

## Introduction and Commentary

### North Carolina 20/20

**“Th' thigh bone's connected to th' leg bone...th' leg bone's connected to th' knee bone... th' knee bone's connected to th' shin bone...th' shin bone's connected to th' ankle bone... th' ankle bone's connected to th'....”**

Just like the old song, each element that defines the “good life” in North Carolina is connected to all the others.

A good quality of life is related, generally, to a good salary...

A good salary depends on a good job...

Good jobs depend on a strong, well-diversified economy...

A strong economy depends on high quality education...

Quality education depends on healthy children and families...

Healthy families and children depend on safe and vibrant communities;

Those communities depend on a sustainable environment, and on a first-class infrastructure of roads, rail, airports, adequate water supplies, clean air, solid waste disposal, high-speed interconnectivity for information technologies and communication, and smart growth strategies.

Safe and vibrant communities, infrastructure, and a sustainable environment depend *decidedly* on an engaged, active citizenship and on accountable governments. Active citizenship and accountable government are fundamental elements that sustain and grow our democracy... so we can, in turn, choose to participate in a good quality of life.

And the cycle continues...

All these elements and conditions working together create and insure the good life each of us wants - for those we love, and for ourselves.

In establishing the N.C. Progress Board, the General Assembly recognized that for North Carolina to be a strong, beautiful, dynamic state in the future, we would need to set goals aimed toward that future, and keep a careful score of our progress. The General Assembly set eight key issue areas for this goal-setting and score-keeping work:

- Healthy Children and Families
- Safe and Vibrant Communities
- Quality Education for All
- A High Performance Workforce
- A Prosperous Economy
- A Sustainable Environment
- A 21<sup>st</sup> Century Infrastructure
- Active Citizenship and Accountable Government

These issue areas were first established by the Competitiveness Commission of North Carolina, chaired by former Governor James B. Hunt, Jr. and co-chaired by Dr. Julianne Still Thrift and Mack B. Pearsall.

**There are critical interrelationships among the issue areas.** That's one big lesson the North Carolina Progress Board has learned in putting together this report. As we researched, interviewed, compiled and organized the data summarized in these pages, we have been struck, repeatedly, by the interconnections and the interdependencies required for any real progress to occur. In fact, we believe it is a serious error to consider any of these issue areas or their related visions, goals, measures, or targets, without considering them all! In fact, we have come to call the issue areas "imperatives" because we feel that none of them is dispensable; each one is essential.

As you'll see throughout the report, we've tried to "connect the dots" between related areas. Keep these interrelationships in mind as you become familiar with the report.

**What North Carolina is becoming is quite different from what we've ever been.** We know that more change is coming. But just look at how profoundly the state has changed already:

- Once most of us lived in small towns and rural areas - now we live in big cities and rapidly growing urban corridors.
- Once our culture was homogenous - now we come from different backgrounds, speak other languages and practice many religions.
- Once our skins could be sorted into two or three shades - now our skins come in a wide array of shades.
- Once we worked in textiles, furniture and agriculture - now more of us are employed in the services sectors of our economy.
- Once we made things. Now we make deals. We arrange this or that, package and move around money, ideas, and information, brands and markets; heal and help the sick; legislate, litigate, medicate, and recreate.
- Once our families could get by on a single salary - now it takes two for most of us, and sometimes extra jobs on the side.
- Once we were surrounded by extended family, friends and neighbors; we sat on our porches on afternoons and evenings - now we are more mobile, more dispersed, distracted - and more isolated...and lately...more anxious...
- Once, *if we had* a telephone, we had to dial a "long-distance" operator to place a call to a loved one in the next town. Now, we pull out this small gadget from our pockets, and with voice-activated circuitry, speak their names into it to call the loved one, almost anywhere on the planet, for a fraction of the cost.
- Once, if we had a computer, it might have had 126Kb of memory and been a bit bigger than a breadbox. It was slow, and cost about \$4,999. Now, laptop computers process information at almost a *billion* bytes per second, and store several billion bytes of information, and can zip that information around the world at almost the speed of light. The cost is about \$1,000.

These changes have had a profound impact on what researchers call “social capital” - that network of special relationships that provides us with information, support, and a sense of belonging - a sense of "place." It is just as necessary and critical to us as financial capital - if not more so - for our wellbeing, and the state’s wellbeing.

As far as our state's wellbeing is concerned, we found that while North Carolina has certainly made some progress, we're in a precarious situation with regard to many areas, including:

- Our health, especially with diseases that are killing us that can be prevented;
- The quality of our air;
- The depletion of our forests;
- Our rural infrastructure;
- Our water supply and future water quality;
- Our skills as workers - we simply are not keeping up with training and re-training North Carolina's workforce for 21<sup>st</sup> century job skills.

And, we learned that:

- About 13% of all North Carolinians live below the Federal poverty level\*
- A third of those **below** the 200% of poverty level are children;
- *One million* of us cannot read or write well enough to hold a job;
- *Each year*, about 16% of the high school population (23,000-25,000) drops out of school and,
- Suicide *still ranks* among the top 10 causes of death among North Carolinians.

**Why You Should Care.** Information technology, e-commerce, e-government, ethnic diversity, biotechnology, bad ozone days, water quality and supply problems, an aging infrastructure, the "digital divide," illiteracy, poverty, losses in manufacturing jobs, retraining the workforce, and after the horrible tragedies in New York and Washington, DC - terrorism: The challenges we confront right now, **today**, in North Carolina have never been more complex **nor** more **interconnected**.

In the past North Carolina has developed innovative policy initiatives to confront its challenges head-on. Today, as then, the big ideas must come from good people who are able to see trends that are not yet visible to others.

We must give our strongest support and commitment to leaders who will look beyond today’s headlines, dig out the underlying trends, find creative ways to address those trends, and then reset our course.

The Progress Board can play a key role on our journey into the 21<sup>st</sup> century. We **can ask** the hard questions. But we **cannot answer** the hard questions. **You** must answer these questions and others:

- Are we willing to pay the price to improve our schools, colleges and universities?
- Are we willing to invest in our children? To help them think about their "futures"?
- Are we willing to invest in our older citizens so all can have access to a set of basic long-term care services?
- Are we willing to invest even more to eliminate illiteracy among about 1 million North Carolinians?

\* The current Federal poverty level is computed in terms of costs of living in the 1960's; by using today's costs about 28% of North Carolinians live in poverty

- Are we willing to focus our workforce development programs so those who need new training and retraining will be able to find and choose effective training programs for the jobs of the future?
- Are we willing to discipline ourselves to preserve clean air, streams, estuaries, forests and fishing grounds?
- Are we willing to invest in ensuring clean ground water for a population that may reach 10 million in 2020?
- Are we willing to re-invest in the traditional industries of North Carolina - including creative initiatives for agriculture?
- Are we willing to get involved in the business of government and *insist* its programs, and program managers, and its elected officials become more accountable?
- Are we willing to do our very best to elect the best among us to represent and govern us?
- Are we willing to make a real effort to understand other people, other customs, other cultures?
- Are we willing to imagine a better future, beginning now?

It is time to reach back to the beginnings of this great state and to the spirit of folks who carved those beginnings out of the wilderness.

It is time to engage the future fully, and to accept our clear responsibility for *getting to the results we want*. It is time to choose - to imagine the answers, solutions, and long-term benefits to the question: "What *is* best for North Carolina?"

*It's way past time to settle for the expedient solution; the short-term fix.* Neither worked - or ever will.

Looking toward a time and a future that has not arrived isn't easy. It's risky, there are few incentives and no guarantees of success. We spend a lot of our days thinking about the "here and now." There is nothing wrong with that - on its face. But if we *fail* to pause, reflect, look, dream, then act toward a possible "*then and there*," the here and now will arrive and leave before we know it - and be nothing like we've ever imagined.

In his Inaugural, Governor Mike Easley made several references to his commitment to "One North Carolina." He said:

"Today we celebrate one North Carolina. One North Carolina when every community matters, where every family can contribute and where every individual counts...."

"Let us stay our minds on one North Carolina--today and tomorrow. We have all the resources to be the best: bold and aggressive leadership in both parties, wonderful people of great spirit...We must instill in all our people such knowledge, wisdom, and optimism that the spirit within them can at last be unleashed to build a higher quality of life---a life that breaks the bonds of poverty, builds economic prosperity, and lets the human spirit soar."

Governor, the North Carolina Progress Board's members and staff send you a raucous "RIGHT ON!" But we would be remiss in our duty if we did not report to you, the General Assembly, and to all North Carolinians that in our judgment, we are heading in directions away from "One North Carolina." Unless we fail to act - soon and decisively - it may be too late. The title of an old bluegrass song describes very well our concern for North Carolina today:

"...I ain't broke (but I'm badly bent!)"

In the construction and content of our vision statements, our goals, measures, and targets, we call for a simple, renewed commitment to North Carolina's timeless motto:

*Esse quam videri*  
To be, rather than to seem.

A handwritten signature in cursive script, reading "Jim Cooper". The signature is written in black ink and is positioned in the lower right quadrant of the page. A vertical line is present to the right of the signature.

## What is in this report and why

**The N.C. Progress Board.** The Progress Board was created by the General Assembly in 1995, upon the recommendation of the Commission for a Competitive North Carolina. Our mission is to help the state's leaders and citizens pause, reflect, take stock and keep score, based upon a long-term view of what the state is to become, together with what it needs. That means setting milestones, checking progress, reporting data, recommending course corrections, and considering and reporting imaginative solutions to jumpstart change.

The Progress Board is chaired by the Governor. It is made up of 23 members appointed by the Governor, Speaker of the House of Representatives, President Pro Tem of the Senate, and the Board itself to represent a cross-section of the state. Initially housed in the Department of Administration, the Board now is attached administratively to the Board of Governors of the University of North Carolina system.

**Organizing NC 20/20 findings and conclusions.** To make sense of the huge volume of data that defines us and our state, we had to impose a structure that would suggest a manageable set of visions, goals and measures for North Carolina in the year 2020. We imposed some tough limits on the numbers of goals and measures. For each imperative (i.e., issue area), we have only four or five goals, and about as many measures. (We found we could only work with so many "puzzle pieces/building blocks" at once!) Still, you may see others that just cannot be left out. Tell us about your ideas; this business of setting strategic goals is for all North Carolinians.

**Setting Goals, Monitoring Progress.** If we are to create a "futures" map for the state, the first step is to set out vision statements with strategic goals, identify targets and measures, and monitor the state's progress toward achieving them. You will be seeing these terms repeatedly in the following pages that follow, so let us define them up front.

- **Vision:** a special, unusual foresight that represents our highest and best expectations for one of the eight issue areas, at a future time (the year 2020).

*Example: All families and children are healthy and live in safe and vibrant communities.*

- **Goal:** a "word picture" of where we want to be, and the conditions or standards that have to be in place, i.e., sketching out what we mean by making our economy, our communities and our people and their lives "better."

*Example: North Carolinians will have adequate and affordable housing options.*

- **Measure:** a quantitative indicator of progress toward the target.

*Example: Percentage of households paying more than 30% of their income for housing.*

- **Target:** a measurable milestone of where the state must be along the timeline toward 2020 to achieve the goal

*Example: The proportion of North Carolina renters paying 30% of their income or more in rent will decline to 25%. The proportion of homeowners with housing expenses exceeding 30% of income will decline to 13%.*

**Reporting to North Carolinians.** A key role of the Board is to report the results of its research and analysis in ways that are useful to North Carolinians and North Carolina institutions. Our first report, issued in 1997, covered four of the eight imperatives defined by the Competitiveness Commission: A Prosperous Economy, Quality Education for All, Sustainable Environment and Healthy Children and Families. With this 2001 report, we are updating the first four areas and fleshing out the rest: Safe and Vibrant Communities, A High Performance Workforce, 21<sup>st</sup> Century Infrastructure and Accountable Government/Active Citizenship.

The report you are holding in your hands is a summary of our work over the last year. Reading the narrative in this report, we hope you will reflect on the imperatives, the visions, goals, etc., of each week and form your own opinion, then chart your own direction for helping us meet our targets.

**What is in this report?** This report contains all the vision statements, goals, and measures for the eight imperatives, and summaries of our findings about where we are today. The complete report narrative is available on our website, [www.theprogressboard.org](http://www.theprogressboard.org). We encourage you to bookmark the site for future reference. The text is searchable and there is an index.

**The citizen's role.** North Carolina needs everyone to push around these ideas and findings like puzzle pieces; like building blocks. We think the chances are very good that new ways to look at old problems will come from people like you.

We talked with several hundred North Carolinians in interviews, listening sessions and other public meetings to get their sense of where North Carolina is, and where we should be headed. Now it's your turn.

Ask yourself these questions: Have we spelled out the right vision? Do the goals, measures, and targets make sense? Is this where I *really* want North Carolina to be in the year 2020?

**Providing Policy Education.** We are undertaking a wide range of activities to reach out to the state's constituents, including elected officials, public executives, non-profit organizations, business leaders, community leaders, the media and general public.

With this report completed, we intend to go on a "listening tour" of North Carolina to get folks' opinions about its contents. We intend to conduct some opinion surveys, hold some focus group meetings, and consistent with our statutory provisions, we intend to work on some policy analyses and recommendations and conduct educational programs for public officials. In particular, we hope to engage the non-profit community of North Carolina in learning more about what we've found, and solicit their interest.

Our goal is to become one of the "go-to" organizations for information on North Carolina - especially about the future of North Carolina.

All of our lives we've heard the saying 'hindsight is 20/20'. It's time to make *foresight 20/20!*

# Healthy Children and Families

## Vision

**Families and individuals of all ages thrive in North Carolina. From early childhood well past retirement, our citizens are mentally and physically fit, with no significant differences in health across racial, ethnic, or geographic lines. Our most vulnerable citizens -- children and the elderly -- are surrounded by a supportive family and community.**

The net in-migration of nearly a million people over the past 10 years<sup>1</sup> tells us that life in North Carolina carries a great deal of appeal. Indeed, most North Carolinians are doing well. Almost everyone who wants to work does so. Soccer fields brim with healthy, vibrant children cheered on by loving parents. Elders fill learning-in-retirement programs at colleges and universities, eager to keep their minds as well as their bodies active.

But this is a report on how to make things better, which brings our focus to areas of concern: trends heading in the wrong direction, the folks who aren't doing so well, the red flags that if not heeded could spell trouble. In the area of Healthy Families and Children, four concerns stand out.

### **The other side of the boom**

The booming economy of the 1990s has meant there's plenty of work to go around. The good times are not evenly distributed, however. Statewide, nearly one family in three barely squeaks by from month to month with little or no savings to cover emergencies.<sup>2</sup> In some rural counties, unemployment consistently runs 150 percent or more of the statewide rate, and poverty remains deeply entrenched.<sup>3 4</sup>

### **The one-headed monster**

Three times as many children are growing up in one-parent homes today as was the case in 1960.<sup>5</sup> A third of all children today are born out of wedlock,<sup>6</sup> and almost that many are being raised in single-parent households, mostly headed by women.<sup>7</sup> A large portion of those children are poor. In fact, we have more children living in poverty today than in 1990.<sup>8</sup> Add in a divorce rate of slightly more than one for every two marriages<sup>9</sup> and America's high mobility rate -- 30 percent of today's North Carolinians weren't born here and many more have moved internally<sup>10</sup> -- and we have a large population potentially under stress but without the traditional support system of spouse and extended family nearby.

### **French-fry-eating coach potatoes**

We are not taking care of ourselves. Access to health care, including insurance is a significant problem that must be addressed, but of far greater concern are the lifestyle decisions that are setting us up for long-term health problems and ever rising costs. We do too many of the wrong things, smoking and drinking too much, and not enough of the right things, such as exercise and eating fruits and vegetables.<sup>11</sup>

### **Growing population of elders**

Many retirees are financially well off, physically fit, and enjoying an active life in what for them truly are golden years. For others, old age is a time of poverty, isolation, illness, and fear. One-third of North Carolina residents over age 65 have

incomes below 200 percent of the federal poverty level.<sup>12</sup> Will the Baby Boomers, who will start to reach age 65 in 2011, be any better prepared?

As we examine these concerns, several messages emerge:

**We're all in this together.** It's difficult to talk about families without also talking about communities. These challenges are too great to be addressed solely as individuals or families, but in community -- based on mutual respect and willingness to pull together for common good -- we can find solutions. For this reason, measures addressing child care and the needs of the elderly have been placed in the Safe and Vibrant Communities issue area.

**Personal responsibility matters.** Decisions about staying in school, having children, losing weight, and saving for retirement ultimately rest with the individual. But what each of us decides affects not only ourselves, but also our families, our communities, and our state.

**Solutions must look to the long term.** North Carolina faces complex problems that cannot be solved overnight. Many current initiatives hold potential for making a significant difference in poverty and health, among them Smart Start, school reform, and the Healthy Carolinians Task Force. They will need time to bear fruit. To advocate patience, however, is not to recommend delay. Existing measures may not be all that is required if all North Carolinians are to thrive.

"Families are where education starts. Often times it is investments in families rather than schools that might be more effective in terms of increasing achievement." – David Grissmer, senior management scientist for the RAND Corporation.<sup>13</sup>

"Many employees said work had a negative impact on their home lives. ...The discontented weren't just working mothers. Childless couples and single people were just as dissatisfied. Men expressed greater frustration than women did with work-family balance. Unhappiest of all were employees responsible for elder care, a long-ignored group almost as numerous as women with kids." -- *Business Week*<sup>14</sup>

"Children growing up in single-parent households have twice the risk of repeating a grade in school, having behavioral problems, dropping out of high school, and being out of work; and girls raised in single-parent households have twice the risk of becoming teenage mothers. Mothers head over 85 percent of single-parent families. About half of the children and mothers headed by women live in poverty [i.e., below the federal poverty level.] However, even with income is taken into account, children from single-parent families fare worse than those from two-parent families."<sup>15</sup> -- Paul A. Beuscher, N.C. Department of Health and Human Services

## Goal 1: Fewer North Carolinians will live in poverty and near poverty.

North Carolina has a long history as a state of the working poor. In 2000, the dimensions became all the more obvious with the release of *Working Hard Is Not Enough*, a report of the N.C. Justice and Community Development Center and North Carolina Equity. Authors Sorien Schmidt and Daniel Gerlach detailed the costs of a basic market basket of goods and services and compared the tally with the returns of North Carolina taxpayers. Their conclusion: More than 35 percent of North Carolinians, or 1.1 million families, earn less than the amount needed to achieve a basic standard of living.<sup>16</sup>

The estimate is conservative on two counts. First, the costs include only such basics as housing, Child care, food, and transportation and make no allowances for savings or debt payment. Second, many of our poorest citizens are excluded because they are not required to file tax returns.<sup>17</sup>

At the other end of the scale, the wealthiest families have gotten richer, increasing the gap between the rich and poor. In the last 20 years, incomes of the richest fifth of North Carolinians rose 40 percent while the poorest moved not at all.<sup>18</sup> This disparity has been masked because many measures of economic well-being rely on averages or on wages alone.

Poverty puts people at risk of nearly every negative factor we can measure, including poor health, lack of health insurance, failure in school, child abuse and neglect, inadequate housing, and crime victimization. All of these factors create a drain on the rest of the community as well. High levels of poverty make communities less attractive places to visit or locate businesses and prevent those communities from investing in their own futures, including the very support systems many families need to survive and thrive. Unless we tackle this core problem, we will forever be addressing its consequences.

