plans are in place to serve them.*

While Eastern North Carolina is making progress in each of the six areas of infrastructure need, Hurricanes Dennis and especially Floyd were a setback, exposing the magnitude of the water and sewer need and greatly exacerbating an existing shortage of affordable housing. The region is making progress on highways, Internet access, natural gas availability, and economic development in general, as evidenced by the willingness to invest in shell buildings. However, the needs of the region still outstrip the infrastructure, and poverty still reigns over prosperity in many of the eastern counties.

The consensus is that it would take billions of dollars to meet the region's need, but the state's current budget crisis and other longer-range fiscal factors mean that type of investment probably isn't in the cards for the near future.

When Wilson County's leadership did a survey in 1992 of the companies they had tried to recruit, officials were shocked at what they found. Fewer than 1 percent of the companies that looked at the county actually moved there. When asked why, 62 percent of the companies said it was because the county didn't have the right infrastructure in place along Interstate 95.

The survey was a wake-up call. Three years later, Wilson County had put up \$7 million to build

a 600-acre industrial park near I-95. County officials extended water and sewer lines to the park and began taking out bank loans to build buildings there—so-called “shells” that they hoped to turn around and sell to business clients who wanted to get new enterprises started quickly.

The investment carried a big up-front cost. Wilson County has had to raise water and sewer

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rates to pay for the park, and the higher rates still drive some clients away. But officials say the investment has put the county on the economic development map. "It's like night and day," says Jennifer Lantz, executive director of the Wilson Economic Development Council. "Before, we were only being considered by the people in our immediate region for projects. Once the park was completed in 1995, we began getting looked at by companies looking at Norfolk [Va.], Charlotte, and Greenville-Spartanburg [S.C.]."

The "looks" have resulted in four new companies coming to the county so far, investing \$109 million. In two years, employment from those four companies is expected to reach 600 people. And Lantz believes the investment has paid off. Since the 1992 survey, the number of clients looking at Wilson County per year has doubled, and county developers are now convincing 14 percent of them to move there.

The impact of having infrastructure in place, of course, goes far beyond economic development. In many counties, it is literally the stuff that future dreams are made of—or dashed by. In Tyrrell County, school superintendent Nelson Smith watches the annual departure of his best and brightest. "Our enrollment is declining year after year after year," says Smith. "Every year we lose a good portion of our high school graduates. They get training, and then they just don't come back."

Lack of jobs is part of the problem, Smith says, lack of hope another. But he believes lack of infrastructure may be the county's key deficit. "When we don't have a four-lane highway, we don't get business. When we don't have an apartment building, it's hard for our graduates to find a place they can afford to live. And when we don't have shopping centers and malls and other amenities, it makes it hard to recruit teachers to our schools."

***"I'm one of those who is
convinced if you build it,
they will come.***

If you build the right thing."

—JENNIFER LANTZ, EXECUTIVE DIRECTOR,
WILSON ECONOMIC
DEVELOPMENT COUNCIL

"I'm one of those who is convinced if you build it, they will come," says Lantz. "If you build the right thing."

Across Eastern North Carolina, counties are trying to figure out how to build and pay for the "right thing"—how to put in place the kind of infrastructure that convinces more people and companies to move there and fewer current citizens and companies to leave there.

But there are obstacles to counties who want to put those things in place, mostly financial. The 41 counties in Eastern North Carolina—with the exception of Scotland and Hoke those east of or intersected by Interstate 95 but really the counties of the North Carolina coastal plain—are twice as likely to be considered "economically distressed" as counties in other parts of the state. N.C. Department of Commerce rankings (calendar year 2001) show that 23 of the 41 Eastern North Carolina counties (56 percent), are designated as "Tier One" or "Tier Two" counties—those considered under conditions of the William S. Lee Act as most "economically distressed." In the rest of North Carolina, only 13 of 59 counties (22 percent) are Tier One and Tier Two. (See Table 1, p. 47.)

More than half of the counties ranked lowest in their "ability to pay" are in Eastern North Carolina. North Carolina's Division of Community Assistance in the Department of Commerce ranks counties' "ability to pay" based on population, per capita income, and tax valuation of land and uses these ratings to determine a county's capacity to financially contribute to the cost of a project. Counties are rated on a scale of zero to 100, with a county scoring zero having the least capacity to contribute and a county scoring 100 having the greatest.

Counties in the bottom 25 in ability to pay from Eastern North Carolina in the year 2000 include Tyrrell, Northampton, Bertie, Jones, Hoke, Hertford, Hyde, Greene, Martin, Perquimans, Washington, Halifax, Bladen, and Columbus. People in counties in Eastern North Carolina make less money and are more likely to live in poverty, and not as many people are moving there or staying there as in the rest of the state.¹ The devastating impact of Hurricane Floyd on infrastructure in the East and the decline in property values that resulted has further challenged local budgets, as has the drop in farm income.

Finally, there are significant physical challenges to improving infrastructure in Eastern North Carolina. Some estimates show that as much of two-thirds of the remaining land can't accept septic tank systems, leaving the expensive extension

**Table 1. North Carolina Counties by Their 2001 Economic
Development Tier Categories, As Determined by the N.C.
Department of Commerce***

Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Alleghany	Anson	Avery	Brunswick**	Alamance
Ashe	Bladen**	Caswell	Burke	Alexander
Beaufort**	Duplin**	Chowan**	Caldwell	Buncombe
Bertie**	Hoke**	Cleveland	Carteret**	Cabarrus
Camden**	Madison	Cumberland**	Craven**	Catawba
Cherokee	Mitchell	Currituck**	Dare**	Chatham
Clay	Montgomery	Gaston	Franklin	Davidson
Columbus**	Onslow**	Gates**	Granville	Davie
Edgecombe**	Pamlico**	Greene**	Harnett**	Durham
Graham	Pasquotank**	Haywood	Lincoln	Forsyth
Halifax**	Robeson**	Jackson	Macon	Guilford
Hertford**	Vance	Lenoir**	Nash	Henderson
Hyde**		McDowell	Pender**	Iredell
Jones**		Person	Pitt**	Johnston**
Martin**		Polk	Rowan	Lee
Northampton**		Rockingham	Sampson**	Mecklenburg
Perquimans**		Rutherford	Stokes	Moore
Richmond		Stanly	Surry	New Hanover**
Scotland**		Watauga	Wilkes	Orange
Swain		Wayne**	Yadkin	Randolph
Tyrrell**		Wilson**		Transylvania
Warren**				Union
Washington**				Wake
Yancey				

* Tier rankings are developed using unemployment, per capita income, and population growth, among other factors.

** Denotes Eastern counties

Source: N.C. Department of Commerce, Commerce Finance Center at www.nccommerce.com/finance/tiers/

Down our way there are three things I think most of us take on faith. One is that so long as you make peace with your god before you die, even at the latest hour, you'll be saved.

Two is that if you turn on the tap, you'll get safe, clean drinking water. And three is that if you flush the john, it will work. They don't know where it will go, but they believe that.

Those three things have one thing in common: Nobody wants to pay the price to ensure that any of these things will happen. Nobody gets really interested in making atonement before they get sick. Nobody wants to give to the church. And nobody wants to pay for water and sewer.

—SEN. JOHN KERR

of water and sewer lines as a necessary prerequisite for any new development, and in some counties much of the remaining land is classified as "wetlands," making development of any sort inadvisable or problematic.²

But the importance of getting infrastructure in place remains. "Obviously education and the quality of life are critical to the future success of Eastern North Carolina," says Ernie Pearson, an attorney in Raleigh, N.C., who specializes in economic development, "But if you want communities to grow and remain strong, you don't get to the point of discussing those other things unless you have infrastructure."

Depending on how you define it, infrastructure can include everything from forests to shopping malls to personal computers. But increasingly, the "basic infrastructure" cited by people of Eastern North Carolina as essential to their future falls into six categories: water and sewer, highways, affordable housing, high-speed Internet access, shell buildings, and natural gas.³ What follows is a detailed look at how Eastern North Carolina measures up in these categories.

Water and Sewer: A Busted Flush?

If you asked Eastern North Carolina leaders to name which types of infrastructure are most critical to their future growth and quality of life, the answers would vary based on where they live and what they already have in place. But among the items cited, the single type of infrastructure

these leaders mention most often as key to the future of the region is the availability of water and sewer lines.

During testimony before the Rural Prosperity Task Force in Kenansville, N.C., in September 1999, Wayne County Senator John Kerr indicated that having reliable water and sewer holds the key to a community's success. A prospective business, he says, will not locate where there is no water and sewer. And without sewer service, residential construction is limited to those places where septic systems can be installed. In many parts of Eastern North Carolina, septic systems are not an option: the ground won't accept septic tank discharge. Such is the case in parts of Bertie, Camden, Chowan, Currituck, Gates, Hertford, Pasquotank and Perquimans counties to mention a few examples. Indeed, estimates are that two-thirds of the remaining undeveloped land in Eastern North Carolina won't accept septic systems. If a county can't find enough water from rivers or lakes or aquifers to serve its citizens, it can't grow. And if a county can't solve those problems, planners can't even begin to think about other "quality of life" issues.

A compelling study conducted between 1994 and 1997 by John Soles at the nonprofit North Carolina Rural Economic Development Center assessed the water and sewer needs⁴ in 75 counties, including most eastern counties,⁵ identifying a projected \$11.34 billion in needs across the state over the next 20 years.⁶ The survey found that the average size of sewer systems in all eastern counties was fewer than 3,300 customers, with the excep-

tion of Lenoir, and that average size of water systems was fewer than 3,300 customers in all but Harnett, Lenoir, Onslow, Pasquotank, and Pitt counties. This means that nearly 75 percent of the systems surveyed were officially classified as "small" (serving fewer than 3,300 customers), compared to a national average of 10 percent. Therefore, when the time comes to improve or rebuild, the cost per customer is higher. Further, the study found that the systems were aging—50 percent are over 40 years old—and overworked. Three quarters of the water and sewer systems had no excess capacity to take on additional customers.⁷

No comprehensive assessment of water and sewer needs has been completed since the devastating 1999 flood resulting from Hurricane Floyd, but the 1997 survey shows water and sewer needs are significant and serious in all regions of the state. According to the survey results, needs in 34 of the 41 Eastern North Carolina counties totaled just over \$1.3 billion. (See Table 2, pp. 50–51.)⁸ The rest of the state had needs totaling just over \$10 billion,

most of that in the state's major urban centers.

The statewide Rural Economic Development Center study served as one factor in convincing North Carolina voters to approve an \$800 million general obligation bond issue in 1998—among the largest in the state's history at the time. The funding was designed to address critical needs over the next five years and needs unmet by anticipated funding from federal, state, local, and private sources.

Since that time, even as bond money has begun to be spent, the needs of towns and counties in Eastern North Carolina have grown even more acute. In 1997, the Rural Center survey found that Jones County still had some excess capacity to add residential and business customers to their systems. No more. Trenton Mayor Sylvia Willis in Jones County says she has full approval to build an industrial park in her town, but no water and sewer to serve prospective businesses. Preliminary estimates of the cost of improvements to the sewer system alone stand at \$1.4 million,⁹ a huge cost for a



Karen Tam

small town. But without additional water and sewer supply, Willis says the project can't proceed. "We can't do anything until we get a new plant," says Willis.

Hoke County has no sewer system except in the town of Raeford. And that is making it impossible to recruit businesses anywhere outside Raeford. "It kills you. It destroys you," says Hoke

County Commissioner James Leach. "You cannot compete for any business without it."

At least one study shows that investments in water and sewer made to attract a single company generally end up attracting several companies. A study by the Appalachian Regional Commission in July 2000 found that water and sewer projects they funded eventually served four times as many busi-

Table 2. 1997 Eastern North Carolina Water and Sewer Needs

County in Eastern N.C.	Water Needs (in millions)	Sewer Needs (in millions)	Total Cost (in millions)
1. Beaufort	\$29.3	\$6.4	\$35.7
2. Bertie	15.8	2.5	18.2
3. Bladen	9.5	1.5	11.1
4. Brunswick	26.1	59.4	85.6
5. Camden	3.5	0	3.5
6. Carteret*	9.8	10.9	20.7
7. Chowan	3.0	11.6	14.6
8. Columbus	19.5	12.3	31.8
9. Craven*	6.7	9.4	16.0
10. Cumberland	Not surveyed		
11. Currituck	27.3	0	27.3
12. Dare	29.5	0.4	29.9
13. Duplin	10.6	9.9	20.5
14. Edgecombe	Not surveyed		
15. Gates	3.5	0	3.5
16. Greene	8.7	11.6	20.3
17. Halifax	16.6	10.1	26.6
18. Harnett	10.3	30.9	41.2
19. Hertford	11.3	15.9	27.2
20. Hoke	8.2	2.0	10.2
21. Hyde	5.9	0	5.9
22. Johnston*	11.0	12.8	23.9
23. Jones*	3.7	1.1	4.8
24. Lenoir†	41.9	64.5	106.4
25. Martin	9.9	13.1	23.0
26. Nash	Not surveyed		
27. New Hanover	Not surveyed		

nesses as they had originally projected and created 62 percent more jobs than projected. According to the study, each public dollar invested in water and sewer projects for businesses resulted in more than \$12 in total income.¹⁰

So far, the eastern counties are doing better than the rest of the state in applying for—and getting—the money from the state bond issue. An

analysis done for the state Infrastructure Council shows that 134 applicants from 134 eastern towns and counties¹¹ have filed grant requests amounting to 54 percent of the total statewide requests for water and sewer bond funds. Forty-six of those applicants have received \$96.3 million in funding—58 percent of the total amount granted statewide.¹²

The percentage of grants flowing to the East

Table 2, continued

County in Eastern N.C.	Water Needs (in millions)	Sewer Needs (in millions)	Total Cost (in millions)
28. Northampton	14.2	10.3	24.5
29. Onslow ⁺⁺	9.5	319.2	328.7
30. Pamlico	Not surveyed		
31. Pasquotank	110.8	13.7	124.5
32. Pender	8.9	3.9	12.8
33. Perquimans	5.6	5.0	10.6
34. Pitt	47.1	28.2	75.3
35. Robeson	22.0	9.8	31.8
36. Sampson	13.2	3.7	16.9
37. Scotland	7.2	12.4	19.5
38. Tyrrell	Not surveyed		
39. Washington	6.8	2.7	9.5
40. Wayne	Not surveyed		
41. Wilson	60.4	11.0	71.5
Total Eastern Need (34 counties surveyed)			\$1,333.8
Total Other NC Counties			\$10,006.2

The figures cited for a county's "needs" represent assessments performed by consulting engineering firms working with system owners and operators over the period of 1995–1997 and attempt to assess the cost of improvements to public community water and sewer systems that will be needed to meet county needs through 2020. Row totals may not add up precisely due to rounding.

* Indicates county "need" survey based exclusively on EPA data.

+ Much of the need in Lenoir County in 1997 came from the need to update Kinston's water and sewer facility. Hurricane recovery funds addressed much of this need.

++ About \$309 million of Onslow County's need comes from a single project, an effort to build a countywide, consolidated system.

Source: N.C. Rural Economic Development Center, 1997

4021 Carya Drive, Raleigh, NC 27610, (919) 250-4314 www.ncruralcenter.org

raised concerns among western legislators in the 2000 session of the General Assembly, who called for the analysis. But Sen. Kerr, one of the General Assembly's strongest advocate for water and sewer funding, says the funds make up for historic deficits in the region and current environmental challenges. "We have higher water tables, so that makes it harder to do septic systems," says Kerr. "We've had smaller systems in place. And we've got greater needs."

The higher water tables mean that it is harder for people seeking to build in Eastern North Carolina to put in their own septic systems. According to Ed Moran, head of the Eastern North Carolina Sustainable Economic Development Center, roughly two-thirds of remaining land in the East "won't perk"—that is, it won't accept traditional septic systems. That leaves water and sewer lines as the principal solution for development.¹³

But the money available through the 1998 bond issue will only address a small part of the East's water and sewer needs. The 1997 study identified \$1.3 billion in water and sewer needs for Eastern North Carolina alone. The bond issue authorized only \$800 million for the entire state, and the application process for these funds is ongoing. For additional funding, counties depend on federal, state, local, and private sources. The 2000 General Assembly provided some help by voting to make more funding available to lower income communities by designating funds from the bond issues for grants rather than loans.¹⁴ But for the past two decades, federal funding for water and sewer projects has dropped dramatically—declining by half between 1981 and 1997.¹⁵ Wealthier communities can make up for the shortfall by borrowing funds from banks to build water and sewer projects, but 123 of the 200 water and sewer systems surveyed either have no bond

rating or have bond ratings too low to qualify.¹⁶

In the short term, that means rural communities have to be creative. One solution for counties is practical. Those that don't have water and sewer capacity are forming alliances with those who do and thereby benefiting from economies of scale. Rather than build a new sewer plant in Hoke County, for example, leaders are negotiating deals with the towns of Raeford and Fayetteville to provide treatment of wastewater.

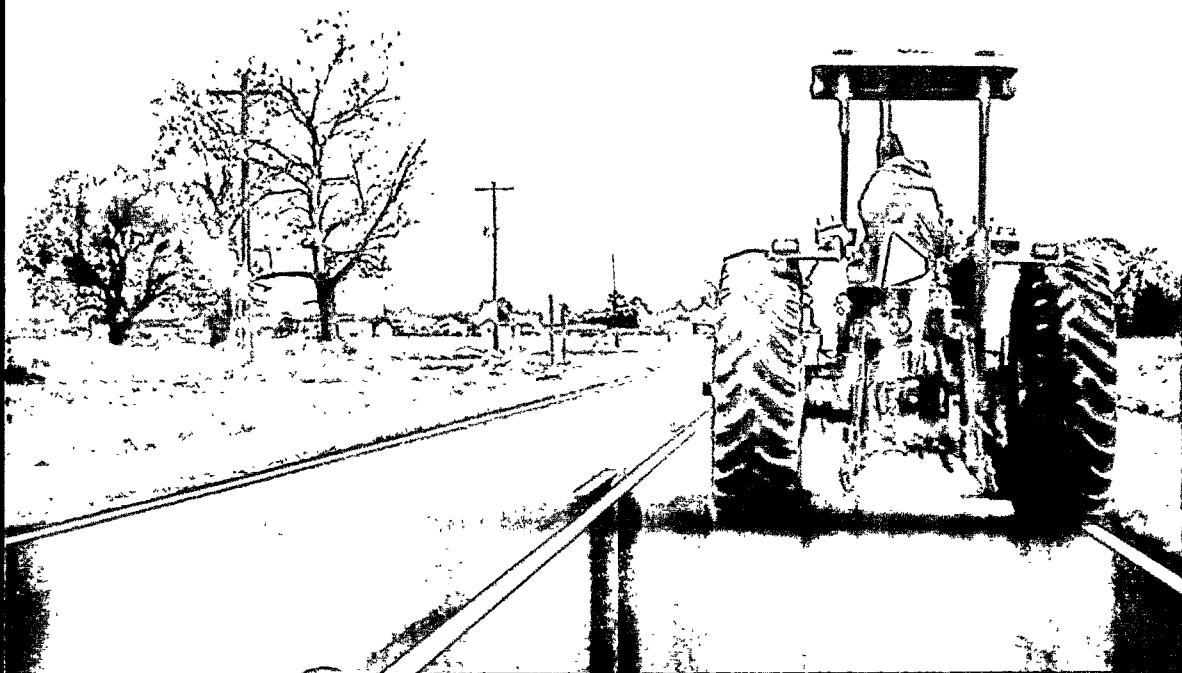
Pender County is proposing to help New Hanover County double the capacity of its wastewater treatment plant by 2004, with the agreement that Pender could send up to 75,000 gallons of sewage to the plant daily. "If they are looking for expansion, we would like to provide them funds for some of that capacity," says Assistant County Manager Andy Hedrick. "We think it would be far better for us to join paying into their own plant than build our own, that way using the dollars to get more treatment for them and for us."

Other eastern counties are exploring new technologies. Rather than extending water and sewer lines to serve new development, the town of Beaufort is using a \$2.5 million United States Department of Agriculture (USDA) Rural Development grant to put a decentralized wastewater treatment system in developments beyond the current water and sewer line grid. Supporters of the process say that for less than the cost of extending water and sewer lines, a decentralized project can provide small developments all the water and sewer service they need.¹⁷

Others are starting to question how much water and sewer capacity should be expanded, and where it should go. In Johnston County, commissioners have recognized the role that expanding wastewater treatment capacity can have on development by recommending spending \$16 million to expand the capacity of their treatment facility from 4.5 million to 7 million gallons a day. But they also have put restrictions on who can tap into the new lines. The expansion allows only those immediately adjacent to municipalities or along the interstate highway to use the extra capacity.

The policy aims to limit sprawl in the county. Mary Kiesau, who leads the Sierra Club's anti-sprawl campaign, and John Hodges-Copple, planning director for the Triangle J Council of Governments, say the proposal seems to put some controls on growth. "It sounds like what they're doing is guiding development to specific areas . . . rather than having it spread willy-nilly around the countryside," says Hodges-Copple.¹⁸

***A study by the Appalachian
Regional Commission in July 2000
found that water and sewer
projects they funded eventually
served four times as many
businesses as they had originally
projected and created 62 percent
more jobs than projected.***



Karen Tam

Some are calling for more funding to bolster traditional water and sewer services. In its final report issued in 2000, the N.C. Rural Prosperity Task Force recommended that the state authorize a new \$1 billion statewide bond issue to pay for water and sewer needs in rural areas,¹⁹ but the passage in 2000 of the \$3.1 billion bond issue for universities and community colleges may limit the state's ability to pursue additional bond efforts. North Carolina Citizens for Business and Industry (NCCBI), the statewide chamber of commerce, recommended as part of its legislative platform for 2001 creating a dedicated funding stream from state funds to pay for water and sewer infrastructure improvements, but NCCBI hasn't suggested a source for the funds.²⁰ Some are looking west for funding ideas. Faced with similar needs and similar budget challenges, a task force in the state of Washington proposed allowing counties to hold back up to 0.04 percent of their sales tax revenues for infrastructure development of all sorts.²¹

Each of those solutions assumes the water will actually be available if the infrastructure is in place. In central Eastern North Carolina, even that may be in doubt. Some studies show the water level in the Black Creek aquifer in the central and southwest coastal plain²² and the Upper Cape Fear aquifer in the western coastal plain²³—into which many

larger water systems drill wells—may have dropped as much as 150 feet over the past century due to overuse.

New regulations by the Environmental Management Commission, which go into effect in the summer of 2002, aim to stop that depletion by forcing large municipal and county systems to decrease the amount of water they take from the aquifers by as much as 75 percent. Municipal leaders aren't sure where they will find more water or how much it will cost. "Everybody's pretty clear that we're drawing out more than the systems are putting in," says Richard Hicks, town manager of Farmville, which has 11 wells currently serving its citizens. "It's going to have a significant impact on the economic well-being of Eastern North Carolina."²⁴

Highways: Can You Get There From Here?

The second most-commonly-cited infrastructure need for Eastern North Carolina is highways. "If you study our history and drive our state, you can see clearly one thing," says Oppie Jordan, vice president of Carolinas Gateway Partnership in Rocky Mount, an economic development group. "Development comes where the infrastructure is in place."

Ernie Pearson, a Raleigh attorney specializing in economic development who works with towns and counties across North Carolina, puts it another way. "A county can offer a great pool of workers," says Pearson, "but if the company has to take its goods 50 miles on a two-lane road before they hit the highway, they aren't going to come."

One indication of the value Eastern North Carolina and the state place on roads is the reaction after Hurricane Floyd. When the storm hit in September of 1999, it closed more than 1,000 sections of road, including large sections of Interstate 40, Interstate 95 and U.S. highways 64, 70, and 264.²⁵

City and county officials in the East feared economic disaster. With the road system disrupted, tourists couldn't drive there. Commuters couldn't get to jobs. Customers couldn't get to restaurants and stores. Businesses couldn't ship goods. The North Carolina Department of Transportation mounted a massive road repair operation, spending \$76 million clearing debris and repairing major and minor roads in Eastern North Carolina, and most repairs were completed quickly.

Another indication of the important role highways can play in development is the impact big roads can have. Ten years ago, Interstate 40 opened in Johnston County, and set up an exit to Highway 42 near the unincorporated area known as Cleve-

land, a small collection of scattered homes with no business. Today, Cleveland has more than 125 stores, offices, gas stations, hotels, and restaurants.

On the plus side, according to Durwood Stephenson, a Johnston County contractor and member of the state Department of Transportation Board under Gov. Jim Hunt, I-40 has brought in nearly \$100 million in commercial development to the area immediately surrounding Cleveland, along with hundreds of new jobs. Stephenson says that the presence of the highway and resultant growth has enabled the county to extend water and sewer lines to a satellite campus of Johnston County Community College, and local schools were able to tie into the system without cost. Further, Stephenson says that an estimated 70 percent of Johnston County residents commute to another county for work and that I-40 to a large extent has made that possible.

On the minus side, the explosive growth in Cleveland has taken place without careful planning. "There was a plan to develop, but there was no development plan,"²⁶ says Stephenson. More than 45,000 cars now travel through the crossroads every day, creating rush hour traffic snarls. Businesses have been allowed to build driveways directly off of Highway 42, and the number of traffic accidents has increased as people try to fight their

Table 3. The Eastern North Carolina Intrastate Highway System

	Eastern North Carolina	Remainder of State
Percent of state's population	42%*	58%
Percent of remaining Intrastate Highway System to be completed	54	46
Scheduled miles to be paved per region, 2002-2008	209	135
Scheduled spending per region, 2002-2008	\$968 million	\$883 million

* DOT's "eastern" counties include several counties that are not included in the East for the purposes of this article. These are Durham, Franklin, Granville, Person, Vance, Wake, and Warren. NCDOT's eastern districts do not include Hoke and Scotland counties, which the N.C. Center for Public Policy Research does include in its definition of the East. The center's 41 eastern counties contain **30.1 percent** of the state's population, according to the 2000 U.S. Census.

Source: N.C. Department of Transportation, *Transportation Improvement Program Status Report*, December 2000.

**Eureka, Fremont, Faro—
What made me think I could ever
Name this land—with its tobacco
Standing eight leaves tall? . . .**

—JAMES APPLEWHITE
“DECIPHERING THE KNOWN MAP”

way onto the road. Property costs have soared. The relaxed community has been transformed.

