



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

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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.

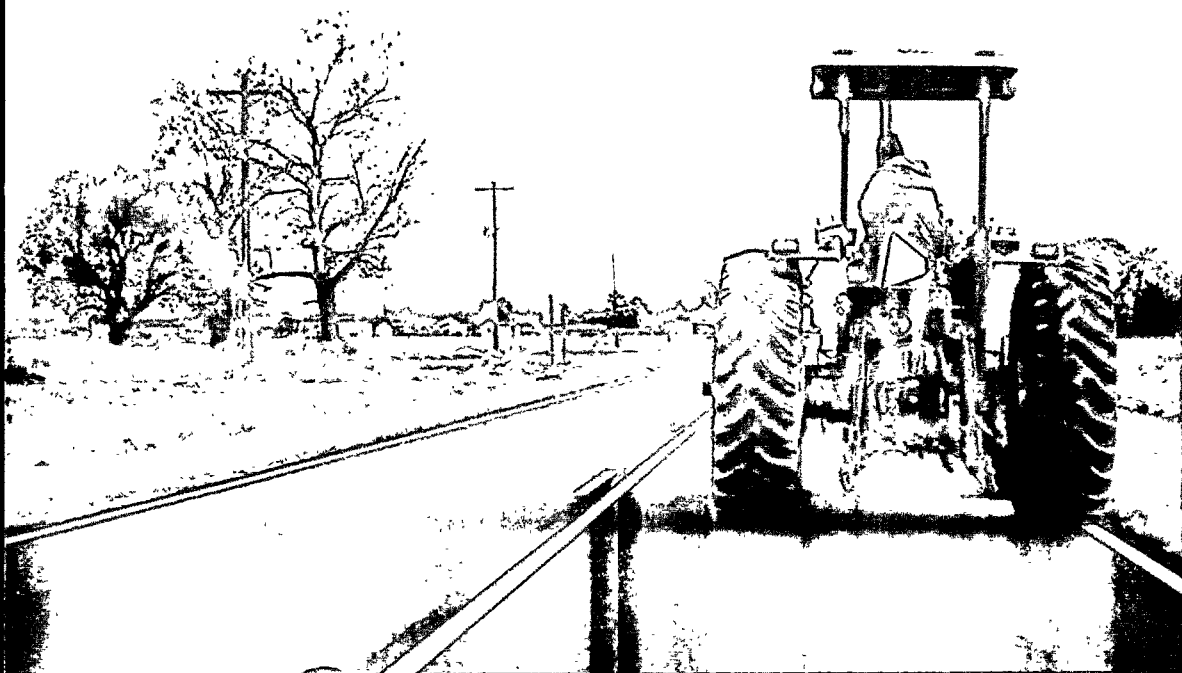
Pender County is proposing to help New Hanover County double the capacity of its wastewater treatment plant by 2004, with the agreement that Pender could send up to 75,000 gallons of sewage to the plant daily. "If they are looking for expansion, we would like to provide them funds for some of that capacity," 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
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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."

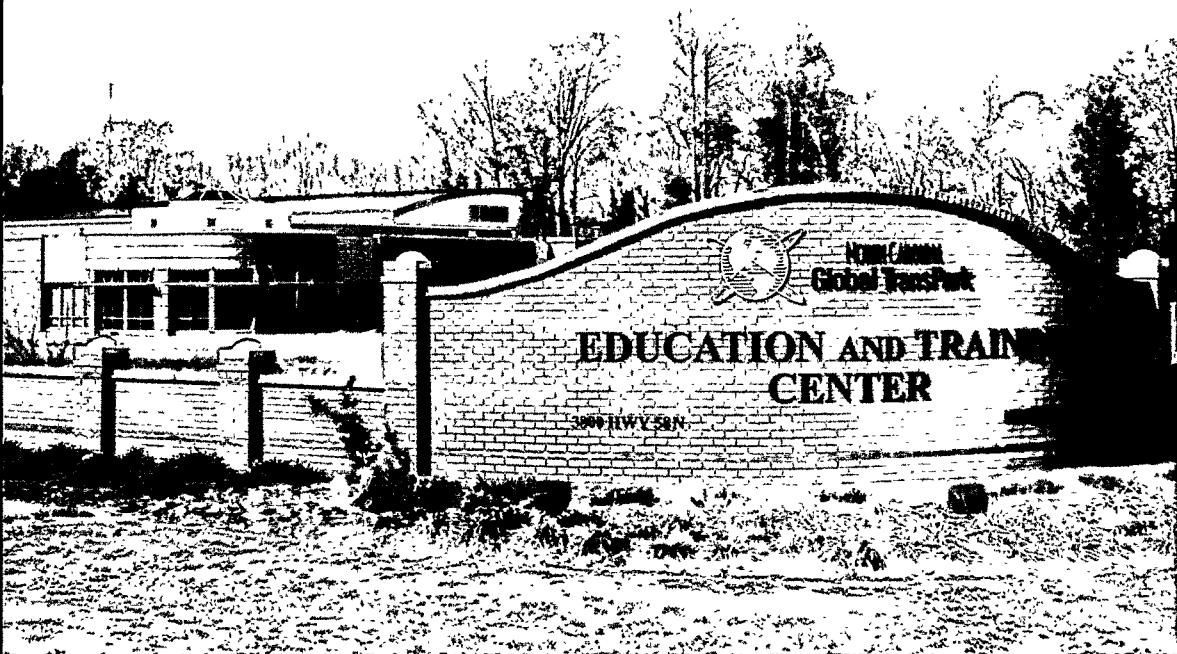
Economic developers say shell buildings are becoming an essential ante in the high stakes game of bringing new companies to a county. Increasingly, they say, companies seeking new locations hire consultants to find the ideal location for their new plants. Those consultants do much of their initial work 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,