“Despite all the growth and all the new, high tech businesses, despite microscopic unemployment rates and aggressive efforts to move people from welfare to work, more than a third of North Carolina families struggle to pay for their most basic needs. This is not about how nice a car they can buy. It is about how to afford child care. . . . It is about how to find, much less afford, a two-bedroom apartment for a family of four. It is about choosing between shoes and food, a visit to the doctor and paying the rent. In short, these families do not earn a living income. To add a final measure of insult to injury, they are working more than ever before and their real average wages are lower than they were twenty years ago.” -- *Working Hard Is Not Enough*<sup>19</sup>

““The measure used most often to indicate both academic and nonacademic readiness for school is the percentage of children whose families are below the poverty level. Poverty is linked to many conditions -- such as inadequate health care, insufficient housing, and a lack of reading materials in the home -- that can imperil children’s readiness for school.” -- David Denton, *Benchmarks 2000*<sup>20</sup>

<b>North Carolina Living Wage</b>		
The hourly wage needed to attain a basic standard of living.		
<b>Family</b>	<b>Urban</b>	<b>Rural</b>
One adult		
One preschooler	\$11.00	\$8.50
Two adults		
Two young children	\$16.25	\$14.25
	(\$8.12 each)	(\$7.12)
State minimum wage: \$5.15 an hour		
Source: <i>Working Hard Is Not Enough</i>		

## **Measure 1: The proportion of North Carolinians at 200 percent of poverty will be cut in half, to 14 percent**

By using 200 percent of the federal poverty level, we have adopted a measure we can apply statewide and over time that approximates the Living Income Standard outlined in *Working Hard Is Not Enough*. The poverty level is widely recognized as inadequate by today's costs of living. It is calculated based on the relative costs of goods and services in the early 1960s. Since then, however, the proportion of a family's budget allocated to food has decreased while housing costs have increased substantially. Child care also has taken on added significance as more women have entered the work force.<sup>21</sup>

According to the Current Population Survey of the U.S. Census, 28 percent of all North Carolinians have incomes below 200 percent of the poverty level. Unfortunately, those least able to address a remedy for poverty are the very people most afflicted: 38.4 percent of all children and 33 percent of all people 65 and older live below 200 percent of poverty. Though sobering, these numbers do represent an improvement of 4 to 5 percentage points across the board over 1992.<sup>22</sup> Minorities, people living in rural counties, and families headed by single women are disproportionately likely to be poor.

"The dual risk of poverty experienced simultaneously in the family and in the surrounding neighborhood, which affects minority children to a much greater extent than other children, increases young children's vulnerability to adverse consequences." -- From *Neurons to Neighborhoods*<sup>23</sup>

## **Measure 2: North Carolinians will earn at least the national median annual wage**

Wages account for the greatest source of income for most people below retirement age. Although they have long lagged behind, North Carolina wage-earners are inching closer to the earnings of their counterparts nationwide. In 1997, the latest year for which figures are available, North Carolinians earned \$26,672 compared with a national median of \$30,336.<sup>24</sup>

This measure must be used cautiously as growth in upper-level wages can obscure what's happening at the bottom of the pay scale. The gap between the wealthiest and the poorest North Carolinians increased by about 20 percent in the last 20 years.<sup>25</sup>

Several disparities are worth noting. According to the Rural Economic Development Center, rural workers in some industries earn only 60 percent as much as urban workers in similar jobs.<sup>26</sup> Women also earn less than men do, about 74 cents to the dollar.<sup>27</sup> Women -- especially single mothers -- and minorities are clustered in jobs that tend to pay less well.<sup>28</sup>

Finally, it is noteworthy that North Carolinians, like other workers, are laboring more hours to bring home those wages. During 1979-99 period, the average time worked has increased the equivalent of 2.8 weeks per worker, according to a report from the Center on Budget and Policy Priorities and the Economic Policy Institute. Some of the additional hours result from more time on the primary job and some from people taking second and third jobs. In addition, as more women entered the work force, middle-income, two-parent families worked nearly 14 more weeks and two-parent, lower-income families, an additional 10 weeks.<sup>29</sup>

Current trends raise concerns about the future. North Carolina has been losing manufacturing jobs, which pay better than other sectors. Job growth is highest in service and retail sectors, which generally pay less, provide fewer hours of employment, and offer fewer benefits. (Also see sections on High Performance Workforce and Prosperous Economy.)

### **Measure 3: In 2020, seventy percent of North Carolinians will receive retirement income other than Social Security**

According to the 2000 Census, 59.1 percent of North Carolinians 65 or older received retirement income other than Social Security. For those retirees, pensions or other private sources accounted for over half of their annual income. The mean individual retirement income that year was \$14,596 compared with \$10,948 from Social Security.<sup>30</sup> The release later this year of detailed reports from the 2000 Census will provide a more current picture.

The lack of additional income clearly is one reason so many elders live in poverty or teeter on the edge. North Carolina ranks ninth nationwide in the number of people over 65 who fall below the federal poverty line,<sup>31</sup> and as noted earlier, the poverty level seriously under represents the true cost of living.

Census figures also obscure the state of North Carolina's native retirees because the Census also includes a significant numbers of wealthy elders drawn by the state's growing reputation as a retirement haven. According to research by Vira Kivett, professor emerita of UNC-Greensboro, some subgroups of the elderly-- such as rural African-American women-- have poverty rates as high as 80 percent.<sup>32</sup>

With the 2 million Baby Boomers aging toward retirement, a huge question faces the state: Will the Boomers be better prepared than their parents for their later years? To find the answer, the N.C. Division of Aging calculated how many of today's middle-aged workers can expect a pension, based on which job categories provided pensions in 1993 and where North Carolinians are currently employed. Its answer: Only 40 percent of Baby Boomers now employed in North Carolina can expect a pension on retirement. The lowest income workers are least likely to be covered by pensions and, at the same time, are unable to save for retirement on their own. The oldest Baby Boomers will turn 65 in 2011, and it's estimated that at least 1.5 million of them will still be alive when the youngest of them pass 65 in 2030.<sup>33</sup> Unless ways can be found to increase pension coverage and savings, North Carolina will soon face another question: How will it provide the state's share of Medicaid and other services for the coming senior boom?

## **Measure 4: The overall rate of home ownership will increase to 73 percent as more minorities and first-time buyers are able to buy homes of their own**

Because homes represent the largest single investment most families make, homeownership stands in here as a measure of family wealth. North Carolina has among the highest rates of home ownership in the country. In 2000, some 71.3 percent of housing units are owner-occupied overall, based on the Current Population Survey.<sup>34</sup> Reliable data are not available for subgroups from that survey, but the 1990 Census shows stark differences in ownership rates across racial and age groups. Specifically, 73 percent of non-Hispanic whites owned their own homes, but only half of all minorities did. Among people younger than 35 (the first-time buyer group), 44 percent owned their own home.<sup>35</sup>

For home ownership to represent a reasonable measure of wealth, however, we must consider the type of home. According to the Census, 454,159 of North Carolina's housing units are manufactured housing -- 16 percent of the total housing stock.<sup>36</sup> An estimated 75 percent of manufactured housing is owner-occupied.<sup>37</sup> Manufactured housing has enabled many people to move out of substandard housing, giving some indoor plumbing for the first time in their lives. This is a benefit not to be taken lightly. At the same time, we recognize that manufactured housing has a limited lifespan. It depreciates in value rather than appreciates and thus cannot be considered a tool for building family wealth.

North Carolina is one of 20 states that will benefit from a new program to boost minority home ownership. The With Ownership, Wealth, or WOW program could make as much as \$50 billion available under special terms to help 1 million minority families purchase homes. The special terms include such features as low down payments and below-market rates. The program was announced April 3 by its sponsors, which include the Congressional Black Caucus Foundation, the mortgage market companies Fannie Mae and Freddie Mac, major banks, mortgage companies, and community groups.<sup>38</sup>

## Goal 2: North Carolinians will follow good health practices.

Health behaviors are estimated to account for 50 percent of health status.<sup>39</sup> If our citizens are to be healthy and if we're to lower the cost of health care, increase our productive capacity, and enjoy life to its fullest, we should first look at how we live. In North Carolina, we see a high prevalence of lifestyle-related disease, such as heart disease, stroke, chronic obstructive pulmonary disease, and diabetes. Two-thirds of North Carolina's preventable deaths and a \$6 billion annual drain on the economy can be attributed to just three of those factors -- tobacco, poor nutrition, and lack of physical activity along, according to North Carolina Prevention Partners. Other leading causes of preventable deaths include alcohol and drugs, AIDS, guns, and car accidents.<sup>40</sup>

As disturbing as the overall situation is, minorities are disproportionately likely to have lifestyle factors putting them at risk of poor health<sup>41</sup> and in fact die prematurely at much higher rates than do whites.<sup>42</sup> People who live in rural areas also are more likely to die of injuries and/or to suffer from heart disease, cancer, and diabetes. A study from East Carolina University bears this out. It looked at causes of premature death (before age 75) in eastern North Carolina which is largely rural and has a high percentage African-American population. It found that more eastern North Carolinians died prematurely from cancer, heart disease, diabetes, stroke, and unintentional injury than the rest of the state by percentages ranging from 14 to 40.<sup>43</sup>

Cardiovascular disease and stroke bear particular attention. Heart disease is the leading cause of death in North Carolina and in 1996 alone accounted for a fifth of all hospitalizations and \$2 billion in hospital charges.<sup>44</sup> Yet it is largely preventable through exercise, good nutrition, and abstinence from smoking. Stroke is the state's third leading cause of death, accounting for 8 percent of deaths and rising. Overall, the state exceeds the national rate in stroke deaths, and Eastern North Carolina's rate of death by stroke doubles that of the nation. This pattern has existed for at least 50 years.<sup>45</sup>

North Carolinians interested in improving lifestyles and health are beginning to make themselves heard. The Healthy Carolinians Task Force, Prevention Partners, the Heart Disease and Stroke Prevention Task Force, and the Smart Growth movement all focus much-needed attention on this area. The following measures draw heavily from the work of the Healthy Carolinians Task Force and its *Healthy Carolinians 2010 Report*.

"Measuring health by years of life lost before age 75, if eastern North Carolina were a state, it would rank 51<sup>st</sup>." -- Christopher Mansfield, Director, Center for Health Services Research and Development, East Carolina University School of Medicine<sup>46</sup>

North Carolina continues to have a high rate of infant mortality, third highest in the nation, despite numerous improvements in prenatal care. The next major step in lowering this tragic number is to address health issues before conception, in keeping with the emphasis on healthy lifestyles. As this effort continues, we should keep a vigilant eye on the impact on infant mortality.

Infant mortality	1997-99	2000
(Rates per 1,000 live births)	Infant death (less than 1 year)	Infant death (less than 1 year)
North Carolina total	9.1	6.2
White*	6.7	4.9
Black*	15.7	11.1
American Indian*	13.4	5.8
Asian or Pacific Islander*	5.9	4.3
Hispanic	6.4	3.2
* not Hispanic	Source: N.C. State Center for Health Statistics	

## Measure 1 : Percentage of population who smoke cigarettes

**Target: Both teen and adult tobacco use will decline to 10 percent or less.**

If we had to choose only one statistic that we could change and make the greatest difference to health, this is it. Tobacco use accounts for 40 percent of all preventable deaths and \$2.1 billion in health care costs and lost productivity in North Carolina.<sup>47</sup> It is associated with heart disease, stroke, lung cancer, and chronic lung disease. Smoking during pregnancy can result in miscarriages, premature delivery, and sudden infant death syndrome. Environmental smoke increases the risk of heart disease, asthma, and bronchitis in children. While we focus on cigarette smoking, make no mistake: There is no safe tobacco alternative to cigarettes. Cigars, chewing tobacco, and snuff all carry their own, significant health risks.

While the percentage of North Carolinians who smoke is inching downward, we still smoke more than most of the rest of the nation. Overall in 1999, 30 percent of North Carolinians age 12 and older smoked cigarettes during the 30 days prior to a national survey. The rate varied with age, ranging from 19 percent among 12- to 17-year olds, to 45 percent among 18- to 25-year olds, and 29 percent among those 26 and older.<sup>48</sup> More men than women smoke, though that difference has shrunk, and youths from rural areas are more likely to smoke than are young people in urban areas.<sup>49</sup>

Because the nicotine in tobacco is highly addictive, it is far safer never to start smoking.<sup>50</sup> While cost can be a major deterrent to young people picking up cigarettes, North Carolina's cigarette tax (second lowest in the country) keeps the price here low.<sup>51</sup> Those who have given up cigarettes cite a smoke-free workplace as their No. 1 reason for quitting. Only 5 percent of North Carolina's schools are totally smoke-free zones for all students, teachers, staff, and visitors.<sup>52</sup>

According to the U.S. Department of Health and Human Services, cigarette smoking alone kills more people in the United States each year than AIDS, alcohol, cocaine, heroin, homicide, suicide, motor vehicle accidents and fires -- combined.<sup>53</sup>

Lung cancer has become to leading cause of cancer death among women. It kills 70 percent more women than does breast cancer, leading U.S. Surgeon General Dr. David Satcher to say: "When calling attention to public health problems, we must not misuse the word 'epidemic.' But there is no better word to describe the 600 percent increase since 1950 in women's death rates for lung cancer, a disease primarily caused by cigarette smoking. Clearly, smoking-related disease among women is a full-blown epidemic."<sup>54</sup>

## Measure 2: Percentage of population significantly overweight

**Target: The percentage of overweight children in each age group will decline to 7 percent. No more than 37 percent of adults will be overweight, and 13 percent, obese.**

Being overweight and obese significantly raise the risk of premature death. Higher weights are associated with high blood pressure, high cholesterol, type 2 diabetes, heart disease, stroke, gall bladder disease, arthritis, sleep disturbances and breathing problems, and endometrial, breast, prostate, and colon cancers. People who are seriously overweight tend to suffer from low self-esteem and lack energy. Nationwide in 1995, \$99 billion in medical costs and lost productivity was attributed to obesity.<sup>55</sup>

The percentage of North Carolinians overweight and obese has been increasingly steadily. In 1999, of children seen in North Carolina health department clinics and WIC programs, 12.3 percent of 2 to 4 year olds, 17.8 percent of 5 to 11 year olds, and 22.5 percent of 12 to 18 year olds were overweight (in the 95th percentile for age and sex).<sup>56</sup> These percentages correlate closely with findings from the Youth Risk Behavior Survey of the Centers for Disease Control. It shows that a quarter of North Carolina high schoolers and middle schoolers describe themselves as overweight.<sup>57</sup> Among adults, CDC surveys find that 56 percent of North Carolinians are overweight (a Body Mass Index of 25 or higher) and 19.8 percent were obese (a BMI of 30 or higher).<sup>58</sup>

All demographic segments of the population are affected by obesity, but the occurrence is highest among female minorities (African-Americans, Hispanics and Native Americans) and occurs in low-income groups at twice the rate of the wealthy. While the prevalence increases with age, the rising rate of obesity in children is particularly alarming given the long-term health consequences. Even in young children, we are seeing elevated cholesterol, hypertension, and type 2 diabetes, which previously has been associated with later life.<sup>59</sup>

In an attempt to combat this problem, the N.C. Cardiovascular Health Program received a \$6.35 million, five-year grant from the federal Centers for Disease Control in 1998. The program focuses on improving nutrition and increasing physical activity by changing policies and environmental factors to encourage healthier behavior. For example, it promotes increased requirements for physical education in the schools, streets that are safe and friendly for walking and biking, and menu labels for heart-healthy choices in restaurants.<sup>60</sup>

There are two primary means to prevent and treat obesity: eat right and exercise. Proper diet and exercise also address numerous other health issues, from cancer to osteoporosis and depression. Unfortunately, North Carolinians pay little attention. Only 20 percent of adults say they eat the minimum daily requirements for fruits and vegetables, and even fewer participate in regular, sustained leisure time physical activity.<sup>61</sup> Poor nutrition and lack of physical activity are linked with 26 percent of all preventable deaths.<sup>62</sup>

### Measure 3: Rates of syphilis and HIV/AIDS

**Target: The rate of new HIV infections will decline to 9 per 100,000 population, and syphilis will be eliminated in North Carolina.**

Sexually transmitted diseases (STDs) have significant adverse consequences on health and the economy of North Carolina. The overall trend in new STD infections is down, but the trend unfortunately does not extend to the most deadly and costly form. The HIV infection rate increased 39 percent from 1990 to 1997. The lifetime cost of HIV/AIDS treatment exceeds \$150,000. At this time, there is no cure, and once the infection progresses to full-blown AIDS, it is fatal. STDs disproportionately affect minorities -- especially adolescents and young adults -- and people with limited access to health care.<sup>63</sup>

In 1998, there were 19.7 new cases of HIV reported per 100,000 population in North Carolina.<sup>64</sup> African-Americans currently represent more than 70 percent of all AIDS cases in the state. Nationally, AIDS was the leading cause of death among African-American men ages 25-44 in 1998 and the third leading cause among African-American women. HIV/AIDS also is rising among women, from 10 percent of North Carolina cases in the 1980s to about 27 percent in 1999.<sup>65</sup>

North Carolina's syphilis cases, although decreasing, still are among the highest in the nation. The state ranked first in the number of cases and fourth in the rate of syphilis in 1998. Nationwide, 28 counties account for half of all primary and secondary syphilis cases. Five of those counties are in North Carolina: Forsyth, Guilford, Mecklenburg, Robeson, and Wake. The 1998 rate of primary and secondary syphilis was 9.6 per 100,000 population. Nearly 80 percent occurred among African-Americans.<sup>66</sup> STDs are spread through unprotected sexual behavior. Condoms, if used correctly and consistently, can help prevent STDs as well as unintended pregnancy. The only 100 percent effective method of prevention, however, is abstinence unless one is in a committed, mutually monogamous relationship with an uninfected partner.

## **Measure 4: Percentage population who indulged in binge drinking in past 30 days and percentage population using any illicit drug in the past 30 days**

**Target: The rate of binge drinking will decline to 8 percent overall and, among age groups, to 4 percent among those ages 12 to 17; to 15 percent among those ages 18 to 25; and to 8 percent among those 26 and older. Use of illicit drugs will decrease to 3 percent overall and, among those 12 to 17, to 6 percent among those 18 to 25, to 7 percent; and among those 26 and older, to 2 percent.**

Substance abuse and addiction disrupt families, cause major health problems, cost people their jobs, and sometimes lead to crime. The economic costs in North Carolina are estimated at \$5 billion to \$7.6 billion dollars annually.<sup>67</sup> This includes health care, lost productivity, and law enforcement and criminal justice costs.