The county has benefited from the added tax base, but Stephenson says the county also had to increase police and fire protection and bear part of the cost of extending water and sewer lines. Overall, the financial benefit of the highway on the county has been tremendous, but county officials say they have learned from the experience, and have made changes that will enable them to better regulate development in the future.

The development in Cleveland shows the transformative power a highway can have—good and bad—and why so many city and county leaders in Eastern North Carolina see multi-lane roads as critical to their future development. Two decades ago, the only four-lane road you could find without stoplights in Eastern North Carolina was I-95. That has changed dramatically, with the completion of I-40 and the four-laning of U.S. highways 64, 70, 74, and 264. In the next decade, plans for the North Carolina “Intrastate System” call for four-laning of large portions of U.S. 13, 17, 24, 87, and 158 and improvements to other roads.²⁷

Statistically, the counties in the Department of Transportation’s three Eastern North Carolina regions²⁸ have a greater percentage of the Intrastate System to be completed than the remainder of the state. But plans call for those counties to get more funding²⁹ to do more paving than other regions by 2008. (See Table 3, p. 54.)³⁰ “I don’t think there is any question we lag behind the rest of the state,” says Stephenson, “But we are getting closer to catching up.”

The “catching up” for Pasquotank County Manager Larry Keaton will be complete when a section of Highway 17 near Elizabeth City is completed in June 2002. When that bypass is created, and the rest of Highway 17 is four-laned, people will have a fast north-south corridor that will take them easily through northeastern North Carolina. It will give people in the northeast quick access to

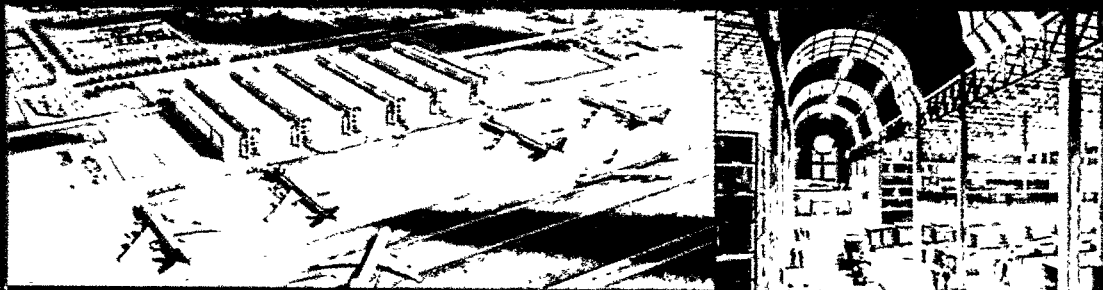
jobs in the Norfolk area and will provide tourists from Virginia easy access to northeastern North Carolina beaches and attractions. “For us, it means people don’t have to avoid Elizabeth City because we don’t have a four-lane road,” says Keaton. “And more traffic means a more favorable business climate and better jobs for our people.”

“Elizabeth City should be the Wilmington of the north,” says Jennifer Lantz, the Wilson County developer who studied infrastructure through the state’s Economic Development Board. She notes that the town has scenic beauty and all the right tools. “But with no major highway, it’s not accessible, and it can’t grow.”

The same concern faces the Global TransPark in Lenoir County: without interstate quality highways linking the Park to I-95 and the coast, supporters say, they have no chance of success. “We have over 100 stoplights between Raleigh and the State Port in Morehead City, and no stoplights from Raleigh to California,” says Leigh Harvey McNairy, a member of the Lenoir County Board of Education who served on the Rural Prosperity Task Force and ran for Congress in the 3rd District in 2000. “How’s that for effective movement of goods and services?”³¹

The TransPark could turn into a key test of the value of infrastructure to a region. It is designed to eventually encompass 15,000 acres and to have facilities that bring together air, rail, port and road capacity in a central location. Ultimately, the TransPark is a large airport geared toward national and international cargo flights, coupled with a large, technologically sophisticated industrial park for companies using “just-in-time” manufacturing to provide or replenish inventory for firms placing orders. But while much of the infrastructure has been approved, four-lane uninterrupted highway access to the port at Morehead City via Highway 70 and to I-95 via Highway 117 has been slow in coming.³² Until those connections are complete, many believe the Global TransPark won’t deliver on its promise of eventually employing 55,000 people.³³

The impact of a highway has seemed so obvious for so long that few have actually taken the time to quantify its impact on the prosperity of a region. In one of the only recent studies of its kind, the Appalachian Regional Commission found that every \$1 invested in building highways brought a return of \$1.32 in economic impact.³⁴ This claim of economic gain versus dollars invested was not derived from a fixed multiplier as is often used in the travel and tourism industry, but instead relied on a



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study that attempted to gauge travel efficiency *with* the highway versus efficiency if the highway had *not* been built. The study considered such factors as travel times, vehicle operating costs, and accidents. These factors were plugged into an econometric model to yield the economic benefit. The multiplier employed in the model, called an REMI model, varies according to the information that is fed into it and thus is dynamic, rather than fixed. This is intended to provide a more precise estimate of the benefit of a particular project.

But the payoff for a highway isn't always immediate or obvious. Hyde County is one of just three eastern counties not slated to have roads built as a part of the Intrastate System. While traffic is picking up there, county leaders have not demanded a new highway. "Having a four lane road wouldn't be the first thing on our priority list right now," says Scott Coble, a Hyde County Commissioner. "It could help with tourism, but there are other things we need more right now."

In other parts of the region, there has been no obvious immediate impact of new highways. The widening of U.S. 64 and U.S. 264 has made it easier for tourists to get to coastal counties, but long stretches of roads through Eastern North Carolina remain undeveloped. With scarce road dollars, cities in the Piedmont desperate to widen clogged arteries point to those roads as evidence that highway funding could be better spent on immediate needs.

But Eastern North Carolina leaders say slow development is more a tribute to the lack of other forms of infrastructure, not an indication that highways don't work. They remain convinced that highways are a critical piece of their continued development puzzle. And the N.C. Department of Transportation's building plans through 2008 will allow them to get the new highways in place that will give them the chance to prove their case.

Housing: Can Supply Meet Demand?

Hurricane Floyd probably had a more significant impact on affordable housing in Eastern North Carolina than any other part of the region's infrastructure. While the impact of the storm on the supply of housing is still hard to quantify, a clear example of what can happen when there are too few affordable homes came on the night of November 12, 2000. That night, a fire broke out in a 1,200-square-foot Rocky Mount home where 17 members of Virgie Lane's family were staying. There was no smoke alarm. The fire killed seven,

left ten more homeless, and sparked an intense debate about affordable housing in the city that straddles the Nash-Edgecombe county line.

Hurricane Floyd's floods severely damaged an estimated 2,500 Rocky Mount homes and put an intense strain on those seeking affordable housing in the area. Farouk Hamad, the landlord of the house Virgie Lane was renting and 68 other properties in the city, was cited by the city for the inadequacy of his rental property. But city officials say the housing shortage made them hesitant to close down those houses: "We have been reluctant to issue vacate orders because of the housing shortage,"³⁵ said Rocky Mount Inspections Supervisor George Jones. For his part, Hamad asserts he is playing a critical role in serving the needs of low-income individuals after the flood. "If it weren't for me," he says, "half of them wouldn't have places to stay."³⁶

Having a good supply of affordable housing can have a dramatic impact on an eastern county's ability to attract and retain some of its most important citizens: teachers, clerks, municipal workers, and police officers. "If the people who get your water bill ready or teach your children or protect your streets can't afford to live there, you've got a problem," says Bill Rowe with the N.C. Justice and Community Development Center. "You've either got to find some way to pay them more, create more affordable housing, or get used to the idea that they'll be leaving soon."

For people with deep roots in eastern rural North Carolina or for military families stationed there, leaving may not be practical or possible. That leaves them with limited options: accepting substandard housing or paying for more expensive, higher-quality housing while finding other ways to make ends meet: "For many of our municipal and county employees, it's not even something to debate. There's just no option: their family can only do it if they have two full-time incomes," says Don Davenport, Beaufort County manager.

Teacher turnover in poor counties is already a problem, as rural school systems struggle to compete with wealthier counties who can afford to pay greater supplements. The turnover rate in the school systems in the East for the 1999-2000 school year was 14.5 percent compared to 13.2 percent statewide.³⁷ "Without affordable housing, rural counties become like minor league training clubs—the wealthy systems take the best and leave the rest," says Jim Causby, Johnston County school superintendent and head of a statewide coalition of low-wealth school systems.³⁸

Others say the impact on the community goes beyond even that. "If you want a strong educational system in your county, you've got to have good teachers," says former Lieutenant Governor Bob Jordan, now a Mt. Gilead business owner. "If you don't have good affordable housing, it doesn't always mean people won't take the jobs, but they can't live there, and that means they don't spend their dollars in your community. They don't join your churches. They don't bring their strength to your everyday community."

A recent study by East Carolina University's Regional Development Institute found that over the past two decades, counties in northeastern North Carolina have received more money through the federal Community Development Block Grant (CDBG) program, which is typically directed toward housing production, than counties in the western part of the state. Over the past two decades, people who live in the Northeast have received more than twice as much per capita through the program as those who live in the West. But while the

Outhouses Not Completely Out in Eastern North Carolina

Walking out into a cold rainy night to use the toilet is almost unfathomable for North Carolinians who live in the more affluent, developed areas of the Tar Heel state. Still, the concept isn't as foreign to those who live in the state's rural areas, including areas in the East.

At the 1990 census, North Carolina ranked 12th in the nation for the percent (1.8 percent) of residential units lacking indoor plumbing (49,528 of 2.8 million homes). In response, former Governor James B. Hunt Jr. and other state officials announced a plan to eliminate outhouses by assembling funds and volunteers to build bathrooms into existing houses.

Fortunately, results from the 2000 census suggest that their efforts at least partially addressed the outdated use of outhouses by effectively reducing the state's number of households relying on outdoor privies. Outhouses, besides being extremely inconvenient, create a public health issue by increasing the chances that raw sewage will seep into groundwater, thus increasing the chances of fecal coliform contamination in drinking water. North Carolina's rank in number of outhouses fell significantly to 34th, reflecting about 13,100 houses with outdoor toilets compared with more than 33,000 in 1990—a reduction of 60 percent. However, in contrast to 1990, the 2000 census did not count houses having indoor fixtures with pipes emptying directly into ditches or streams—an approach

known as straight piping and also an unacceptable means of waste disposal that can pose a considerable health threat.¹ Therefore, while the decreasing statewide numbers are encouraging, the changes in methods in the census survey may underestimate North Carolina's plumbing problems.

According to Sharon LaPalme, associate director of the N.C. Rural Communities Assistance Project, a private nonprofit group based in Pittsboro, surveys in some counties have found many homes with complete indoor plumbing emptying directly into a ditch, stream, or failed septic system. "With sewage disposal in particular, these recent survey efforts (by the U.S. Census) definitely suggest there's an undercount," LaPalme says.² Still, the size of the decline almost certainly means that fewer people are braving the elements to simply visit the restroom and that less raw sewage is soaking into North Carolina soil and contaminating underground water supplies.

—Joanne Scharer

FOOTNOTES

¹ "Progress on privies," *The News & Observer*, Raleigh, N.C., August 12, 2001, p. A26.

² Richard Stradling, "State's outhouses on way out," *The News & Observer*, Raleigh, N.C., August 6, 2001, p. A1.

Joanne Scharer is a public policy consultant living in Carrboro, N.C.

northeastern counties may be attracting more money from the CDBG program, officials argue that is because there is more poverty and more need.³⁹ Further, there is no federal funding source focused specifically on the East, as the federal Appalachian Regional Commission focuses on mountain counties in 13 states.⁴⁰

Before the flood, a report by the Community Economic Development Office of Pamlico Sound Legal Services showed eastern counties were below the state average in percentage of homes considered "affordable" for their residents, percentage of homes considered "overcrowded," and percentage of homes lacking complete kitchens or complete plumbing.⁴¹ The flood made a bad situation worse. No comprehensive post-flood assessment of affordable housing has been done, but state estimates are that the flood itself damaged more than 67,000 homes, nearly 8,000 of which were destroyed. These included thousands of rental

***That there are many mansions in
'our Father's house' they tell you;
but there are too few flats
in Rostov and why,
that they don't tell you.***

—BERTOLT BRECHT
THE THREEPENNY OPERA

units, which are more likely to be occupied by lower-income individuals. The U.S. Department of Housing and Urban Development's first survey of housing after the flood estimates that more than 135,000 people in the 41 Eastern North Carolina counties live in housing that is either unaffordable, inadequate, or overcrowded.⁴²

The flood has driven some former low-income homeowners into the rental market, exacerbating the existing shortage in rental units and driving up costs. Beaufort County manager Don Davenport says many of the homes along the Pamlico "just disappeared," and the people who lived there haven't come back. In Grifton, Kelly Dickens, a mental health worker, was shocked when she returned after several months. "I should be happy [to move home], but all my neighbors are gone" says Dickens. "It's like a war zone."

It's clear that there are significant needs throughout the region for those seeking affordable



Karen Tam



Hurricane Floyd rendered many Eastern North Carolina homes uninhabitable including this flood-ruined home in Kinston.

housing. And hurricane recovery efforts have the opportunity to address some of those needs. As of Sept. 14, 2001, the Federal Emergency Management Agency, working with the state, had authorized the buyout of more than 5,000 homes substantially damaged by Floyd's flooding. A spokesperson for the N.C. Hurricane Floyd Redevelopment Center indicated that approximately half of those damaged homes were rental units. The state has earmarked \$20 million in federal aid for production of rental units, which should lead to creation of 1,800 rental apartments and homes. In addition, a federal HOME grant to the North Carolina Housing Finance Agency should create an additional 1,000 rental units. These and other efforts should provide a significant step toward replacing the rental units lost in the flooding caused by Hurricane Floyd.

The situation for lower-income homeowners is more complex. The flood-related buyouts will address some of that group's needs. In addition, private groups like Habitat for Humanity,⁴³ Baptist

Men from the Southern Baptist Convention, Mennonite Disaster Services,⁴⁴ North Carolina Interfaith Response,⁴⁵ and the North Carolina Home Builders Association⁴⁶ have donated services to rebuild other homes, but even the 60 homes Habitat plans by the end of 2001 will address only a small portion of the flood-generated need.

But neither the past investment nor the new investments after the flood appear likely to address the historic and continuing affordable housing needs in the East.⁴⁷ Statistically, the problem of finding affordable housing was and is more serious in Eastern North Carolina than in the rest of the state, and remains more serious after the flood. Renters in eastern counties are three times more likely to pay more than one quarter of their total income in rent than renters in the rest of the state.⁴⁸ Homeowners in Eastern North Carolina are twice as likely to pay more than 20 percent of their total income for their homes as those in the rest of the state.⁴⁹

As one way of addressing those needs, affordable housing advocates have urged the state to de-

vote more of its hurricane recovery funding toward rental production. In a letter to then-Gov. Jim Hunt in September 2000, representatives of the N.C. Justice and Community Development Center, the N.C. Fair Housing Center, the N.C. Association of Community Development Corporations, and the N.C. Low Income Housing Coalition described the amount of resources devoted to renters as "clearly inadequate," noting that only 4.2 percent of the \$470 million that the state has put aside for "Direct Housing Assistance" is targeted toward rental production.⁵⁰ They urged the state to set aside additional resources.

State officials say they are trying to find the right balance between owner-occupied homes and rental homes. Gene Byrd, former state director of Housing and Business Redevelopment, which focuses on flood recovery, says the funding won't meet all the needs of either owners or renters: "We could devote our entire budget toward producing nothing but rental housing, and we still wouldn't solve that whole problem."

While construction continues, those in need of housing have to take what they can find. Shirrell Thomas, a Housing Counselor with the Housing Recovery Assistance Center in Beulahville, spends her days talking to the people whose homes were destroyed by the flood. "A lot of the people I talk to have taken places that were substandard just because they needed some place to live," says Thomas. "Long term, that can't be the solution."

Over the past decade, the lack of affordable traditional housing has led to one sort of solution already: there has been explosive growth in the number of manufactured housing units in the East. During the 1990s, the number of manufactured homes in Eastern North Carolina grew by 56 percent—more than three times the rate of the growth of population. In Pamlico County, nearly one-third of all homes are now manufactured homes.⁵¹ And while one study asserts that the value of these homes grows at rates comparable to traditional "stick-built" homes,⁵² housing advocates traditionally have opposed manufactured homes as a solution out of concern for the homes' long-term value as an appreciating asset and concerns about their safety in high winds.⁵³ There is less opposition to boosting construction of modular homes, built partially in factories, with final adjustments made on site.

At least three long-term challenges remain. In interior Eastern North Carolina, land is generally affordable, but the number of builders available to build any kind of housing is limited. Unless the incentives are significant, given a choice between

rebuilding affordable housing and rebuilding more expensive homes, builders will choose the more profitable, more expensive homes.

The second challenge, which confronts eastern counties on the coast with waterfront property, is the cost of land. Soaring land costs due to the construction of vacation homes and an influx of retirees make it harder to purchase land at prices that can support affordable housing. And even if communities purchase the land, the challenge of finding available builders would remain. "The most challenging affordable housing needs are on the coast and in the mountains," says Gerry Pfifer, a HUD economist who studies North Carolina housing needs. "Money drives the market. What it means is that what housing is being built there is high end."

A third challenge is the income level of those seeking lower-cost housing. The lower per capita income in most eastern counties means housing of similar quality to that of the rest of the state is on average less affordable. The North Carolina Department of Labor has been piloting Individual Development Accounts (IDAs) in 11 eastern counties. But the IDAs, designed in part to help low-income individuals save for down payments on homes by matching savings, are limited in size and do not have recurring state or federal funding.⁵⁴

State officials have explored ways of encouraging builders to construct more affordable housing. The Division of Community Assistance in the N.C. Department of Commerce is giving priority in its Small City Community Development Block Grant program to projects creating rental housing in poor rural counties and high poverty urban areas. In 1999, the General Assembly enacted a Low Income Housing Tax Credit which provides incentives for developers to build housing for people at very low income levels by lowering the cost of construction.

Money for the Housing Trust Fund, designed to strengthen a variety of statewide efforts to increase affordable housing, has never exceeded \$10 million. Governor Easley recommended that \$3 million for the Housing Trust Fund remain in the continuation budget for this year, and the legislature appropriated this amount.⁵⁵ And all efforts are still constrained by the relative lack of builders willing or able to help put affordable housing in place.

A new program launched in January 2001 by the mortgage financing agency Federal Home Mortgage Corporation, known as Freddie Mac, aims to make more than \$100 million available in low-interest home loans for Eastern North Carolina.

The program, called CarolinaGold, targets working class homeowners looking to buy or rebuild after the flood. "We think this will be particularly important in Eastern North Carolina, ravaged by the floods," said Craig Nickerson, vice president for community developing lending at Freddie Mac. "Please consider this a down payment on a long-term commitment to this state."⁵⁶

It's the kind of down payment that folks in the East could use more of. The relatively small amount of outside resources, low number of builders, escalating coastal land values, and lack of personal income leaves Eastern North Carolina in a tough position. Without enough low and moderate-cost housing, the region faces a rippling array of challenges, including recruiting teachers, municipal employees, and workers for new or expanding industry who need an affordable place to live.

Internet Access: Available, But At What Speed and At What Cost?

The newest, most-talked-about infrastructure challenge in North Carolina is building technology that provides fast, inexpensive access to the Internet. Addressing the unserved areas of the state topped the list of recommendations presented by the Rural Prosperity Task Force in its 2000 report on revitalizing rural North Carolina.⁵⁷ Implement-

ing the recommendation tops the list of challenges faced by the Rural Internet Access Authority.⁵⁸ And the possibility that people throughout the state could have such infrastructure—and the access it brings—brought then-President Clinton to Eastern North Carolina in the spring of 2000.

On April 26, 2000, Clinton stood in front of the Whiteville Train Depot in Columbus County and wondered out loud why rural Eastern North Carolina and other rural areas like his hometown in Hope, Arkansas, had never experienced the same prosperity as urban areas. The reason, he said, was simple. "No matter how many roads we had or how many power lines we had or how many trains ran through our town, we were still a long way away from everybody else, and it took time to get from here to there—wherever 'there' was."⁵⁹

Clinton was in Whiteville to hail an idea that he believed could provide large portions of North Carolina with the kind of infrastructure he believed could "collapse time and distance"—a three-year plan endorsed by the state's three biggest telephone companies (BellSouth, Sprint, and Verizon) and telephone cooperatives to provide high-speed,⁶⁰ affordable⁶¹ access to the Internet everywhere in the state by the end of 2003.

Erskine Bowles, the Charlotte businessman and former White House Chief of Staff to President Clinton who chaired the Rural Prosperity

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Task Force, says high-speed information technology infrastructure might be the one piece of infrastructure the state could afford. "Information technology could be the salvation of rural North Carolina; the lack of it could be the damnation of rural North Carolina," says Bowles,⁶² who is seeking the Democratic nomination for the U.S. Senate in 2002. The Authority will use the funding to encourage telephone, wireless, cable, and satellite companies to put infrastructure in place to reach the Authority's goal—that every citizen in the state have access to high-speed, affordable Internet services by the end of 2003.⁶³

Bowles' argument was based on his belief that by 2005, private companies, as well as state and federal governments, would be asking for bids on projects, soliciting for services, and advertising grants exclusively over the Internet. Small companies not connected to the Internet couldn't advertise on the web, couldn't bid for government contracts, and couldn't handle private companies' electronic billing requirements.

With high-speed affordable Internet access, rural companies can find new markets all over the world. In 1999, sales of agricultural products at Baker Limestone in Siler City totaled about \$1 million and were limited to the Chatham County area of the Piedmont region of North Carolina. Once the company began advertising over the Internet, people across the country began buying, and sales quintupled in a year.⁶⁴

By contrast, House-Autry Mills in Eastern North Carolina's Sampson County, would like to use the Internet to advertise its corn meal mixes and communicate with its sales staff electronically. But until July 2001, the idea was cost-prohibitive. They had to make long-distance calls to get connected to the Internet.

High-speed connectivity matters for other reasons, too, experts say. Glenn Dunlap, who has conducted an extensive assessment of North Carolina's information technology infrastructure, says businesses that want to be able to communicate via the Internet need high-speed capacity. "Increasingly, the operations that provide higher value—maps, graphics, et cetera, you can't do unless you have high-speed bandwidth," says Dunlap. "If you're a manufacturer and you want to demonstrate your product to potential customers via streaming video, you need high speed. If you are a trucking company, and you want to provide your drivers detailed instructions to every delivery site, you need maps, and to get them you need high speed. If you are a grandparent who



Karen Tam

**County Manager
Larry Meadows in front of the
Jones County Civic Center**

wants to see video of your grandchild, you need high speed."

Ken White, head of Beachlink.com, a wireless Internet service provider based in Dare County that serves customers nationwide, says new wireless technology will provide even more possibilities. Such technology will "even let farmers in the field in Tyrrell County sell their crops right from the field with handheld devices, getting the goods to the market quicker, allowing higher profits," says White.

Jones County manager Larry Meadows summarizes the potential of the new technology this way: "If you're going to do any business these days, you've got to get it, and it's got to be fast."

Right now, North Carolinians face three substantial barriers to taking full advantage of the new technology. The first is infrastructure—the ability to get high-speed, affordable access to the Internet. According to a study by the U.S. Department of Commerce, only about 35 percent of North Carolina households have access to the Internet, ranking the state 45th, well under the national average.⁶⁵ Although 97 percent of the state's public schools have Internet access, North Carolina, at 74 percent,

ranks next to the last in nation (ahead of only Alabama and tied with Pennsylvania) in percentage of schools with one or more *classrooms* connected to the Internet.⁶⁶

As for the potential of people from different regions to get affordable connections to the Internet at high-speed, available studies suggest

that there are large gaps in coverage in both the East and the West. An assessment by Dunlap analyzes the percentage of homes in the state's counties that could potentially receive high-speed service based on copper lines already in place and suggests that people in eastern counties have less potential opportunity to get affordable high-speed

**Table 4. Potential High Speed Internet Access:
How Many Could Go Fast?**

Name of County in Eastern NC	% of Population Within Potential Range of High-Speed Internet Connections	Name of County in Eastern NC	% of Population Within Potential Range of High-Speed Internet Connections
1. Beaufort	51.8%	23. Jones	50.8
2. Bertie	51.6	24. Lenoir	66.3*
3. Bladen	47.6	25. Martin	71.9*
4. Brunswick	45.3	26. Nash	53.9
5. Camden	48.2	27. New Hanover	72.4*
6. Carteret	57.5	28. Northampton	41.0
7. Chowan	67.5*	29. Onslow	36.8
8. Columbus	41.9	30. Pamlico	29.9
9. Craven	56.1	31. Pasquotank	72.7*
10. Cumberland	71.5*	32. Pender	32.0
11. Currituck	40.9	33. Perquimans	69.0*
12. Dare	48.9	34. Pitt	58.8
13. Duplin	45.7	35. Robeson	52.6
14. Edgecombe	73.6*	36. Sampson	42.7
15. Gates	33.7	37. Scotland	69.6*
16. Greene	23.9	38. Tyrrell	45.4
17. Halifax	88.6*	39. Washington	62.8*
18. Harnett	37.2	40. Wayne	65.0*
19. Hertford	71.9*	41. Wilson	70.7*
20. Hoke	29.3	Average for Counties in Eastern N.C.	56.5%
21. Hyde	33.8	Statewide N.C. Average	62.1%
22. Johnston	37.5		

* County has higher percentage of people with potential access than the state average of 62%.

Source: Figures provided by Glenn Dunlap, N.C. Department of Commerce EDIS information.



Karen Tam

This Eastern North Carolina training center is wired to move data fast, but much of the state's coastal plain is not.

connectivity based on existing infrastructure (See Table 4).

The study analyzes the percentage of each county's population that falls within 18,000 feet of the end office of a telephone company—the distance within which high-speed access could theoretically be provided over existing telephone lines.⁶⁷ Among Eastern North Carolina counties, the percentage of the population that fall into this category varies dramatically. About three in ten people in sparsely populated Hoke and Hyde counties have the ability to access high-speed Internet connections via their phone lines. More than seven in ten have high-speed Internet access in more densely populated counties such as New Hanover, but also in some less-populated counties such as Halifax and Hertford.