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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

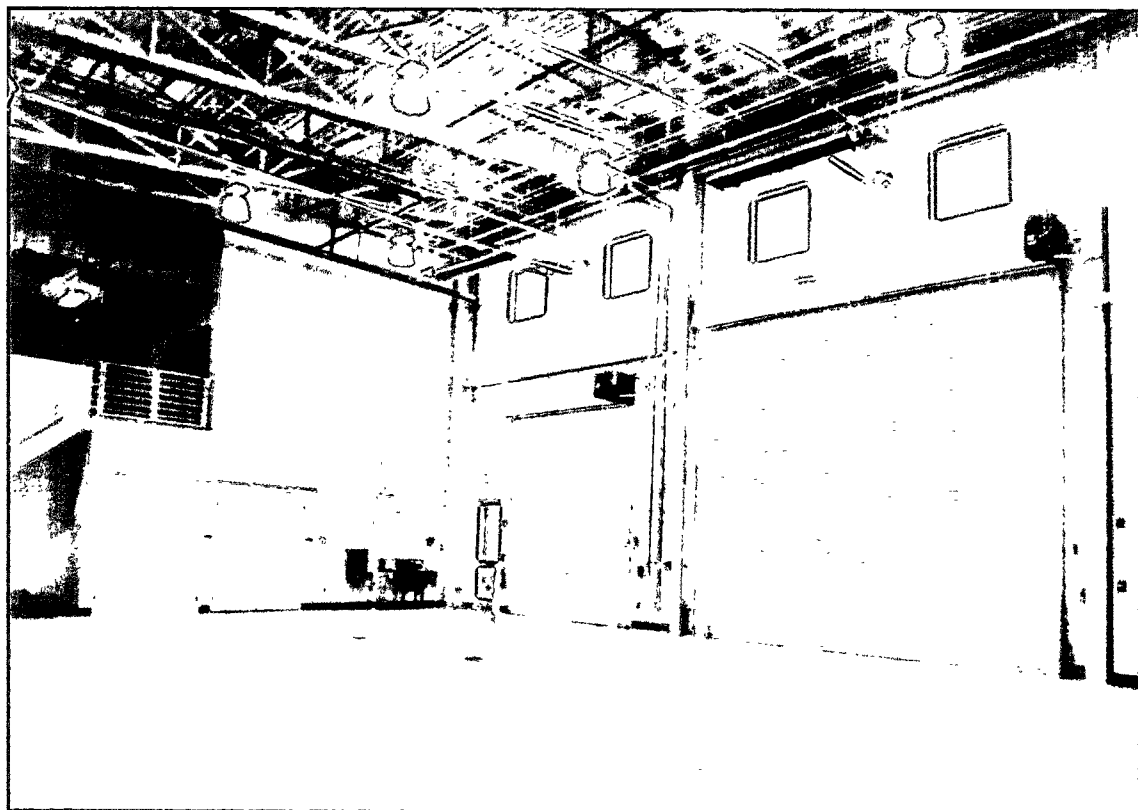
In its report in February 2000, the Rural Prosperity Task Force recommended creation of a Rural Redevelopment Authority for 85 North Carolina counties (including all eastern counties except Cumberland and New Hanover).⁷⁹ The Authority is charged with helping poor rural counties fund, among other things, 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



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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



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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.