Alcohol abuse alone is associated with motor vehicle crashes, homicides, suicides, and drownings – all leading causes of death among youth. Long-term heavy drinking can lead to heart disease, cancer, alcohol-related liver disease, and pancreatitis. Drinking during pregnancy may result in fetal alcohol syndrome, a leading cause of preventable mental retardation.<sup>68</sup> In more general terms, substance abuse is associated with such serious problems as violence, injury, HIV infection, teen pregnancy, school failure, motor vehicle crashes, and homelessness.<sup>69</sup> The Department of Correction says 62 percent of adult prisoners have a substance abuse problem needing treatment<sup>70</sup> while 54 percent of youth committed to training schools were similarly assessed.<sup>71</sup> Social service agencies report that drugs and alcohol are associated with most instances of child abuse and neglect.<sup>72</sup>

The earlier young people experiment with alcohol or drugs, the greater the likelihood of long-term problems.<sup>73</sup> CDC Youth Risk Behavior Surveys reveal that three-quarters of North Carolina high schoolers have used alcohol at some time, and nearly one-third began drinking before age 13.<sup>74</sup> Marijuana use, after declining for several years, is rising again.<sup>75</sup> Among adults, illicit drug use and binge drinking -- defined as five or more servings in a single setting -- have held steady at approximately the same level for the past two decades.<sup>76</sup>

More specifically, in 1999, 16.6 percent of all North Carolinians (age 12 and older) indulged in binge drinking during the 30 days prior to a national survey. Among age groups the rates range from 9 percent of 12 to 17 year olds to 31 percent of 18 to 25 year olds and 15 percent of those 26 and older. The overall rate of illicit drug use was 6.3 percent, with 11.5 percent among those 12 to 17, 15 percent among those 18 to 25, and 4 percent among those 26 and older.<sup>77</sup>

Substance abuse is predominantly a male phenomenon and occurs in roughly equal proportion across racial/ethnic and income lines. Income affects the substance of choice and ability to pay. As a result, drug-related crime (both from dealing and using) disproportionately impacts low-income neighborhoods.<sup>78</sup> Young people are more likely to abuse substances than older adults, especially if their parents are substance abusers, but alcohol and the misuse of prescription drugs are problems among the elderly as well.<sup>79</sup>

In 1999, North Carolina law enforcement officers made 32,454 arrest for driving while impaired, down a third since 1994.<sup>80</sup> The National Highway Traffic Safety Administration estimates that alcohol was involved in 513 highway deaths in the state in 1998 (about half of all traffic fatalities) and 27 percent of all traffic accidents.<sup>81</sup>

## Measure 5: Percent of target population receiving recommended vaccinations, total and by racial/ethnic group

**Target: All children will receive recommended vaccinations. By 2020, 85 percent of adults 65 and older will receive annual flu vaccinations and one-time pneumonia vaccinations.**

Immunizations are considered one of the greatest health achievements of the 20th century. Many once-common vaccine-preventable diseases are now under control. Smallpox has been eradicated. Polio has been virtually eliminated from the Western Hemisphere, and the occurrence of measles is low.<sup>82</sup>

Current recommendations call for all children born in the United States to be vaccinated against 10 types of childhood disease. Immunizations against flu and pneumonia can prevent serious illness and death, particularly among older adults and others at high risk of serious complications. Flu causes an average of 110,000 hospitalizations and 20,000 deaths annually in the United States. Pneumonia kills 10,000 to 14,000 people each year. People 65 and older are encouraged to receive a flu vaccine each year and a one-time immunization against pneumonia. All of these vaccinations represent an inexpensive, cost-effective approach to disease prevention.<sup>83</sup>

North Carolina has made significant progress in getting young children vaccinated. In 2000, 87.6 percent of children 2 years old had completed the recommended vaccinations.<sup>84</sup> Under-vaccinated children are more likely to live in medically underserved areas and among new immigrant populations.<sup>85</sup>

We are further behind in reaching senior citizens with vaccinations. Roughly 44 percent of non-institutionalized adults 65 and older received the annual flu vaccination in 1998 and or had ever received a pneumonia vaccination. African-Americans and Hispanics are less likely to be vaccinated than are whites.<sup>86</sup>

“The percentage of children who have received all recommended immunizations is probably the most reliable indicator of whether their health needs have been met sufficiently before they begin school.” *Benchmarks 2000: Getting Children Ready for the First Grade.*<sup>87</sup>

## Goal 3: North Carolinians will have access to health care.

Lack of access to health care carries a high price tag and begins a vicious spiral effect on North Carolinians. People avoid, or are unable to obtain, preventative services. Delays in treatment result in later diagnoses when illnesses are more difficult and more expensive to treat. Those high costs in turn get passed along to the public purse and to private individuals and companies with the ability to pay, through an indirect process called *cost-shifting*.

North Carolina ranks 27th in the nation in the percentage of residents covered by health insurance.<sup>88</sup> More than 1.5 million North Carolinians lack insurance,<sup>89</sup> and another million are considered underinsured. That is, they are at risk of spending 10 percent or more of their income out of pocket on medical care.<sup>90</sup> Among these, nearly half of senior citizens lack prescription drug coverage.<sup>91</sup> Many insurance policies also fail to cover mental health and addiction services on a par with other types of health care.<sup>92</sup>

Health insurance access isn't the only culprit preventing people from receiving the health care they need, however. In some areas of the state there is a shortage of health care providers. While the Office of Rural Health and the recruitment by individual localities has made inroads on increasing the numbers, much remains to be done. Demographic trends demand the state remain alert to other spiraling health concerns.

### **Geriatric specialties**

The number of health care providers trained in geriatric specialties remains low despite the surge in population age 65 and older. According to the state's Long-Term Care Task Force, only 20 physicians list a primary specialty in geriatrics on their medical licenses while 65 list their primary practice location as a nursing home or extended care facility.<sup>93</sup>

### **Long-term care insurance**

North Carolina ranks 21<sup>st</sup> in the number of long-term care insurance policies sold (41,469).<sup>94</sup>

### **Minority representation**

As the population for whom English is a second language continues to grow, there is a need to ensure that one's language does not create a barrier to receiving quality health care. Among physicians in 1998, only 4.8 percent were African-American, .03 percent American Indian, and 1.2 percent Hispanic.<sup>95</sup>

### **Transportation**

For the elderly and poor rural residents in particular, ready and reliable transportation can present an obstacle to doctor's visits.

Use of clinical preventative services, such as early prenatal care, can serve as an indicator of access to quality health care services. After a significant push, North Carolina now reports that 84 percent of pregnant women receive prenatal care in the first trimester of pregnancy. The rate for whites, however, is substantially higher than for most minorities.<sup>96</sup>

Pregnant women at or below 185 percent of the federal poverty level are eligible for prenatal care under Medicaid and North Carolina's Baby Love program. Medicaid covered 44 percent of all births in the state last year.<sup>97</sup>

## Measure 1: Percentage of population lacking health insurance at some time during the year

**Target: All North Carolinians will be covered by health insurance.**

Research has shown that people without health insurance are less likely to have a usual source of care, to obtain preventative services, or to undergo discretionary, high-cost procedures. They are more likely to delay or forego needed care (by as much as four times), only to experience hospitalizations that could have been avoided or to be diagnosed with such severe conditions as late-stage cancer.<sup>98</sup>

North Carolina has addressed the health insurance problem by expanding Medicaid eligibility, creating the N.C. Health Choice for Children program, and negotiating basic plans for small business groups with private insurance carriers. Despite these efforts, which have covered more children than ever before, the number of uninsured has increased over the past 10 years. Specifically, in 1998-99, 15.5 percent of North Carolinians (1,527,540 individuals) lacked health insurance at some time during the year.<sup>99</sup> Nearly half of those were uninsured for the entire year.<sup>100</sup> About 225,000 of the uninsured were children.<sup>101</sup> Low-income people are least likely to have health insurance coverage. Nearly 60 percent of the uninsured have incomes below 200 percent of the poverty level. Minorities are less likely to be covered than are whites, and Hispanics least of all. In addition, 5 percent of the elderly are not covered by Medicare.<sup>102</sup>

Lack of insurance is not limited to the unemployed. In 1998, for 67 percent of the uninsured, more than a million people, someone in the family was working full time, and another 11 percent had a family member working part time. People are less likely to have health insurance if they work for a small company, for a private household, or in construction or agriculture.<sup>103</sup>

Cost is the most significant barrier to obtaining health insurance. The average premium in 1998 for coverage under an employer-sponsored plan cost more than \$5,000 a year, three times what it cost in 1997. This sum includes both employer and employee contributions.<sup>104</sup>

The effort to expand health insurance to all children was stymied when the Department of Health and Human Services froze application to the Health Choice program for lack of funds. The joint federal-state program aims to help the children of working parents who don't qualify for Medicaid but can't afford health insurance. It covers children in families with incomes below 200 percent of the federal poverty level with small enrollment fees, depending on ability to pay. Nearly 72,000 children are enrolled currently. The state estimates another 30,000 may qualify.<sup>105</sup> Governor Mike Easley's proposed budget adds \$10 million for the program in 2001-02 and \$21 million the next year to expand enrollment to nearly 100,000 children.<sup>106</sup>

## **Measure 2: Percentage of population underserved in terms of available primary care, dental care, and mental health care**

**Target: The supply of health care professionals in these three fields will be adequate to serve all North Carolinians, regardless of where they live.**

North Carolina and the federal government have addressed the problems of providing health care coverage to all areas and populations through a number of programs. These include the N.C. Office of Rural Health which uses incentives to attract physicians to underserved areas and funds rural health centers; the Area Health Education Centers; and federal migrant health clinics.

Despite all these efforts, 21 North Carolina counties and parts of 23 others are considered areas of persistent health professional shortages, according to the Cecil B. Sheps Center for Health Services Research at UNC-CH.<sup>107</sup> In addition, the latest report from the federal Division of Shortage Designations indicates that the supply of health care professionals falls short of the numbers needed to serve 10 percent of the state's population, the dental care needs of 8.6 percent, and the mental health needs of 10.5 percent.<sup>108</sup> This does not mean that only 10 percent of people are affected by the shortage. Instead, physicians in some areas may be spread so thin that 20 percent of the population may get only half the health care they need, or 30 percent may get only a third, and so forth. Nor is it only rural areas that are affected. The shortage encompasses several low-income urban communities.

The type of need varies from place to place and the medical area. For example, 31 counties lacked a single psychologist in practice in 1998.<sup>109</sup> By comparison, only four counties in 1998 lacked a dentist<sup>110</sup> but there has been an inadequate number of dentists willing to take patients covered by Medicaid because of low reimbursement rates. The dentists say those rates are often lower than their overhead. In 1998, only 20 percent of Medicaid recipients visited the dentist.<sup>111</sup> Some improvement has occurred in the past two years, but a tight supply of dentists (North Carolina ranks 47th in dentists per capita) means few need an additional source of patients.<sup>112</sup>

### **Measure 3: Proportion of adults in need of comprehensive substance abuse treatment who receive treatment**

**Target: 20 percent of adults in need of substance abuse treatment will receive it.**

Comprehensive substance abuse treatment programs have been shown to reduce addiction and related crimes and health care costs.<sup>113</sup> Consider:<sup>114</sup>

- The National Treatment Improvement Evaluation Study found that treatment reduced heroin and cocaine use by more than half after one year of treatment, and cut drug expenditures by almost 70 percent. Treatment also reduced the percentage of individuals who visited medical centers for alcohol or drug related reasons from 24.7 percent to 11.5 percent.
- A 1997 report by the RAND Corporation determined that treatment is 15 to 17 times more effective in reducing cocaine use and related crime than either mandatory, minimum prison sentences or conventional law enforcement.
- An earlier RAND Corporation report indicated that every \$1 spent on treatment resulted in a \$7.46 reduction in drug-related spending and lost productivity.
- A Blue Cross/Blue Shield study found that addiction treatment resulted in a collateral drop in the health care costs of family members by more than 50 percent.

Despite such promising results, few substance abusers receive needed treatment. According to a 1995 survey by Research Triangle Institute, 343,000 adult North Carolinians were in need of comprehensive substance abuse treatment in 1995, but only 4.4 percent of those received it. The survey excluded some populations, such as the homeless and persons in prisons, where substance abuse problems are known to be great.<sup>115</sup> The Progress Board's modest target of reaching 2 out of 10 who need treatment represents an improvement of 450 percent.

Managed care and health insurance plans generally do not cover substance abuse treatment on parity with other health care needs. As a result, the private sector is closing treatment facilities while the need for treatment rises. Almost 10 percent of private treatment beds closed during 1999-2000. The result is long waiting list for publicly funded programs.<sup>116</sup> Programs that are available are unevenly dispersed. More than 40 counties lack any residential beds for substance abuse treatment other than in hospitals, and more than 30 lack halfway houses for substance abuses.<sup>117</sup> Youth in need of substance abuse treatment are even less likely to receive it. Only 3 percent do, compared with 16 percent nationally.<sup>118</sup>

## Measure 4: Suicide death rate

**Target: Reduce the suicide death rate to not exceed more than 6 per 100,000 overall, and the rate of youth suicide to no more than 4 per 100,000.**

Suicidal thoughts are not normal responses to stress. More than 90 percent of people who kill themselves are depressed or have other diagnosable mental or substance abuse disorders.<sup>119</sup> For this reason, we use the rate of suicide as a key indicator of access to mental health care.

Suicide ranks in the top 10 causes of death for nearly all age groups in North Carolina. For 1996-98, the age-adjusted rate of death by suicide in North Carolina was 11.8 per 100,000 population annually.<sup>120</sup> This exceeds the national rate of 10.6.<sup>121</sup> In addition, more North Carolinians use guns to kill themselves (two-thirds of all suicides) than do their counterparts nationally.<sup>122</sup>

Suicide runs highest among older adults, especially white males. A 1998 study by the State Center for Health Statistics (examining data up to 1995) reported that suicide was increasing among elderly whites, younger minorities, and younger males. North Carolina's rate of youth suicide exceeded the national rate by a substantial margin in the mid-90s,<sup>123</sup> but has been declining since it peaked at 14.2 per 100,000 in 1994. In 1998, youth suicide had dropped to 6.8 per 100,000.<sup>124</sup>

The number of suicides reflects a more widespread problem. Studies say there may be eight or more suicide attempts for every one completion. Although four times as many men as women die by suicide nationally, women report attempting suicide two to three times as often.<sup>125</sup> This reflects other findings that twice as many women as men suffer from depression.<sup>126</sup> The ratio of suicide attempts to completions also is higher in young people.<sup>127</sup>

Several risk factors have been associated with suicide. In adults, these include depression, alcohol abuse, cocaine use, and separation or divorce. For youths, depression and substance abuse also are risk factors, as are a history of physical or sexual abuse, and aggressive or disruptive behaviors. Risk factors are not the equivalent of suicidal tendencies, but may indicate the likelihood that people need help dealing with a problem. Often, they have attempted to reach out. According to one study, most elderly victims visit their physicians within the month preceding the suicide.<sup>128</sup>

It is ironic, however, that for many years North Carolina had a high rate of suicide even as North Carolinians reported fewer days of poor mental health than did other Americans. Since 1995, about 30 percent of Americans have reported experiencing one or more days of poor mental health during the month preceding a nationwide survey. Initially, only half as many Tar Heels reported having poor mental health days. During 1998 and '99, however, the North Carolina percentage climbed to 26.<sup>129</sup>

## Goal 4: Safety and stability will be at the heart of every family.

No matter how young or how old, if we're to thrive -- physically, mentally, emotionally -- we need to feel safe and nurtured in our own homes. Infants who are not held, stroked, and talked to fail to develop normally. Growing children and teens need a secure home base from which to explore the world. Adults, too, need the support and balance that friends and family provide.

Safety and stability have many aspects. Illness and death can strain a family at its seams. Television and the Internet can bring unwanted images into the home. Neighborhood crime and violence may leave a family feeling insecure and parents concerned about whether their children will fall victim to the lure of gang membership. And psychiatrists tell us that moving to a new community can be one of the most stressful events a family faces, and frequent moves are particularly hard on children and adolescents.<sup>130</sup>

For the purpose of this report, however, we limit our measures to two of the most detrimental aspects of family life in America -- family violence. Spousal abuse and child abuse and neglect are closely linked. They occur most often in families where the adults have failed to learn appropriate coping skills, where poverty stretches thin their financial and emotional resources, and where substance abuse clouds judgment.<sup>131</sup> Patterns of abuse frequently carry over from one generation to the next. Victims of child abuse often fail at school, suffer lasting psychological scars, and become involved in other types of violence, both as perpetrator and victim.<sup>132 133</sup>

To stop the cycle of abuse, we must first recognize it. Until recent years, America viewed whatever happened inside the family as a private matter, closed to public scrutiny. North Carolina became the last state, in 1993, to recognize marital rape as a crime.<sup>134</sup> Many public and private organizations are working hard to change the climate of acceptance for family violence and to implement programs to halt and prevent its occurrence. They include the Governor's Commission on Family Violence, Prevent Child Abuse North Carolina, and both state and local social service agencies.

Not included in this report, but also of special concern, is the crime of elder abuse, neglect, and exploitation. The National Elder Abuse Incidence Study estimated that 450,000 elderly persons were abused or neglected in 1996. Self-neglect affected another 100,000 elders. Although social services departments investigate charges of abuse, no statewide agency currently tracks the overall incidence of abuse against elders. Like child abuse, elder abuse affects our most dependent and defenseless citizens, with the eldest of the elderly -- those 80 or older -- suffering the most abuse. Also reflecting child abuse, in nine out of 10 cases, the perpetrator of elder abuse is a family member.<sup>135</sup>

"Children grow and thrive in the context of close and dependable relationships that provide love and nurturance, security, responsive interaction, and encouragement for exploration. Without at least one such relationship, development is disrupted and the consequences can be severe and long-lasting." -- *Neurons to Neighborhoods: The Science of Early Childhood Development*.<sup>136</sup>

## Measure 1: Rate of spouse/partner abuse per 1,000 adult females

**Target: The rate of domestic violence against women will decline to no more than 5 incidents per 1,000 adult females. This target may need to be adjusted as better data become available.**

Domestic violence is a problem that won't go away. People who grow up in families where they have been abused or seen one parent abuse the other tend to repeat the behavior, either as victim or as abuser. They have learned to see it as normal. But there's nothing normal about being beaten, raped, or killed. That such crimes happen in families or other supposedly loving relationships makes them all the more tragic.

While the greatest costs cannot be reduced to simple digits, some numbers do provide a clue to the extent of the problem. Nationwide the medical costs total \$44 billion annually, according to the American Medical Association. These include 21,000 hospitalizations, almost 100,000 days of hospitalizations, 30,000 emergency department visits, and 40,000 physician visits a year. (A comparable state estimate is not available.) Yet the true extent of domestic violence is not known. Many victims, perhaps the majority, never report their abuse to physicians or to police.<sup>137</sup>

The N.C. Domestic Violence Commission is leading a three-year effort to collect better data on domestic violence in this state through coordination among agencies ranging from the police to social services and battered women's shelters.<sup>138</sup> The best available evidence now places the rate at 12.1 incidents per 1,000 adult females, a 63 percent increase over 1993.<sup>139</sup> Too often battery leads to worse crimes. Nearly 70 percent of women murdered in North Carolina are killed by a current or former intimate partner, according to the study "Femicide in North Carolina."<sup>140</sup>

In addition to coordinating the effort to improve reporting and data collection, the Governor's Domestic Violence Commission has outlined a multifaceted approach to controlling and preventing these crimes. This involves public awareness; providing special attention to non-English speaking populations, minorities, and gays and lesbians; working with law-enforcement agencies to develop a consistent response; and developing a best-practices guide for the treatment of offenders.<sup>141</sup>

Wife beating results in more injuries requiring medical treatment than rape, auto accidents, and muggings combined.<sup>142</sup>

## Measure 2: Rate of substantiated cases of child abuse and neglect per 1,000 children

**Target: No child will die as a result of abuse or neglect. The overall rate of child abuse and neglect will decline to no more than 27 per 1,000 children younger than 18.**

There is not and never can be an excuse for harming a child, whether the abuse is physical, sexual, emotional, or the result of neglect. The 1995 report by the U.S. Advisory Board on Child Abuse and Neglect states this in *A Nation's Shame*.