The study is admittedly preliminary and doesn't assess other technologies that could potentially fill in some of the gaps of service, such as wireless technology, cable, satellite connections, and other forms of connectivity. But even with the limitations of the study, it does suggest a significant challenge for the Rural Internet Access Authority. The Authority, created by the 2000 General Assembly,⁶⁸ is funded with a \$30 million

pledge by MCNC, a private non-profit group focusing on boosting the state's technology capacity. The Authority will use the funding to encourage providers to put infrastructure in place so that every citizen in the state would have high-speed affordable access by the end of 2003. In addition, the group is charged with boosting the number of people who own and know how to use computers.⁶⁹

"I don't think it's clear that you just put the pipe out there and everybody suddenly uses and understands and benefits from the Internet. People have to feel that this connects directly to their lives."

—RICK ROSS, PRESIDENT
OF USERMAGNET, AN INTERNET
MARKETING COMPANY IN CARY, N.C.

**Table 5. Home Computer Ownership
by Economic Development Region in N.C., 1999**

Region in North Carolina	Percentage of Homes with Computers
Southeast (Bladen, Brunswick, Columbus, Cumberland, Hoke, New Hanover, Pender, Richmond, Robeson, Sampson, Scotland)	45%
Global TransPark* (Central Eastern) (Carteret, Craven, Duplin, Edgecombe, Greene, Jones, Lenoir, Nash, Onslow, Pamlico, Pitt, Wayne, Wilson)	48
Piedmont Triad (Alamance, Caswell, Davidson, Davie, Guilford, Montgomery, Randolph, Rockingham, Forsyth, Surry, Yadkin)	49
Advantage West (Alleghany, Ashe, Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga, Wilkes, Yancey)	53
Charlotte (Alexander, Anson, Cabarrus, Catawba, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, Union)	60
Northeast (Beaufort, Bertie, Camden, Chowan, Currituck, Dare, Gates, Halifax, Hertford, Hyde, Martin, Northampton, Pasquotank, Perquimans, Roanoke, Tyrrell, Washington)	61
Research Triangle Park (Chatham, Durham, Franklin, Granville, Harnett, Johnston, Lee, Moore, Orange, Person, Vance, Wake, Warren)	68

* This economic development region has changed its name to North Carolina's Eastern Region.

Source: N.C. Board of Science and Technology, "Public Perceptions of the Importance of Science and Technology to the North Carolina Economy," September 1999.

The second barrier North Carolinians face in being able to take advantage of new technology is that many Tar Heels don't even own computers. A U.S. Department of Commerce study found that about 45 percent of households have a computer, a figure that ranks North Carolina 44th among states.⁷⁰

In Eastern North Carolina, home computer ownership appears to be even lower. (See Table 5, above.) A survey by the North Carolina Board of Science and Technology of the state's seven economic development regions found slightly higher

rates of home computer ownership than the national study, but determined that ownership was lowest in the southeast and central eastern regions.⁷¹

A third significant barrier to taking full advantage of new technology is more fundamental. Many people in North Carolina don't necessarily believe that home access to the Internet is a worthwhile goal. (See Table 6, p. 67.) The September 1999 survey by the North Carolina Board of Science and Technology found that while most of the people in the central eastern and southeastern regions of the state agreed it was important for all citizens to have ac-

Table 6. Poll Responses to "Should Citizens Have Internet Access From Their Homes?" (by economic development region in N.C.)

Region in North Carolina	Percentage Answering Yes to Poll Question Above
Northeast (Beaufort, Bertie, Camden, Chowan, Currituck, Dare, Gates, Halifax, Hertford, Hyde, Martin, Northampton, Pasquotank, Perquimans, Roanoke, Tyrrell, Washington)	43%
Research Triangle Park (Chatham, Durham, Franklin, Granville, Harnett, Johnston, Lee, Moore, Orange, Person, Vance, Wake, Warren)	64
Southeast (Bladen, Brunswick, Columbus, Cumberland, Hoke, New Hanover, Pender, Richmond, Robeson, Sampson, Scotland)	66
Charlotte (Alexander, Anson, Cabarrus, Catawba, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, Union)	69
Advantage West (Alleghany, Ashe, Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga, Wilkes, Yancey)	73
Piedmont Triad (Alamance, Caswell, Davidson, Davie, Guilford, Montgomery, Randolph, Rockingham, Forsyth, Surry, Yadkin)	74
Global TransPark* (Central Eastern) (Carteret, Craven, Duplin, Edgecombe, Greene, Jones, Lenoir, Nash, Onslow, Pamlico, Pitt, Wayne, Wilson)	75

* Now renamed North Carolina's Eastern Region.

Source: N.C. Board of Science and Technology, "Public Perceptions of the Importance of Science and Technology to the North Carolina Economy," September 1999.

cess to the Internet from their homes, less than half of the people in the northeastern region agreed.⁷²

So the state's Rural Internet Access Authority has three challenges facing it if it is to accomplish its goal: finding ways to put high-speed, affordable infrastructure in place, finding ways to increase ownership of computers, and making the case for why high-speed, affordable access to the Internet matters to people.

"I don't think it's clear that you just put the pipe out there and everybody suddenly uses and understands and benefits from the Internet," says

Rick Ross, president of Usermagnet, an Internet marketing company in Cary. "People have to feel that this connects directly to their lives."⁷³

And developing that feeling could take a significant public awareness effort by the Rural Internet Access Authority, says James Leutze, who chairs the board of directors for the group and is chancellor at UNC-Wilmington. Leutze freely admits that the task is daunting and funding was probably inadequate. "I personally don't think \$30 million is enough to do what we are talking about doing," he says, "not at warp speed, anyhow."⁷⁴

Shell Buildings: A Risk Worth Taking or a Shell Game?

Ask economic developers what tools they need to have to convince new companies to move here, and they'll start talking about "shell buildings." Economic developers estimate that more than 80 percent of companies seeking to relocate their businesses say they want to move to counties that have existing, vacant buildings ready for them to move into. For counties in the East and throughout the state, that increasingly means making a tough decision—to finance the construction of buildings themselves, then hope that they can convince a company to buy these buildings.

Eastern counties are choosing this option more than counties in the rest of the state. In the East, half of the counties have built shell buildings in the past three years or have plans to do so. In the rest of the state, only about 38 percent of counties have built shells.⁷⁵ Some wealthier, urban counties have not had to invest in such buildings. They have private developers who are making those investments. Others have had enough plant closings that they have a steady supply of vacant buildings.

The public policy questions raised by shells have forced county leaders with tight budgets into sometimes bitter arguments: Should we invest money now in building a new building or refurbishing an existing one? And if we build it, will anybody come and buy it? Others ask the fundamental question of whether cities or counties should be "fronting" the cost of buildings that businesses could construct themselves. Washington County has now decided to build a shell building, but county officials have been divided in the past. "Some of our folks think people will just move here because they like us," says county manager Lee Smith. "But if we have nothing to market but open

"Some of our folks think people will just move here because they like us. But if we have nothing to market but open lots, that just doesn't seem to be real attractive these days."

—LEE SMITH, COUNTY MANAGER,
WASHINGTON COUNTY

lots, that just doesn't seem to be real attractive these days."

"It is work to put together the financing and build the building, and there is a risk involved," says Doug Byrd, director of community relations at the North Carolina Department of Commerce. "But if you don't do it these days, you're not in the market."

Economic developers say shell buildings are becoming an essential ante in the high stakes game of bringing new companies to a county. Increasingly, they say, companies seeking new locations hire consultants to find the ideal location for their new plants. Those consultants do much of their initial work over the Internet. Their first job is to eliminate possible sites that don't have everything their clients are looking for. "Every site selection firm in the country has to, as its first job, get people off the list," says Mac Holladay, president of Market Street Services, an economic development consulting firm in Atlanta.

"It goes fast these days," says Oppie Jordan of the Carolina Gateway Partnership in Nash and Edgecombe counties. "A lot of times you get eliminated before you even know anyone is looking at you."

And not having shell buildings can get you eliminated. With four of every five potential new clients demanding existing, vacant buildings, business prospectors like Jim Frank Henderson, Jr., executive vice president of the Laurinburg/Scotland County Chamber of Commerce, say they have no choice if they want to be considered. In 1996, Henderson pulled together a coalition of seven banks, city and county leadership, and existing local companies to build a shell. The shell sold in November 2000 to We Pack Logistics, a packaging and distribution company, which is buying the shell and making an additional \$3-\$4 million investment in the county, as well as hiring 25 people.

Not every shell building succeeds immediately in the way planners hope. Goldsboro's first shell building cost the county \$1 million—and went unsold for more than four years. During that time, it became, according to the *Goldsboro News-Argus*, "Wayne County's most volatile political issue. Mere mention of the term 'shell building' induced lightning and earthquakes."⁷⁶

But while the shell went unsold, one company that came to the county to look at the shell decided to move into another vacant building. And Barnes Foods, an existing Goldsboro company, decided that rather than leave the county, it would move into the shell building. A little more than a year later,



Karen Tam

the county economic development board voted to build another shell, this one even larger—a 100,000 foot, \$2.4 million building.⁷⁷

Scotland County's Henderson says the true value of the shell for his county and others is getting them "on the list" for companies looking to expand. Once he had a vacant building, he says, companies began to visit his county. "Over four years, we had 30 companies come to look at that shell; 21 of them wouldn't have come here without it." Once those companies actually saw what the county had to offer, two of them decided they liked it, and decided to build their own plants. F.C.C., which makes clutches for all-terrain vehicles, brought 125 jobs and \$21 million in investment to Scotland County, and Kordsa, a tire cord manufacturer, invested \$23 million and created 150 jobs.

Rocky Lane, the economic developer for Halifax County, who convinced his county to build a 50,000 square foot building in 1998, puts it even more bluntly. "I hope I never sell it," says Lane of the shell. Since the building was completed, more companies come to look. If he sells the shell, he could drop off the list. Lane says he can point to

two companies that have come to look at the shell, and ended up making big investments in new buildings. Rieser's Fine Foods, a processed food company, is bringing in 320 jobs and \$20 million in investment, and Wood Barn, which makes stair products, is investing \$1 million and creating 40 new jobs.

But while some counties have had success, other counties have faced challenges. Counties with limited tax bases and budgets often see the decision to construct a shell as a choice between economic development and meeting essential short-term service needs, such as school funding or emergency services. If a county has built a shell in the past and had trouble selling it, the political case for another similar investment may be hard to make. In many cases, political leaders balancing limited budgets may have to decide between investing in critical immediate needs, such as emergency services or school funding, and longer term projects such as shell buildings. Even in more affluent counties in the East, the shell building strategy has faced a political struggle. For example, in 1992, voters in Cumberland County rejected a referendum

to build a \$1.5 million shell building at the Cumberland Industrial Center. In late 2000, the idea resurfaced. The Fayetteville Area Economic Development Corporation sought approval from the board of county commissioners to construct a shell building in the same park. However, this time the building would be financed with loans secured by the public-private corporation, thus circumventing the need for approval by taxpayers.⁷⁸

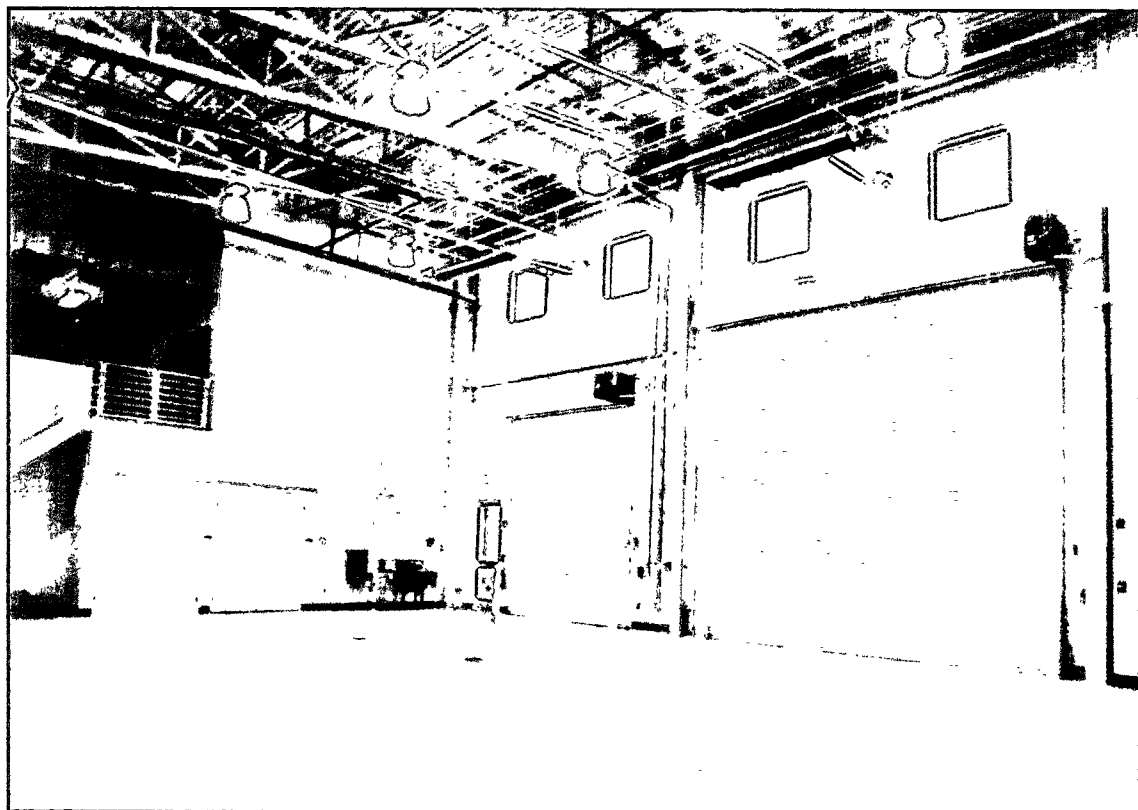
In its report in February 2000, the Rural Prosperity Task Force recommended creation of a Rural Redevelopment Authority for 85 North Carolina counties (including all eastern counties except Cumberland and New Hanover).⁷⁹ The Authority is charged with helping poor rural counties fund, among other things, construction of shell buildings.⁸⁰ While the 2000 General Assembly created such an Authority and provided funds for planning, no funding for actual projects was included.

The size and location of shell buildings are also critical issues faced by counties. A few years ago, a number of counties constructed shell buildings of roughly 50,000 square feet. Not all were easily accessible by highway, others couldn't be expanded, and surveys found that most companies were looking for buildings either smaller or larger.

Wayne County's unsold shell created controversy; Robeson County still has an unsold shell in Fairmont—six years after it was built.

By contrast, Wilson County has invested in and sold five shells, and has completed a giant sixth building roughly the size of three football fields. Jennifer Lantz, executive director of the Wilson County Economic Development Council and former chair of the state Economic Development Board's Infrastructure and Regionalism Committee, says each county has to look carefully at its overall situation when deciding when, where, and how big to build: "A shell of 132,000 square feet works for us because it is right on Interstate 95, and we have the water and sewer capacity to support it," she says. "For a smaller county like Greene, it might make more sense to build smaller buildings along their two-lane roads, and invest the money they save in improving their water and sewer capacity or other things."

Even if they do not have newly constructed shell buildings, many Eastern North Carolina counties have another asset to offer new and expanding companies—vacant buildings, left behind by textile and apparel manufacturers that could be effectively used by new clients. The cost of readying



Karen Tam

these existing buildings, in many cases, may be less than the cost of building a shell. As Greg Cummings, executive director of Economic Development in Robeson County, puts it, "Even those who won't build shells will work hard to convert existing vacant buildings."

So increasingly, Eastern North Carolina counties are taking on the task of getting buildings ready for new and existing companies. The risk of playing the shell game is of picking the wrong one at the wrong time, but there is also risk in not playing—that communities will be passed over by companies looking to expand or relocate.

Natural Gas: Without It, Will Industry Take a Pass?

The availability of natural gas is seen as a critical infrastructure need in only some Eastern North Carolina counties—the ones that don't have it. Some companies, developers say, will only look at a county with natural gas pipelines. The biggest recent example of that is Nucor Corporation. The company's new plant in Hertford County represents one of the state's biggest economic development projects ever. The \$300 million plant sited on 900 acres in Tunis along the Chowan River required 1,400 construction workers to build. Nucor has hired 340 people, paying them an average wage of \$60,000—three times the county's per capita income.

And to hear Fred Yates tell it, one piece of infrastructure was key: "Without natural gas, Nucor wouldn't be here: no ifs, ands, or buts." The excitement Yates feels about the project may seem a little bit surprising. He is the mayor of the town of Winfall, in Perquimans County, two counties east, which didn't get the Nucor project. Winfall's citizens, though, are getting some of the Nucor jobs and some of the 400 jobs committed by other companies elsewhere in Hertford County since Nucor made its announcement.⁸¹

More importantly, says Yates, Nucor gives counties throughout the northeastern part of the state hope that they can find companies willing to come—if they have the right infrastructure in place. Right now, many companies prefer to use natural gas as the source of energy for their operations, including everything from heating office space to fueling manufacturing processes. But 14 of the 20 North Carolina counties that currently have no available natural gas service are located in Eastern North Carolina. For years, no private companies have proposed to serve those counties because of

a perceived lack of demand for natural gas.

"They [the gas companies] did the study, and it showed we didn't have enough customers," says Bob Spivey, mayor of Windsor, located a few miles east of a natural gas line in Bertie County. "But if you don't have the gas lines, you can't get some of the customers."

The lines and the philosophy of the natural gas companies are changing, in part due to a \$200 million dollar bond issue approved by North Carolina voters in 1998 to speed completion of the state's gas system. Since then, Eastern North Carolina Natural Gas, a joint venture of Progress Energy (which owns North Carolina Natural Gas) and the Albemarle Pamlico Economic Development Corporation, has received approval from the North Carolina Utilities Commission to provide services to all 14 of the eastern counties without gas lines.⁸² The reality of the existing demand hasn't changed: there still isn't much demand for natural gas among existing companies in the East. But the demands of new companies moving to the East, as well as pressure from the Utilities Commission to outline plans for unserved counties in their service area, have convinced Progress Energy to speed up its deployment schedule. Hilda Pinnix-Ragland, Vice-President of Economic Development for the company, estimates that about 40 percent of companies seeking to relocate require natural gas, and believes availability will create demand: "While there will be some upfront cost, we believe in the long run it will pay for itself. Not just in a return for us, but for the communities as well."

The changing math of the equation is creating some competition for Eastern North Carolina gas customers as well. In March, 2000, DFI Group, a Raleigh-based development company, announced a possible partnership with SCANA (which owns PSNC Energy, formerly Public Service Company of NC), a South Carolina-based gas company to build three ethanol production plants fueled by gas transmitted along a new 250-mile natural gas pipeline. The pipeline would have run from South Carolina to the Virginia border. A key "linchpin" for this project to move forward was SCANA's negotiating with the City of Fayetteville to build a new gas-fired generation plant, served by a new \$90 million, 10-mile gas pipeline. This project was important because it would pay for SCANA to run a trunk line into Eastern North Carolina. The City of Fayetteville initially supported SCANA's proposal but decided in the end not to build its own plant because of concerns about market risks such as natural gas prices.

The failure of its project with SCANA forced DFI to abandon using natural gas for its operations, but may indirectly result in an increase in the supply of liquefied natural gas (LNG) in Eastern North Carolina. Early in 2000, DFI and El Paso Merchant Energy presented a joint proposal to the State Port in Morehead City to build an ethanol production and LNG storage facility on Radio Island. The State Ports Authority ultimately turned down the lease for DFI, but approved the lease for the LNG facility. If it receives environmental permits, El Paso plans to invest between \$250- \$400 million in the project, and hopes to build both a storage facility and a pipeline for LNG to serve Eastern North Carolina by 2006.⁸³

Meanwhile, the proposed build-out of the natural gas pipeline in the northeast by Eastern North Carolina Natural Gas promises increased supplies of natural gas as well. If all goes well, Mayor Yates says Winfall could see natural gas by March of 2002.

Industrial customers may make the business case for natural gas lines, but Yates notes that the bottom line to customers may be the real benefit. Once the pipelines are in place, he says, some of the residents of his town can benefit as well. "Eventually, it trickles down to the citizens. Some of them are using LP (liquefied propane) right now for their gas needs. Once natural gas comes in, there will be competition. And the prices will come down for everybody once we have some competition."

That ability to compete using natural gas is a new asset for much of Eastern North Carolina. While a pipeline alone can't make a county more prosperous, eastern leaders say they will be better equipped once the lines are drawn and filled.

Besides existing and potential industry and the residents of Eastern North Carolina, there is another potential set of customers. Some farmers in this region of the state also have a need for a sufficient and affordable source of natural gas. These farmers use natural gas to make nitrogen fertilizer products, which are needed to fortify soil to produce almost all the field crops grown in North Carolina, including wheat, corn, cotton, tobacco, and sweet potatoes. The state's only primary crops that don't rely on nitrogen fertilizers are soybeans and peanuts.⁸⁴

Conclusions

A review of Eastern North Carolina infrastructure suggests that while critical infrastructure

is not currently available in all areas of need, the East is making progress, as reflected in Table 7 (pp. 74-75), which summarizes whether a particular infrastructure component is in place for each of the 41 counties included in this study:

Making Strides

- Eastern counties currently lag behind the rest of the state in the percent of the intrastate highway system that has been completed, but figures show that the N.C. Department of Transportation will be spending an average of \$85 million more dollars in the three eastern highway regions than in other regions of the state. This aggressive construction schedule should ensure that all eastern highways on the state's intrastate system are either complete or underway by 2008. Only three eastern counties—Hyde, Hoke, and Pamlico—do not have an existing or planned intrastate highway. (See Table 7, pp. 74-75.)
- The Rural Internet Access Authority has \$30 million dollars and commitments from major telephone companies—Bell South, Sprint, and Verizon—to apply toward its goal of providing high-speed Internet access to every home and every business throughout the state. Though some are concerned about whether the Authority has adequate funding to complete its task, even the start of that effort should provide particular help to eastern counties, which currently, on average, have fewer people who own home computers or are connected to the Internet. In "Falling Through the Net," a U.S. Department of Commerce report issued in October 2000, a survey showed that 45.3 percent of N.C. households had computers compared to 51 percent nationally. The study also found that 35.3 percent of N.C. households were connected to the Internet compared to 41.5 percent nationally. In addition, only 11 of the 41 eastern counties have an above-average percentage of their population within range of potential access to high-speed Internet. Aside from its many other uses, high-speed Internet access may soon be an essential component for a wide range of business transactions.
- Eastern counties have been more active than those in other parts of the state to begin using public funds to help construct shell buildings to attract new businesses and help expanding

businesses. Some communities are still debating whether construction of such buildings is a valuable use of public funds, particularly when they have difficulty selling the buildings. However, nearly half of the eastern counties have been taking advantage of these buildings as a way of attracting prospective clients to their county. Of the 41 eastern counties, 19 have built or plan to build shell buildings.

- Thanks to funding from a 1998 bond issue and private sector plans of Progress Energy and others, natural gas lines should be in place for the 14 eastern counties (Camden, Carteret, Chowan, Currituck, Dare, Gates, Hyde, Jones, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington) without natural gas service by the end of 2002. The availability of the gas broadens the number and variety of companies that will be willing to consider locating in those counties.

Needing More Attention

- In the areas of water and sewer and affordable housing, however, addressing the needs of Eastern North Carolina counties is more prob-

lematic. Even before the flooding from Hurricane Floyd, counties throughout the East had aging water and sewer systems inadequate to meet demand. Eleven of the participating counties with data available (34 counties) report having water and sewer needs of less than \$20 million (see Table 7, pp. 74–75), and 21 counties report needs in excess of \$20 million. Data were not available for the remaining seven counties. Furthermore, a 1999 report published by the Community Economic Development Office of Pamlico Sound Legal Services, entitled “The State of Housing in Eastern North Carolina,” said that 1.7 percent of homes statewide lacked complete plumbing compared to 2.5 percent of the homes in the East (the report did not include Bladen, Columbus, Hoke, Hyde, Robeson, Sampson, and Scotland counties). The study also found that 1.3 percent of homes statewide lack complete kitchens compared to 1.8 percent in the East.⁸⁵

- Affordable housing options for low-income individuals and families are an even greater problem. Only 16 of the 41 counties reported average home rental costs of less than 25 percent of monthly income, a common measure of rental property affordability. (See Table 7,



**Table 7. Summary of Infrastructure Needs for
Eastern North Carolina Counties, 2001**

County in Eastern NC	Water and Sewer Needs of Less Than \$20 million ¹	Highway Intrastate System Exists in County?	Housing Affordability (rental costs are lower than 25% of monthly income) ²	Access to High-Speed Internet Above State Average? ³	"Shell" Building Built in County ⁴	Natural Gas Available in County?	2001 Economic Tier Designation ⁵ by N.C. Department of Commerce
1. Beaufort		✓			*	✓	1
2. Bertie	✓	✓	✓		*	✓	1
3. Bladen	✓	✓	✓			✓	2
4. Brunswick		✓			✓	✓	4
5. Camden	✓	✓	✓			*	1
6. Carteret		✓				*	4
7. Chowan	✓	✓		✓		*	3
8. Columbus		✓			✓	✓	1
9. Craven	✓	✓	✓		✓	✓	4
10. Cumberland	Data unavailable	✓		✓		✓	3
11. Currituck		✓	✓			*	3
12. Dare		✓				*	4
13. Duplin		✓	✓		✓	✓	2
14. Edgecombe	Data unavailable	✓		✓		✓	1
15. Gates	✓	*	✓			*	3
16. Greene		✓	✓		✓	✓	3
17. Halifax		✓		✓	✓	✓	1
18. Harnett		✓			✓	✓	4
19. Hertford		*		✓		✓	1
20. Hoke	✓					✓	2
21. Hyde	✓					*	1
22. Johnston		✓				✓	5
23. Jones	✓	✓				*	1
24. Lenoir		✓		✓	✓	✓	3
25. Martin		✓	✓	✓	*	✓	1
26. Nash	Data unavailable	✓	✓		✓	✓	4

Table 7, continued

County in Eastern NC	Water and Sewer Needs of Less Than \$20 million ¹	Highway Intrastate System Exists in County?	Housing Affordability (rental costs are lower than 25% of monthly income) ²	Access to High-Speed Internet Above State Average? ³	"Shell" Building Built in County ⁴	Natural Gas Available in County?	2001 Economic Tier Designation ⁵ by N.C. Department of Commerce
27. New Hanover	Data unavailable	✓		✓		✓	5
28. Northampton		✓	✓			✓	1
29. Onslow		✓			✓	✓	2
30. Pamlico	Data unavailable					*	2
31. Pasquotank		✓		✓	✓	*	2
32. Pender	✓	✓	✓			*	4
33. Perquimans	✓	✓		✓	✓	*	1
34. Pitt		✓			✓	✓	4
35. Robeson		✓				✓	2
36. Sampson	✓	✓				✓	4
37. Scotland	✓	✓		✓		✓	1
38. Tyrrell	Data unavailable	*	✓			*	1
39. Washington	✓	✓		✓	*	*	1
40. Wayne	Data unavailable	✓	✓	✓	✓	✓	3
41. Wilson		✓		✓	✓	✓	3

¹ Based on 1997 study by Rural Economic Development Center.