Yet in North Carolina, child abuse and neglect have been increasing. In 1997, the rate of substantiated cases of abuse and neglect was 55.9 per 1,000 children, representing about 35,000 cases.<sup>143</sup> Although most cases relate to neglect rather than physical abuse, the outcome can be the same. Twenty-three children died in 1998 as a direct result of some form of maltreatment.<sup>144</sup> Many experts suggest the undercount is far greater than that.<sup>145</sup> *A Nation's Shame* estimates that half of child abuse fatalities may be unrecognized. Our youngest children and children with disabilities are most likely to be abused or neglected. Nine times out of 10, the maltreatment comes at the hand of a parent or other close relative.<sup>146 147</sup>

Unless the emotional consequences are treated, these children suffer lasting harm. The American Academy of Child and Adolescent Psychiatry says abuse puts children at risk for alcohol and drug use, school problems, poor self-image, and depression, among other potential consequences. As adults, they may have trouble establishing loving relationships and may repeat the patterns with their own children.<sup>148</sup>

As this suggests, patterns of child abuse tend to be repeated from generation to generation. In addition, research shows that men who abuse their partners often abuse their children, and abused women are more likely to abuse their children than are non-abused women.<sup>149</sup> Children in families with alcohol problems suffer are three times more likely to suffer from abuse or neglect. The risk of abuse or neglect is 22 times the average in children from low-income families.<sup>150</sup>

"If it were a communicable disease, the rate of occurrence we see with child abuse would not be considered acceptable. It gets to the core of who we are." -- Tom Vitaglione, Senior Fellow, Child Advocacy Institute<sup>151</sup>

# Safe and Vibrant Communities

## Vision

**Communities of every size and in every region of the state offer their citizens a desirable quality of life. Citizens live in safety and in harmony. Communities achieve economic and environmental sustainability as home, civic, and cultural life prospers. And everywhere, communities celebrate a vitality evident in the proportion of young people who choose to remain at home, or to return home, for their adult years.**

Radical change has come to North Carolina and her communities over the last 20 years. Historically, North Carolina was a state of small towns and rural communities. Today, most of us live in cities or their sprawling suburbs. Once farmers, textile workers, and furniture makers, we now do research for multinational corporations, process airline tickets and credit card sales, clerk in stores, serve meals in retirement centers, and run the computers that direct the machines that fabricate automobile parts. Towns and cities previously dominated by single industries are being transformed, gradually or with gut-wrenching suddenness, into something -- well, something different. Sometimes a bedroom community, sometimes an eclectic mix of small employers, sometimes a near-ghost town. But different, that's for sure. As our schools have consolidated, they have moved out of our center of attention. Used to be, we all gathered on Friday nights to cheer on the home team. Now we sit in isolation in front of large-screen televisions. We don't even rock on the front porch much any more, air conditioning, tiger mosquitoes, and ozone alert days having convinced us that fresh air is much overrated, or maybe nonexistent.

Two decades ago, our complexion reflected North Carolina's Scottish, Irish and German settlers, African Americans and Native Americans. Today, we can claim a multitude of ethnic influences. Led by Hispanics, who are the largest group of recent immigrants, the newest Tar Heels hail from every corner of the globe. And despite all that Lady Clairol, Rogaine, and the plastic surgeon can do, we're getting older, much, much older.

Recognizing these changes, we set out to learn how people across North Carolina view their communities, what they see as the challenges to be met over the *next* 20 years, and how they would define a safe and vibrant community. We held focus groups with the people who get things done at the grassroots level. We talked with the leaders of state and local organizations, with mayors and county managers. We studied strategic plans that cities, counties, and regions have adopted to guide their futures. And we made sure to include the young people whose future will be most influenced by the decisions made today.

Throughout this search, three overarching messages came through loud and clear: (1) Although North Carolina has changed much, North Carolinians are as committed as ever to their communities, whether they've lived here 40 years or four. (2) The elements they use to define "safe and vibrant" vary little, although size and local conditions often determine the emphasis placed on different elements. (3) Vibrant communities actively work on improving themselves, embrace change (when it's for the right reason), and take pride in their accomplishments.

We have distilled some of the most frequently mentioned elements of safe and vibrant communities into the four goals that follow. These goals reflect the potential strength that lies in our diversity, the fundamental requirements for safety and shelter, and the need for communal answers to common problems. They are not all-inclusive, however. Many important elements of vibrant communities, such as schools and jobs, are covered in other sections of this report. Others will require more time to develop into measurable goals, and those deserve a few words of mention.

More than mere places, communities are collections of people interacting in a variety of ways. The bonds that convince people to act for the collective good don't just happen, but must be nurtured. People must have places to meet and mingle, and opportunities to develop common understanding. Vibrant downtowns provide a focus and an opportunity for informal meetings -- at the post office, in a café, on the town commons that many communities are trying to re-create. Cultural resources, such as libraries and historic buildings, and cultural activities -- from professional orchestra concerts to community theater, bluegrass jam sessions and heritage festivals -- play important roles. As Abdul Rasheed, president of the N.C. Community Development Initiative, said: "There can't be a healthy community without a way to celebrate and chronicle history and culture, and those celebrations must be accessible to all, regardless of income."<sup>152</sup> The same holds true for recreational and civic opportunities for all ages. From Little League to Rotary, they encourage us to stay active, bring us in touch with one another, and make us feel good about the places we live. Finally, people must be able to take advantage of the opportunities that exist. Often that means being able to get from one place to another safely, particularly for those without cars. Bit by bit, it all adds up. Individuals, families, and companies increasingly pay attention to these quality of life issues in deciding where to locate or whether to remain in place.

The absence of these less tangible issues from the goals presented here in no way diminishes their importance. We simply have yet to determine the most appropriate means by which to measure our successes and shortcomings on a statewide basis.

The survey grew out of a collaboration of community foundations nationwide and built on the work of Robert D. Putnam, author of *Bowling Alone: Collapse and Revival of the American Community*, and his Harvard-based Saguaro Seminar on civic engagement. Almost 30,000 people were surveyed. They included 3,000 people in a national sample and another 26,200 in 40 participating communities across 29 states.<sup>153</sup>

## **Goal 1: All members of the community will be valued, and their civic participation welcomed.**

For all the ties that bind North Carolinians together, there remain wedges that drive us apart. Lingering racism is suspect in the gaps in income, health, and school achievement. Newcomers to our communities are too often greeted with misunderstanding and hostility. Our elders and our youngsters seldom receive the respect they are due. The poor become “them,” rather than part of “us.” Stereotypes and cronyism lock women out of business opportunities. Yet our communities will never achieve their potential, will never be truly vibrant places to live and grow, until we embrace all members of the community equally and profit from their contributions to civic life.

The measures that follow focus primarily on the most deeply engrained problem: racial and ethnic discrimination. If we can close this divide, we should be able to conquer the rest.

Truth is, we have made substantial progress since that day 40 years ago when four young men sat down at the Woolworth’s lunch counter in Greensboro. Today, the state sends two African-American representatives to Congress. State Auditor Ralph Campbell, an African-American man, has twice been elected on a statewide ballot. Schools are integrated even if housing patterns are not. African-Americans, whites, and Native Americans work, eat, shop, and watch movies side by side. Churches welcome the newest immigrants to this land of immigrants with Spanish-Vietnamese-, Latinos-, Korean-, and Chinese-language services. Government agencies provide many printed materials in Spanish and attempt to hire translators as needed. Communities hold international festivals to celebrate the diversity of cultures.

There is much to celebrate. The 2000 Census reveals a rich and growing diversity in this state. Durham has become a county of minorities as whites, the largest group, now make up only 42 percent of the population. Hispanics account for more than 10 percent of the population in four rural counties and for more than 7 percent in six other counties.<sup>154</sup>

As we celebrate, we also see indicators that things aren’t what they should be. In February, for example, nearly 300 white students at Whiteville High School skipped the school-wide program marking Black History Month. Only 50 white students remained. Most of those who skipped had their parents’ permission to sign out of school.<sup>155</sup> In a recent national survey, Charlotte scored next to last out of 40 metropolitan communities on a measure of interracial trust. Guilford and Forsyth counties, which also participated in the survey, scored better than Charlotte, but lower than predicted based on their demographic profiles.<sup>156</sup> And both employers and landlords have been accused of shortchanging Hispanic immigrants while taking advantage of the language barrier and the immigrants’ ignorance about their legal rights.<sup>157</sup>

While justice demands better, economics requires it. Hugh McColl, before he retired as CEO of Bank of America, brought home this point during a speech in Raleigh.

“Almost immediately after we integrated our schools,” he said, “the Southern economy took off like a wildfire in the wind. Integration -- and the diversity it began to nourish -- became a source of economic, cultural, and community strength.”<sup>158</sup>

V.O. Key, Jr. praised us too soon and too well. In his 1949 classic *Southern Politics*, he wrote:

“The comfortable picture of the Tar Heel State as an area of progress, tolerance, and enlightenment is scotched most forcefully by North Carolinians themselves. ... They know that every liberation from every ancient taboo is bought or buttressed by shrewdness and hard work and endless patience. Yet they take pride in what they accomplish and seldom indulge in complacency that ignores work yet undone.”<sup>159</sup>

### Racial and Ethnic Composition of North Carolina

Non-Hispanic whites	70.2%
Non-Hispanic blacks	21.4%
Hispanics, any race	4.7%
Asian	1.4%
American Indian	1.2%
Other	1.1%

Source: 2000 U.S. Census

## Measure 1: Voter registration as a % of those eligible and voter turnout as a % of registered across racial and ethnic lines

**Target: Voter registration and turnout will be equally high across all racial and ethnic groups.**

Voting is a citizen's most fundamental right in a democracy. It is the first and primary way to bring everyone to the decision-making table. North Carolina shares with many Southern states a history, from before the modern civil rights era, of Jim Crow laws and poll taxes. This history should make us acutely aware of the need, as a state, to ensure open and equitable voting procedures and, as citizens, of the responsibility to exercise our right to vote.

Minority registration appears to lag behind that of whites. (See details in sidebar.) The State Board of Elections is purging the registration books of an expected 500,000 or more names of people who are deceased, have moved out of state, or lost voting privileges through a felony conviction. With those names removed and with the complete Census tabulations in hand, the board will be able to provide accurate breakouts of voter registration by race as a percentage of eligible voters. The board does not currently maintain statewide voter turnout by racial/ethnic group but will be able to provide that data when a new computerized reporting system is fully operational.<sup>160</sup>

In the meantime, the 1998 Current Population Survey of the U.S. Census gives a glimpse of the likely picture. Among non-Hispanics age 18 or older, it shows African-American registration lagging behind that of whites by about 9 percentage points (66.9 percent versus 57.4 percent). Hispanics have much more catching up to do. Only 12.2 percent of Hispanics – about one-quarter of Hispanics who hold citizenship -- were registered to vote. The survey also asked who had voted in the last election. On voting habits, African-Americans almost equaled whites but Hispanics fell even further behind.<sup>161</sup>

North Carolina Voter Registration by Race	
October 2000	
Whites	4,028,032
Blacks	979,488
Native Americans	42,523
Other	42,523
Source: N.C. Board of Elections	

## **Measure 2: Perception of equal treatment by law enforcement and of protection of rights by the courts, as measured by two questions on the North Carolina Citizens' Perception of Crime and Victimization**

**Target: At least 40 percent of all racial/ethnic groups will agree that "Law enforcement officers treat all suspects the same." At least 70 percent of all racial/ethnic groups will agree that the "Courts are concerned with the defendant's constitutional rights."**

Minorities' longstanding concerns about equal treatment in the criminal justice system have been heightened in recent years. Charges of racial profiling on traffic stops have been leveled against state and local law-enforcement agencies and led to passage of a state law (1999 SB 76) requiring of study of traffic stops by the N.C. Highway Patrol. Researchers at N.C. State University and N.C. Central University are currently analyzing the data. Questions about the fairness of trials and sentencing, along with the high proportion of African-Americans on death row, have spurred several legislative bills calling studies of the death penalty and a widespread campaign for a death penalty moratorium. The organization Human Rights Watch studied sentencing for drug-related crimes and found that in North Carolina, black males were sent to prison 27 times as often as whites, even though surveys show that the proportion of drug use varies little across racial lines.<sup>162</sup> Overall, minorities are represented in the state's correctional system at more than twice their proportion of the population.<sup>163</sup> While statistics do not prove unequal treatment, law enforcement and the courts are plagued by persistent perceptions of unfairness among the public.

Because of such concerns, the Governor's Crime Commission includes relevant questions on the North Carolina Citizens' Perception of Crime and Victimization Survey. The results show a wide gulf between white and minority views of law enforcement and the courts. Even among whites, however, only a minority see law enforcement as even-handed. Specifically, 3,000 randomly selected North Carolina residents in 1999 were asked to agree or disagree with the statements "Law enforcement officers treat all suspects the same" and "Courts are concerned with the defendant's constitutional rights." On the statement about law enforcement, less than one-third of respondents overall answered affirmatively that all suspects are treated the same. Among whites, 35 agreed, but among African-Americans, only 20 percent agreed. (Because of sampling size, breakouts are unavailable for smaller minority groups.) The courts fared better in public opinion, but a large racial divide remains with 69 percent of whites but only 51 percent of blacks seeing the courts as concerned with a defendant's rights.<sup>164</sup>

The same questions were asked in the 1997 survey, with responses roughly the same for law enforcement. The courts, however, had dropped in public opinion over the two-year period. A third question looked at the courts from a slightly different angle, asking whether juries were biased and unfair. The percentage who saw juries as biased roughly equaled those who did not believe the courts were concerned with the defendant's rights.<sup>165</sup>

### **Measure 3: The percentage of minorities and women in top wage-earning jobs and who own businesses, compared with the proportion of minorities and females in the total labor force**

**Target: Representation of minorities and women in the top wage-earning categories and among business owners will be equal to their proportion of the workforce.**

Minorities and women consistently earn lower incomes than do white men. One reason for the racial differences is that workplaces are highly stratified by color. A recent study from N.C. State University shows, for example, that managerial and professional positions are largely filled by whites. African-Americans concentrate in blue-collar and service-sector jobs. Hispanics are disproportionately represented among unskilled laborers and operatives. Differences in educational achievement may account for some of the disparities. Hispanic employment patterns also appear to follow the typical patterns of immigrant succession.<sup>166</sup> The differences among male and female earnings are even more striking. Women earn only 74 cents for every \$1 earned by men.<sup>167</sup>

For another look, we turn to the U.S. Census. Until the release of the 2000 pertaining to employment early in 2002, we must rely on the 1990 Census, taken when the great surge of Hispanic immigrants into North Carolina was just beginning. Top wage-earning jobs are broadly defined using three categories: managerial and professional specialty occupations; technical, sales, and administrative support; and precision production, craft, and repair occupation.

In 1990, racial minorities accounted for 25.6 percent of employed persons 16 and older but only 18.3 percent of persons in higher-earning jobs. Blacks fared even worse than minorities in general with 13.0 percent in higher-earning jobs. At first glance women appear in a much stronger position, accounting for roughly half of employed persons and half of persons in the designated occupations. The picture dims if the “pink collar” subcategories are removed -- such as administrative support, teachers and counselors, and sales clerks. With those occupations subtracted, female representation in the top wage-earning jobs drops about 15 percentage points, from 49.9 percent to 34.9 percent.<sup>168</sup>

Many state and local programs, such as the state’s Office for Historically Underutilized Businesses, reach out to give women- and minority-owned businesses an equal opportunity to compete for government contracts. The state also invests in nonprofit organizations that support minority business growth, including the Institute for Minority Economic Development and the North Carolina Community Development Initiative. Nonetheless, minorities are severely underrepresented among business owners, and the companies they own tend to be quite small. If companies jointly owned by men and women are included in women-owned businesses, then women represent a

healthy percentage of business owners. But, like minority-owned businesses, the companies garner only a small fraction of all receipts.<sup>169</sup>

Specifically, according to the 1997 Economic Census of Women- and Minority-Owned Businesses, women owned 24 percent of all North Carolina companies outright and 41 percent of all companies if joint ownerships are included. These firms, however, represented only 4 percent and 8 percent of total business receipts. Blacks owned 6 percent of all firms, which accounted for only .4 percent of receipts. Hispanics owned 1 percent of all firms, accounting for .2 percent of receipts. (Data on other minorities have not been released for 1997.) Comparisons with previous years are not reliable because of changes in the way ownership was determined.<sup>170</sup>

## **Goal 2: Residents will feel safe in their homes and neighborhoods**

No community will thrive unless its people feel safe. North Carolina has been making progress against many types of crime in recent years, but safety is not merely safety from crime. People also need to feel safe from disasters and secure that, in an emergency, they will receive prompt and competent assistance. Natural disaster planning, in particular, takes on added importance given long-term hurricane forecasts and the growing population in vulnerable areas.

### **Improvements in the fight against crime**

When North Carolinians saw crime increasing rapidly during the 1990s, they took swift action on a number of fronts. They built more prisons, increasing space from 20,674 to 32,323 beds; enacted the Structured Sentencing Act to keep violent criminals behind bars for their full sentence while providing community alternatives for non-violent criminals; increased community policing; established the Department of Juvenile Justice and Delinquency Prevention and set up Juvenile Crime Prevention Councils in every county, among other measures.<sup>171</sup> And crime has been dropping in recent years. Public action may have made a difference, but this downward trend also may have been facilitated by decreasing numbers of young adults, who are most likely to be involved in crime; a stronger economy; and a lessening of the turf wars that marked early crack-cocaine trafficking.<sup>172</sup> Wherever the credit belongs, the state's residents have noticed. A 1997 survey revealed that only 36.7 percent of respondents believed the state's criminal justice system was effective in controlling crime. The percentage increased to 51 percent in 1999.<sup>173</sup>

### **Lessons from Hurricane Floyd**

The state's emergency preparedness system had its most grueling test in September 1999, when Hurricane Floyd flooded 19,000 square miles of eastern North Carolina. Fifty-one people died, almost 86,000 homes were destroyed or damaged, and more than 48,000 people sought refuge in emergency shelters.<sup>174</sup> Total damages surpassed \$6 billion, and full recovery remains years away.