² Based on 2000 study by U.S. Department of Housing and Urban Development, North Carolina Office.

³ Counties indicated as having "Access to High-Speed Internet Above the State Average" have a greater percentage of their residents residing within 18,000 feet of a central telephone office switch than the rest of the state, which would theoretically enable the population to have high-speed Internet access over the existing copper telephone lines.

⁴ Based on N.C. Department of Commerce survey, November 2000. In counties indicated, at least one shell building has been built in the county from January 1998 to November 2000. An asterisk indicates a shell building is in the planning stages.

⁵ A county's economic tier designation is determined annually by the N.C. Department of Commerce based on the county's average unemployment rate, average per capita income, and percentage growth in population.

* Refers to a planned infrastructure component that is not yet in place.



pp. 74–75.) According to the U.S. Department of Housing and Urban Development, North Carolina State Office, people in nearly two-thirds of the counties in Eastern North Carolina pay more than one quarter of their monthly income in rent. In the rest of the state, renters pay more than a quarter of their income in only 20 percent of the counties. Furthermore, in 82.5 percent of Eastern North Carolina counties, homeowners pay more than 20 percent of their monthly income for their homes; in the rest of the state, homeowners in only 41.7 percent of counties pay that much.⁸⁶

- In addition to the *affordability* of housing, the *availability* of housing is another issue in and of itself. Hurricane Floyd recovery funds will build and rebuild some housing but will not address the full need. Gerald Pfifer, HUD regional economist in Greensboro, N.C., notes that Eastern North Carolina housing presents

a problem on multiple fronts. Along the coast, most housing built is expensive second home or investment property that local residents can't afford. In some interior counties, little housing is being built period. Rental properties are again priced beyond the means of most residents, and much rental property is substandard. Perhaps most telling, notes Pfifer, is that 44 to 70 percent of renters in Beaufort, Bertie, Bladen, Camden, Columbus, Hertford, Johnston, New Hanover, Pitt, Robeson, and Tyrrell counties (11 of the 41 eastern counties) are unable to afford a HUD-determined fair market rent, meaning adequate rental housing simply isn't available in their price range.

- While some water and sewer systems will be rebuilt using hurricane recovery funds, the money will not stretch far enough. The decision by the General Assembly in 2000 to provide more grant money from the 1998 bond is-

sue for water and sewer needs also will help poor communities, yet these dollars will not address all of the need.

Unfortunately, the pricetag on the region's infrastructure needs runs into the billions. Currently, too many counties have too few assets to pay for those on their own. The N.C. Department of Commerce determines a tier ranking for every county in the state based on the county's unemployment rate, average per capita income, and percentage growth in population. Of the 41 eastern counties, 15 are grouped among the state's poorest counties in its lowest tier, tier 1. These poorest of the poor are sprinkled throughout the region but concentrated primarily in the northeast. By contrast, only two eastern counties rank among the state's strongest economically as tier 5 counties. These are New Hanover County, the state's second most densely populated, and Johnston County, which benefits from its proximity to Wake County and the state capital.

The N.C. Rural Economic Development Center, a nonprofit advocate for rural counties throughout the state, and North Carolina Citizens for Business and Industry, the statewide chamber of commerce, both have recommended that a dedicated funding stream be established using state funds to address the water and sewer needs of all counties. At the beginning of the 2001 legislative session, North Carolina Senate President Pro Tempore Marc Basnight created a new Rural Development Committee, charged with determining how to implement a series of recommendations of the Rural Prosperity Task Force, including infrastructure challenges, throughout the state. Last session, the General Assembly approved creation of a Rural Redevelopment Authority, which would be charged with allocating funding for infrastructure needs in poor counties, but appropriated no money to capitalize the authority.

And moving forward with any of these ideas faces a fundamental barrier. The state's budget woes—with a budget shortfall of almost \$800 million for the fiscal year ending June 30, 2001, and a shortfall of similar magnitude expected for fiscal year 2002—make substantive appropriations unlikely in the near future.

Others have proposed establishing a nonprofit corporation focused exclusively on identifying and addressing the funding needs of the region, and seeking to increase the amount of federal funding flowing to the region. That project, how-

ever, is still only in the talking stage.

That leaves Eastern North Carolina with some tough infrastructure challenges and no immediate solution to addressing them. Yet the region's leaders—from economic development officials in relatively populous Wilson County to the mayor of the tiny town of Winfall—believe having the right infrastructure makes a difference, and they are struggling with how to put it in place. ■■

FOOTNOTES

¹Information excerpted from N.C. Department of Commerce, "North Carolina Regional and County Economic Development Scans—Northeast, Southeast and Global TransPark Regions," N.C. Department of Commerce, December 1999, pp. 169–171, 228–230, 406–408.

²Estimates in Tyrrell County are that 85 percent to 93 percent of remaining undeveloped land is either designated "wetlands" or "prior converted wetlands."

³Focusing on these elements of infrastructure does not mean that other areas are not also important to the economic success and quality of life of Eastern North Carolina. Eastern North Carolina is facing significant challenges in provision of electric power as municipal power companies seek to find relief from debt, but power is almost universally available, and power costs are not typically cited as a challenge unique to Eastern North Carolina. The quality of rail infrastructure is roughly comparable throughout the state, though the East has an asset in the state-owned North Carolina Railroad. The State Ports in Morehead City and Wilmington are a significant asset for eastern companies, particularly in Carteret, New Hanover, and surrounding counties. Increasingly, many believe that in order to attract new businesses, communities need to have airports long enough to land corporate jets or at least be within 100 miles of an international airport. Others argue that environmental and visual "infrastructure" plays a critical role in both economic development and quality of life. Forests and waterways and even historically preserved buildings can play a key role in citizens' attitude about where they live, can boost tourism, and can attract new businesses.

⁴The figures cited for a county's "needs" represent assessments performed by consulting engineering firms working with system owners and operators over the period 1995–1997, and attempt to assess the cost of improvements to public community water and sewer system that will be needed to meet county needs through 2020.

⁵The county-by-county assessment did not look at water and sewer systems in Carteret, Craven, Cumberland, Edgecombe, Johnston, Jones, Nash, New Hanover, Pamlico, Tyrrell, and Wayne counties and 15 other counties in other parts of North Carolina. Later information gathered from EPA included data about needs in Carteret, Craven, Johnston, and Jones counties.

⁶The estimate of total state "need" was an extrapolation based on available data from 75 counties. An updated survey of all 100 counties is underway.

⁷N.C. Rural Economic Development Center, "County Catalogue—Selected Water and Sewer Indicators for 75 North Carolina Counties," October 1998, p. 2.

⁸This issue of *Insight* includes 41 counties considered eastern. However, only 34 of those 41 counties were included in

the survey conducted by the Rural Economic Development Center.

⁹Letter from Richard Moore, McDavid and Associates, Inc., to Glenn Spivey, Town of Trenton, Dec. 4, 2000.

¹⁰Brandow Company and the Economic Development Research Group, "Evaluation of the Appalachian Regional Commission's Infrastructure and Public Works Program Projects," July 2000, p. 34.

¹¹Chapter 156 (S.B. 1381, An Act To Reallocate the Proceeds of the Clean Water Bonds) of the 2000 Session Laws identifies 38 "eastern" counties. These do not include Harnett, Hoke, and Robeson counties, and do include Warren County, which is not identified as "eastern" for purposes of this issue of *Insight*. This issue of *Insight* includes 41 counties considered eastern. These are the 41 counties of the North Carolina coastal plain.

¹²N.C. Department of Environment and Natural Resources, "Information for Infrastructure Council," presented to the N.C. Infrastructure Council, October 2000.

¹³Six counties in northeastern North Carolina (Bertie, Camden, Chowan, Currituck, Pasquotank, and Perquimans) have formed a coalition called the Management Entity Program to develop an alternative sewage disposal system for citizens and businesses in parts of counties where sewer lines are not practical and traditional septic systems won't work. The program's 2,200 customers pay for the equipment (which costs more than traditional septic systems) and pay an annual maintenance fee to the program. Four other counties (Gates, Hertford, Tyrrell, and Washington) have joined the program on a contractual basis to help citizens and businesses with similar needs in their counties.

¹⁴Chapter 156 (S.B. 1381, An Act To Reallocate The Proceeds of the Clean Water Bonds) of the 2000 Session Laws, Section 2.

¹⁵N.C. Rural Economic Development Center, "County Catalogue—Selected Water and Sewer Indicators for 75 North Carolina Counties," October 1998, p. 2. In "Clean Water: Our Livelihood, Our Life," October 1998, p. 4, the Rural Center notes that the federal share of spending declined from 43 cents of every dollar spent on public works to 17 cents per dollar in 1997. See also Ran Coble *et al.*, "Chapter Three: How Federal Budget Cuts Affected North Carolina," *Federal Budget Cuts in North Carolina, Part II*, North Carolina Center for Public Policy Research, Raleigh, N.C., April 1982, p. 11, which identifies water and sewer facility construction grants as receiving the fifth largest reduction in federal funding for North Carolina in the Omnibus Budget Reconciliation Act of 1981.

¹⁶*Bond Rating Report*, North Carolina Municipal Council, Raleigh, N.C., June 30, 2001.

¹⁷Figures from Ed Moran, director of the Eastern North Carolina Sustainable Community Economic Development Center, in an interview November 17, 2000. Moran estimates the cost of extending a 6 inch PVC pipe one mile at \$185,000. By comparison, Moran says a decentralized system serving 20 families of four would cost about \$150,000, no matter where it was set up, and would be able to return safe, treated wastewater into the aquifer.

¹⁸As quoted in Adrienne Lu, "Johnston sewage-plant boost to lure business, industry," *The News and Observer*, Raleigh, N.C., Sept. 5, 2000, p. B3.

¹⁹Leslie Boney III and Lucy Gorham, "Report of the Rural Prosperity Task Force," February 2000, p. 69.

²⁰North Carolina Citizens for Business and Industry Legislative Recommendations, December 2000.

²¹Hal Spencer, "Economic help for rural counties among laws taking effect today," Associated Press, *The Seattle Times*, Seattle, Wash., July 25, 1999.

²²This aquifer, known as the Black Creek aquifer, is present

in the central and southwestern portions of the coastal plain at elevations of 317 above sea level to -1612 feet below, averaging -220 feet. The Black Creek aquifer ranges from 12 to 972 feet thick and averages about 179 feet thick. The aquifer is composed of very fine to fine "salt and pepper" sands. Wells typically yield 200–400 gallons per minute. http://www.dwr.ehnr.state.nc.us/About_DWR/Division_of_Water/Resources/Water_Allocation_Section/Ground_Water_Branch/aquifercharacteristics/charact.htm

²³The Upper Cape Fear aquifer is present in the western portions of the coastal plain at elevations of 295 above sea level to -1852 feet below, averaging -315 feet. The upper Cape Fear aquifer ranges from 8 to 481 feet thick and averages about 123 feet thick. The aquifer is composed of very fine to coarse sands and occasional gravels. Wells typically yield 200–400 gallons per minute. http://www.dwr.ehnr.state.nc.us/About_DWR/Division_of_Water/Resources/Water_Allocation_Section/Ground_Water_Branch/aquifercharacteristics/charact.htm

²⁴As quoted in James Eli Shiffer, "State agency puts cap on Eastern well water," *The News & Observer*, Raleigh, N.C., Dec. 15, 2000, p. A1.

²⁵N.C. Department of Transportation website and Gov. Jim Hunt, "Rebuilding Eastern North Carolina, Supplemental Federal Assistance for the unmet needs in the State of North Carolina in the aftermath of Hurricane Floyd," presentation of Gov. Jim Hunt to Congress, Oct. 20, 1999, p. 8.

²⁶Adrienne Lu and Steve Cannon, "Johnston's traffic magnet," *The News & Observer*, Raleigh, N.C., May 23, 2000, p. A1.

²⁷The N.C. Department of Transportation's Transportation Improvement Program "Status Report, December 2000" shows the remaining 180 miles to be completed to make US 17 from the South Carolina border to the Virginia border will be under construction by 2009.

²⁸The three "eastern" regions as defined by the North Carolina Department of Transportation do not include Scotland and Hoke counties and do include Durham, Franklin, Granville, Person, Vance, Wake, and Warren counties.

²⁹The N.C. Department of Transportation's "Equity Formula" is used to divide construction allocations from the Highway Trust Fund among different regions of the state. The formula attempts to address both immediate traffic needs and recognize that roads can spur development, but has come under criticism from both urban centers and rural areas. Spending of the state's annual road budget is delivered to the seven regions on a fixed formula: 50 percent by population; 25 percent by the number of miles of the state's intrastate system in the region; and the remaining 25 percent of the money divided equally among the regions.

³⁰N.C. Department of Transportation, "2002–2008 Transportation Improvement Program," p. 02–08. Figures do not include funding appropriated for "urban loops."

³¹As quoted in "Rural Prosperity Task Force Report," February 2000, page 71.

³²The Rural Prosperity Task Force, in its February 2000 report, made expediting completion of the Goldsboro Bypass and connecting the TransPark to Highway 117 via Highway 70 its top priority (pp. 72–75). When the Goldsboro Bypass is completed, the Global TransPark will have a controlled access highway link to I-95 in Wilson. The N.C. Department of Transportation's "Status Report," December 2000, shows scheduled construction on all segments of Highway 70 from the Global TransPark to the coast under construction by 2007.

³³For more, see Tom Mather, "Air Cargo Complex: Flight or Fancy?" *North Carolina Insight*, Vol. 14, No. 2, September 1992, pp. 26–57.

³⁴Wilbur Smith & Associates for the Appalachian Regional Commission, "Appalachian Development Highways Economic

Impact," November 17, 1998, p. 12. Economic impact included computation of "competitive position, roadside expenditures, tourism, accident savings, and other efficiencies."

³⁵ As quoted in Martha Quillen and Oren Dorrell in "Fire shows dearth of affordable housing," *The News and Observer*, Raleigh, N.C., Nov. 19, 2000, p. A1.

³⁶ *Ibid.*

³⁷ "Teacher Turnover Report," NC Department of Public Instruction., Raleigh, N.C., www.ncpublicschools.org/teacher_education/t_turnover.html. The overall turnover for the counties in the East includes county and city school systems.

³⁸ Testimony before Rural Prosperity Task Force, Sept. 14, 1999, Kenansville, N.C.

³⁹ East Carolina University Regional Development Institute, "Northeast by West," p. 8. The study finds that during the past two decades, northeastern North Carolina has received nearly \$150 million, or \$412 per capita, from CDBG funds, while Western North Carolina has received a little more than \$40 million, or \$176 per capita. On the other hand, the study notes that western counties also are eligible for funding through the Appalachian Regional Commission, while eastern counties are not. For purposes of the study, the "Northeast" was defined as Franklin, Camden, Tyrrell, Bertie, Hyde, Martin, Northampton, Halifax, Warren, Edgecombe, Beaufort, Hertford, Perquimans, Washington, and Vance counties. The "West" was defined as Clay, Madison, Macon, Avery, Yancey, Cherokee, Mitchell, Graham, Swain, Ashe, Alleghany, and Rutherford counties.

⁴⁰ The Appalachian Regional Commission's member states include Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

⁴¹ Community Economic Development Office, Pamlico Sound Legal Services, "The State of Housing in Eastern North Carolina," March 31, 1999, pp. 11-13. The report did not include Bladen, Columbus, Hoke, Hyde, Robeson, Sampson, and Scotland counties. The report showed that 1.7 percent of homes statewide lacked complete plumbing versus 2.5 percent of the

homes in the East. Statewide, 1.3 percent of the homes lack complete kitchens compared to 1.8 percent in the East.

⁴² Gerald Pfifer, "Very Low-Income Households with Selected Conditions," U.S. Department of Housing and Urban Development, North Carolina State Office, May 3, 2000, pp. 11 and 13.

⁴³ Bonnie Rochman, "Habitat helps with Floyd recovery," *The News & Observer*, Raleigh, N.C., Jan. 7, 2001, p. 1B.

⁴⁴ Linda Ray, "Raising the Roof Newsletter," N.C. Department of Commerce Housing and Business and Redevelopment Center and Governor's Hurricane Redevelopment Center, January 2001, p. 2.

⁴⁵ News Release, North Carolina Housing and Business Redevelopment News, "Duke Endowment Grants Assist Local Interfaith Hurricane Floyd Recovery Centers," N.C. Department of Commerce, Feb. 6, 2001, p. 1. The Duke Endowment granted \$200,000 to local interfaith recovery centers for use by families restoring damaged or destroyed houses in Nash, Edgecombe, Wilson, Beaufort, Hyde, Martin, Pitt, Wayne, Greene, Craven, and Bertie counties.

⁴⁶ News Release, N.C. Home Builders Association, "N.C. Home Builders Association Builds Home in Four Days for Flood Victims," Nov. 21, 2000.

⁴⁷ The Regional Development Institute attributes the continued deficit in affordable housing stock (and shortcomings in population growth and economic development activity) in the Northeast in part to the absence of funding similar to the Appalachian Regional Commission funding available in the West.

⁴⁸ U.S. Department of Housing and Urban Development, North Carolina State Office, "Annual Report, Fiscal Year 1999," p. 11. Average renters in 62.5 percent of the counties in Eastern North Carolina pay more than one quarter of their monthly income in rent. In the rest of the state, the average renter pays that high a percentage in only 20 percent of counties.

⁴⁹ *Ibid.*, p. 13. In 82.5 percent of Eastern North Carolina counties, the typical homeowner pays more than 20 percent of



Karen Tam

monthly income for a home; for the rest of the state, the average homeowner in only 41.7 percent of the state's remaining counties pays that much.

⁵⁰N.C. Justice and Community Development Center, the N.C. Fair Housing Center, the N.C. Association of Community Development Corporations, and the N.C. Low Income Housing Coalition, Letter to Governor Hunt, Sept. 14, 2000.

⁵¹Community Economic Development Office, Pamlico Sound Legal Services, "The State of Housing in Eastern North Carolina," March 31, 1999, pp. 107 and 114. The report estimates growth in eastern counties between 1990 and 2000 at 18 percent.

⁵²Guoqiang Shen and Richard A. Stephenson, "The Impact of Manufactured Housing on Adjacent Site-Built Residential Properties in North Carolina," Department of Planning, School of Industry and Technology, East Carolina University, Greenville, N.C., January 1999, pp. 3 and 4.

⁵³For more on controversies regarding the siting of mobile homes, see Stephen McCollum, "Want a Mobile Home? Better Check the Zoning Requirements First," *North Carolina Insight*, Vol. 5, No. 2, August 1982, pp. 53-56.

⁵⁴Counties in Eastern North Carolina currently conducting IDA projects include Beaufort, Carteret, Columbus, Craven, Edgecombe, Halifax, Hertford, Hyde, New Hanover, Northampton, and Pitt.

⁵⁵While the Senate and House have agreed to this level of funding, since there is no capital budget for the 2001-2002 fiscal year, the actual level of Housing Trust Fund money this year will not include an additional \$5 million that was in that fund last year, so the net effect is that the total amount in the Fund this year will drop from \$8 million to \$3 million.

⁵⁶Scott Mooneyham, "Low Cost Loans Offered," Associated Press, *Goldsboro News-Argus*, Goldsboro, N.C., Jan. 30, 2001, p. 2B.

⁵⁷"Rural Prosperity Task Force Report," February 2000, pp. 12 and 27.

⁵⁸The Rural Internet Access Authority was created through Chapter 149 (Senate Bill 1343) of the 2000 Session Laws, now codified as N.C.G.S. 143B-437.40-43.

⁵⁹Office of the Press Secretary, The White House, "Remarks in Whiteville, North Carolina," April 26, 2000, p. 1.

⁶⁰Defined in Chapter 149 (Senate Bill 1343) of the 2000 Session Laws, now codified as N.C.G.S. 143B-437.41, as 128 kilobits per second for residential customers; 256 kilobits per second for business customers.

⁶¹Defined in Chapter 149 (Senate Bill 1343) of the 2000 Session Laws, now codified as N.C.G.S. 143B-437.43, as "at prices in rural counties that are comparable to prices in urban North Carolina."

⁶²Testimony during meeting of Rural Prosperity Task Force, Aug. 13, 1999, Mars Hill, North Carolina.

⁶³The 2001 General Assembly is currently considering a measure proposed by Sen. Eric Reeves that would require the Utilities Commission to consider broadening its definition of "universal service" in telecommunications to include high speed Internet access.

⁶⁴Mark Schreiner, "N.C. man's web hit gets Clinton's attention," *Morning Star*, Wilmington, N.C., April 28, 2000, p. A1.

⁶⁵In "Falling Through the Net," published in October 2000, the U.S. Department of Commerce found that 45.3 percent of N.C. households had computers, vs. 51 percent nationally (p. 7). The study found that 35.3 percent of N.C. households were connected to the Internet, vs. 41.5 percent nationally (p. 8).

⁶⁶"Technology Counts 2001, The New Divides: Looking Beneath the Numbers to Reveal Digital Inequalities," *Education Week*, Bethesda, Md., Vol. 20, No. 35, May 10, 2001, pp. 56-59, www.edweek.org/sreports/tc01/tables/35access-tlg.h20.

⁶⁷Glenn Dunlap, study findings presented to the Rural

Internet Access Authority at its meeting January 16, 2000. The study, performed using GIS mapping, is probably the most significant assessment of a state's capabilities in the country, but Dunlap says the study has limited value as a comprehensive summary of the state's assets. It does not take into account services provided by wireless connections, cable, satellites or other forms of technology and also does not assess if telephone company equipment is actually configured to allow high-speed connections. Furthermore, in some cases, the accuracy of the numbers assessing how many people are within range of telephone end offices in a county may be compromised because telephone offices are located within 18,000 feet of one another, creating an overlap.

⁶⁸Chapter 149 (Senate Bill 1343) of the 2000 Session Laws, now codified as N.C.G.S. 143B-437.42.

⁶⁹A related effort is being launched by the N.C. Department of Commerce, in collaboration with the state Office of Information Technology Services, the N.C. Community College System, the N.C. Department of Public Instruction, the Institute of Government, Concurrent Technology Corporation, the Cooperative Extension Service, the State Library System, and others. It looks at how to train people to ensure that they can take advantage of the access once it is available.

⁷⁰"Falling Through the Net," note 65 above, pp. 21-22.

⁷¹N.C. Board of Science and Technology, "Public Perceptions of the Importance of Science and Technology to the North Carolina Economy," September 1999, p. 10. The survey was conducted in May 1999. The results are based on a telephone survey of 500 randomly selected households throughout North Carolina.

⁷²*Ibid.*, p. 11.

⁷³Testimony at meeting of Rural Internet Access Authority, Jan. 16, 2001.

⁷⁴*Ibid.*

⁷⁵N.C. Department of Commerce survey, November 2000. The survey showed that 19 of the 41 eastern counties are building shells. In the rest of that state, only 23 of 59 counties are building shells.

⁷⁶Mike Rouse, "Tough question, simple answer: Should Wayne build another shell building?" *Goldsboro News-Argus* editorial, Nov. 15, 1999, p. A10.

⁷⁷Stan Alleyne, "EDC agrees to \$2.4 million shell proposal," *Goldsboro News-Argus*, Dec. 7, 2000, p. A1.

⁷⁸J. Kyle Foster, "Shell a frame for growth," *The Fayetteville Observer*, Nov. 18, 2000 found at www.fayettevilleobserver.com/cgi-bin/news

⁷⁹"Rural Prosperity Task Force Report," February 2000, pp. 32-38.

⁸⁰Chapter 148 (H.B. 1819) of the 2000 Session Laws, Section 1, now codified as N.C.G.S. 143B-437.27.

⁸¹"Eastern North Carolina Open for Business," *Site Selection Magazine*, July 2000, Special Section. See Bill Finger, "Phantom Jobs: New Studies Find Department of Commerce Data To Be Misleading," *North Carolina Insight*, Vol. 8, No. 3-4, 1984, pp. 50-52 for a discussion of plant announcements and the actual number of jobs created versus the number announced.

⁸²N.C. Utilities Commission, "Natural Gas Service Areas in North Carolina," current as of November 2001.

⁸³Sigrid Hughes, "LNG lease approved," *Carteret News Times*, March 8, 2001, p. A1.

⁸⁴Bob Williams, "N.C. farmers pinched by shortage of natural gas," *The News & Observer*, Raleigh, N.C., Jan. 21, 2001, p. 1B.

⁸⁵Community Economic Development Office, Pamlico Sound Legal Services, note 41 above.

⁸⁶U.S. Department of Housing and Urban Development, North Carolina State Office, "Annual Report, Fiscal Year 1999," pp. 11 and 13.



THE AFTERMATH OF HURRICANE FLOYD

Lessons Learned and Not Learned

by John Manuel

Executive Summary

Hurricane Floyd dumped more than 21 inches of rain on Eastern North Carolina in September 1999, inundating an area the size of Maryland. By most accounts, it was the worst natural disaster to strike North Carolina in recorded history. A total of 52 lives were lost as swollen rivers and sounds engulfed homes, farms, junkyards, and anything in their paths. The haunting scenes of dead livestock floating in rising floodwaters dominated state and national news mediums.

More than two years later, the state is still rebuilding. There have been lessons learned and some not learned in how to crawl out from the wreckage and how to lessen the risk that such a disaster will occur again.

Among the positives: The state drew criticism for its rescue efforts in reaching people trapped by rising floodwaters. With federal funds resulting from Floyd, the state has been able to purchase an information management system that will enable it to deploy its resources better to dispatch people and supplies in the face of future emergencies.