One of the most striking lessons of Floyd was how out of date existing floodplain maps are. Highway construction and other development have severely altered the landscape since most of the maps were drawn more than a decade ago. Traditional floodplain mapping is time-consuming and expensive, requiring surveyors to walk stream banks and note landscape features.<sup>175</sup> To speed the process, the state and the National Aeronautics and Space Administration are cooperating on an experiment using laser measurements taken from airplanes to chart land elevations.<sup>176</sup> In addition, the state -- in cooperation with local governments -- has undertaken to relocate more than 4,000 households out of harm's way using the Hazard Mitigation Program of the Federal Emergency Management Agency. Homes bought through the program are either moved or destroyed and the land consigned to public parkland or a similar open use.<sup>177</sup>

More challenges lie ahead. A new study by FEMA, for example, estimates that one in four homes within 500 feet of the U.S. coastline will be lost to erosion and rising sea level during the next 60 years.<sup>178</sup> North Carolina's Outer Banks, which are

naturally evolving barrier islands, are particularly susceptible to erosion. And new threats constantly arise. The Division of Emergency Management currently is helping coordinate the response to Europe's epidemic of hoof and mouth disease.<sup>179</sup>

The state's fire departments and emergency medical services also face substantial challenges. Fire departments statewide and EMS units in the east rely heavily on volunteers and are having increasing difficulty covering daytime emergencies. Of North Carolina's 50,000 firefighters, 45,000 are volunteers. Additional efforts may be directed toward improving training and service.<sup>180 181</sup>

**"Who's at risk?"**

If you're poor and a member of a minority group, your risk of being a victim of violence or a natural disaster is substantially higher.

The 1999 N.C. Citizen's Perception of Crime and Victimization Survey joined numerous other studies in finding that African-American and Hispanic males are at greatest risk of being physically assaulted. Persons with lower incomes also were more likely to be victims of violent crimes. Property crimes, however, were more often perpetrated against people with higher incomes.<sup>182</sup>

A study by East Carolina University also found racial disparities in the impact and recovery from hurricanes. African-Americans in coastal counties were more likely to experience hurricane damage even though they lived farther from the coast. Inland residential development in high-risk floodplains also tended to be predominantly poor and minority.<sup>183</sup>

## **Measure 1: Percentage of residents who feel safe in their homes and neighborhoods, as measured by the North Carolina Citizens' Perception of Crime and Victimization**

**Target: 85 percent will feel safe in their own homes from people who want to take their possessions.**

**99 percent will feel safe in their communities in the daytime.**

**65 percent will feel safe in their communities at night.**

“Perception is reality,” we heard time and again as we talked about crime with experts in law-enforcement and criminal justice and with community leaders. Few of us check crime statistics when deciding whether to go into a neighborhood, lock our doors, or install an alarm system. We go with our gut feeling, our perceptions. Because perceptions affect how we act, they have a ripple effect and can become self-fulfilling prophecies. If we avoid downtown because we don’t feel safe, downtown businesses suffer. Vacant storefronts increase the perception of danger -- the feeling that something or someone sinister could be lurking in the shadows. If fear keeps people behind locked doors at home, we lose the criminal deterrence of alert and knowing neighbors. Thus, any discussion of public safety warrants a look at public perception as well as crime statistics.

### **Measuring perceptions of crime**

The North Carolina Citizens’ Perception of Crime and Victimization Survey was first carried out in 1991 and was revived by the Governor’s Crime Commission in 1997 and 1999. The commission’s plans call for continuing the survey in 2001 and thereafter on a biennial basis. The survey solicits responses from 3,000 people selected randomly from across the state.

From the questions related to the perception of crime we selected three that relate to how people feel at the moment the survey is taken. They ask people to respond to the statements:

- In my own home, I’m not safe from people who want to take what I have.
- I feel safe going anywhere in my community or neighborhood in the daytime.
- I feel safe going anywhere in my community or neighborhood after dark.

Five potential responses are: *strongly agree*, *agree*, *have no opinion*, *disagree*, or *strongly disagree*. We combined the two agree statements into a single number and did the same with the two disagree responses.

### **Feeling safer, but a bit uneasy**

In the 1999 survey, a majority of the respondents on each question indicated they feel safe, but the size of the majority ranges from 59 to 90 percent. The lowest score relates to whether people feel safe going out in the community

at night. Among people 65 and older, women, and people with lower incomes, a majority indicated they did not feel safe going out at night.<sup>184</sup>

Generally, feelings of safety and perception of crime improved between 1997 and 1999. When asked to look forward, however, people were not highly optimistic. Almost half said they expected violent crime to increase during the next three years. While high, this nonetheless was a significantly better than two years earlier. It also was noteworthy that in 1999, 51 percent of respondents said the criminal justice system was effective, up from 36.7 percent in 1997.<sup>185</sup>

## Measure 2: Index rate of violent crimes and property crimes

**Target: The violent crime index rate will decline to 520 per 100,000. The property crime index rate will decline at least to 4,370.**

Native North Carolinians older than 40 wax nostalgic about life when families left their doors unlocked and their keys in the car. Today's reality is quite different. During the 1990s, North Carolina surpassed the nation in the rates of violent crimes and property crimes included in the FBI's Uniform Crime Report, and it continues to exceed the national rates. In 1999, in fact, North Carolina exceeded the national rate in property crimes by 25 percent.<sup>186</sup>

Both violent and property crime rates have been dropping over the past few years, however. North Carolina's violent crime rate -- covering murder, rape, robbery, and aggravated assault -- was 549.7 per 100,000 population in 1999. The state property crime rate for the same period was 4,683.5. Property crimes include burglary, larceny, and motor vehicle theft. Overall, the state's crime rate rose 9 percent from 1990 through 1999, but most of the increase occurred during the first five years of the decade. The rate actually dropped 3 percent between 1995 and 1999. By comparison, the overall U.S. crime rate saw a steady decrease throughout the '90s, for a total reduction of almost 27 percent.<sup>187</sup>

Some differences exist across geographic areas. In 1999, the crime rates in three eastern cities -- Fayetteville, Greenville, and Wilmington -- were significantly higher than the state average.<sup>188</sup> Although crime in urban areas tends to be higher than in rural communities, the gap has narrowed in recent years.<sup>189</sup>

Another interesting footnote is that the state's rate of motor vehicle theft has exceeded the national rate for at least 20 years.<sup>190</sup>

The Uniform Crime Report covers crimes reported to law enforcement. Some crimes, however, are never reported. The N.C. Citizens' Perception of Crime and Victimization, therefore, sheds additional light. Nearly 20 percent of the 3,000 respondents in 1999 reported being the victims of some type of crime during the year. About half of those said someone had broken into, or tried to break into, his or her car or home. More than a third of the crime victims (7 percent of those surveyed) reported a physical assault of some type.<sup>191</sup>

### **Trends in Juvenile Crime**

Crimes by juveniles attract considerable attention. While adolescence is a time of testing limits, no one wants childhood to end with a criminal conviction. There is also concern that adolescents who break the law are headed for much more serious trouble later on.

Like the overall crime rate in North Carolina, the data on arrests of persons younger than 16 show two distinct trends: A significant increase in crimes through the first half 1990s, peaking in 1996, followed by trend downward. Despite the recent decreases, however, juvenile arrests for violent crimes were 50 percent higher in 1999 than in 1989. Arrests for property crimes rose slightly more than 20 percent over the decade. These figures should be kept in the larger perspective. Juveniles were charged with only 2 percent of all violent crime and about 1 percent of all property crimes in 1999.<sup>192</sup> These data apply to crimes covered by the FBI Uniform Crime Report.

Trends in some lesser crimes also deserve notice, specifically, those for which more than 1,000 juveniles were arrested in 1999. Of those, disorderly conduct arrests increased almost 1,300 percent during the '90s, arrests for simple assault rose 330 percent, arrests on runaway charges doubled, and vandalism increased 70 percent.<sup>193</sup>

### Measure 3: State and county ratings in emergency preparedness

**Target: The state emergency management program will become the first such program to receive national accreditation. Targets for county emergency management programs will be developed once current preparedness levels have been assessed.**

The North Carolina Division of Emergency Management leads state and local agencies in helping citizens prepare for, respond to, and mitigate against injury and damage resulting from natural disasters and other emergencies. Its emergency response plan has been tested with some regularity as hurricanes have threatened or hit the state's coast each year since 1995. In an effort to ensure that the state is prepared for any type of disaster or emergency, North Carolina takes part in two complementary programs for assessing readiness. Both cover a range of components from crisis communications and finance to fire and rescue response. Other emergencies including natural disasters, hazardous material releases, and terrorism are also covered.<sup>194</sup>

#### **From readiness to accreditation**

FEMA requires the state to conduct a "capabilities assessment of readiness" every other year that is supervised by the federal agency. North Carolina takes the additional step of conducting the assessment on its own during alternate years. For the past two years the state's readiness has been rated 3.96 and 4.1 on a scale of 1 to 5.<sup>195</sup>

The Division of Emergency Management also is scheduled to be evaluated for national accreditation by its professional peers this fall. The accreditation standards, the NFPA 1600 Standard on Disaster/Emergency Management and Business Continuity Programs, which took effect February 1, 2000, were developed cooperatively by the National Fire Protection Association, FEMA, the National Emergency Management Association, and the International Association of Emergency Managers. North Carolina could become the first state in the country to win accreditation.<sup>196 197</sup>

#### **Local government emergency capacity**

To improve emergency preparedness at the local level, the Division of Emergency Management and the N.C. Emergency Management Association have been developing an assessment tool similar to FEMA's for local governments. The tool is intended to be used in establishing a state minimum standard and to help local officials direct resources appropriately. In 1999, about a quarter of the state's counties participated in a voluntary demonstration of the assessment tool. Of the nine functional areas examined, participating counties received average scores of 75 percent or better on categories dealing with immediate response. Scores were significantly lower on recovery measures and lowest of all (46 percent) in mitigating the impact of future emergencies or disasters.<sup>198</sup> A few more counties have taken the assessment since the initial demonstration. All 100 counties have emergency management plans.<sup>199</sup>

## Goal 3: North Carolinians will have adequate and affordable housing options.

Most people understand intuitively the difference good housing makes, not only for individuals and their families, but to the community as a whole. That's why:

- City leaders in Asheville, working on a strategic plan for sustainable development, placed the availability of housing for low-income families as the city's No. 1 weakness and the cost of overall housing at No. 4.<sup>200</sup>
- Rockingham County lists housing as its second goal in its economic development plan. "For any community, quality housing is a cornerstone of both quality of life and economic development," the plan says. "In scouting locations ... industry always examines the quantity and quality of available housing."<sup>201</sup>
- The Wilmington Chamber of Commerce includes affordable housing as one of its top 10 priorities. Discussing the cost-benefit analysis, the chamber says: "It is difficult to cite a specific dollar benefit to the resolution of the low-income housing problem in our community. Placement of a family in adequate housing leads to intangible health, mental, educational, and economic benefits to our citizens. Our ultimate goal should be to develop private home ownership of as many housing units as possible. This will result in significant economic benefits to all of us."<sup>202</sup>

Just as these communities have recognized locally, the state of North Carolina faces a significant challenge in meeting the demand for adequate and affordable housing. Renters and first-time homebuyers are being priced out of the market, not only in urban areas but in rural communities as well. One analysis suggests that a third of North Carolina renters cannot afford the fair-market rent for a two-bedroom home. In some communities, the proportion soars to more than 50 percent.<sup>203</sup> Purchasing a home, particularly for first-time buyers, is moving further out of reach as the gap between median income and housing prices widens.<sup>204</sup>

### **Affordability vs. sprawl**

One result of the affordability gap in urban areas is that families are moving farther away from central cities in search of homes they can afford. This movement brings us traffic congestion, threatens the natural environment -- including air quality, eats away at farmland and green space, increases the cost of infrastructure, and decreases the time people can spend with their families and in their communities. The catch phrase for this type of development is sprawl, and it's what we're seeing all over North Carolina. Urbanized land area is increasing at three to four times the rate of population growth in our largest cities. Statewide, vehicle miles traveled increased 37 percent while population grew only 15 percent between 1989 and 1998.<sup>205</sup> The Sierra Club lists Raleigh as the second most sprawl-threatened small city in America.<sup>206</sup>

Georgia had to experience even worse sprawl before being forced to face reality, Gov. Roy Barnes said in February 2000. The alarm sounded when the federal Department of Transportation withheld support for new highway construction

because of air quality problems, but he said it should have been clear sooner. "We were losing money," Barnes said. "Not just federal [highway] money, but money from businesses that were not coming in. This is not a tree-hugging, fuzzy-animal issue. This is about money. This is about continued prosperity. This is about family."<sup>207</sup>

### **Floyd made it worse**

No discussion of housing in North Carolina can be complete without reference to the devastation caused by Hurricane Floyd in September 1999. Eastern counties already shouldered a disproportionate share of substandard and overcrowded housing<sup>208</sup> when Floyd destroyed almost 8,000 homes, rendered 17,000 more uninhabitable, and damaged an additional 61,000.<sup>209</sup> Despite the collected efforts of federal, state, and local governments, massive volunteer relief and rebuilding programs, and private construction, the impact will be felt for years to come.

"More and more people are being isolated by class as people can't afford to live in the communities where they work." — Abdul Rasheed, President, North Carolina Community Development Initiative, Inc.<sup>210</sup>

## Measure 1: Percentage households paying more than 30 percent of their income for housing

**Target: The proportion of North Carolina renters paying 30 percent or more of their income in rent will decline to 25 percent. The proportion of homeowners with housing expenses exceeding 30 percent of income will decline to 13 percent.**

The term “affordable housing” is widely accepted to mean that households pay no more than 30 percent of their income on housing costs, including utilities and upkeep. Federal and state agencies and nonprofit institutions working on housing issues all converge on this measure. A household that pays more than 30 percent of income for housing may be unable to meet unexpected expenses, such as appliance or car repair and medical bills.

### **On the brink of homelessness**

These families and individuals are considered at risk of becoming homeless. Twenty percent of North Carolina households -- more than a quarter of a million -- fall into this category.<sup>211</sup> According to the 1990 Census, they included 34 percent of renters and 17 percent of homeowners.<sup>212</sup> Some pay a much larger portion of their income for housing. In the Charlotte area for example, 80,000 households exceed the affordable level of housing expenses. Of those, 30,000 pay more than half of their income on housing.<sup>213</sup>

Affordability can affect homeowners as well as renters. Among the former, low- to moderate-income elderly may face particular problems paying for repairs, property taxes, and fuel bills. The issue, however, affects a larger proportion of renters, who tend to have lower incomes overall. The less well-off a family, the graver the risk. The 1990 Census shows that 20 percent of renters and 8 percent of homeowners have incomes below 50 percent of the median income for their areas. To make matters worse for these families, they often pay more than they can afford for substandard housing.<sup>214</sup>

In September 2000, the National Low-Income Housing Coalition issued a report, titled *Out of Reach*, that provides another perspective on the issue. It calculated the median annual income of renters and compared that with the ability to afford the fair market rent in their area, as set by the U.S. Department of Housing and Urban Development. According to the report, 36 percent of renters in North Carolina cannot afford the fair market rent for a two-bedroom home. In Greenville and Wilmington, 47 percent of renters cannot afford a two-bedroom home. Raleigh and Asheville followed close behind. Some rural areas were even worse off, with more than half of renters priced out of the market.<sup>215</sup>

Statewide, the median fair market rent for a one-bedroom home is \$447, only slightly below the mean Social Security payment of \$468 (1990 level). Thirty percent of the state’s renters cannot afford even a one-bedroom home.<sup>216</sup>

The N.C. Housing Finance Agency estimates that *at least* 44,000 North Carolinians are now homeless. A quarter of them are children, most younger than 5. With 20 percent of households paying excessive housing costs, these numbers could easily grow. In fact, many of the homeless move in and out of

homelessness as jobs and financial crises fluctuate.<sup>217</sup> Given the downward pressure on incomes as manufacturing jobs decline, it is likely that the housing affordability gap will continue to widen. (See sections in this report on Economy and Workforce.) Another cloud on the horizon is the possibility that many homes currently available for rent subsidies will be coming off the market as the first wave of contracts expire on housing built with Section 8 federal tax credits. In North Carolina, this includes 274 housing projects.<sup>218</sup>

## **Measure 2: Affordability of home ownership – the median price of existing homes compared with median family income**

**Target: Average families in North Carolina will be able to afford a home of their own.**

Home ownership is part of the American dream, but for many North Carolinians, it has long been an impossible dream. In 1990, three out of four white families owned their own home, but only two out of four minority families did. Among all adults younger than 35, homeownership dropped to 44 percent.<sup>219</sup> Again, that was in 1990. Today, housing prices appear to be pushing home ownership further and further out of reach for a significant portion of the population.

A picture of the affordability of home ownership emerges from a comparison of the median price of existing homes on the Multiple Listing Service with what the average family can afford to buy. For the latter measure, we borrowed a rule of thumb from the lending industry and multiplied the median family income by two and a half.<sup>220</sup> Using this measure, the gap in affordability has tripled in the last three years alone.

Here are the specifics. According to the 1997 Current Population Survey, the median family income (for primary families) in North Carolina was \$43,467. A family at this income level typically can afford to buy a house valued at \$108,700. The median price of homes sold in North Carolina in 1997 was \$125,562. By 2000, the median family income had risen to \$46,000, which means this family could afford a home of about \$115,000. The median price of a home, however, had increased to \$169,981. All together, the gap in affordability widened from \$17,000 to \$55,000.<sup>221</sup>

This gap, we emphasize, is for families in the *middle*. Not the poor, who can afford even less, and not the wealthy, whose incomes have grown faster than other segments of the population.<sup>222</sup> Teachers, police, and firefighters -- to name a few who provide vital services -- often find themselves priced out of the housing market. The gap is particularly acute in urban areas, where it contributes to sprawl and traffic jams as families move farther from their workplaces in search of homes they can afford.

### **Measure 3: Percentage of households lacking complete plumbing and percentage of households overcrowded**

**Target: By 2020, all occupied housing in North Carolina will have complete plumbing and only 1 percent of occupied housing will be overcrowded.**

A dramatic record of improvement lies in Census statistics on housing. Between 1940 and 2000, the percentage of North Carolina homes lacking complete plumbing dropped from 76 percent to .43 percent. The Census defines complete plumbing as including hot and cold piped water, a bathtub or shower, and a flush toilet. It defines as overcrowded any home with more than 1 person per room. During that same 60-year period, overcrowded housing in North Carolina declined from 35 percent of all homes to 1.85 percent. Severely overcrowded homes (more than 1.51 persons per room) dropped from 18 percent to less than 1 percent.<sup>223</sup>

Statewide tallies miss significant disparities within the state, however. An analysis by the Rural Economic Development Center shows that substandard housing is disproportionately concentrated in rural areas. In 14 northeastern counties, more than 7 percent of all homes either lacked plumbing, were overcrowded, or met both conditions.<sup>224</sup>

In addition, Hurricane Floyd's flood may well have caused at least a temporary setback, particularly on overcrowded housing. The flood destroyed 7,642 housing units and rendered another 17,436 units uninhabitable without major repair, primarily in areas east of I-95.<sup>225</sup> As of July 2001, some 263 families remain in temporary travel trailers and mobile homes.<sup>226</sup> Many more have crowded into existing homes, often with other family members. That was the case in a Rocky Mount home where several people died last fall. Twenty people in an extended family were living in the four-room, 1,200-square-foot house when fire swept through. Some had lost their homes in last year's flood. They had no where else to go, at least no where they could afford.<sup>227</sup> Housing data from the 2000 Census will help clarify the extent of existing problems. Those data are scheduled for release later this year.

## **Goal 4: In every community, residents will have access to essential programs and services.**

Just as it takes a village to raise a child, it takes that same village to nurture an adolescent, support the parents (and aunts and uncles), encourage the grandparents, and -- increasingly -- lend a helping hand to the great-grandparents. In short, none of us are in this alone. Yet the strain of trying to go it alone shows up in statistics: one divorce for every two marriages,<sup>228</sup> 1,700 runaways,<sup>229</sup> an increasing number of North Carolinians reporting poor mental health days,<sup>230</sup> and more than 800 suicides every year with most being committed by the elderly.<sup>231</sup>

Support services can make the difference between a family that thrives and contributes to the community, on the one hand, and a family torn apart by physical and emotional overload on the other. There are numerous services, both formal and informal, that communities need to create healthy environments for their residents. We focus here on a few that answer the essential needs of families and individuals: the care of the young and the elderly.

Parents and adult children miss less work time -- and perform better on the job -- when they have safe and reliable care for their loved ones. Quality day-care programs prepare children for success in school while after-school programs keep youngsters involved in positive activities during prime hours for adolescent misbehavior. The importance of elder care programs grows as the population age 65 and older rises toward 2 million in the year 2020, with the greatest percentage increase in those 85 and older.<sup>232</sup> Our challenge is to enable elders to remain active, independent, and contributing members of society for as long as possible and to care for them when they can no longer care for themselves.

### **Women and their work**

Traditionally, the women of the family shouldered these responsibilities. North Carolina, however, has an equally strong tradition of women in the work force. Today, women make up 47 percent of paid workers in North Carolina.<sup>233</sup> These working women include two-thirds of mothers with children younger than 6.<sup>234</sup> For most families, the mother's income is not an option but a requirement. The economy also depends on it. With an unemployment rate of 5.3 percent, we would be hard-pressed to continue building the economy without the contributions of women.<sup>235</sup> America's increasing mobility heightens the role of community. Once, extended family might have been called on for supportive roles, but today many of us either live long distances from relatives or have outlived all who were nearby.

Only with strong families will we have vibrant communities. Douglas W. Nelson, president of the Annie E. Casey Foundation, was addressing concerns of families with young children when he wrote the introduction of the *2000 Kids Count Data Book*, but his words apply equally well across the age spectrum:

“In addition to real economic opportunities and relevant social networks, strong families also need high-quality support and services. These supports and services should be predictably available, accessible, affordable, responsive, and relevant to family needs and cultures. They should also make families feel confident that their community is working for and with them

to raise healthy, successful children. Strong families need to be reassured that community institutions and organizations will be there to both help them prevent problems from occurring and deal with them effectively if they do. Without these critical supports, family can feel isolated and even alienated.”<sup>236</sup>

### **Services for young children, and adolescents**

Two pieces that are missing from the following goals we hope to add soon. One will address pre-kindergarten, an issue that has taken on legal as well as social importance since the *Leandro* decision. While that decision requires North Carolina to provide pre-kindergarten for an estimated 40,000 at-risk children, it is not clear how a good pre-kindergarten program differs from the high-quality Child care that already is at the center of North Carolina’s early childhood focus. The National Center for Early Development and Learning, a program of the Frank Porter Graham Center at UNC- Chapel Hill, has received a three-year federal grant to help identify the common elements of successful school-related pre-kindergarten programs. When that study is completed, we should be able to add a measure for pre-kindergarten that will address quality rather than mere quantity.

The second missing piece concerns extended-day programs and other services for adolescents and teens. As George Sweat, secretary of juvenile justice and delinquency prevention said, “Schools are safe places to be. The problem begins after the final bell rings.”<sup>237</sup> Data on these programs are difficult to obtain because the programs are offered by myriad agencies, some public, some nonprofit, each serving a distinct constituency, and all with different reporting systems. The Governor’s Crime Commission has been working to help communities understand how to coordinate spending for programs to ensure a continuum of services, particularly for at-risk children and youths. By the end of 2001, it expects to have a menu of effective programs by which communities can judge their offerings.<sup>238</sup> This menu should provide a starting point for the development of our own measure.

“The future of rural areas will very much influence the future of many of our elderly and the strengths of older rural households will very much affect the future prosperity of their communities.” – Ann Johnson, chair, Governor’s Advisory Council on Aging<sup>239</sup>

The Lakota believe that if the old do not stay connected to the young, the culture will disintegrate. We are seeing signs of this disintegration in our culture. Children watch television instead of hearing stories. They are frightened and unruly, numb from hurry and overstimulation. Teenagers run in unsupervised gangs. Parents feel isolated and overwhelmed, and elders go days without speaking to anyone. No generation’s needs are truly met. Segregated societies are intellectually stagnant and emotionally poisoned. Only when all ages are welcome into the great hoop of life can a culture be a healthy one.” — Mary Pipher, *Another Country*.<sup>240</sup>

## **Measure 1: Of children in day-care proportion in child care facilities with star-ratings of three or higher**

**Target: By 2020, 85 percent of children in child care will be in facilities rated with three stars or higher.**

A considerable amount of public policy debate over the last eight years has focused on early childhood education. The rationale has been discussed so often and in such detail that it seems almost clichéd to repeat here. The rate of development is faster at this time of life, from birth to 5 years of age, than at any other. Or, to borrow the words from a learned summation of research in early childhood development: “What happens in the first months and years of life matters a lot, not because this period of development provides an indelible blueprint for adult well-being, but because it sets either a sturdy or fragile stage for what follows.”<sup>241</sup>

High-quality child care can be especially important for lower income children to help them catch up with their peers. Studies have shown that investments pay off. High-quality early learning experiences are positively correlated with better school performance and lower likelihood of committing crime later on.<sup>242</sup> The importance of these programs increases with the growing proportion of working mothers and the emphasis on moving welfare recipients into the work force.

### **Smart Start and T.E.A.C.H.**

Since 1990, North Carolina has launched two innovative early childhood programs that have become national models. The Partnership for Early Childhood Education, more often called Smart Start, encompasses child care and education, family support programs, and health services through a collaboration that involves state and local, public and private partners. Smart Start programs have been established in all 100 counties, but not all are fully funded. The T.E.A.C.H. (Teacher Education And Compensation Helps) Early Childhood Project provides scholarships to child care teachers in an effort to improve their educational level and wages and, as a result, reduce turnover. T.E.A.C.H. has now been copied by 15 other states.<sup>243</sup> Overall, the state provides subsidies for more than 100,000 children in child care. About two-thirds of those are children younger than 5 with the rest receiving after-school care subsidies.<sup>244</sup>

Still, we have far to go. Some 16,338 children remain on waiting lists for child care subsidies statewide.<sup>245</sup> High quality care is not equitably distributed, and although teacher turnover has been reduced, it remains high at 31 percent annually.<sup>246</sup>

Approximately 215,000 children are cared for in almost 9,500 settings regulated by the N.C. Division of Child Development. About 400 facilities sponsored by religious organizations receive notices of compliance that they meet health and safety regulations. All other for-pay facilities must be licensed. Until last year, licenses were graded A or AA, with the latter indicating the facility met a higher standard of care. In 2000, the state began

rolling out a 5-star rating system. The minimum license required is one-star. Facilities may voluntarily apply for higher ratings, which are based on program standards such as staff/child ratios, the educational level of the staff, and history of compliance with state guidelines. The state encourages facilities to work toward higher ratings by providing higher subsidies at the different grades. The five-star standard represents the highest licensing requirement in the country.<sup>247</sup>

The conversion to the star ratings is in progress. As of January, 7,492 facilities had obtained star-rated licenses. Of all the children in the star-rated facilities (130,677), 57 percent were cared for in facilities rated at three stars or higher.<sup>248</sup>

“We are reinventing how we rear children in America, and we’re finding new ways to support families in their responsibility for child-rearing, but we have a long way to go. The services we’ve developed so far are not up to the task of providing the support to families that we need to.” – Dick Clifford, co-director of the Frank Porter Graham Child Development Center, UNC-Chapel Hill<sup>249</sup>

“The elements of early intervention programs that enhance social and emotional development are just as important as the components that enhance linguistic and cognitive competence. Some of the strongest long-term impacts of successful interventions have been documented in the domains of social adjustment, such as reductions in criminal behavior.”<sup>250</sup>— *From Neurons to Neighborhoods*.

<b>Child Care Facts and Figures for North Carolina</b>	
Total number of children in regulated child care centers and homes	213,988
Number of children receiving child care subsidies (plus 39,000 school-age children in after-school programs)	62,000
Costs of child care	Varies according to location, quality, and age of child.
Costs of child care for an infant	More than <b>\$7,000</b> a year for quality care
Source: Division of Child Development Monthly Statistical Summary, January 2001; Ball, et al, Position Paper on North Carolina’s Early Care and Education System, January 2001.	

## **Measure 2: Number of counties with core long-term care services for the elderly as defined by the state's Long-Term Care Task Force**

**Target: Every North Carolinian will have ready access to a core set of long-term care services.**

The aging of the population will increasingly strain our ability to cope unless North Carolina takes steps now to shore up its long-term care system. By this, we mean not merely institutional services such as nursing homes, but also home-delivered meals, home-health aides, Medic Alert and other services that enable people to live as independently as possible in the community. Such services may delay or eliminate the need for institutional care.

### **A growing need for community care**

The Long-Term Care Task Force of the North Carolina Institute of Medicine projects that by 2010, the number of persons 18 or older requiring assistance will increase by about 84,000, or 20 percent, to almost 420,000 people. (Older adults make up about half of those requiring assistance.) With appropriate services, the vast majority (87 percent) will be able to remain in the community. Yet even now, an estimated 11,000 North Carolina elders who need some form of long-term assistance are not being served.<sup>251</sup>

After a year long study, the task force noted that North Carolina's current long-term care services are so fragmented and duplicative that it was difficult to obtain accurate data. The data that are available show that the availability of long-term care services varies greatly from county to county. This applies both to institutional and community-based resources. In March, the task force released a comprehensive report outlining strategies for improvement. The recommendations range from smoothing entry into the system to improved planning at the local level. The report also deals with such critical issues as the adequacy of the long-term care work force, quality assurance, and financing.<sup>252</sup>

We focus here, as an indicator that North Carolina is taking the necessary steps, on the availability of services. As the task force report recommends:

Every North Carolinian should have access, either in the county of residence or within reasonable distance from the county, to the following long-term care services:

1. Long-term care information and assistance services
2. Transportation
3. Housing and home repair and modification assistance
4. Home-delivered meals
5. Durable medical equipment and supplies
6. Medical alert or related services
7. Nursing services
8. Respite care, adult day care/day health, or attendant care.

9. In-home health care
10. Adult care homes
11. Nursing homes
12. Care management for high-risk or complex conditions

In addition to the long-term care services listed above, older adults and people with disabilities need other medical, mental health, dental, vision, and hearing services to meet specific health and functional needs. Individuals who have functional, medical, or cognitive impairments may also need guardianship services or protective services to ensure that their long-term care needs are being met.<sup>253</sup>

The emphasis on community-based care, where appropriate, should enable elders to live more satisfying lives. It also will reduce the burden on the state treasury. Community services for a disabled adult, on average, cost \$69 a day compared with \$89 a day for nursing home residents. In 1999 Medicaid paid \$1.3 billion on publicly funded long-term care services for older adults in North Carolina. Some 70 percent of those expenditures went for nursing homes with another 9 percent for adult care homes.<sup>254</sup> Service agencies, however, have begun to emphasize home and community care and propose increasing its proportion of the long-term care budget.<sup>255 256</sup>

“Ideally, long-term care services would be provided by home- and community-based programs or families on behalf of their loved ones. These services should enable individuals to live as independently as possible without casting them into poverty.”<sup>257</sup> —  
*Long-Term Care Plan for North Carolina*

Nearly half of North Carolina’s elders live in rural communities. These rural elders have higher rates of disability, lower incomes, less education, and lower reading ability than do their counterparts in towns and cities. They have a higher need for long-term care services yet have less access to those services and to education on self-care. Among the services particularly lacking in rural areas are mental health care, specialty medical care, and long-term coordination of care. “In an urban county, you might have 50 different agencies for care management and in a rural county you might have nobody,” said Kim Dawkins Berry, director of the Area Agency on Aging, Piedmont Triad Council of Governments.<sup>258</sup>

### **Measure 3: Number of comprehensive caregiver resource centers for family members caring for impaired older adults**

**Target: North Carolina will have at least 10 comprehensive caregiver resource centers to provide support for family members caring for impaired older adults.**

With age and chronic disease comes the need for help with daily living. At one level, help may be needed with transportation, meal preparation, or managing finances. Older adults also may need help at a more basic level — with personal grooming, being able to move from bed to chair, eating. In 2000, about 131,000 adults 65 and older in North Carolina had functional impairments encompassed by the latter category. Most of the responsibility for helping these elders fell on family or friends. More than half of these impaired older adults received help only from unpaid, informal sources. Another third received combination of formal (paid) and informal. It is particularly noteworthy that even among those with three or more limitations on daily activities, half received only informal assistance.<sup>259</sup>

#### **They get by with very little help**

As rewarding as caring for a loved one can be, it also can cause stress and fatigue. Many primary caregivers are sandwiched between the needs of their older parents and their own children. Others are themselves elderly and in declining health. Some have no other reliable family members to provide relief. And some, however willing, find themselves ill-equipped for the physical and emotional demands.

These family members need and deserve the community's respect and support in fulfilling the role of caregiver. The state and some localities currently provide assistance, such as respite care through a number of different programs. But like other long-term care services, the statewide record is spotty.<sup>260</sup>

The N.C. Division of Aging, which has primary planning responsibility for meeting the needs of elders and their caregivers, advocates for the establishment of comprehensive caregiver resource centers in every county. These centers would assist family members caring for impaired older adults. Currently, there are no such programs in the state, but this recommendation dovetails with new funds (\$4 million for North Carolina made available through the federal Older Americans Act. The federal money is targeted to family caregiver support programs that provide information on and assistance in locating services; caregiver counseling, training, and peer support; and respite care.<sup>261 262</sup>

"There are only four kinds of people in the world: those who have been caregivers, those who currently are caregivers, those who will be caregivers, and those who will need caregivers."<sup>263</sup> — Former first lady Rosalyn Carter

"As a nation, we are not organized in a way that makes aging easy. Right now we are in a crisis. We lack the housing arrangements, social structures, traditions, and wisdom to make the last years of life manageable. No one wants to die surrounded by hired help. No one wants their parents to be anxious about money and in pain in their last years. Yet these things happen all the time."<sup>264</sup> — Mary Pipher, *Another Country*

# A Quality Education for All

## Vision

**A quality education is essential to success in an increasingly competitive, ever changing workplace. In order for citizens to be contributors to the state's economy, culture, social and religious communities, as well as the overall well-being of the state, a sound education is necessary to provide the tools needed to make wise and informed decisions. So that North Carolina's children and adults will also actively participate in our democratic government, it is crucial they are offered a quality education from early childhood past retirement.**

**North Carolina's education system will strengthen public schools so every child has an equal opportunity to succeed, and every graduate is ready for work or additional education. All citizens will have access to continuing education opportunities through a seamless education partnership between the secondary and post-secondary educational systems in the state.**

***For the education system to be effective, every child will start to school healthy and ready to learn.***

### **What Quality Education for All Means**

"America's schools are being buffeted by change: new expectations for what children should learn, new technologies for delivering instruction, new proposals for how to govern and define public schools. As the nation strides into a new century, developments on all those fronts are bound to take unpredictable turns. But one change is certain: The school-age population of the United States is growing and shifting in ways that pose significant challenges and offer unrivaled opportunities." (*Education Week*, September 27, 2000)

North Carolina cannot have a competitive workforce, prosperous economy, vibrant communities and active and involved citizens unless it has a quality education system for those in the public schools and for those seeking job retraining and higher education.<sup>265</sup>

### **What are the Quality Education Issues for North Carolina?**

- North Carolina has **the fourth fastest growing enrollment in the public school system** in the country. Students enter the system speaking more than **180 languages**. Can the current system of financing public schools provide the resources for a growing, diverse student population?
- With a growing nonwhite population in the schools, projected to outnumber whites later this century, how do we increase the number of nonwhite teachers in the school system? 85% of the teaching force is white.

- Studies and the state's own testing scores demonstrate that, while some progress is being made in closing achievement gaps based on race and poverty, the gaps remain wide and the pace at which the gaps are being closed is slow.
- North Carolina cannot have a prosperous economy in the 21<sup>st</sup> century if a significant portion of its citizens do not have basic reading and math skills.
- Low-wealth communities and school systems facing resegregation have difficulty attracting and keeping teachers and other personnel. Students in these schools cannot get a quality education if they do not have competent classroom teachers.
- By 2010 it is estimated that 85 percent of all jobs will require competencies equivalent to 14 or more years of education. **North Carolina cannot have a prosperous economy unless more citizens get a 14-year education or a college diploma.**
- North Carolina ranks 6<sup>th</sup> among the 50 states in total state funding on higher education (for public universities and community colleges) and ranks 10<sup>th</sup> in percentage of public higher education institutions according to a study by the N.C. Center of Public Policy Research. Yet North Carolina ranks 34<sup>th</sup> in college going rates among the states according to the N.C. Center.<sup>266</sup>

North Carolina has taken steps to increase salaries of teachers, instructors and professors. But with enrollment increasing in all education institutions, a looming shortage of teachers and other personnel means students may be getting less, not more attention in classrooms.

To achieve the vision of a quality education, North Carolina must ensure that more of our citizens get 14 or more years of education and that those of all ages have access to learning environments that encourage them to succeed. Measures for achieving those goals include reducing the adult illiteracy rate, decreasing the dropout rate, improving test scores and narrowing the achievement gap. These steps for achieving progress are critical if our citizens are to be competitive not only in their own communities, but in the international economy.

To address issues and to define ways of measuring progress, a working group of the North Carolina Progress Board met with education officials and held listening sessions across the state. In addition, staff for the Board interviewed a broad range of individuals to identify goals for ensuring a quality education for our citizens. After goals were identified, education officials and other individuals were asked to review the goals and measures.

**Goal 1: North Carolinians will have a basic 14-year education, and graduates will demonstrate competencies in critical and analytical thinking, teamwork, communication skills, problem solving, use of numbers, data and technology so they have the knowledge and skills needed to be competitive in the global economy and to fully participate in our democratic system.**

“Every American youth and adult needs to acquire 21<sup>st</sup> Century Literacy...the ability to read, write, and compute with competence, think analytically, adapt to change, work in teams, and use technology,” according to a report by the national 21<sup>st</sup> Century Workforce Commission.<sup>267</sup>

A quality education system is one of the key indicators that businesses review in determining whether to expand or locate new facilities in a state. “Companies don’t want lip service about changes in education. They are going to demand more from education. They are willing to help but they need honest feedback on what is happening,” states one corporate executive interviewed about North Carolina reforms.