Environmentalists became concerned that more than a dozen junkyards were inundated, raising fears that the state's public waters would be contaminated with heavy metals and other pollutants. To date, proceedings are underway to purchase nine of the junkyards with an eye toward converting them to green space. So far, studies have detected little flood-related pollution in the affected sounds and rivers.

Among the negatives: Buyouts of hog farms located in floodplains are proceeding at a snail's pace. One photograph became almost synonymous with the flood. It pictured hogs perched upon the rooftop of a barn, half submerged beneath floodwaters. The surrounding waters bore the carcasses of animals that had already floated free. Critics say another Floyd-like storm could wreak the same havoc. The farm is yet to be purchased or relocated—symbolic of the slow pace of buy-out efforts.

The picture in housing is mixed. More than 67,000 homes were damaged by Hurricane Floyd, nearly 8,000 of which were destroyed. While many homeowners have relocated or rebuilt their homes, many more are still mired in negotiations for loans or buyouts. Affordable housing was an issue in the East even before Hurricane Floyd, and renters are having particular problems finding affordable places to live. For example, when Edgecombe Community Develop-

ment Corporation completed apartments that had been under construction before Floyd, the agency had 732 inquiries and applications for 32 apartments—and not all of them went to Floyd victims.

Homeowners generally have fared better than renters, though the pace has been slow for many homeowners as well. Only about 13 percent of homes in counties affected by Hurricane Floyd were covered by flood insurance. For those not covered by flood insurance, the primary vehicle for financing a rebuilding effort is a Small Business Administration Disaster Home Loan. As of Sept. 14, 2001, the SBA had approved loans to some 13,000 North Carolinians totaling \$510.9 million. However, many homeowners had incomes too low to qualify for an SBA loan (A family of four must make at least \$20,563 to qualify). Still others—particularly seniors—did not want to enter into a 30-year promissory note. For these, a patchwork of loan and grant programs has been pieced together, but it takes time to make people whole after a disaster of the magnitude of Floyd, and many homeowners and renters have not reached that point. As of Nov. 1, 2001, 207 families still lived in FEMA travel trailers and mobile homes.

As for avoidance of future disasters, again, the picture is mixed. Local governments will have a better picture of their floodplains to help guide development, thanks to Digital Flood Insurance Rate Maps developed through a \$23 million state appropriation—the largest such commitment to better floodplain mapping in the country. Some cities, such as Kinston, have instigated exemplary efforts to buy out flood prone areas and relocate their citizens. Yet some homeowners are building back in the same places they lost their houses before. In conclusion, while Floyd was a harsh teacher, it's clear there are still lessons left unlearned in the storm's wake.

On a cool, clear winter's day, pilot Phil "Snoopy" Bowie banks his Cessna 110 over the city of New Bern and heads west along the Neuse River. Rick Dove, southeastern representative of the River Keeper's Alliance, is seated beside him. In September 1999—a year-and-a-half earlier—Hurricane Floyd had swept through Eastern North Carolina, dumping more than 21 inches of rain and flooding an area the size of the state of Maryland. In the storm's aftermath, former Governor Jim Hunt and the North Carolina General Assembly allocated \$836 million in storm relief money, passed a flood

hazard prevention act, and initiated more than a dozen new programs to make the region whole and prepare it for future storms. Dove has come aloft to find out what has actually changed on the land.

"There's the McCoy farm right down there," Dove says, pointing to a block of eight rectangular barns and adjoining waste lagoons. In September 1999, those lagoons were completely underwater, their contents spilled out into public waters. Hogs were clinging to the roofs of the half-submerged barns or floating dead nearby. Aerial photos of that image were published nationwide, often accompanied by articles admonishing North Carolina for allowing such farms to be built in the floodplain. Today, the lagoons are once again full, indicating

the barns have been restocked with animals. Dove shakes his head.

"That farm should not be back in operation," he says. "The state said they were going to buy it out, but they didn't. The money's gone elsewhere. The next time we get a major rainfall event, that farm will be underwater again."

Bowie steers the plane west to the town of Kinston. A pair of junkyards straddle a bend in the

river, rusting cars and trucks parked in long irregular rows. These, too, were inundated by Floyd, and oil and gasoline from their rusting tanks and engines spilled into the river.

"The state has done a little better on the junkyards," Dove says. "I understand they've got contracts to buy some of them out and turn the land into greenways. That's going in the right direction."

Table 1. Hurricanes That Have Significantly Affected North Carolina Since 1879

Hurricane Name/Date	Category*	Deaths in N.C.	Maximum Winds*	Damage Totals in N.C. (Unadjusted)	Damage Totals in N.C. (Adjusted for Inflation)
August, 1879	4	40+	168	NA	NA
September, 1883	3	53	100+	NA	NA
August, 1899	4	25	140	NA	NA
September, 1933	3	21	125	\$3 million	\$36.6 million
September, 1944	3	1	110	\$1.5 million	\$14.4 million
Hazel, 1954	4	19	150	\$136 million	\$845 million
Ione, 1955	3	7	107	\$88 million	\$544 million
Donna, 1960	3	8	120	\$25 million	\$142 million
Diana, 1984	3	3	115	\$85 million	\$141 million
Gloria, 1985	3	1	100+	\$8 million	\$12.8 million
Hugo, 1989	3	7	100	\$1 billion	\$1.4 billion
Emily, 1993	3	0	111	\$13 million	\$15.3 million
Bertha, 1996	2	2	105	\$1.2 billion	\$1.3 billion
Fran, 1996	3	24	115	\$5.2 billion	\$5.6 billion
Bonnie, 1998	3	3	104	\$1 billion	\$1 billion
Floyd, 1999	2	52	110	\$6 billion	\$6 billion

* These numbers are as they occurred in North Carolina. Categories are based on the Saffir/Simpson Hurricane Scale, which uses the storm surge, central pressure, and/or maximum sustained winds to classify Atlantic hurricanes into one of five categories. Category 5 is most severe. However, none of the above-referenced storms had this level of intensity when it reached landfall in North Carolina. The categories do not take into account flood damage, which was Hurricane Floyd's signature agent of destruction.

Sources: J. Barnes, J. (2001) "Selected Notorious Hurricanes in North Carolina Since 1879." <http://www.ibiblio.org/uncpress/hurricanes/charts.html>, and T. Ross and N. Lott, "Billion Dollar U.S. Weather Disasters 1980-2001," National Oceanic and Atmospheric Administration. <http://www.ncdc.noaa.gov/ol/reports/billionz.html>.

***Flood waters rise, dams leak
cemeteries give up their dead . . .
Do you see the long-buried coffins floating down Main Street
even time cannot hold the departed . . .
How do you bury the dead
When the ground won't allow it . . .***

—FROM "LOOSE COFFINS IN CAROLINA"

BY MAUREEN A. SHERBONDY

Bowie circles the Cessna, bringing the circular holding tanks of Kinston's Peachtree Sewage Treatment Plant into view. This plant is located right in the floodplain of the Neuse, and high waters have hampered its operation on an almost annual basis. During Hurricane Floyd, the plant was totally inundated, dumping millions of gallons of raw sewage straight into the river.

"This darn plant breaks down every time it drizzles," Dove says. "But the state is finally going to shut the thing down. They're going to run everything to another plant outside the floodplain. Now, that's a real success."

As Bowie banks his Cessna toward home, it's clear that North Carolina has learned some important lessons in the wake of Hurricane Floyd. Changes are already visible on the ground and others are underway. At the same time, some individuals and communities are carrying on business as usual, either not believing that another storm of Floyd's magnitude will come along soon or assuming that the state and federal government will bail them out if it does. There are still livestock and junkyards in the floodplain, and houses by the score. With Hurricane Floyd two years passed, *Insight* looks at some lessons learned and not learned by the citizens and political leaders of North Carolina.

Emergency Preparedness and Response

When Hurricane Floyd hit on September 15, 1999, North Carolina was largely unprepared for the devastation that followed. Flooding of inland streams and rivers was the primary agent of destruction, not the coastal storm surge and wind that accompanies most hurricanes. Fifty-two lives were lost, most by drowning. Sixty-six counties

were declared disaster areas, twenty-seven of them being severely damaged by the storm. Seventy-three municipalities were severely damaged by the disaster, most notably the communities of Princeville, Greenville, Tarboro, Kinston, and Rocky Mount.

After the storm passed, agencies across the eastern part of the state sprang into action. Local rescue squads, state forest and park rangers, N.C. Wildlife Commission officers, N.C. Department of Transportation workers, National Guardsmen, and others performed acts of heroism in rescuing people and animals from the floodwaters. Without taking away from these individual acts, some people are critical of the state's preparedness and response both prior to Floyd and in the storm's wake.

Slim Ray is president and chief executive officer of CFS Press, which specializes in books on flood and swift-water rescue. Ray has more than 20 years' experience as a raft guide, canoe/kayak instructor, and rescue instructor for Rescue 3 International. In an article written for *The News & Observer* one year after Floyd, Ray detailed a series of issues that he says remain unresolved.

First, Ray says that relevant state and local agencies, including local rescue squads and N.C. Department of Transportation workers, were not properly trained or equipped in swift-water rescue prior to Floyd. Ray says they still lack this training, despite plans announced by the State Fire Marshal's Office to develop these programs. Ray also contends that the state did a poor job of getting trained rescuers where they needed to be in the initial stages of the disaster. He blames this disorganization largely on divided command for emergency training and management at the state level. The State Fire Marshal within the Department of Insurance is responsible for rescue standards and training. The Division of Emergency Management



Hobucken residents waded through flood waters from Hurricane Floyd to reach the Goose Creek Island Community Center, that was destroyed by a tornado generated when Hurricane Floyd moved ashore in Eastern North Carolina.

within the N.C. Department of Crime Control and Public Safety is responsible for the actual management of disasters. But when Floyd hit, Ray claims that the Fire Marshal's office oversaw the actual mobilization of rescue forces, and "because they were not familiar with the resource manual developed by Emergency Management, there were delays and confusion."

Although Emergency Management has the authority to manage rescue operations in counties after the governor declares a state of emergency, Ray contends that the division took a "wait-and-see attitude," not intervening unless asked by local rescue squads. "All these factors virtually guaranteed a slow, reactive response during the first 24 hours of Hurricane Floyd," Ray writes. "Were it not for the prompt intervention of the military with its fleet of helicopters, the death toll would have been much higher. . . . The state response system is broken."¹

Responding to Ray's criticisms, Division of Emergency Management Director Eric Tolbert says

he does not agree with Ray's call for a "statewide incident command system" that would direct local rescue operations in a crisis. Tolbert says the Division of Emergency Management is not sufficiently staffed, nor is it intended to manage all emergency functions that happen in a crisis. Rather, he says, it should serve a coordinating role.

"A greater problem that was experienced during Floyd was that we did not have an information management system that connected the State's Emergency Operation Center [EOC] with the county EOCs," Tolbert says. "With the [Federal Emergency Management Agency] financing that resulted during Floyd, we were able to purchase a system called EM-2000, which provides for far better efficiency in inventorying, securing, and dispatching resources statewide. We are in our infancy with this system, but have already seen dramatic improvements in our resource management."

Tolbert also disagrees that there was too long a delay in getting swiftwater teams from the west-

ern part of the state into the floodzone. He says that highly trained swiftwater rescue teams were rarely needed during Floyd, and that "operations" level teams were readily available among local fire and rescue organizations and wildlife officers. Given that just 24 hours before Floyd's landfall, the projected hurricane path was into Charleston and inland across Winston-Salem and Greensboro, Tolbert says it would have been imprudent to move highly trained resources from the western part of the state into the coastal plain.

Tolbert does agree there is a need to train and equip all personnel who might be called upon to respond to a water-related emergency or might find themselves in a flood emergency situation as a result of their duties. Specifically, Tolbert envisions these personnel being divided into three levels of capability—awareness (able to provide minimal rescue services), operations (able to provide rescue from a boat, shoreline, and bridges, but not in the water), and technician (able to perform rescues in moving floodwaters using special equipment). Thus far, the division has received a FEMA grant of \$70,000 to begin this training, but no state ap-

propriation. Tolbert estimates a need for training and equipment in excess of \$2 million.

Ray's criticisms also were broadly rejected by the Office of the State Fire Marshal in the N.C. Department of Insurance. Tim Bradley, Senior Deputy Commissioner of Insurance in the Office of the State Fire Marshal, notes that N.C. Department of Transportation officials are not trained or equipped for swift water rescue because their job is not rescue. He says that rescue squad personnel, on the other hand, often do have such training, especially where they provide protection in areas with large bodies of water. "During Floyd, everyone helped out, including numerous citizens who were not trained," says Bradley.

"Large investments in swift water techniques and equipment in areas without major rivers or large bodies of water would likely not be tolerated by the taxpayers," Bradley adds. "When a jet crashes in a rural community, local fire departments are usually ill-equipped to handle that incident unassisted by outside help. Airports, on the other hand, have crash-fire equipment and training as would be expected. The same scenario exists for

Flood Speak: A Guide to Some Common Terms

- **100-year-floodplain:** Inundation during periods of higher than normal stream flow that has 1 percent chance of being equaled or exceeded in any given year. This is also known as "base flood."
- **Floodplain:** The area adjoining a drainageway such as a river or stream that is subject to inundation by a base flood. The floodplain consists of the following two parts:
 1. **Floodway:** The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than 0.2 feet.
 2. **Floodway Fringe:** The area of the floodplain lying outside of the floodway.
- **Hazard Mitigation:** A series of preventive measures designed to avoid future risks to people and property from natural disasters. Some preventive measures include upgrading facilities, relocating property in flood-prone areas, or elevating floodplain buildings.
- **National Flood Insurance Program:** A program managed by the Federal Emergency Management Agency (FEMA) that provides federally backed flood insurance to communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

—Long Vo and Patrick Cash

Long Vo and Patrick Cash were summer 2001 Center interns.

water rescue. It's easy to say where swift water rescue teams should have been placed after you know where the storm went, but four hours before landfall the state still was not sure of Hurricane Floyd's path. Early predictions showed a westward path for the storm. Based on that information, where would you place teams?

"Few instances where swift water rescue teams were needed occurred, and when they did, it would have been necessary for a team to have been in that location to have made a difference," Bradley says. "Had we ignored the storm's probable path and moved a couple of the mountain teams east, what was the likelihood of them being in the district, or even the county where they were needed? It would have been luck."

Bradley also disagrees that divided command was an issue in the Floyd response, and he says that unfamiliarity with Emergency Management resource manuals was not a problem. "This isn't divided command but integrated command, which is the way major disasters involving multiple agencies are supposed to be managed," says Bradley.

"The Department of Insurance employees from the State Fire Marshals Office had trained on the EM [Emergency Management] system for years. There were imperfections, but unfamiliarity with the resource manuals was not an issue. Unfamiliarity with the system did not cause problems."

Bradley notes that the tiered training envisioned by Tolbert will be completed by the Office of the State Fire Marshal by Jan. 1, 2002, with each level available to rescue squads and fire departments statewide. He cautions, though, that the next major disaster to afflict the state may not be a flood. "I agree we need to train for water rescue and be as prepared as we can, but there are a lot of other potential areas for disaster as well, and we've got to be prepared for them all."

Housing Assistance, Repair, and Reconstruction

According to reports issued by the North Carolina Redevelopment Center, a temporary state agency set up by former Governor Hunt to oversee

News & Observer / Robert Miller



Cindy Jennings sweeps up debris in her mother Shirley Denton's home in the town of Chinquapin, flooded when heavy rain from Hurricane Floyd pushed water from the North East Cape Fear river into nearby creeks and streams.



John Manuel

the recovery effort, more than 67,000 homes were damaged by Hurricane Floyd, nearly 8,000 of which were destroyed.² Counties responded by setting up 227 emergency shelters housing more than 62,000 people. Other organizations, including local fire departments, churches, and motels, provided shelter for another 41,000 victims. Food was provided by a variety of groups, including nonprofits such as the Red Cross (91 mobile feeding stations), Salvation Army (seven mobile kitchens), and the Baptist Men of the Baptist State Convention of North Carolina (four mobile feeding sites). The state provided 450,000 MREs (Meals Ready to Eat) through an existing contract with the manufacturer, SOPAKCO, Inc. of Mullins, S.C. Emergency medical attention was provided by volunteer physicians from SORT (Special Operations Response Team), a private group centered in Winston-Salem.

In the days and weeks following the storm, donations of money, food, clothing, furniture, and supplies poured in from all over the world, much of it to a disaster relief organization set up by Governor Hunt. The state set up several dozen distribution centers to hand out donated food and supplies. Local organizations, primarily church groups, also pitched in and provided hundreds of volunteer workers. State officials say the distribution was orderly, although not all donated material could be used. "Don't send clothing, send cash," officials wound up saying. In sum, no one lacked for emergency food or shelter following the storm. However, getting damaged housing repaired and finding new housing for those whose homes were beyond repair was an enormous problem—one that continues to this day. Indeed, Gov. Mike Easley, in an Oct. 17, 2001, letter to local government officials, declared the state's role in disaster recovery complete but chided local officials to get the job

done on housing. Easley, who took office in January 2001, noted that only three local governments are more than 50 percent complete in the rebuilding process and the majority are less than 25 percent finished. He warned that unless significant strides were made, the state's Hurricane Floyd Re-development Office would reassign its funding to other areas in need.

While wind and storm surge along the coast are typically the major causes of damage from hurricanes, rainfall and subsequent flooding far inland were Floyd's signature agent of destruction. In excess of 20 inches of rain fell in some areas, sending rivers out of their banks and inundating 4.2 million acres of land. Although the water didn't knock many buildings down, houses flooded to any degree were rendered uninhabitable. Insurance is the basic vehicle relied upon to make people whole after a natural disaster, but this did not work for Floyd. *Basic homeowners insurance does not cover flood damage, and only a small fraction of people in the affected counties—approximately 13 percent—owned flood insurance on their homes.*

"Flood insurance was available in virtually all areas affected by Floyd, but there were several problems that deterred its use," says Phil Letsinger, National Flood Insurance Program Coordinator in the N.C. Division of Emergency Management. "Property owners and renters have been unaware of the flood risks where they live. Many are unaware of the opportunities to purchase flood insurance, and of those who are aware, a certain number find the insurance unaffordable. Insurance agents themselves are often poorly informed about the program. Some will say you can't get insurance because you live in the floodplain. Others will say you can't get it because you don't live in the floodplain."

For those without flood insurance whose homes were damaged, the primary avenue of relief

was the temporary housing assistance program offered by the Federal Emergency Management Agency (FEMA). FEMA offers several options. Owners whose houses can be made livable for \$10,000 or less may qualify for a direct grant for up to that amount. For owners whose homes cost more than \$10,000 to be made livable, and for renters who are driven out of their homes, grants are available to pay for rental of comparable housing. Alternative housing was in drastically short supply in Eastern North Carolina, and in recognition of this fact, FEMA offered homeowners a third option. Rather than accept the grant for rental assistance, homeowners could obtain a \$10,000 direct grant to use for alternate housing.

"We recognized that there was just no other place for most homeowners to go, so we offered this special one-time grant of \$10,000 as a means of getting them started on the road to recovery," says Russ Edmonston, spokesperson for FEMA. "In general, it takes homeowners much longer to recover from these disasters than renters."

FEMA also provided temporary housing in the form of 2,536 mobile homes and travel trailers. Trailer parks were set up in 10 locations around the region. People could also opt to set their trailers up next to their homes, which many chose to do. Mobile homes and travel trailers were made available primarily to homeowners, but a large percentage of renters also were included. According to Edmonston, FEMA had expended approximately \$142.7 million for all disaster housing assistance as of June 6, 2001.

***"Finally a man in a boat comes
by—we scream for help, he
sees us, we're free.
At least I think so.
Suddenly a wave washes us in
the water, all except my
brother. He is on the house.
We scream and scream."***

—FROM "WE SCREAM FOR HELP"

BY MARY KEARNS, JONES COUNTY
MIDDLE SCHOOL STUDENT

For those who don't have flood insurance, the primary avenue for rebuilding is through a federal Small Business Administration Disaster Home Loan. These loans are for up to \$200,000 (15 percent more is available if the home is to be elevated above the floodplain) at $3\frac{5}{8}$ annual interest for up to 30 years. As of Sept. 14, 2001, the U.S. Small Business Administration (SBA) had approved loans to some 13,000 North Carolinians totaling \$510.9 million.

Those who were outside the SBA criteria or who were turned down by the SBA for credit/debt reasons were referred to the Individual and Family Grant Program (IFGP). Funded by FEMA and administered by the state, IFGP is one of the standard federal disaster assistance programs offered in all areas declared disaster areas by the President of the United States. It offers grants of up to \$13,600, based on a formula for the value of lost or damaged furnishings. According to a FEMA spokesperson, as of Sept. 14, 2001, 87,000 people had applied for these grants, of which 48,149 had been approved. The IFGP grants totaled \$94.9 million.

North Carolinians soon became aware that the housing assistance offered by FEMA, while much appreciated, was not sufficient to restore most homeowners and renters to anything near their previous living status. Leza Wainwright, former director of the N.C. Redevelopment Center, says that approximately 65 percent of applicants for SBA loans were below the limit in terms of income (a family of four must make at least \$20,563 to qualify). Of those who met the income criteria, 53 percent ended up getting turned down for credit and debt-carrying reasons. Rental housing and affordable new housing were also in desperately short supply.

Joyce Dickens, president of the Rocky Mount/Edgecombe Community Development Corporation, says the organization did a need-and-demand analysis for single-family housing in June of 1999 and found a need for 1,600 homes over the 2000–2005 projection period just in the Rocky Mount area. "That was *before* Hurricane Floyd," she said.

It was clear that North Carolina was going to have to commit a substantial amount of its own funds to supplement those programs offered by FEMA, and to create new programs. In an emergency session held Dec. 15–16, 1999, the General Assembly passed the Hurricane Floyd Recovery Act, which allocated an unprecedented \$836 million for housing, business, agricultural, environmental, and local government assistance.³

In the area of housing, the state provided as-



Floyd's destruction included Tarrytown Mall in Rocky Mount—one of Eastern North Carolina's hardest hit cities.

sistance through 10 different programs. The State Acquisition and Relocation Fund (SARF) provides funds for supplemental grants to homeowners who participate in the FEMA program to buy out homes located in the 100-year floodplain. These grants are not to exceed \$50,000, except where necessary to place low and moderate income families into comparable housing as defined by the federal Uniform Relocation Act. SARF also offers relocation assistance grants to renters whose housing units were to be purchased under the federal buy-out program.

For those homeowners approved for SBA disaster home loans, the state offered an additional grant of up to \$10,000 to pay for repairs or losses not covered by the SBA loan or to lessen the amount of debt that they had to take on.

The Replacement and Repair Grant program provides local governments with funds to repair or replace homes of low-income homeowners not subject to the federal buy-out program, not covered by insurance, or not eligible for SBA loans.

To stimulate the construction of new subdivisions in the affected counties, the state is providing infrastructure grants to local governments for new housing developments. The state also has allocated funds for nonprofit housing organizations to purchase land for the construction of new homes and to hire project managers to oversee the building efforts. In addition, the state has appropriated money for the construction of rental housing in Eastern North Carolina.

Three final programs which indirectly contribute to housing construction include funds to local governments to hire housing inspectors, rehabilitation specialists, and project managers; funds for Housing Recovery Assistance Centers to hire housing counselors; and funds to set up and staff a Housing Recovery Office.

According to Robert Carver, former spokesperson for the North Carolina Redevelopment Center, the application period for the state housing grants closed Feb. 16, 2001, and local governments were required to get their final paperwork in to the



John Manuel

This flood damaged home was approved for a buyout in Kinston.

N.C. Redevelopment Center by March 9. "The state provides funding based on applications from local governments," says Carver. "It is then the responsibility of the local government to carry out the work."

Thus, the state has to rely on local governments to tell them how many homes have been completed. As of October 2001, the N.C. Redevelopment Center had completed timelines and funding agreements with all local governments to get the work finished and had shifted to a role of monitoring ongoing projects and assisting local governments as problems developed.

The Role of Nonprofits

Along with these governmental programs, the nonprofit community played a tremendous role in the recovery effort. Faith groups, in particular, have played a key role in raising money and organizing volunteers for the clean-up repair of flood-damaged homes. The North Carolina Interfaith Disaster Response, a nonprofit organization with delegates from 15 church denominations, hired a full-time director to coordinate the efforts of the faith community in the Floyd recovery and

to offer assistance in obtaining resources for volunteers. Executive director Carolyn Tyler reports that as of Feb. 15, 2001, faith groups had directly spent more than \$15 million raised from donors around the world and contributed an estimated \$10 million in volunteer labor to help put flood victims back on their feet. This includes the repair of 3,231 houses and assistance of 10,452 families with other unmet needs such as payment of rent and utilities and provision of appliances and furniture.

In addition to these efforts, the American Red Cross spent \$22 million on Floyd relief and recovery efforts and the United Way of North Carolina distributed \$20.5 million raised through the Office of Governor Hunt. These United Way contributions were channeled to local nonprofits providing services on the ground. Fundraising for Floyd recovery is ongoing, says United Way of North Carolina President Jim Morrison, and there is still a great need. "This is a five-year adventure," says Morrison. "We are still raising money, but the disaster was two years ago. People don't realize there are still needs that are not being met." Indeed, the massive flood may have stretched the capacity of charitable givers. In the aftermath of the storm,

—continues on page 95

Hurricane Floyd Relief: Available Federal and State Aid

For victims of Hurricane Floyd, there are two main sources of aid available—federal and state. Through the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), states that experience a major disaster beyond their abilities to cope can seek help from the federal government. The Stafford Act outlines the steps involved in obtaining a presidential disaster declaration, determines the scale of aid available, and sets conditions for obtaining the necessary funds.