**Why We Cannot Accept the Achievement Gap**

“The demands of the new economy make it necessary for all students to achieve at a high level,” according to Tom Vander Ark, Executive Director of Education for the Bill and Melinda Gates Foundation. Speaking at the 2001 N. C. State University Emerging Issues Forum, he stated “erasing the achievement gap is one of the most important issues facing society.”<sup>268</sup>

“We accept the current gaps because we don’t think about the consequences down the road,” says Robert Bridges, former Wake County School Superintendent and Chair of the Advisory Commission on Raising Achievement and Closing Gaps.<sup>269</sup>

**Testing**

To find out if students are learning the basic skills, North Carolina and many other states started a variety of testing options as part of “standards-based reform,” in the 1980s. Parents, educators, researchers and others have raised questions about the merits of testing.

*Education Week* reports, “In particular, the assessments now being used to judge whether students and schools have met state standards leave much to be desired. In too many states, the tests still focus too much on low-level, multiple-choice questions and are poorly aligned with the standards they are designed to measure. In too many states, students’ academic fates rest too heavily on performance on a single test.”<sup>270</sup>

Policymakers and many elected officials are reviewing concerns but see test results as a way of holding schools accountable.

“Forty-nine states now have statewide academic standards for what students should know and be able to do in at least some subjects; 50 states test how well their students are learning; and 27 hold schools accountable for results, either by rating the performance of all their schools or identifying low-performing ones,” according to the “Quality Counts 2001” study by *Education Week*.<sup>271</sup>

**Target 1: By 2010, nine out of 10 students score at or above grade level on End-of-Grade (EOG) and End-of-Course (EOC) examinations. (A target in the *First in America 2010 report*)**

North Carolina began testing students in math and reading in grades 3 through 8 in 1992-93 with a program developed by the Department of Public Instruction. More than 577,000 students took the tests in 1999-2000. Students are given end-of-the-course tests in 11 courses in high schools.<sup>272</sup>

**Ethnic/Racial Lens**

Score disparities exist among white and racial/ethnic subgroups on the end-of-grade and end-of-course tests. Given the increasing diversity of the student population, an even greater focus is needed on the achievement gap. Pilot projects are underway across the state to address the disparities, but significant steps must be taken if the state is going to have a competitive workforce in 2010 and 2020.

“In looking at the achievement gap, we need to be asking the question whether we can have the same strategy for African-Americans, Asians and Hispanics,” says Dr. Nolo Martinez, advisor to the governor on Hispanic/Latino affairs.<sup>273</sup>

Dr. Claudie Mackey of Elizabeth City State University is working on an initiative in Northeastern North Carolina to help students with the testing process. He says it is important for students to know they should go through a test and solve the easiest problems first, then to use their time to focus on more difficult problems since many of the tests are time-driven.<sup>274</sup>

Teaching strategies may be used by local school districts to identify particular skills and weakness of students and thus help students succeed on the test and also learn the subject matter.

**Measure 1: The percentage of students passing end-of-grade tests in grades 3-8 on average must move from 75% to 90% in reading and from 80% to 90% in math. On the end-of-course exams, current scores at or above grade level range from 47% in history to 73% for physics. Students must improve from 17 to 43 percentage points in end-of-course exams.**

<b>Percentage of Students Passing End of Grade Tests (1999-2000)</b>		
<b>Reading</b>		
<b>Grade 3</b>	<b>Grade 5</b>	<b>Grade 8</b>
74.4%	79.1%	82.5%
<b>Math</b>		
<b>Grade 3</b>	<b>Grade 5</b>	<b>Grade 8</b>
71.8%	82.9%	80.6%
<b>Percentage of Students Passing End-of-Course Tests (1999-2000)</b>		
Algebra I	69%	
Algebra II	63%	
Geometry	60%	
Physical Science	57%	
Biology	58%	
Chemistry	62%	
Physics	73%	
ELPS	67%	
English I	68%	
English II	58%	
US History	47%	

*(Source: Department of Public Instruction)*

**Target 2: N.C. will be one of the top 10 states on NAEP examinations by 2010. (A target of First in American 2010 report.)**

The National Assessment of Educational Progress (NAEP) is an important measure in gauging how North Carolina students are doing compared to other students in the nation.

The NAEP, often called the nation's report card, is a federally mandated project that assesses students in grades 4 and 8 in various subject areas at different intervals from every two to six years.<sup>275</sup>

**Measure 1: North Carolina must move up 2-12 spaces in various grade levels to meet the target of being one of the top 10 states.**

(2000 test scores in Math show North Carolina is making progress in reaching this goal.)

North Carolina's National Assessment of Education Progress Scores				
Grade 4	Reading	28%	Proficient Tied for 22 <sup>nd</sup>	1998
Grade 4	Math	27%	Only two states are above N.C. and 18 others are in the same range	2000
<b>Grade 8</b>	<b>Reading</b>	<b>31%</b>	<b>Tied for 12<sup>th</sup></b>	<b>1998</b>
<b>Grade 8</b>	<b>Writing</b>	<b>27%</b>	<b>Tied for 6<sup>th</sup></b>	<b>1998</b>
<b>Grade 8</b>	<b>Math</b>	<b>30%</b>	<b>Only four states above N.C. and 18 others in the same range</b>	<b>2000</b>
<b>Grade 8</b>	<b>Science</b>	<b>24%</b>	<b>Tied for 24<sup>th</sup></b>	<b>1996</b>
<i>Source: NAEP, National Center for Education Statistics, N.C. Department of Public Instruction</i>				

**Target 3: N.C. students rank above the national average on The Third International Mathematics and Science Study (TIMSS) and have scores competitive with the countries in the top tier of the study.**

Our students must have academic skills comparable to those in other nations if North Carolina is going to have a competitive workforce in the global economy. Thirty-eight nations participate in the Third International Mathematics and Science Study (TIMSS-R). Twenty-seven states and districts participate in a voluntary benchmarking study.

Among findings from the study:

- “Between 1995 and 1999, there was no change in eighth-grade mathematics or science achievement in the United States.”
- “There was an increase in mathematics achievement among U.S. eighth-grade black students between 1995 and 1999.”<sup>276</sup>

**Measure 1: North Carolina students must increase their scores in math and science to reach the U.S. average**

North Carolina's math scores were comparable to the countries of England and New Zealand with 18 countries having higher scores and 17 countries having lower scores.

In science, North Carolina scores were comparable to New Zealand. 17 countries had higher scores and 18 had lower scores.

	U.S. Average	N.C. Average	International Average
Math	502	495	487
Science	515	508	488
<i>Source: N.C. Department of Public Instruction and TIMSS 1999 International Reports</i>			

**Target 4: Ninety-five percent of North Carolina students will finish high school and 60% will have at least two years of education beyond high school by 2010. (That 95% of North Carolina students will finish high school is a target in First in America 2010.)**

If 85 percent of all jobs in 2010 require competencies equivalent to 14 or more years of education, then North Carolina students must not only finish high school they must also seek higher education. If our students don't graduate from high school, then they won't get good jobs and earn adequate wages.

There were 100,505 students who entered the ninth grade in North Carolina in 1995-96. About 60%, or 60,081 students graduated from high school in 1998-99. So 40,000 students either dropped out along the way, graduated later or were among the 6,394 students receiving a high school equivalency degree that year. <sup>277</sup>

**Measure 1: Ninety-five percent of the population must complete high school and another 16% of current population over age 25 must get a diploma**

**An increase in enrollment in community colleges, colleges and universities must be seen**

Currently 79.2% of North Carolinians over age 25 have completed high school. Only three states West Virginia, Alabama and Kentucky have lower high school completion rates than North Carolina which tied with Texas for the 46/47 spot. <sup>278</sup>

**To reach the target of High School Diploma Rate - Whites 81.7% Blacks 72.1% Hispanic 41.4%**  
(Source: U.S. Census Bureau)

<b>Fall Head Count Combined Enrollment for Community Colleges, Colleges and Universities <sup>279</sup></b>		
<b>1978</b>	<b>1988</b>	<b>1998</b>
251,385	324,288	378,867
<i>Source: UNC General Administration</i>		

**Target 5: The average SAT score in math and verbal will be equal to the national average by 2010.** *(First in America 2010 set a target of one of the top ten by 2010. This report selected national average because it would be difficult for North Carolina to move up 28 to 38 rankings by 2010, but it could achieve the national average by then.)*

The Scholastic Aptitude Test (SAT) is used as a measure in this report because it is widely recognized by the media and policymakers as an indicator of progress in education. The scores used here are actual scale scores as well as an adjusted scale score to take into account the participation rate in North Carolina.

The SAT is a test score used by many colleges and universities in evaluating a student's readiness for college.

- North Carolina ranks 10<sup>th</sup> in the nation with more than 44,183 students taking the test in 2001.<sup>280</sup> *The North Carolina Public University System requires the test, which increases the number of students taking the test.*

The use of the SAT as a measure has become controversial because some educators have argued that it is not a true reflection of a student's performance or of the state's school system. The debate over the SAT has increased with the decision by the University of California System President Richard Atkinson that the SAT I no longer be required for admission to the system. *(The system will continue to use other levels of the SAT for admissions. These tests are in specific subject areas.)*

Atkinson states, "Anyone involved in education should be concerned about how overemphasis on the SAT is distorting education priorities and practices, how the test is perceived by many as unfair, and how it can have a devastating impact on self-esteem and aspirations of young students."<sup>281</sup>

Year	Scale	N.C. Score	Rank	US Score
2000-2001	Actual	992	47 <sup>th</sup>	1020
	Adjusted	1035	32 <sup>nd</sup>	1049
1999-2000	Actual	988	48 <sup>th</sup>	1019
	Adjusted	1029	38 <sup>th</sup>	1053

To reach the current average, North Carolina students' scores need to increase by 28 points for the actual score and 14 points for the adjusted score. However as North Carolina makes progress in trying to reach the national average, so do other states. That means North Carolina must take additional steps to improve its ranking.

In a release about the SAT, State Board of Education Chairman Phil Kirk says that many North Carolina students do not take enough rigorous courses to prepare them to do well on the SAT. The College Board, which administers the SAT, cites students taking more rigorous courses early in their academic careers as the best preparation for the SAT.

Kirk also cautioned against using the SAT as a gauge of overall state education performance. The College Board states that the SAT scores are useful in making decisions about individual students and their academic preparation for college and that it is 'unfair' to use the scores to rank or rate teachers, educational institutions, districts or states.<sup>282</sup>

School districts in the state are not required to provide SAT preparation and that may have some impact on the scores.

*In addition to the measures listed above, later this decade North Carolina will begin requiring students to pass high school exit exams to receive a high school diploma. Future reports will include that measure.*

To improve test scores, increase the high school completion rate and narrow the achievement gap, students must be in schools that create a supportive learning environment. Students will not seek a 14-year education if they do not feel that schools encourage them to achieve their potential.

## **Goal 2: All public school students will have access to schools that create a supportive learning environment in which every student is provided an equal opportunity to reach his or her potential.**

A supportive learning environment for students includes involvement of parents in activities, resources for schools to help students achieve their potential, quality teaching and strong administrative support and recognition of the needs of a diverse population.

- “Education for the 21<sup>st</sup> century means that we have to have diverse learning opportunities and get out of the buildings. We need to move schools back to the community and engage all of the community,” states Linda Harrill, President, Communities in Schools of North Carolina.<sup>283</sup>
- “Getting the public involved in public schools” was emphasized repeatedly by speakers at the 2001 N.C. State University Emerging Issues Forum.

Creating a supportive learning environment becomes more difficult with the growth in population and the increasing diversity of the student population. Large high schools have become dehumanizing institutions according to Tom Vander Ark, Executive Director of Education for the Bill and Melinda Gates Foundation. “We know how to create good, small schools. Do we have the courage to do what we need to do to create caring orderly schools?”<sup>284</sup>

### **Public Support for Schools**

North Carolinians have a positive attitude about public schools according to a Carolina Poll released in the spring of 2000.

- “More than half of those polled (52.3 percent) said they would give the public schools in their communities a grade of A or B. Another 26 percent would give the grade of a C. In total more than three-fourths of those polled (78 percent) would give public schools in their communities a C or above. Fourteen percent grade their schools with a D or F.”<sup>285</sup>

### **Mixed Grades**

*Education Week* in its “Quality Counts 2001” report gave North Carolina mixed grades, with mostly Bs and Cs.

- D- was the grade for school climate based on class size, student engagement and parent involvement, and choice and autonomy.<sup>286</sup>

## Funding

The disparity in funding among schools and school systems has an impact on school environment. Funding determines the ability of the systems to attract and retain quality personnel at all levels.

- “In the 1998-1999 school year, the gap between local school current spending in the state’s richest and poorest counties amounted to a difference of \$1,201 per student – a gap of \$31,225 for an average class of 26,” according to a local school finance study by the Public School Forum of North Carolina.<sup>287</sup>
- The study notes that the gap continues to widen between the highest spending and lowest spending counties.

The General Assembly has attempted to address the funding inequity through funding for low-wealth and small school systems.

### Adequate Funding for At-Risk Students – The Leandro Case

- A number of school systems and parents challenged the state's funding system in the *Hoke County v. N.C. State Board of Education* court case. In 2000, Superior Court Judge Howard E. Manning Jr. ruled that the state must provide preschool for at-risk 4-year-olds. In March 2001, Manning ruled that state and local leaders had one year to come up with a “coordinated, effective educational strategy for at-risk children statewide.” The ruling left many leaders wondering if programs for other students would have to be cut to provide for at-risk students.
- The two rulings could very well change how the state allocates resources. If the state does not develop a plan that meets the needs of all students, then North Carolina will have a tough time increasing its national rankings in many of the measures in Goal 1 and in Goal 2.

## Ethnic/Minority Lens

Does the school environment have an impact on the achievement gap, particularly the placement of minorities in special education programs?

- North Carolina African-American children are over four times more likely than white students to be designated as mentally retarded and 2.76 times more likely than whites to be classified as “emotionally disturbed,” according to a study by Tom Parrish for the Harvard Civil Rights Project.<sup>288</sup>

A supportive learning environment recognizes the diverse needs of students and helps them achieve their potential. Indicators of a supportive learning environment include a reduction in the dropout rate, access to quality teachers, the accountability of individual schools, and awareness by parents of support for his/her child in school.

**Target 1: North Carolina is among the top 20 states with the lowest high school dropout rate.** *(First in America 2010 set a target of top 10)*

Keeping students interested in schools is part of building a supportive learning environment. Studies show who drops out and why.

- “We know that low expectations and academic and career-preparation programs that are not challenging will not keep students in school. We know that students who have fallen behind in reading, mathematics and writing are those who are most likely to drop out of schools when they get to high school. We know that children who get a poor start and are not ready to begin first grade are more likely to drop out of school later. We know that schools alone cannot solve the dropout problem. Preventing teenagers from dropping out of school requires services from and cooperation among schools, community agencies and local businesses,” states a report by the Southern Regional Education Board.<sup>289</sup>

**Dropping out Means Lost Wages**

The *New Economy Index* reports, “In the 1970s, a high school dropout was 3.5 times more likely to be unemployed than a college graduate. In the 1980s and 1990s, that ratio has increased to 4.5.”<sup>290</sup>

**Measure 1: North Carolina must move up 20-28 rankings to become one of the top 20 states with the lowest dropout rates.**

- The percentage of 16 to 19 year-old teenagers who are not enrolled in school and are not high school graduates is 12%. North Carolina is tied for 41<sup>st</sup> with four other states according to research by the Annie E. Casey Foundation.<sup>291</sup> *(This ranking differs slightly from the high school completion rate measure in Goal 1 and the DPI data below because of the age group used and the years used to compile the data.)*

Data compiled by the N.C. Department of Public Instruction shows a gradual decline in the dropout rate of students’ grades 7-12. (State officials say the dropout rate increased after 1997-98 because of a change in the definition of dropouts. These percentages only look at one year compared to the previous year and not to a period of years as used by the high school completion rate. The numbers in this measure also include the 7<sup>th</sup> and 8<sup>th</sup> grades.)

<b>Dropout rate of grades 7-12</b>		
1997-98	19,541	3.61%
1998-99	25,578	4.6%
1999-00	24,596	4.34%
<i>Total</i>	<b>69,715</b>	
<i>Source N.C. Department of Public Instruction</i>		

Whatever measure is used, the dropout rate, the adult illiteracy rate or the high school completion rate, North Carolina is not making significant progress in getting citizens to complete a K-12 education.

**Target 2: By 2010, N.C. is among the top 10 states in the percentage of teachers who are fully licensed and one of the top 10 states in the percentage of teachers teaching in their field. (First in America 2010 has the same target)**

“America’s future depends now, as never before, on our ability to teach. If every citizen is to be prepared for a democratic society whose major product is knowledge, every teacher must know how to teach in ways that help them reach high levels of intellectual and social competence. Every school must be organized to support powerful teaching and learning,” according to a report by the National Commission on Teaching & America’s Future.<sup>292</sup>

North Carolina led the nation in improving teacher quality according to the “Quality Counts” study by *Education Week*.

- The state received a B+ for its efforts.<sup>293</sup> State teachers score close to or at the national average on teacher examinations. North Carolina has also taken significant steps to improve teacher salaries.

<b>1999-00</b>	<b>N.C. Average</b>	<b>\$39,220</b>
	<b>US Average</b>	<b>\$41,819</b>

**N.C. Rank 23**

(Source Department of Public Instruction)

North Carolina has moved from 43<sup>rd</sup> in 1997-97 to 23<sup>rd</sup> in 1999-00.

<b>Teacher Salary Information</b>			
<b>School year</b>	<b>Avg. N.C. Salary</b>	<b>Avg. US Salary</b>	<b>N.C. Rank</b>
1996-97	\$31,286	\$38,611	43 <sup>rd</sup>
1997-98	\$33,129	\$39,454	38 <sup>th</sup>
1998-99	\$36,898	\$40,582	29 <sup>th</sup>
1999-00	\$39,220	\$41,819	23 <sup>rd</sup>
<i>Source: National Education Association and First in America 2010</i>			

Recruiting new teachers and other personnel becomes a critical issue for the state as more and more retire or seek new careers.

- North Carolina needs about 10,000 new teachers each year for the growing student population and to replace those teachers who leave.
- According to a State Board of Education 1998-99 report on teacher turnover, “The 117 school systems reported that 11,761 of the 87,723 teachers employed during the 1998-99 school year left their systems for a statewide turnover rate of 13.44%.” This is up slightly from the rate of 12.30% reported for the 1997-98 school year.

Respect is one of the key issues for teachers according to John Wilson, former executive director of the North Carolina Association of Educators and now executive director of the National Association of Education.

- “Young teachers look at things differently. They do not come into the system saying I am going to stay 30 years. When I talk in college education classes, I ask them where they plan to be in five years, and very few say that they will be in the classroom. So they do not see staying for the long haul.”
- “We have to increase the pay and take away some of the nonprofessional duties and responsibilities and improve the treatment of teachers.”
- “They need office space and telephones.”  
“They want to be treated like professionals.”<sup>294</sup>

**Measure 1: To meet the target of having quality teachers in the classroom, North Carolina must move up 13 spaces in the rankings in the number of teachers meeting licensure requirements and 12 spaces in the rankings for teachers teaching in field**

As the demand for more new teachers grows, getting licensed teachers becomes difficult. While the current ranking for teaching in field is above average nationally, only 66% of secondary teachers were teaching in field.