I. Federal Assistance

Once a presidential declaration is made, the federal disaster assistance available falls under three basic categories: *Individual Assistance* to help individuals, families, or business owners; *Public Assistance* to help public and a few non-profit organizations to repair or replace damaged facilities; and *Hazard Mitigation Assistance* which provides aid designed to reduce future losses to private and public property. In all, the federal government obligated \$2 billion to North Carolina in assistance in Floyd's wake.¹

A. Individual Assistance: One of the major forms of federal assistance is the *Individual Assistance Program*. This initiative provides grants, loans, and/or counseling services to individuals and families. In each case, the applicants seeking assistance must register with the Federal Emergency Management Agency (FEMA) through the different local offices and establish their eligibility. The first step in the application process is a phone interview. After the interview, the applicants receive information and application forms. Once applicants fill out the necessary paperwork, the agency determines each applicant's eligibility on a case-by-case basis. It is important to note, however, that federal disaster aid does not guarantee total recovery from all material and personal losses. Instead, the assistance is limited to returning damaged or lost property not covered by insur-

ance (such as one's home) to its pre-disaster state, or to providing for necessary expenses or needs to help disaster victims back on their feet. The three major services under the Individual Housing Assistance Program include:

1. *Temporary Housing Assistance:* This program assures that people whose homes have been damaged have a proper place to live until repairs can be made. Temporary housing assistance includes funds for home repair, rental assistance, mortgage and rental assistance, lodging reimbursement, and referral to other housing programs.
2. *Individual and Family Grants:* These grants are given to applicants who are not eligible for Small Business Administration loans or those who receive an insufficient amount from their Small Business Administration loans. Individual and Family Grants can cover expenses such as housing, personal property, medical, dental, funeral, transportation, and flood insurance premiums. The state administers this program and pays for 25 percent of the grant amount, while the federal government provides the remaining 75 percent.
3. *Small Business Administration Disaster Loans:* For many victims, this program is the main form of disaster assistance. The SBA makes loans to three groups: (1) homeowners and renters to repair or replace disaster-damaged property, (2) business owners to repair or replace disaster-damaged property, and (3) small businesses and agricultural cooperatives to assist them through the recovery period.

In addition to these three main programs, the federal government also implements other smaller programs under the Individual Housing Assistance Program, such as:

—Floyd Relief, *continued*

4. *Disaster Unemployment Assistance:* This program provides unemployment benefits and re-employment services to those who lose jobs because of the disaster and who do not qualify for regular unemployment insurance programs. Individuals must register with their state's employment services, and benefits extend anywhere from the date of the disaster until 26 weeks after the disaster declaration.
5. *Legal Services:* Once the President of the United States declares a disaster, FEMA and the Young Lawyers Division of the American Bar Association team up to provide free legal assistance to victims, especially low-income individuals who cannot afford a lawyer. The lawyers typically provide assistance with insurance claims, legal counseling, or the replacement of wills and other important legal documents destroyed in the disaster.
6. *Special Tax Considerations:* Taxpayers who suffer losses due to the disaster may deduct the amount on their federal income tax return for the year in which the disaster occurred. The Internal Revenue Service also can expedite refund checks to taxpayers in a federally declared disaster area.
7. *Counseling:* The Crisis Counseling Assistance and Training Program provides supplemental funding to states for short-term counseling for disaster victims. This counseling program provides both immediate services and regular programs that may last for up to nine months.

B. Public Assistance: Aside from Federal aid to individuals and families, the federal government also offers assistance to public institutions and organizations, such as state and local governments and any other political subdivision of the state. Focused on public facilities, this form of federal aid can fund the repair, restoration, reconstruction, or replacement of a public facility or infrastructure that is damaged or ruined by a natural disaster. In normal circumstances, applications for assistance must be filed 30 days after an area is designated a disaster

area. Applicants may complete their own small projects and document their damages on a project worksheet. FEMA will review this documentation and obligate the federal government to pay at least 75 percent of the cost. Once FEMA obligates money to the state, it is the state's responsibility to manage and distribute the funds to local governments and individuals.

C. Preventive Assistance: Finally, the third form of federal aid, the *Hazard Mitigation Grant Program*, involves a series of preventive measures designed to avoid future risks to people and property from natural disasters. Communities can apply for mitigation funds through their state, and the funds help implement *Hazard Mitigation Grant Program* projects such as upgrading facilities to meet current standards, acquiring or relocating properties in high hazard areas, elevating flood-prone buildings, and protecting existing structures.

II. State and Local Government Assistance

In the onerous process of rebuilding after a natural disaster strikes an area, the state and local governments also take an active role in helping victims recover from their ordeal. After Hurricane Floyd, Governor Jim Hunt and the North Carolina General Assembly approved \$836.6 million in state funding to help meet the needs of Eastern North Carolina left unmet by the \$2 billion in federal assistance. Gov. Hunt established the Hurricane Floyd Reserve Fund in the Office of State Budget and Management, and through this fund, the North Carolina General Assembly authorized a series of projects and programs to help the numerous flood victims. North Carolina gave money to small businesses to reduce the interest on their SBA loans or to businesses that did not qualify for SBA loans. The state also gave grants to the farming and fishing industries to cover equipment, crop, and livestock losses, in addition to implementing public health and environmental programs to provide safe drinking water and clean up the damaged areas. In light of all the damage left in Floyd's wake, however, one of the main problems on which the legislature focused was the housing situation. Hurricane Floyd did an esti-

mated \$6 billion in insured and uninsured damage. Ultimately, the storm damaged more than 67,000 homes in some way, and it destroyed 8,000 homes. Therefore, of the \$836.6 million dollars set aside for the relief effort, the state obligated \$493.6 million dollars toward housing programs.

Crisis Housing Assistance Fund: Aid for housing relief falls under this fund, which is administered by the Division of Community Assistance and North Carolina Housing Finance Agency. The primary goal of these two agencies is to help people (especially low-income families) repair or find affordable and adequate housing. They help victims through a variety of initiatives, such as:

1. The State Acquisition and Relocation Fund, which provides a supplemental grant to homeowners participating in FEMA's Hazard Mitigation Grant Program buy-outs to purchase replacement homes. These grants also give relocation assistance to renters whose homes have been bought out.
2. Grants to low-income homeowners to repair or replace their home.
3. State grants to successful SBA loan applicants in order to reduce the amount of debt that they accumulate to repair their homes.
4. Infrastructure grants to local governments to build new housing developments.

5. Funds to build affordable rental units for people.

6. Funds for more personnel—such as housing inspectors or housing counselors—and a Housing Recovery Office to oversee the housing effort.

Before victims of Floyd can apply for these state funds, they must also register with FEMA, and, with the exception of Hazard Mitigation Grant Program buy-out homes, have documentation proving that they have already exhausted all attempts to seek federal aid. This is to prevent double dipping and assure that state funds go as far as possible. Thus, applicants must have documentation stating their grant approval or denial from the federal Individual Family Grant program, or be able to show that they did not receive any SBA loans. Families that fail to adhere to these guidelines are not eligible for any aid other than relocation assistance within the buy-out program.

—Long Vo

FOOTNOTE

¹ The federal deadline for registering for disaster aid was Feb. 29, 2001, and the state application deadline was Feb. 16, 2001.

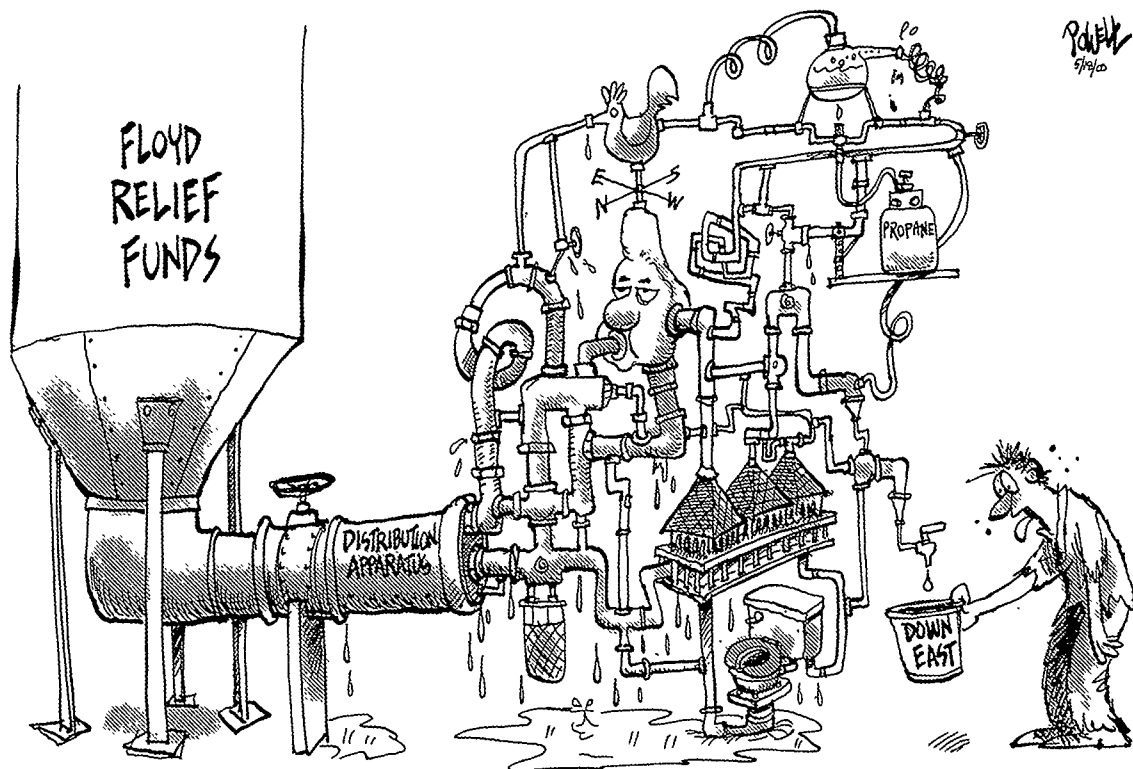
Long Vo was a summer 2001 Center intern.

some local United Way agencies suffered what could be called Floyd fatigue, as giving for community campaigns dropped. Flood-ravaged Greenville saw a decrease of 13.2 percent in its 1999–2000 United Way campaign, while Goldsboro saw a dip of 9.6 percent. The impact immediately following the flood could be felt as far away as Iredell County in the western Piedmont, where local United Way officials reported trouble reaching their campaign goal due to Floyd-related generosity.

But the rebuilding continued even as non-Floyd-related giving was returning to pre-flood levels. Tyler says the faith groups are only halfway through the rebuilding effort in terms of meeting requests for housing repair. Faith groups are hoping to continue assisting families in need. How-

ever, raising funds to support recovery programs is becoming more difficult as the crisis atmosphere fades and in the wake of Sept. 11, 2001, relief efforts. The state Housing and Business Redevelopment Center, an arm of the N.C. Department of Commerce, initially offered to reimburse faith groups for construction materials used to rebuild homes later found to qualify for government aid. However, the center backed away from that offer in the midst of the spring 2001 state budget crisis. Currently, the North Carolina Redevelopment Center and the United Way are seeking funds to pay for future material costs incurred by faith groups in the Floyd recovery effort.

"The role of nonprofits in picking up projects not covered by state or federal governments has



been huge," says Robert Carver, formerly of the N.C. Redevelopment Center. "We want to do what we can to keep those programs going."

A Lack of Housing

For all these efforts, there is still a tremendous lack of housing for flood victims in Eastern North Carolina. As of Nov. 1, 2001, 207 families were still living in FEMA travel trailers and mobile homes, and untold others were living with relatives or in substandard housing. The principal problem is that it simply takes time to get publicly financed housing underway.

"You have to find land that is available, affordable, and close to the support services like jobs, churches, and schools that the people have ties to," says Tom Hegele, who retired in October 2001 as spokesperson for the Division of Emergency Management. "Then, you have to find builders who are willing to do the construction, and that's not been easy when it comes to affordable housing. We had a builder in Kinston who left to build \$300,000 homes in Arizona. He said he could make as much money on one of those houses as he could make on 10 houses for low-income buyers."

Paul Wilms, director of governmental affairs for the North Carolina Home Builders Association, says the story of a single builder leaving Kinston to build high-priced homes in Arizona represents anecdotal evidence of a problem. "Hundreds of builders in Eastern North Carolina are responding to this need," says Wilms.

When housing units do become available, the demand for them is overwhelming. And there is no guarantee that flood victims will qualify for them. Rocky Mount-Edgecombe Community Development Corporation recently completed apartments that were under construction before Floyd. The N.C. Housing Finance Agency urged the CDC to give preference to flood victims, but that was not always possible.

"We had a total of 732 inquiries and applications for 32 apartments," CDC director Dickens says. "Among them were 153 flood victims, of which we ended up accepting 13. Some of those who applied were ineligible due to income restrictions—either too little or too much [to qualify]—some were disqualified because of bad credit ratings or criminal records. The need for rental property is tremendous."

And then there are those who could qualify for

a new home loan, but simply don't want to take on that obligation. "We've heard a lot of anecdotes about people who are 60 or 70 years old, who lost everything, and don't want to take on a 30-year loan," says Hegele. "I don't have an answer for that."

In sum, when large numbers of people are displaced by an event like Hurricane Floyd, no amount of housing repair and construction programs is enough to make everyone whole within a reasonable period of time. The state is doing a commendable job in attempting to spur the construction of new apartments and affordable housing, but clearly other approaches are needed to avoid continued problems.

Hazard Mitigation

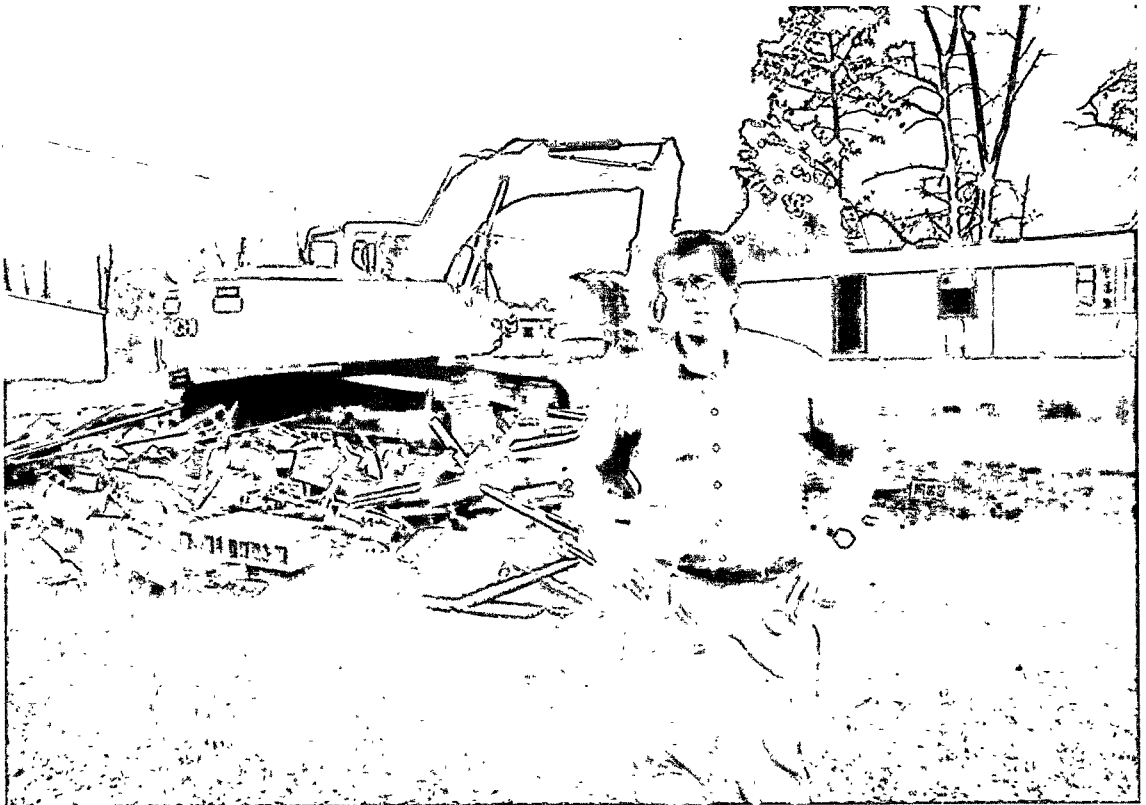
As he drives through the neighborhoods of Southeast Kinston bordering the Neuse River, city planner Chris Cabral points to the shotgun shacks, mobile homes, and brick bungalows that line the narrow streets. Cabral says this area has been repeatedly flooded at least since 1899 when a major hurricane hit. Had that flooding occurred a

few decades ago, most of the owners and tenants would be back in the houses, unable to afford to move elsewhere, hoping against hope that they wouldn't be flooded again. But the federal government and the city of Kinston have learned their lesson.

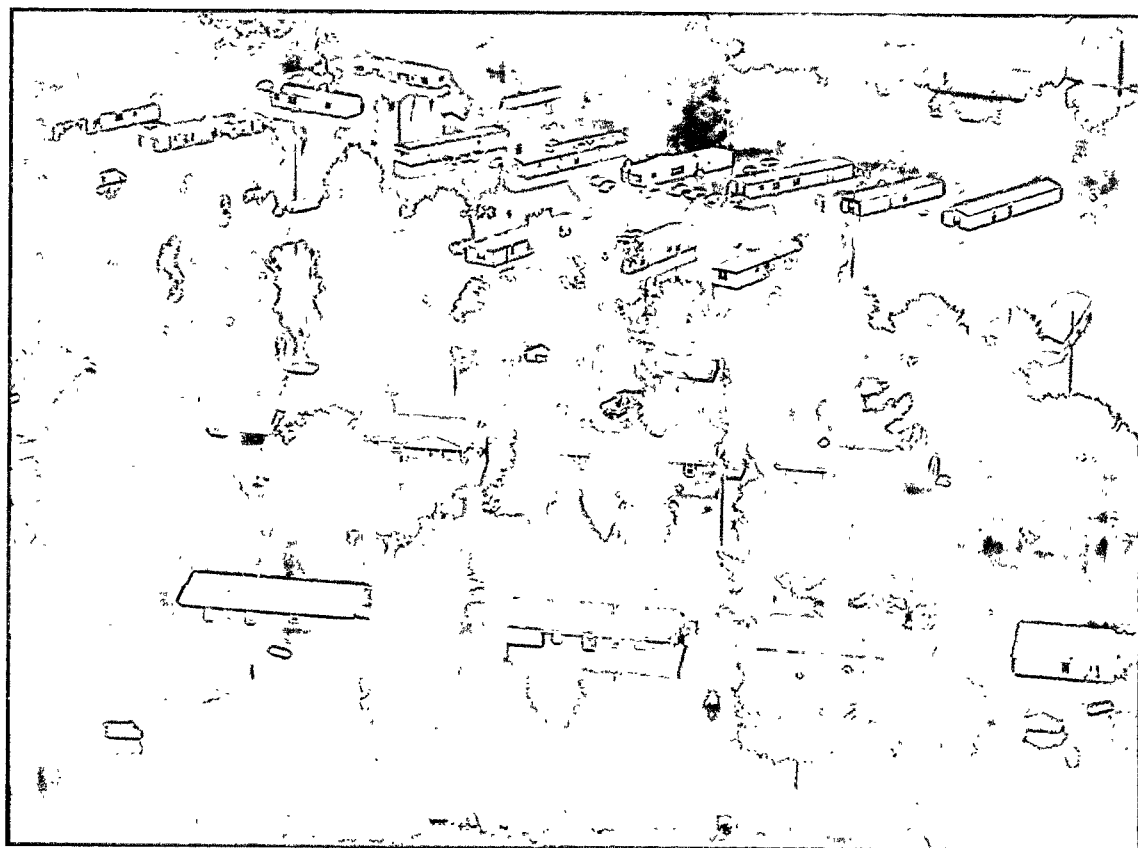
"We've bought out all of these homes," Cabral says proudly. "All of them will come down within the next year. The residents are moving to nicer neighborhoods in North Kinston well out of the floodplain. Our plan is to convert this area to a park. The next time the Neuse River overflows its banks, the only homes flooded out will belong to the snakes."

After decades of paying for repairs to homes in the nation's floodplains, the federal government in the mid-1980s came to the realization that it is far cheaper to remove buildings from the floodplain than to repair them after a storm. That realization was translated into policy in 1988 with the passage of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 93-288).⁴ Among other programs, the Stafford Act authorized the Hazard Mitigation Grant Program (HMGP), which provides funds for the buyout and removal of flood-prone

Kinston planner Chris Cabral, pictured in an area bought out after Hurricane Floyd, takes pride in the city's plans for the floodplain.



John Manuel



News & Observer

The town of Princeville, inundated by Floyd's flood waters, opted to rebuild and repair on the same site.

structures. That program went into full swing in 1993 when Mississippi River floods inundated thousands of homes and communities in the Midwest. The state of North Carolina began to get serious about it in 1996 in the wake of Hurricane Fran. Buyouts of homes in coastal areas inundated by Fran got underway, a move which paid off handsomely when some of those same communities were flooded by Floyd. "In the cities of Washington, Kinston, and Belhaven alone, we avoided \$9.2 million in potential damages from removing structures after Fran," Tolbert says. "The best rescue is one that doesn't have to happen."

After Floyd, the state committed \$139 million to supplement FEMA grants to buy out homes located in the 100-year floodplain. According to the Division of Emergency Management, approximately 8,000 homes have been declared eligible for buyout. As of Nov. 19, 2001, however, FEMA had only approved the purchase of 4,377 structures at a total cost of \$287.3 million.

The pace of the buyouts has been criticized for its slowness, and buyouts do not help everyone,

including renters and people with inadequate documentation, such as migrant farmworkers. Unquestionably, many of the region's poor have been left worse off than before the storm struck. But officials say that given the arduous process of setting up the programs at the local level, signing homeowners up for buyouts, finding alternative housing, and condemning the buildings, progress actually has been phenomenal. "Our hazard mitigation section has done a Herculean job in helping local governments put together their programs, getting applications compiled, submitted, reviewed, and approved by the state and federal government," says Hegele. "I realize that doesn't help the disaster victim who has been sitting in an apartment for a year, but these things take time."

Opting Out in Princeville

Not every flooded community has chosen to participate in the buyout program. Princeville, settled by freed slaves in 1865 and consid-

—continues on page 102

Back on the Map: Princeville Rebuilds After Flood's Devastation

When Theresa Richardson went to bed on the night of Hurricane Floyd, she hadn't a clue of a devastating flood that would all but wipe her tiny hometown of Princeville off the map. Like most town residents, she thought the worst of the storm was behind her. The waters of the nearby Tar River had receded during the day, and Richardson assumed the storm would calm by morning.

"I thought to myself that all of the rain was over, but that night took everyone by surprise," says Richardson. "The police and fire rescue came out with bull horns at 3 o'clock in the morning and told everybody to evacuate because the dike had busted. When I came back [from the evacuation], I had lost everything."

But fortunately for Richardson, the story didn't end there. A renter before the flood, she is now a homeowner. Her story illustrates the most remarkable, yet unexpected effect the flood

had on the town of Princeville, population 940. Before the flood, the percentage of households that were owners was 54 percent compared to a post-flood percentage of 60 percent. The 2000 U.S. Census found the post-Floyd population of Princeville to be much reduced,¹ though former residents are gradually returning.

"Those numbers [of homeowners] are rising every day," says Bobby Hopkins, Princeville's town manager. "When a house is rebuilt, those that were have-nots now at least have something." Hopkins says that for many longtime residents like Richardson, Floyd money enabled them to be homeowners for the first time.

"You can ask anybody, and they will say that nothing like Hurricane Floyd has ever hit North Carolina. Having two hurricanes back-to-back [Dennis and Floyd], we received more rainfall in a matter of weeks than we usually



Long Vo

—Princeville, *continued*

receive all year," Hopkins says. "You could say it was a fluke."

Princeville's annual rainfall total is 42 inches, which is the amount of rain the town was inundated with as a result of the two hurricanes. Dennis and Floyd were about two weeks apart, and the sheer amount of rain in such a short period of time created a rift in the protective dike and flooded houses to their rooftops or higher. The dike, which has since been rebuilt, is essentially the only thing between Princeville and the Tar River.

"It took enormous pressure to buckle the dike in addition to it being weakened by kids riding their ATV's (All Terrain Vehicles) all over it," says Hopkins. Today, Hopkins keeps a wary eye on the earthen structure to assure that it is still sound. "One thing I do once a week now is take a walk on the dike to make sure there are no signs of erosion."

The dike, rebuilt against the advice of some experts, looks like nothing more than a glorified hill with grass covering it. It is 30- to 35-feet higher than the Tar River that parallels it, and the river is visible, but quite a distance away. "When people hear the word dike, they expect something more interesting and dangerous, but this is all it is," Hopkins says. "The Army Corps of Engineers considered making the dike higher this time. However, the city of Tarboro would be at higher risk of flooding, so the Corps of Engineers made it the same height and is administering a \$3 million dike study for further recommendation."

After the storm, residents of the Edgecombe County town had the opportunity to participate in a federal buy-out program that essentially would have meant the end of Princeville due to excessive risk of future flooding. But there was the town's history to contend with. Former slaves first settled here in 1865 along the banks of the Tar River under the protection of Union troops at the close of the Civil War. The town was originally known as Freedom Hill, and in 1885, was incorporated and renamed Princeville after one of the town's citizens, Turner Prince. Today, Princeville is the oldest town in the nation owned exclusively by African-Americans.

"[The descendants of] these citizens have been here since the 1800s," Hopkins says. "This is their land, and they take pride in it. Families have raised families here. This is their land, so how can you take that away from them?" After exhaustive debate and deliberation, the Princeville Town Council voted 3-2 to rebuild rather than accept the buyout.

The townspeople who remain seem pleased with the decision. Today, driving through the streets of Princeville, new houses belie the fact that there was ever a disaster, and only the occasional condemned house or crew of volunteer laborers serves as a reminder of Floyd's passing.

Hopkins feels that although Floyd was devastating for families, it actually resulted in a boon for the community. "The flood is sort of like a blessing in disguise," Hopkins says. "Many of the homes were 60-70 years old, 400-600 square feet, and in bad condition. As we ride around today, we see better and larger homes."

After the flood, the U.S. Army Corps of Engineers rebuilt the dike and added a gate that will close over the railroad tracks where they traverse through the dike. "Before, where those railroad tracks are, a flood would form a river along the tracks and the water would flow directly into Princeville," Hopkins says. "Now we have gates to shut that off." With the new dike in place, Hopkins says that Princeville becomes situated on a 500-year floodplain versus a 100-year floodplain. Being in a 100-year floodplain means that the town has an estimated 1 percent chance every year of being flooded. A 500-year floodplain lessens these chances by five times, making the chance .2 percent that Princeville will be flooded in any given year.

"The decision was made to rebuild, and that is what I am here to do," Hopkins says. "Hurricanes blow down million dollar homes along the coast, and people rebuild. So why not rebuild here?"

With the \$14,299,272 received from the state thus far, Princeville is embarking on a series of projects. The town put together a Princeville recovery and land use strategy plan, which it did not have before the flood. This recovery plan is a comprehensive compilation of



Susan Lyon,
resident of Princeville

Long Vo

all the damage that Floyd caused and the recommended restorations and improvements. These recommendations range from the need for new and wider roads to the types of houses that should be built in place of the condemned ones. Without a recovery plan, Princeville would not have been eligible for state or federal funds.

Today, there are four new subdivisions in Princeville. A new elementary school opened in August 2001, and construction began on a new town hall. Hopkins says Princeville also wants to highlight its deep historical roots and rich culture. The old town hall is going to be turned into a new museum and welcome center. "In five years, we will see a whole new Princeville, not because it is not there anymore, but because it will be so new and different," Hopkins said.

Susan Lyon is among those who is already experiencing the new Princeville. When the flood destroyed her home, Lyon had to move in with her children in Richmond, Va. She returned when her house was rebuilt. "It was hard to get back

after you lose everything, but my [late] husband asked me to take care of this place," Lyon says.

Sam Knight, Princeville's city planner, also decided to stay. "Leaving this place was never an option," Knight said. "I was raised here, and all that I know is here." And Knight said that the decision to rebuild was not a difficult one for the town's elected officials. "When your constituents decide they want to come back, you listen or they vote you out." And so by the margin of a 3-2 vote, Princeville is back on the map.

—*Long Vo and Patrick Cash*

FOOTNOTE

¹ The population figure 940 is from the 2000 U.S. Census. The 1990 U.S. Census found the population of Princeville to be 1,652, while state projections placed the population prior to the flood in 1999 at 2,157. Princeville Town Manager Bobby Hopkins believes the 2000 figure of 940 is too low.

Long Vo and Patrick Cash were Center interns in the summer of 2001.



**Bobby Hopkins,
Princeville Town Manager,
pictured at the town dike**

Long Vo

—continued from page 98

ered the oldest African-American town in the nation, was completely inundated when the Tar River broke through a protective dike. Virtually every building in the town was flooded to the rooftop, and the dike kept the water in for more than a week thereafter. Owing to its precarious position in the floodplain and the degree of devastation, Princeville seemed a natural to participate in the buyout program. However, the thought of vacating the town was too much for Princeville's political leaders. By a 3-2 vote, the mayor and town council voted not to participate in the buyout pro-

The Artist [formerly known as Prince] must still have a place in his heart for his former name: He has donated \$37,000 to the hurricane-devastated town of Princeville, North Carolina.

—ROLLING STONE, MARCH 2, 2000

gram, and instead to rebuild the dike and repair the damaged buildings.

While acknowledging the unique heritage of the town, East Carolina University geology professor Stanley Riggs considers the decision to stay a terrible one. "There is not a worse place in the entire [Tar] river basin to build a town," Riggs says of Princeville. "It is located in a very narrow floodplain right below where a major creek empties into the Tar and right above the U.S. 64 bridge crossing, which effectively acts like a dam in high water. The Corps of Engineers rebuilt the dike exactly as it was before Floyd except for a gate that will close over the railroad tracks where they penetrate the dike.

"In my estimation, Princeville missed a major opportunity to relocate outside the floodplain," Riggs says. "The local politicians have not learned the lesson of river dynamics. Their town is going to get flooded again."

Princeville leaders, however, argue that rebuilding the town was worth the risk. (See "Back on the Map: Princeville Rebuilds After Flood's Devastation," pp. 99-101, for more.) Town Manager Bobby Hopkins says improvements to the town dike have placed the town at the 500-year floodplain level, rather than at the 100-year flood-

plain level where it was situated before. That means a less than .2 percent chance that the town will be flooded in any given year.

Outdated Floodplain Maps

One lesson North Carolina learned from Floyd, however, is that many of the floodplain maps of local watersheds are badly outdated. There was widespread flooding in areas not indicated on maps as being in a floodplain. This is a problem nationwide, not just in North Carolina.

"The hydrology of many streams and rivers has changed, sometimes radically, from when the maps were first drawn," says Mary Hudak, public affairs officer for FEMA Region IV. "Much of this is due to the effects of development in the watersheds, and some to other factors."

FEMA and the state of North Carolina are engaged in a pilot project to remap the six eastern river basins and put all the information in digital form. These Digital Flood Insurance Rate Maps will enable state and local governments to speedily update maps and put the information out on the web. The maps will be useful not just for setting insurance rates, but also for land use planning. The state has committed \$23 million toward this project, a level unprecedented anywhere in the country.

"This is a huge step forward, and it never would have happened without the commitment of the governor and the legislature," says Hudak. "This means each local government will be able to

manage their floodplain and keep it updated. This will outlast all the other programs Governor Hunt has engaged in. It is a gift to the future for North Carolina and the nation." In part due to this and other efforts, North Carolina was named the Outstanding Disaster Resistant State at the Federal Emergency Management Agency's Project Impact Summit in November 2000.

Having accurate floodplain maps is a vital first step to hazard mitigation, but it is only a first step. Buildings must be elevated above or removed from the floodplain to keep them out of harm's way. Facilities such as hog farms and toxic waste dumps must also be removed from the floodplain to avoid the risk of pollution. Hurricane Floyd provided an opportunity for the state to put those seemingly common sense practices into law, but the recommendations developed by the affected state agencies were, for the most part, not approved by the legislature.

And Bill Holman, former Secretary of the Department of Environment and Natural Resources under Gov. Hunt and now executive director of the state's Clean Water Management Trust Fund, does not believe the effort to map the state's floodplains has gone far enough. "Floodplains are wider and floods have increased because wetlands and floodplains have been filled; wetlands that store, treat, and slowly release floodwaters have been ditched and drained; streams have been buried, culverted, straightened, and channelized; and watersheds have been paved," notes Holman. "North Carolina has 17 river basins. We've only funded mapping in six eastern basins."

Hurricane Floyd Flooding by the Numbers

Number of lives lost: 52

Number of homes damaged: some 67,000

Number of homes destroyed: nearly 8,000

Number of N.C. counties declared disaster areas: 66 of 100

Number of municipalities severely damaged: 73

Number of hog farms inundated: 50

Farm animals lost: 21,000 hogs, 2.1 million chickens, 700,000 turkeys, 680 cattle

State aid allocated for Floyd victims: \$836 million

Federal aid allocated for Floyd victims: \$2 billion

In addition, says Holman, floodplain maps will accomplish little unless they are used to guide land use decisions. "Floodplain maps will be useful only if local governments and state agencies adopt and enforce regulations and use the maps to steer and relocate inappropriate development out of the 100-year floodplain," Holman says. Nonetheless, he assures that updated floodplain maps will get some use. "The Clean Water Management Trust Fund and other environmental agencies will use the maps," notes Holman. "CWMTF prefers to acquire, protect, and/or restore riparian buffers in the 100-year floodplain."

Post-Floyd Legislation

In the months following Hurricane Floyd, the N.C. Department of Environment and Natural Resources and the N.C. Division of Emergency Management drafted legislation that attempted to significantly limit new construction in floodplains. The bill they developed was sweeping. First, it conditioned local government eligibility for water and sewer loans and grants and future state disaster relief funds upon those governments adopting floodplain ordinances mandating all new structures to be raised at least 2 feet above the 100-year-floodplain. Additionally, the legislation required that those ordinances prohibit new salvage yards, chemical waste facilities, and solid waste facilities from locating within the 100-year floodplain.⁵

The Flood Hazard Prevention Act of 2000 was introduced into the General Assembly's short session in 2000. The bill, Senate Bill 1341, went into the "605 process," a reference to the room in the Legislative Office Building where stakeholders are called in to hammer out compromises on major environmental bills. The N.C. Home Builders Association, N.C. League of Municipalities, and N.C. Association of County Commissioners among others voiced strong opposition to the mandatory elevation requirement.

"It wouldn't have mattered if it was 2 yards or 2 inches, we simply don't know where that line is," says Ed Regan, deputy director of the N.C. Association of County Commissioners, in reference to the floodplain designation. "We couldn't support that provision not knowing what it would look like in the affected communities."

"The prescription for a 2-foot freeboard was totally arbitrary and could have been damaging," says Paul Wilms, director of government relations for the N.C. Home Builders Association. "In some communities, 2 feet would be excessive; in others

it might not be enough. You can't determine that without doing a hydrologic study, which, until the new state/FEMA mapping is done, most communities cannot afford. We opposed the linking of water and sewer funds to the development of local ordinances for the same reason and because it was, in effect, a mandate."

Elaborating on his association's opposition to the freeboard requirement, Wilms notes that "Senate Bill 1341, even in its original version, did not address the problem—the lack of accurate base flood elevations for most rivers in North Carolina. Simply elevating structures two feet above an inadequate base flood elevation (Charlotte's was 5.7 feet too low) would create the illusion of protection without addressing the problem."

Holman, however, does not agree that the 2-foot freeboard requirement was excessive. "Given the age of the existing maps, the proposed 2-foot freeboard was conservative," notes Holman, then Secretary of the Department of Environment and Natural Resources. "State buildings use the 2-foot freeboard standard."

As a result of this opposition, the bill that emerged required structures to be raised only 1 foot above the 100-year floodplain, and no longer required local governments to adopt floodplain ordinances as a condition for receiving water and sewer funds. Instead, the legislation awarded points to those who followed this practice. (Local government applications for limited state water and sewer loan and grant monies are ranked according to a point system. More points equates to a higher priority for getting a grant.) The prohibition on new solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities being located in the 100-year floodplain was retained.

After the addition of an amendment that delayed the start date of the priority points until after the water and sewer money had run out, the bill passed the House. The Senate then further weakened the bill, eliminating the elevation requirement entirely, and providing priority points for simply adopting a floodplain ordinance that required new construction to be above the 100-year floodplain, the same requirement for entry into the National Flood Insurance Program. Senate Bill 1341 was enacted into law with tepid support from the environmental community. As it was finally passed, the Flood Hazard Prevention Act of 2000 was a bitter disappointment to those who felt the state enjoyed a golden opportunity to capitalize on the lessons of Hurricane Floyd.

"We had a lot of hope going into the short session that the visceral response to Hurricane Floyd would carry the legislation through, but what resulted was a comedy of errors," says Nat Mund, lobbyist for the Conservation Council of North Carolina. "Floodplain regulation may come up again in the next session, but a lot of people will say, 'We've already dealt with that.'"

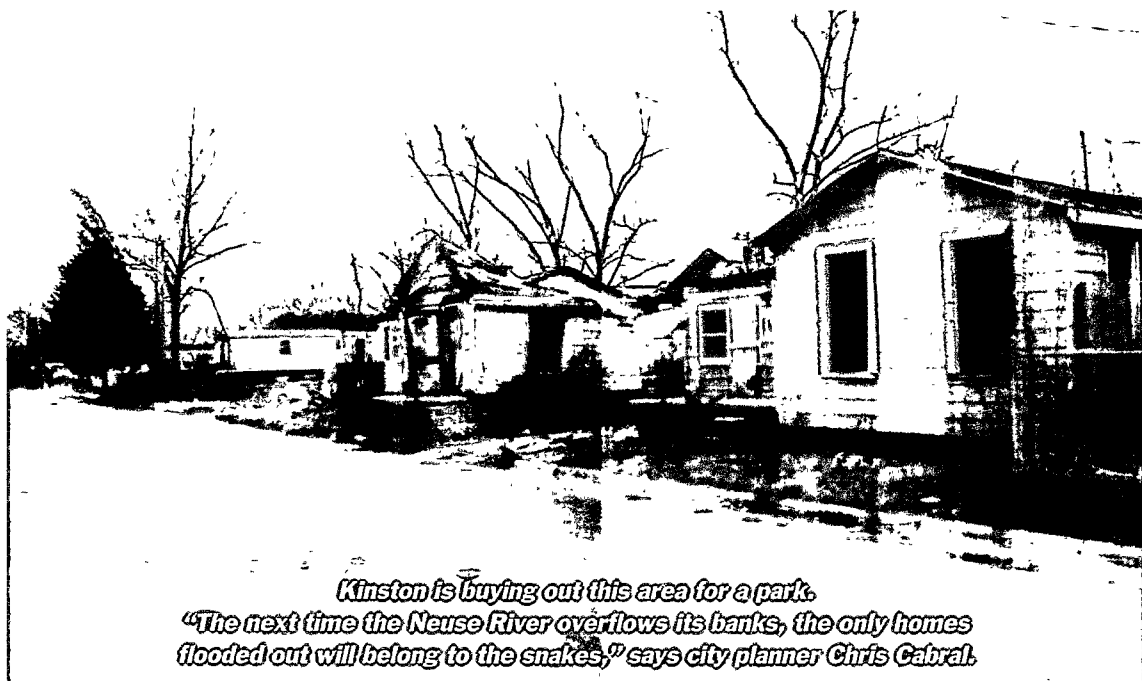
"When you put the word 'may' into legislation, you are letting people off the hook," says Jackie Eubanks, assistant planning director for the City of Kinston, in reference to the act's provisions that local governments "may" enact ordinances limiting development in floodplains. "The problem in Eastern North Carolina is convincing landowners and commissioners that regulation reflects better stewardship and management."

Holman says he too was unhappy with the outcome of Senate Bill 1341. "I was very disappointed that Senate Bill 1341 was practically gutted—and it took a major push to get it enacted. I note that the Water Supply Watershed Protection Act of 1989 set minimum standards (adopted by the Environmental Management Commission and implemented by local governments) to protect drinking water supplies. It was the first successful land use regulation. I was surprised that over 10 years later an effort to set minimum statewide standards for development in floodplains failed."

The Local Role

With the failure of state government to impose comprehensive floodplain zoning standards, the spotlight has turned to local governments. Before Floyd hit, there were 26 communities in North Carolina—five counties and 21 municipalities—with designated flood hazard areas that did not even meet minimal FEMA requirements for floodplain zoning. None of the five counties are in the eastern part of the state, although a number of municipalities are. The Eastern North Carolina towns not participating are: Bolivia in Brunswick County; Four Oaks and Wilson Mills in Johnston County; East Laurinburg in Scotland County, and Sims in Wilson County. Non-participating counties are Alleghany, Caswell, Henderson, Wilkes, and Yadkin. According to state NFIP coordinator Phil Letsinger, most but not all of the non-compliant municipalities are now moving in the direction of adopting floodplain ordinances.

With prodding from the state, a significant number of communities are also developing hazard mitigation plans. In general, a hazard mitigation plan involves identifying hazards in the community (e.g. structures in the floodplain), determining the degree of vulnerability, and preparing and implementing strategies to reduce overall risk. North Carolina requires that local communities develop such a plan as a condition of receiving



Kinston is buying out this area for a park.

"The next time the Neuse River overflows its banks, the only homes flooded out will belong to the snakes," says city planner Chris Cabral.

John Manuel

state or FEMA hazard mitigation funds. Plans must be developed within one year of signing a grant agreement. The state launched its Hazard Mitigation Planning Initiative in 1997, and had 11 communities enrolled in the program prior to Floyd. Since Floyd, another 50 are joining, according to Darrin Punchard, planning branch manager for the Mitigation Section of the N.C. Division of Emergency Management.

A Positive Example

When asked to point to a community that is setting an example in terms of hazard mitigation, state officials invariably point to the City of Kinston. Kinston actually began relocating people out of the 100-year floodplain in the early 1980s. After Hurricane Fran inundated large areas of the city in 1996, the city pursued buyouts in a major way. That year, the federal government awarded Kinston \$25 million to buy out homes in the floodplain. To date, some 250 homes have been removed, with another 25 or 30 left to go. After Floyd hit, the city was awarded another \$50 million and added another 420 homes to the list, but it has yet to remove the first of those. Why are the buyouts taking so long?

"Getting started after Fran was tough," says Cabral. "We'd never done buyouts before so we had to set up the whole administrative structure and basically fly by the seat of our pants. Our legal team first had to conduct surveys and find the titles for all the properties, which was difficult given how old some of these properties were and how messed up some of the property lines were. Next, we had to physically locate the owners. That was a real nightmare. One property had 11 heirs scattered all over the country. Finally, we had to convince the owners to sell and agree on a price. Most people were eager to sell when they found out we would basically buy them a new home, but a few have resisted."

The refusal of some property owners to sell is creating a problem known as "checkerboarding," whereby many properties in a neighborhood are vacated and bulldozed while others remain standing. As long as some homes remain occupied, services such as water and sewer cannot be cut off, and streets cannot be removed. Still, the city is persevering with its buy-out program and has come up with creative uses for the land in the floodplain. "Our goal is to convert 400 to 600 acres into an educational state forest next door to an urban environment," Cabral says. "We will have a series of

trails where the streets were, and educational programs to go along with it."

With the state's help, Kinston has also secured \$32 million from FEMA to expand the Northside Municipal Sewage Treatment plant, which is located outside the Neuse River floodplain and shut down the Peachtree plant, which is inside the floodplain. This is considered a major victory, as the latter has been plagued with operational problems on an almost annual basis and dumped millions of gallons of raw sewage into the Neuse after both Fran and Floyd.

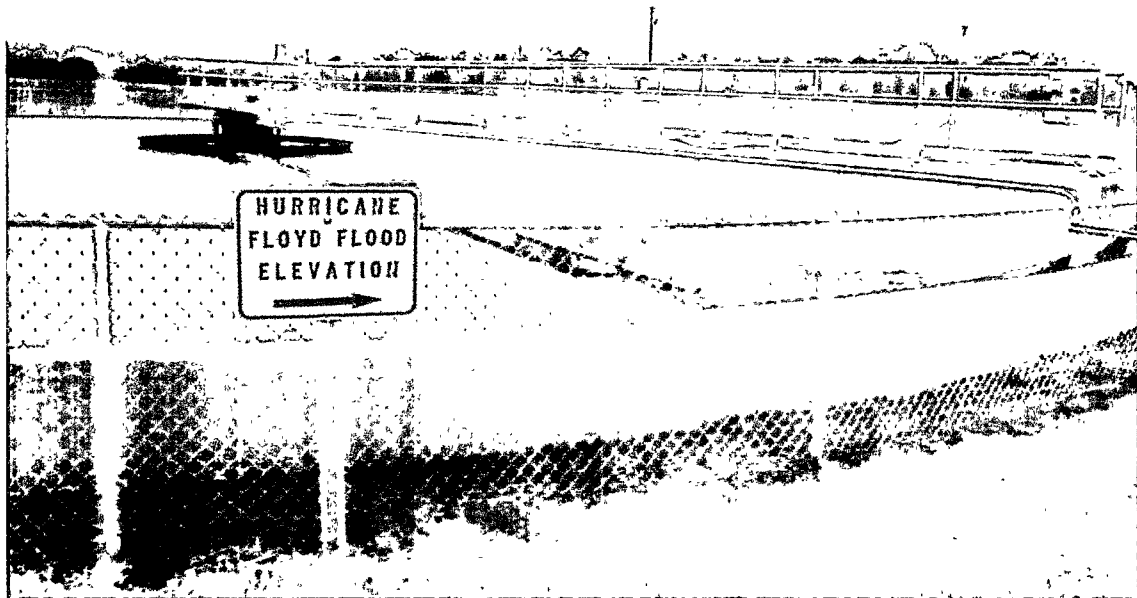
The city of Greenville is also participating in FEMA's buy-out program. According to City Manager Marvin Davis, 750 applications for buyouts have been submitted and approved. Greenville also has adopted a Tar River Floodplain Redevelopment Project through which the city will be lowering development density in areas adjacent to the floodplain. Following the intent of the state's Flood Hazard Prevention Act, Greenville has amended its floodplain zoning ordinance to raise new structures a minimum of 1 foot above base flood level. However, that requirement does not apply to existing structures, and some owners whose homes were flooded during Floyd are rebuilding.

"I don't have exact numbers on how many are rebuilding, but it's true that some people are," Davis says. "We don't have any laws that prevent that. These are mostly people whose homes were less than 50 percent damaged."

Rebuilding is also going on in floodplains out in Pitt County, including the repopulating of a 150-unit mobile home park beside the Tar River that was completely inundated during Floyd.

"We've never had any land use controls in the unincorporated areas of Pitt County, and the flood is an indication that we clearly need some," says James Rhodes, Pitt County planning director. "We've just held a public hearing on a Hazard Mitigation Plan for unincorporated areas and jurisdictions where we are doing buyouts. The plan recognizes the need for zoning throughout the county. It would also involve awarding points for raising the elevation of homes in the floodplain and for distributing educational materials to homeowners in the floodplain. The points would lower the price of the National Flood Insurance Program [NFIP] premiums."

Rhodes admits, however, that there are some communities that do not even participate in the NFIP. And there will always be homeowners that choose to stay in their homes for a variety of reasons. "There are a number of folks who have been



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The oft-flooded Peachtree Sewage Treatment Plant in Kinston, now being replaced.

living on the land for generations and don't want to let go of it," Rhodes says. "Some of it is price-based—people can't afford to take on another mortgage. Some of it is people who were in the 500-year floodplain who suffered minimal damage and don't believe it will occur again."

Holman believes the state should do more than just leave it to local governments to operate the buy-out programs, believing cities like Kinston are more the exception than the rule. "North Carolina, like most states, defers to municipalities and counties to operate the buy-out programs," says Holman. "Some local governments, like Kinston, have the capacity, experience, and want-to to do a good job. Others lack all of the above. Kinston was better prepared to respond to Floyd because it was still working on Fran from 1996. I think the state ought to give itself the option of stepping in to run the program where local governments fail to deliver for their citizens."

The View from the Academy

David Godschalk is professor of urban planning at the Department of City and Regional Planning at the University of North Carolina at Chapel

Hill. He says many North Carolinians wrongly assume that existing laws will protect them from harm if they build in a floodplain. "It was the existing zoning ordinances and subdivision regulations that got us into Floyd in the first place," he says. "The rationale of many individuals and communities is, 'If I want to put myself at risk, that's my business.' However, we all pay the bill, as taxpayers, for disaster relief and reconstruction."

Godschalk says the state should adopt floodplain land use and elevation standards that are higher than those in the Flood Hazard Prevention Act. He says the state should limit infrastructure development, such as bridges and water and sewer lines, in hazard areas. Land in the floodplains should be purchased for public open space, as Kinston is doing. And the state should mandate that local governments *implement* their hazard mitigation plans. "We're not checking up on implementation," Godschalk says. "We should make localities and individuals responsible for risk."

Wilms, however, offers an opposing view regarding location of utilities and sewer lines. "Utilities, especially sewer lines, should be in floodplains and are required to be protected from the 100-year flood," says Wilms. "Doing other-

wise requires increased numbers of pump stations and a greater risk of chlorinated phenol formation—both greater risks to the environment than flooding.”

Godschalk says local governments should map hazard areas and publish the maps for the public to see, “not a popular move in areas where much development is in the floodplain,” he says. The governments should then assess vulnerability and reduce exposure. They should involve citizens in building a constituency for mitigation and add hazard area restrictions to zoning regulations. They should direct new development away from floodplains and relocate existing housing from the floodplains to safe areas. Finally, they should create parks and wooded areas along riverfronts. “We need to build communities that bend, but don’t break,” he says.

Gavin Smith, Chief of the Mitigation Section with the Division of Emergency Management, agrees. “Land use is the biggest challenge,” he says. “There are literally hundreds of thousands of structures still in the floodplain, and there continues to be rapid development in the floodplain. We do not have the state laws to prevent that. Local governments can do that, but they don’t want to be told they can’t build. Also, if they make a condemnation, they have to be able to win in court on the takings issue.

“On the plus side, the new floodplain maps should be a big help in this regard,” Smith says. “New mapping will likely lead to a 2- 3-foot rise in the 100-year floodplain line. That will essentially do more to protect homes than the 2-foot freeboard requirement that failed in the legislature.” Holman is less certain that new maps will change behavior more than stronger regulations such as the 2-foot

freeboard requirement. “I think most local governments will not rush to adopt new ordinances based on the new maps,” says Holman, “I’m not sure how aggressively FEMA and the National Flood Insurance Program will push. Maps are tools. It takes plans and regulations to change behavior.”

Removing Hog Farms from Floodplains

With respect to the removal of agricultural hazards, progress has been slow. Robin Smith, DENR’s assistant secretary for environmental protection, says that the state is making progress on removing hog farms from the floodplain. She points out that the Hog Farm Siting Act of 1995 requires new hog farms to be built outside of the 100-year floodplain. And she says the state has secured \$5.7 million from the Clean Water Management Trust Fund to buy out existing hog farms in the floodplain. However, this is only a beginning. There are 185 hog farms in the 100-year floodplain.

“We have prioritized the facilities according to hazard and solicited bids from the owners to buy out hog production rights,” Smith says. “We have gotten about 80 applications and have bought out about 14 farms.”

The Division of Soil and Water Conservation in the Department of Environment and Natural Resources applied to the Clean Water Management Trust Fund on June 1, 2001, for a second round of funding of approximately \$6 million to buy out active swine producers in the 100-year floodplain, says Holman, the fund’s executive director. “We anticipate a third round of funding next year,” he says, adding that “40–50 producers may ultimately decide to be bought out.”

***In the flood animals are killed,
They are carried out by the current,
Some are alive, some are dead,
Their corpses float on the waters top,
Still as night,
The animals lay,
The water is filled with disease and decay. . . .***

—FROM “FLOODING, HOWLING, RAINING”

BY RUBY LIGI, JONES COUNTY MIDDLE SCHOOL STUDENT

Holman believes there are steps the state could take to increase the number of farmers seeking buyouts. "The Department of Environment and Natural Resources/Division of Water Quality could 'encourage' more producers to participate by requiring old lagoons and hog houses in the 100-year floodplain to be upgraded and flood-proofed," notes Holman. "We don't know how many inactive waste lagoons are in the 100-year floodplain. DENR unsuccessfully sought authority to require owners of lagoons to decommission and clean them up in 1999 and 2000. DENR did not seek legislation in 2001. Many poultry operators were also flooded during Floyd. Poultry operations can be legally built in the floodplain."

Those who have seen hog farms repeatedly inundated in flooding events are frustrated at the small number of hog farms that have been purchased. "Virtually none of the farms I've seen flooded along the Neuse made the list, and some of the worst ones are back in operation," says River Keeper Rick Dove. "If we get another rain event like Floyd, we'll see the same thing all over again."

However, Beth Anne Mumford, director of public affairs for the North Carolina Pork Council, believes that because of widely distributed photographs of hogs perched on the rooftop of a barn as they scrambled to get out of rising waters, hogs have gotten undue attention as a flood hazard. "Ninety-eight percent of hog farms were unaffected," says Mumford. "[Only] 50 farms were flooded. Concerns regarding contamination have not materialized. "Compared to all the things that happened in the flood, we weren't that significant."

Mumford notes that the McCoy farm, the one featured frequently in photographs of flood devastation, is owned by an individual rather than a corporation, and the owner did apply for a buyout. The farm was rated 17th, but the state only had enough funding to purchase 14 farms. Consequently, the owner absorbed his losses due to Floyd and continued operations. "He bought that farm in the mid-1970s," says Mumford. "I don't think until it flooded that he knew he was in the floodplain."

An N.C. Pork Council fact sheet indicates 21,000 hogs were lost to Floyd flooding, along with 2.1 million chickens, 700,000 turkeys and 680 cattle. Tommy Stevens, now the Pork Council's water quality expert but head of the Division of Water Quality in the N.C. Department of Environment and Natural Resources when Floyd struck, notes that the vast majority of hog waste lagoons functioned as designed during Floyd with only six lagoon breaches. "Waste from the majority of

those farms was contained in the lagoons," notes Stevens. "They contained that rainwater. I think those operations fared surprisingly well during those storm events." Stevens says it's difficult to document all of the sources of surface water contamination after a storm, but he says that the wholesale pollution forecast in Floyd's wake failed to materialize.

Drinking Water Contamination and Other Health Concerns

Drinking water contamination is another area of ongoing concern. Following Floyd, the Division of Environmental Health with assistance from local environmental health specialists conducted a massive water-sampling program of private water supplies in the affected counties. Over 12,000 bacteriological samples were collected, of which 29 percent proved positive for total coliform and 5 percent positive for fecal coliform. These results raised concerns about the quality of drinking water in Eastern North Carolina and prompted the legislature to appropriate \$1 million for follow-up sampling of these same wells.

According to a study concluded in November 2000, a total of 2,650 wells have been sampled and inspected. DEH reports that 1.9 percent of these tested positive for nitrates and 2.1 percent positive for fecal coliform, slightly less than the statewide percentage of 2.9 percent for wells tested. Many of these wells have since been abandoned or disconnected. However, the percentage of contaminated wells remains a concern to public health officials. Through inspections of the wells, public health officials have learned some key lessons.

"The first thing we have learned in terms of protecting water quality is the deeper the well, the better," says Malcolm Blalock, deputy director for the N.C. Division of Environmental Health in the Department of Environment, Health, and Natural Resources. "The second thing we have seen is that the quality of well construction varies widely. When you drill a hole for a well, you create a cavity larger than needed for the well casing. Grouting needs to be poured in around that casing to prevent surface water from getting in the well. That's not being done in many, many cases.

"In North Carolina, there are only 25 counties that inspect and permit wells, and there are no full-time state staff dedicated to well inspections," Blalock adds. "We would love to see a program in North Carolina to see that every well sunk is inspected to make sure it is done properly."



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Health officials also were concerned with mosquito infestations that never materialized and with fungal contamination in houses exposed to floodwaters. Once owners disposed of ruined building materials such as insulation and sheetrock, they were eager to close in their walls. However, doing that when wood framing has a moisture content of higher than 15 or 20 percent can lead to the growth of dangerous mold and mildew. The N.C. Division of Public Health provided county health departments with meters to check the moisture levels of wood, while Raleigh-based Advanced Energy Corporation provided training on how to use them. Will Service, industrial hygienist with the Division of Public Health, says he has received reports of mold and mildew as a result of improper closure of buildings, but he has not heard of any widespread health problems. The division is currently engaged in a study with the UNC-Chapel Hill School of Public Health to compare asthma rates in affected areas before and after the flood.

Service says one positive outcome of the flood is that the public health departments in Eastern North Carolina are now much more aware of how to properly clean and restore flood damaged-buildings. Ironically, new construction may also improve as a result of Floyd. A group called the Healthy Building Resource Center is working with nonprofit housing agencies, such as the North Carolina Community Development Initiative, to ensure that the housing units they build adopt the latest standards in healthy and energy-efficient building design.

"We are writing the standards and specifications, training the contractors, conducting quality control during construction, and performance testing after construction," says Arnie Katz, director of the Healthy Building Resource Center. "On top of that, we will guarantee the energy bills."

Katz says the focus on the connection between building design and indoor air quality in the wake of Floyd has left people more open to trying alternative building practices. He cites as an example the

growing sales of a new generation of modular homes that include mechanical ventilation systems and are well constructed. At the same time, Katz says, there is such a shortage of housing in the east that many people are buying trailers and manufactured housing that only meets minimal HUD standards.

Removal of Junkyards and Other Hazards

With respect to removal of junkyards and solid waste facilities from the floodplain, progress has also been slow. The legislature awarded the N.C. Division of Waste Management (DWM) in the Department of Environment and Natural Resources \$4.5 million to evaluate and remedy those facilities deemed to be a hazard. Letters were sent out to local governments seeking voluntary applications to purchase conservation easements on affected facilities. Applications for eleven sites were returned. Independent appraisals for land and structures have been conducted on eight of those, and negotiations for purchase of conservation easements are underway.

"The ball is now in our court to see if we can fund [these] sites," says Bill Meyer, former director of DWM, now retired. "If we can't, we will ask the local governments which of these sites would yield the most public benefit and go after those."

The Flood Hazard Prevention Act prohibits new junkyards in the 100-year floodplain, but Holman notes that "the enforcement mechanism in the law is weak" because the state does not require junkyards to get permits. "We all hope that local governments will enforce the prohibition, but many local governments don't have land use regulations."

DWM also received \$5 million to test, evaluate, and in some cases remove underground storage tanks that were affected by the hurricane. DWM contacted the owners of 102 facilities in the flooded areas, of which 71 were determined to be worthy of testing. As of Nov. 1, 2001, DWM had inspected 56 commercial sites and 15 noncommercial sites. Soil contamination was confirmed at four commercial facilities and 14 noncommercial sites, and soil and tank removal has been completed or is in progress at all of these sites.

The Impact on Fisheries

Although untold volumes of toxic and hazardous wastes were washed into the waters of Eastern North Carolina, the dire environmental consequences predicted just after the flood have not

***And the rain was upon the earth
forty days and forty nights.***

—GENESIS, CHAPTER 7, VERSE 12

***And the waters prevailed
exceedingly upon the earth; and
all the high hills that were under
the whole heaven,
were covered.***

—GENESIS, CHAPTER 7, VERSE 19

materialized. There were some fish kills in the Neuse the summer after the hurricane, but no more than ordinary. Landings of commercial species of fish and shellfish in 1999 varied widely compared to previous years. Shrimp landings almost doubled over 1998 levels; blue crab, herring, southern flounder, and mullet were all down. Don Hesselman, commercial statistics coordinator for the N.C. Division of Marine Fisheries, says it's unclear as to how the hurricane may have affected these.

"There are just too many factors that impact landings," Hesselman says. "I think we can conclusively say the hurricane prevented many fishermen from engaging in commercial fishing activities, and we can also say that a lot of commercial gear was lost. We could probably go out on a limb and say that the floodwaters certainly caused migrations of fish and crab away from low salinity areas. However, the long-term effect of the storm waters, subsequent low salinity, and the influx of pollutants on commercial fish species is something we best leave up to the researchers." Initial estimates ranged as high as \$19 million for commercial fishermen's losses due to Hurricane Floyd, and the legislature appropriated \$11.4 million based on that estimate. However, just over \$6 million was ultimately paid out, says Hesselman, and the remainder of the money was transferred to other purposes.

Despite this lower-than-anticipated payout, Hesselman says the impact of the storm is still being felt, as indicated by the stock status report released in August 2001. "Although North Carolina led the nation in blue crab harvest in 2000, landings were off by 46 percent in the Neuse River and Pamlico Sound. In 2001, crabs, the state's most valuable fishery, appear scarce throughout coastal

waters. The shortage of blue crabs is thought to be linked to flooding associated with Hurricane Floyd in 1999. It appears only blue crabs were immediately impacted by the hurricane, but it is too early to determine the long-term effects of the storm on the overall health of [the state's] fisheries."

After Floyd, the legislature awarded the N.C. Division of Water Quality in the Department of Environment and Natural Resources \$2 million to monitor coastal rivers and sounds. This work has been contracted out to researchers at Duke University, the University of North Carolina at Chapel Hill, N.C. State University, and Oak Ridge National Laboratories. While all contracts have not been completed, those that have been completed do not show widespread pollution.

Damian Shea is associate professor of toxicology at NCSU. Beginning two weeks after the hurricane and continuing for the next 18 months, Shea monitored levels of 146 toxic chemicals in the surface waters and sediments of the Tar, Neuse, Chowan, and Pasquotank rivers. Shea saw an increase in petroleum-related compounds in certain sites immediately after the storm, but these dropped down to background levels within two weeks. Examining known sediment deposition sites in the lower estuaries and sounds, Shea found a slight increase (statistically significant, but not significant

health-wise) in DDT and toxaphene in three sites, but not in seven others. There was no increase for any of the other 144 toxic compounds tested.

"It appears we got lucky," Shea says. "We haven't seen any apparent increase in the toxic chemicals that we measured. However, we did not look at nutrients such as nitrogen, phosphorus, and organic carbon, which other researchers are examining at this time."

Financing Recovery from Future Storms

One final issue that the state has not addressed is how to finance the recovery from a future crisis of Floyd's magnitude. Floyd made it clear that federal funds, while generous, will not cover all the costs associated with recovery from a storm of Floyd's size or greater. The state was fortunate in that Floyd struck at a time when the state's coffers were full and funds were available to allocate to the recovery effort. However, that may not be the case in the future, and some experts feel the state should be setting money aside now to deal with future crises. Billy Ray Hall, executive director of the North Carolina Rural Economic Development Center, says there are two reasons why North Carolina needs such a fund.



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Student volunteers help rebuild a church in Princeville.

"First is the fact that federal relief programs are predicated on disasters costing at most \$2 to \$2½ billion," Hall says. "Once you go beyond that, you're on your own. Second is the fact that despite our best efforts, we have a lot of people in Eastern North Carolina who are poor, uninsured, and in substandard housing. When another storm hits, as it inevitably will, these people will be in trouble again."

Hall feels the state should be building a fund through some sort of real estate assessment, as is being done in Florida. Since being devastated by Hurricane Andrew in August 1992, Florida has been collecting \$15 to \$17 million annually through a surcharge on insurance premiums—\$2 per year for homeowners and \$4 for businesses—to be spent on improved communications systems and hazard mitigation projects. The majority of these funds are redistributed to Florida's 67 counties (approximately \$105,000 each per year), \$3 to \$4 million annually is awarded in competitive grants to non-profit organizations, and some is spent directly by the Division of Emergency Management. The state

also has set up a Catastrophic Insurance Fund to keep insurance companies from going bankrupt in the event of a major natural disaster.

Florida also has declared that in future disasters in which federal funds are awarded on a matching basis (usually 75 percent federal, 25 percent state), affected counties must pay half of the state match. "No longer is it going to be just the state picking up the tab," says Joe Myers, director of Florida's Division of Emergency Management and former director of the North Carolina Division of Emergency Management. "Local governments need to take some of the ownership for what happens to them and this match is an incentive for them to engage in advanced planning."

In sum, it seems fair to say that North Carolina has taken one step out, but still has one foot stuck in the muck of Hurricane Floyd. The state failed to pass a meaningful Flood Hazard Mitigation Law, but it does require local governments to develop hazard mitigation plans as a condition of receiving state or federal hazard mitigation funds. Further, the state has embarked on an ambitious effort to remap the

100-year floodplains using the latest digital technology. This effort should greatly increase community and individual awareness of floodplain zones and lead to wiser use of those areas. Thousands of homeowners living in the floodplain have opted to participate in buy-out programs, yet thousands more have not. Several dozen junkyards and hog farms are in the process of being bought out and converted to open space. State law now requires new facilities of this nature to be constructed outside the floodplain. Yet many of the hog farms that were flooded in Floyd and other hurricanes are not participating and are back in business. Unincorporated areas in virtually all of the eastern part of the state are regulated by county flood ordinances. However, it is difficult for counties to administer the floodplain regulations for agricultural development effectively. The five non-participating counties, Alleghany, Caswell, Henderson, Wilkes, and Yadkin, are in the Piedmont or West. Wiser emergency response policies are being initiated, along with better training of emergency response personnel. Obtaining proper equipment for swift-water rescue remains a problem. A whole host of new programs have been set up to help homeowners and businesses get back on their feet in the wake of Hurricane Floyd. Those programs should be of vital assistance in the event of a future disaster. If nothing else, administrators say, North Carolina now has a wealth of experienced personnel on the state and local level to deal with flood hazards.

And the state continues to fine-tune its disaster response apparatus. The 2001 General Assembly adopted Senate Bill 300,⁶ which establishes three categories of disasters and authorizes the governor to declare a disaster and provide disaster relief when damages are below federal thresholds for assistance. The law also requires the adoption of local hazard mitigation plans by August 2002 and requires participation in the National Flood Insurance Program for communities to qualify for infrastructure grants from the state in Type I disasters. These are disasters that overwhelm local resources but do not do enough damage to necessitate a federal disaster declaration.

The failure to spend all the state and federal money allocated for Hurricane Floyd relief represents another problem, though one that appears all but resolved. Faced with a budget shortfall estimated at more than \$800 million, Governor Mike Easley considered using unspent Floyd monies to balance the state budget, though he ultimately decided not to follow through with this proposal. The Office of the State Auditor found that only \$10.4

million of the \$836 million in state funds allocated for Hurricane Floyd relief efforts had not been spent or obligated as of June 2001, effectively taking these funds off the table in budget debates that roiled the General Assembly in the 2001 session.⁷ As of Nov. 2, 2001, \$828.9 million had been allocated with some \$7.8 million remaining in a contingency fund.

While the wheels of the bureaucracy have been turning slowly, they have been turning. Disaster relief officials at both the state and local level say it would be a huge mistake to cut or divert funds intended for recovery and hazard mitigation. Robert Carver, former assistant director of the N.C. Redevelopment Center, believes the state has done well in allocating and spending relief funds. "We are way ahead of where either North Dakota or Florida were after their disasters."

Marvin Davis, city manager of Greenville, agrees. "With the extent of damage we had, the rebuilding will be going on for three or four years," says Davis. "We live in an instant gratification society where if you don't see progress immediately, you assume nothing is being done. That is not the case."

Time is needed to allow the programs instituted in the wake of Floyd to take effect. But time can also cause people to forget the damage that was done. Thus, it is up to policymakers to see that the lessons of Floyd continue to be turned into meaningful hazard mitigation policies at the state and local level.

"Hazard mitigation is a policy without a public," Godschalk says. "Once a disaster has passed, people want to forget about it. But hazard mitigation is an important public responsibility, and our leaders must be willing to take it on." ■

FOOTNOTES

¹ Slim Ray, "Pressing issues remain unresolved," *The News & Observer*, Raleigh, N.C. Sept. 24, 2000, p. 26A.

² Hurricane Floyd Redevelopment Update, December 13, 2000, published by the N.C. Redevelopment Center, Raleigh, N.C., p. 1. Available from the N.C. Redevelopment Center, 20325 Mail Service Center, Raleigh, N.C. 27699.

³ N.C. Session Law 1999-463 Extra Session, House Bill 2, ratified Dec. 16, 1999.

⁴ Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S. Code 5121, *et seq.*

⁵ The Flood Hazard Prevention Act of 2000, N.C. Session Law 2000-150 (Senate Bill 1341), ratified Aug. 2, 2000, and codified as N.C.G.S. Chapter 143, Art. 21, Part 6.

⁶ Session Law 2001-214 (Senate Bill 300), ratified June 4, 2001, and amending N.C.G.S. 166A-4 through 166A-6A.

⁷ *Performance Audit: Hurricane Floyd Reserve Fund*, Office of the State Auditor, Raleigh, N.C., June 2001, p. 5.

Recommendations to Mitigate Future Hurricane and Flood Damage

The damage, flooding, and loss of life associated with Hurricane Floyd was unprecedented in North Carolina history. The state must not forget the lessons of this great storm. While there is much to admire in both the public and private sector response to human need and suffering, it is also apparent that more needs to be done to prepare for the havoc that a storm of such magnitude can wreak. Indeed, it is imperative that North Carolina take every possible step to assure that the state is as prepared as it can be for the next major storm that hits. That's because prevention is much cheaper than recovery from a disaster—and much safer. With the loss of 52 human lives, the destruction of nearly 8,000 homes, damage to more than 67,000 homes, and the emergency appropriation of \$836 million in *state* disaster recovery funds firmly in mind, the Center offers the following *preventive* recommendations.

(1) The North Carolina General Assembly should appropriate funds in the 2002 session to complete remapping of floodplains within all 17 watersheds in the state and beginning in the 2003 session make annual appropriations to keep the maps up to date. North Carolinians deserve to know where their floodplains are so they can make wise decisions on where to build and live. And if anything is clear from Floyd, it's that floodplains change with time. While many citizens who needed flood insurance didn't have it, it's equally clear that many citizens did not even know they needed flood insurance until they woke up to Floyd's floodwaters. Only 13 percent of homeowners in the Floyd-affected counties had flood insurance on their homes. Out-of-date floodplain maps and ignorance of existing maps and flood insurance regulations are partly to blame for this fiasco. The state has already committed \$23 million, which—combined with \$10 million in federal funds—will cover most of the cost of remapping the six eastern river basins

and putting all the information in digital form. Officials in the State Budget Office estimate that remapping the entire state will cost \$65 million to \$70 million, with an additional appropriation of approximately \$25 million needed from the state. This will enable the remapping of 11 remaining watersheds by 2006. These Digital Flood Insurance Rate Maps will enable state and local governments to speedily update maps and put the information on the Internet. North Carolina is already a national leader in the effort to map floodplains more accurately, and the state must complete the task. Once completed, these maps should be updated on a regular basis.

With digital technology currently available, keeping these maps up to date will not be as onerous in the future as it has been in the past. Accurate floodplain maps are the key to wise land use decisions. These maps must be completed and made readily available to government officials and the public through such means as posting on the Internet. Because hydrology changes as areas are developed, the maps should be updated on a regular basis in developing areas.

(2) The state should provide incentives for local governments to adopt zoning regulations and other hazard mitigation plans above and beyond the minimum required by the Federal Emergency Management Agency. Eligibility for FEMA flood insurance is based on local regulations that require elevating structures above the 100-year floodplain—predicated on a 1 percent annual chance of flooding. The state should institute a carrot-and-stick approach to encourage local governments to participate in this program and go beyond minimum requirements. The carrot should be incentives such as awarding priority points to local governments applying for water and sewer funds. The stick should be a similar deduction of points against applications of local governments that do not participate. Many local governments adopt haz-

ard mitigation plans but don't implement them. Any incentive plan that rewards local governments for adopting hazard mitigation plans also must ensure that these plans are implemented. And thanks to the 2001 General Assembly, local governments now have the added incentive of being required to have a hazard mitigation plan approved and be participating in the National Flood Insurance program to receive state assistance for flood damage in a state-declared, Type I disaster.

(3) The state and its partners in local government should adopt a policy of limiting infrastructure development such as bridges, roads, and sewage treatment plants within 100-year floodplains and design any structures within the floodplain to minimize flooding. Pavement hastens the runoff of stormwater and prevents it from being absorbed into the ground. Bridges and highway embankments can act as dams and dikes, keeping water from flowing downstream and into natural floodplains. Sewage treatment plants can be flooded, causing untreated waste to spill into public waters. Indeed, wastewater treatment plants were flooded following Hurricane Floyd, and many new

wastewater treatment plants are being located outside the floodplain. Infrastructure development should be kept out of floodplains whenever possible, and in the few cases where it is not possible, should be designed to minimize flooding by allowing waters to pass through. Land use planning is one tool local governments can use to prevent inappropriate development in floodplains. Guidelines on structures that should not be allowed in floodplains should be included in local hazard mitigation plans and in comprehensive plans that are designed to guide development.

(4) The Governor and the North Carolina General Assembly should provide the necessary funds to buy out agricultural operations, junkyards, and hazardous chemical storage facilities within the 100-year floodplains. The Clean Water Responsibility/Regulate Swine Operations Act of 1997 bans the construction of new hog farms and hazardous waste facilities in the 100-year floodplains, and the Flood Hazard Prevention Act of 2000 bans hazardous waste facilities in 100-year floodplains. Funds must be provided to buy out existing facilities subject to flooding. The N.C.



John Manuel

—Recommendations, continued

Department of Environment and Natural Resources received applications for buyouts from the owners of 80 hog farms but only had enough Clean Water Management Trust Fund dollars to purchase 14 farms. Media images of hog carcasses borne on the floodwaters of Floyd bear witness to the need for removing these kinds of operations from the state's floodplains, but hog farms are not the only agricultural operations that present a floodplain problem. The state may want to consider adding poultry operations and other kinds of farms that present a contamination threat to the buy-out program.

(5) The Hazard Mitigation Section within the N.C. Department of Crime Control and Public Safety should press ahead with efforts to promote the buyout and removal of frequently flooded residences within the 100-year floodplain. Buyout and removal of oft-flooded structures is cheaper than rescue of occupants and repeating repairs to the same buildings. The Governor and the legislature should assure that funds are available to com-

plete this process. Local governments are learning that it is cheaper to remove buildings from floodplains than to repair or replace them after a storm. When Hurricane Fran hit in 1996, the state began to get serious about the buyout and removal of flood-prone structures. Attention to the problem paid off when Hurricane Floyd hit in 1999, with \$9.2 million in potential losses avoided in the towns of Washington, Belhaven, and Kinston when the same areas flooded by Fran were submerged again. Hazard mitigation efforts got even more aggressive after Floyd, with Kinston expanding its program and cities like Greenville getting in on the act, as the state committed \$139 million to supplement FEMA grants to buy out homes located in the 100-year floodplain. To date, 8,000 homes have been declared eligible for buyouts and FEMA has approved the purchase of 4,377 of these structures. As of Nov. 2, 2001, \$7.8 million of the state's \$836 million approved for Hurricane Floyd relief efforts remained unspent or uncommitted. The remaining funds should be spent to buy and remove more homes from the 100-year floodplain. That money alone, however, is unlikely to solve the problem. Currently, the state receives federal buy-out funds only after a major flood in a boom-or-bust cycle. The state may want to establish a recurring source of revenue to fund these operations.

(6) The North Carolina General Assembly should fully fund the N.C. Clean Water Management Trust Fund with the goal of acquiring floodplains for open space and retaining wooded areas along the riverfronts. Land in floodplains is often ideal for wildlife habitat and/or parkland. Preservation as open space will minimize runoff and allow for flooded rivers to expand and slow. The N.C. Clean Water Management Trust Fund (CWMTF) is an appropriate source of funding for these efforts. Established in 1996, the fund distributes money through a competitive grant process and pays for projects to protect and clean up rivers and coastal waters, including land acquisition. CWMTF officials estimate that more than \$10.5 billion is needed to protect and restore surface water quality in North Carolina. The 2000 Gen-

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eral Assembly committed to increase appropriations to the Clean Water Management Trust Fund to \$40 million in fiscal year 2001-02, \$70 million in 2002-2003, and \$100 million in fiscal year 2003-04 and future fiscal years. The General Assembly's 2001 budget appropriates the necessary funds to meet this commitment through 2002-03. The legislature should continue this commitment in 2003-04 and beyond.

(7) The N.C. Division of Emergency Management should increase efforts to provide swiftwater rescue training and equipment for appropriate state and local officials. Hurricane Floyd provided difficult challenges for state emergency management officials and also highlighted the need for greater preparation among local fire and rescue departments to safely retrieve stranded residents threatened by rising floodwaters. In addition, there is a need to train and equip state-level law enforcement officials and other personnel who could be deployed in the event of another life-threatening emergency of the magnitude of Hurricane Floyd. Given the tragic loss of 52 lives in the flooding that followed Floyd, and the prospect of more catastrophic flooding in the future, the state must provide adequate equipment and training for state and local rescue workers.

(8) The Governor should establish a task force to develop a policy on when it is appropriate for the state to reimburse nonprofit relief programs for materials used in repairing homes and providing services. The nonprofit N.C. Interfaith Disaster Response should be part of this task force. Nonprofit organizations played a critical role in helping flood victims, especially through their volunteer-led housing repair and reconstruction programs. Where those programs repair housing that would ordinarily be eligible for state or federal funding, the nonprofits should be reimbursed for material costs. There was some confusion as to whether nonprofits would be reimbursed for certain supplies and materials following Hurricane Floyd. Yet nonprofits can mobilize forces to begin recovery efforts much faster than can government working alone. In the future, nonprofits

addressing disaster-related projects that otherwise would be eligible for state or federal grants should not be confronted with confusion. The governor should appoint a task force on this topic with instructions that it report to him with recommendations on appropriate policy by July 1, 2002.

(9) The North Carolina General Assembly should follow Florida's example and create an Emergency Management Trust Fund to pay for hazard mitigation. By virtue of its location on the Atlantic seaboard and a predicted cycle of increasing hurricanes, North Carolina, like Florida, is likely to be hit by devastating hurricanes on a regular basis. Florida has set an example in planning for future disasters by providing funds for hazard mitigation on an annual basis through a surcharge on insurance premiums of \$2 on private residences and \$4 on commercial establishments. This generates \$15 million to \$17 million annually for hazard mitigation. North Carolina should establish its own recurring revenue source for hazard mitigation.

* * *

These nine recommendations will not provide absolute protection against a storm of the magnitude of Hurricane Floyd. Through a confluence of events, that storm produced unprecedented damage from particularly severe flooding. Yet Floyd was not the first to inundate the east with floodwaters. North Carolina had already received a stern reminder of the damage these recurring disasters can do when Hurricane Fran struck in 1996. That warning was not fully heeded and the far-reaching recommendations of the post-Fran Disaster Recovery Task Force were virtually ignored. *The state cannot afford to make that mistake again.* North Carolina must be better prepared. The recommendations outlined above are best described as preventive measures to mitigate against future damages from recurring flooding. Memories of the loss of 52 lives and media images of floating hog carcasses and submerged, flood-ruined homes will fade with time. The real threat of new flooding will not.

—John Manuel and Mike McLaughlin

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