Percentage and Ranking			
93%	Meet licensure requirements	tied for 26 <sup>th</sup>	US Average 92%
66%	Secondary teachers teaching in the field in which they are licensed	tied for 22 <sup>nd</sup>	US Average 63%
Source: First in America based on National Center for Education Statistics data and N.C. Department of Public Instruction			

**Target 3: Nine of 10 schools are recognized as Schools Making Everyday Growth/Gains or meeting Expected Growth/Gain Standards as designated by the N.C. ABCs of Public Education.**

*(First in America 2010 has a similar target but uses different categories)*

Individual school accountability and increased student performance are the objectives of the School-Based Management and Accountability Program (known as ABCs ) passed by the General Assembly in 1996.

- “Everyone is in favor of accountability for public schools. Our challenge is to constantly look at North Carolina’s accountability model to be sure that it measures what we want to measure, that it is fair to students and schools and that the curriculum continues to be the main focus of activity in the classroom.” State Superintendent Mike Ward.<sup>295</sup>

The program implemented by the State Board of Education sets growth/gain and performance standards for each public school in the state.

- Standards are based on students’ scores in reading, math, writing and end-of-course results, and then compared to a prediction developed by the Department of Public Instruction based on past school performance.
- Teachers and staff may receive pay incentives based on the level of achievement attained by the school.

Schools are divided into several categories for those meeting standards and those that do not. Schools meeting their expected level or attaining their exemplary growth/gain standard are labeled as **Expected Growth/Gain and Exemplary Growth/Gain**. Schools meeting one of those two standards can also receive special recognition as:

- Schools of Excellence –at least 90% of students perform at or above grade level
- Schools of Distinction – 80% of students achieve at or above grade level
- 25/10 Most Improved Schools in Academic Growth/Gain- a special designation for **25 K-8 schools** receiving the highest 25 values on the exemplary growth/gain report and for **10 high schools** attaining the highest 10 values on the exemplary growth/gain.

Schools not doing as well are defined as the following:

- Schools with No Recognition – schools that did not make expected growth/gains but at least half of the students scored at or above grade level
- Low-Performing Schools– those that fail to meet growth/gains and less than 50% of the students perform at grade level.<sup>296</sup> Low-Performing Schools receive state assistance and resources to help them improve performance, and additional steps are proposed for those who are identified as low performing two out of three years.

\*\*\* At the time this report was printed, the State Board of Education was considering a renaming of several ABC classifications.

The National Governor's Association has recognized that school reform efforts must include assistance to low-performing schools. "Work to transform these schools, arguably the most politically contentious aspect of the reform movement, typically includes rewards for the highest-achieving or most-improved schools and consequences for the lowest performing ones. However, turning low-performing schools around is essential to ensure all students can reach their potential."<sup>297</sup>

**Measure 1: An additional 20% of the schools must increase scores to meet the 9 out of 10 target based on the 1999-2000 statistics showing that 69.6% of the schools made expected or exemplary growth**

	1999-2000		1998-99	
	No. Schools	Percent in Category	No. Schools	Percent in Category
Exemplary Growth	959	45%	1156	58.2%
Expected Growth	514	24%	456	23%
No Recognition	597	28.2%	358	18%
Low-performing	45	13.7%	13	7%
Special Recognition				
Schools of Excellence	73	3.5%	50	2.5%
Schools of Distinction	509	24.1%	408	20.6%
<i>Source: N.C. Department of Public Instruction</i> <i>*Results reflect State board of Education action through October 5,2000</i>				

It should be noted that 81.2% made the expected and exemplary growth gains in 1998-99 and 83% in 1997-98.

**Target 4: Nine out of 10 parents say their child is known and cared about as an individual. (First in America 2010 selected this target)**

Getting to know teachers and other school personnel and talking about their student's achievement is key to parents assisting their children with homework. Parents tend to be more involved in their children's school activities in the early grades and then participation drops off as the child gets older. To increase family-friendly schools, as the student population becomes more diverse, accommodating parents' work schedules, transportation and language barriers are necessary.

"When schools work together with families to support learning, children tend to succeed not just in school, but throughout life. When parents are involved in their children's education at home, the children do better in school, and the schools they go to are better," according to a 1994 publication, *A New Generation of Evidence: The Family Is Critical to Student Achievement*.<sup>298</sup>

## **Measure 1: Parents must continue to be surveyed to obtain feedback regarding their perceptions of how their children are cared about and known in schools**

*First in America 2010* conducted a survey of about 500 parents statewide to find out whether they agreed with the following statements:

- Teachers in my child's school really seem to care about the students
- My child feels cared about in school
- The staff in my child's school makes my child look forward to going to school.<sup>299</sup>

Seventy-nine percent of the parents agreed or strongly agreed that their child is known and cared about as an individual by school personnel. Ninety percent of future parents surveyed must agree that their children are cared about and known. This is a target of *First in America 2010*.

A supportive learning environment and parental encouragement are important steps in improving students' test scores, in reducing the dropout rate and in improving individual schools. These build the foundation for a student's desire to seek education beyond high school. That additional education is critical to the student's future wages and to the economic competitiveness of North Carolina.

## **Goal 3: More North Carolinians will complete two- and four-year degrees so they are prepared for a knowledge-oriented economy and society.**

### **More Education – Higher Wages**

“The quality of life of Americans and the civic and economic future of the country depend more than ever before on the availability and effectiveness of education and training after high school. For most Americans, a college is no longer one of many routes to middle-class life, but a requirement for employment that makes such a life possible. Between 1977 and 1997, the average income of high school graduates decreased by 4% in real dollars, while the income advantage associated with having a college degree instead of only a high school diploma increased by 28%.” Patrick M. Callan, President, The National Center for Public Policy and Higher Education.<sup>300</sup>

### **North Carolina’s System**

North Carolina has a strong higher education system with 16 public universities, 58 community colleges and 36 independent colleges and universities. With the number of high school graduates increasing and more working adults seeking additional education, the enrollment in all three systems is expected to increase.

- The \$3.1 billion higher education bond referendum approved by voters in the fall of 2000 is in part expected to increase the capacity of the university and community college systems to handle additional students.
- The UNC Long Range Plan for 2000-2005 projects that enrollment growth for the system for the period 1998-2008 will be “approximately 47,600 (or 30.7%)” with undergraduates driving the enrollment increase.<sup>301</sup>
- More than half of the 60,000 students in the independent colleges and universities are from North Carolina.

While a college degree is important, technical and vocational training through community colleges programs is also important. The trade sector of the economy needs a significant number of skilled workers in plumbing, heating and air conditioning, construction and other areas as older workers retire. These jobs require training beyond high school and often advanced technical skills to operate or repair equipment. Community colleges also provide a variety of technology courses to provide students with 21<sup>st</sup> century skills.

A national study of community college students found:

- Community colleges help narrow the digital divide by providing computer skills to a substantial number of students.
- 28 percent of the noncredit students had already attained a bachelor’s degree or higher.
- 29 percent of the noncredit students who were unemployed and seeking work reported public assistance as a source of funds for their education.<sup>302</sup>

Keeping education affordable is critical to students that seek further training and education and that workers seek retraining.

**Target 1: North Carolina reaches the national average in bachelor's degree attainment by 2010 – and the gap will be narrowed between whites and nonwhites.** *(A part of the UNC Long-Range Planning 2000-2005)*

A college degree makes a difference in income according to statistics released by the Census Bureau. The 2000 report found that nationally: "Annual average earnings in 1999 for those ages 18 and over who had completed high school only was \$24,572; for those with a bachelor's degree it was \$45,678."<sup>303</sup>

"Never before in the history of America has a university education been more important. The accelerating explosion of knowledge and the inevitable transition to a global economy is changing both the mix of jobs available and the sorts of skills graduates need to be competitive. North Carolina's college-going rate trails the national average, and the state will suffer in global competition if it cannot raise the education attainment of its workforce." UNC General Administration, Office of the President Initiatives.<sup>304</sup>

*Measuring Up 2000*, a report by the National Center for Public Policy and Higher Education, gave North Carolina a "D" grade for low participation in higher education.<sup>305</sup> North Carolina has dropped from 37<sup>th</sup> ranking among the states in 1990 to 39<sup>th</sup> in 2000 in the number of adults over 25 with a college degree according to the Census Bureau.

**Ethnic/Minority Lens**

To decrease the gap between whites and minorities attaining a bachelor's degree, the UNC system and the Board of Governors have taken steps to increase minority enrollment by directing the individual campuses to develop strategic plans for achieving racial parity in retention and graduation rates.

The disparity between blacks and whites has decreased slightly according the latest census statistics with 25.5 percent of whites over age 18 holding a Bachelor's degree or more, blacks 14.7 percent and Hispanics 11.3 percent.

In the fall of 1999 the percentage of nonwhite first-time freshmen increased according to the UNC General administration. The rate of N.C. high school graduates attending a public university as first-time freshmen was 30.6 percent for whites, 28.5 percent for blacks, 29.8 percent for Native Americans, 26.0 percent for Hispanics, and 45.2 percent for Asian."<sup>306</sup>

**Measure 1: To reach the national average, North Carolina must increase by three percentage points the number of adults 25 and over who have earned a college degree**

- Percent of adults, 25 and over, who have earned bachelor's degrees:

**2000** 23.2% N.C. Rank 39<sup>th</sup> National Average 25%  
**1990** 17.4% N.C. Rank 37<sup>th</sup> National Average 20.3%  
(Source. U.S. Census Bureau)

Other data that measures trends for college degrees are:

- Percent of students completing a four-year degree in five years indicates how well the higher education system is doing in getting students to complete degrees.

56% for North Carolina

66% for top five states

(Source: *Measuring Up 2000*)

- Percentage of community college transfer students who have a Grade Point Average greater than or equal to 2.0 after two semesters at a UNC institution indicates how well community colleges are preparing students for college.

75.6% with a GPA greater than 2.0

(Source: N.C. Community College System)

**Target 2: Sixty percent of the fall students of community colleges have completed their program or are still enrolled the following fall at the community college.** *(A critical success factor for the N.C. Community College System)*

Training and retraining of workers are keys to providing citizens with competitive skills in the global economy. The North Carolina Community College System is the primary provider of job training, literacy and adult education.

- In 2000, 315,457 North Carolina adults received job training through occupational continuing education programs.
- One of every eight adults in North Carolina enrolled in a community college course. (Source: N.C. Community College System)

### **Entry Point**

Community colleges are often entry points for students seeking education beyond high school. "More than half of community college students are first-generation students," according to a study for the American Association for Community Colleges.<sup>307</sup>

In North Carolina, the Community College System is providing English as a Second Language for many adults who do not speak English. Small business courses are being provided in Spanish. These steps are particularly important when you look at the literacy levels of Hispanics in the state. Only 41% of Hispanics have a high school diploma. (See *Goal 1 Target 5 for additional data on high school diplomas and literacy rate.*)

In recent years the N.C. Community College System has adopted measures to determine student success along with steps to determine way to address the diverse learning needs of its population and to strengthen workforce development.

**Measure 1: To determine the goal of a 14-year education, community college benchmarks must continue to be measured and efforts must be made by the state to meet and exceed them**

As part of determining the goal of at least a 14-year education for North Carolina citizens, one measure to track is the number of community college students either completing a degree program or returning to complete the program.

The N.C. Community College System has set a benchmark measure of 60 percent of fall students either completing a program or are still enrolled the following fall at community colleges. The system has just started collecting the data and it will not be reported until the fall of 2001.

1999-2000 data indicates that 22,254 completed a degree, certificate or diploma and 62,013 returned in the fall of 2000 to continue their education.

**Target 3: By 2010, grants make-up 50 percent of student financial aid and loans and work-study programs are 50 percent of the aid.**

Tuition and fees for students going to college in North Carolina ranged from \$1,686 to \$2,800 a year in the fall of 2000 at public universities to an average of \$12,500 at independent colleges in the state. Universities in the public system are considered among the most affordable in the country. While the tuition and fees at public universities are low compared to the states, we must also remember that North Carolina ranks 31<sup>st</sup> in per capita income, which averaged \$26,603 in 1999.

**Disparities**

Funding for higher education continues to be an issue for low-income individuals.

- “More than 35 years (1975-76 to 1999-00) after the creation of the federal student-aid programs, financial barriers are still keeping many of the neediest students from pursuing a higher education,” according to a report by the Advisory Committee on Student Financial Assistance in 2001 report to Congress and the U. S. Education Department.
- The study found that “The percentage of high-school graduates from families earning below \$25,000 per year who go to college continues to lag 32 percentage points below families earning above \$75,000. Low-income students attend four-year colleges at half the rate of their higher-income peers, and graduate from those institutions in much smaller numbers.”<sup>308</sup>
- “The growing income disparity between those with college degrees and those without colleges degrees has already turned us into a nation of college-haves and college-have-nots,” according to a report prepared for the National Governor’s Association. <sup>309</sup>

Not only is there a lack of adequate aid, but often there is a lack of good information about the availability of aid.

### **North Carolina Situation**

North Carolina provides a variety of student financial aid programs including incentive grants for needy undergraduates and aid for North Carolina students attending private colleges in the state.

- “During 1999-00, North Carolina provided approximately \$158 million in appropriations to student financial aid programs. However, only one-third of these funds, \$56 million, went to students with a demonstrated financial need. Both need based and non-need based aid have grown at similar rates since 1990-91. Need based aid has consistently comprised approximately one-third of all state funded scholarship/grant aid, and non-need based aid has comprised approximately two-thirds of all state-funded scholarship/grant aid.”<sup>310</sup>

## **Measure 1: Meeting the target means reducing loans and work-study by six percent and increasing grants by six percent**

To reach the target North Carolina must reduce loans and work-study by six percent and increase grants by six percent.

- 1999-00 56% of financial aid is made up of loans and work study and 44% in grants.
- In 1990-91 grants were 56%, work study and loans were 44%. (Source: N.C. Association of Colleges and Universities)
- The percentage of hours that UNC freshmen work per week has increased 10 percent since 1991. (Source: UNC General Administration)

## **Recommendation: Activate a Blue Ribbon Study Commission to look at education needs for the 21<sup>st</sup> century to develop a seamless education system.**

North Carolina can be proud of the progress it has made in improving and supporting the public schools and higher education. But more must be done to provide students and adults with 21<sup>st</sup> century skills because other states are stepping up their efforts to increase educational opportunities.

To keep pace with the changes brought on not only by growing enrollment, changes in demographics, the global economy and the knowledge revolution, all of the higher education systems will have to plan differently about how they prepare for the future.

A Blue Ribbon Study Commission should be established and charged with looking at how North Carolina prepares its citizens for continuous learning opportunities throughout their lives. (Options other than a special commission – work could be done by the North Carolina Education Cabinet, North Carolina School Improvement Plan or Governor Easley's Education First Task Force.) Questions the group must answer:

- Do we have an education system from pre-K through 14-16 years of education that is preparing people with 21<sup>st</sup> century skills?
- Current education models are based on agrarian and industrial societies where the memorization of facts and repetition of skills were important. Do these models help students with the analytical, communication and team skills needed in the 21<sup>st</sup> century?
- The Education Cabinet has promoted dialogue among the various education institutions in the state but has it developed active, collaborative partnerships that provide a seamless education system?
- Are North Carolina policymakers prepared to provide the resources needed for a 21<sup>st</sup> century system and are measures in place to hold the education institutions accountable for providing 21<sup>st</sup> century skills?

The impact of technology and globalization are having an impact on education planning. "Education in the 21<sup>st</sup> century will change significantly in terms of delivery systems, teaching and learning methodologies, and the nature and number of educational providers. Examples include change from a faculty-centered to a learner-centered environment, greater reliance on interactive and collaborative learning, greater focus on learning outcomes and competencies, and delivery of education 'anytime, anywhere'."<sup>311</sup>

Is North Carolina prepared to deliver education "anytime, anywhere" to provide individuals with economic opportunity and to keep the state economically competitive?

# High Performance Workforce

## Vision

**North Carolina workers will adapt quickly to changing demands of the global workplace through their abilities to use information, think analytically, work in teams, and use technology. North Carolina workers will be prepared for these changes as a result of a partnership between the public and private sector that recognizes the importance of family sustaining wages and benefits for all jobs. This combination will result in establishing a standard for a prosperous economy. Employers will recognize employees as an important asset and provide compensation and work environments that value workers.**

North Carolina's economy is changing. The citizens compete for jobs not just with those in the next county and other states, but with other countries. North Carolina and its citizens will not prosper today, in 2010, 2020 or the 21<sup>st</sup> century unless the workers and the state are prepared for the rapidly changing global economy.

"The need for skilled human capital is the most critical component of our nation's economy, and demand for highly skilled workers appears to exceed supply," according to the 21<sup>st</sup> Century Workforce Commission. "By 2006, **nearly half of all U.S. workers** will be employed in industries that produce or intensively use information technology products and services."<sup>312</sup>

Sixty percent of new jobs in the early 21<sup>st</sup> century will require skills possessed today by only 20% of today's workforce according to the Census Bureau, Bureau of Labor Statistics and Hudson Institute.<sup>313</sup>

### **The Work is Changing**

Manufacturing jobs dependent on low-skill workers are declining. Companies are moving production to other countries where wages are lower. The manufacturing sector saw a 3.1% decline in North Carolina between February 2000 and February 2001. From 1990 to 2000 the textile industry lost 72,000 jobs and the apparel industry lost 45,000, according to the Bureau of Labor Statistics. Since 1995 North Carolina has lost more than 100,000 manufacturing jobs.<sup>314</sup>

### **The Labor Force is Changing**

Not only do workers entering the labor market need advanced training, but *those already in the workforce need retraining* if they are to stay competitive in a global economy. High paying jobs of the 21<sup>st</sup> century require more than a high school education. That trend is expected to continue, meaning that lifelong learning must become a reality in North Carolina. According to the Census Bureau,<sup>315</sup> having a college degree in can increase average annual earnings over \$20,000.

### The Work Face is Changing

A majority of our state's workers are older, and employers can no longer count on a large number of young entry level workers. With company reorganizations and other economic changes, workers no longer expect lifetime work with one company and are less likely to be loyal to an employer.

### The Former Workforce

North Carolina's hardworking workforce has been one of the state's greatest assets. In the past those with a high school degree or even dropouts could expect to find a job in the state's manufacturing and agriculture industries. But the number of jobs in those sectors is declining as the economy changes. Ask the productive workers who lost their jobs at the denim plant in Erwin, the Converse plant in Robeson County and the DuPont facilities in Kinston. During the last decade, North Carolina's unemployment rate remained at or below the national average. However, manufacturing declined over that time, and in 2001 unemployment increased overall, especially in manufacturing.

#### Occupations with the most job openings in North Carolina, 1998-2008

Occupation	Change, 1998-2008		Average Wage	Minimum Education & Training Required
	Numerical	Percent		
Cashiers	17,613	17%	\$ 6.95	Short-Term OJT
General Managers & Top Executives	16,922	16%	\$27.66	Work Experience Plus Bachelor's Degree
Retail Salespersons	16,333	14%	\$ 9.03	Short-Term OJT
Registered Nurses	13,168	22%	\$20.02	NC Community College Nursing Diploma
Nursing Aides and Orderlies	10,007	24%	\$ 7.68	Certification Courses

OJT – On-the-Job Training

Note: Data are preliminary and subject to revision.

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## The Future Workforce

From 1998-2008 on average North Carolina will have an average of 170,295 jobs that need to be filled each year. About forty-eight percent should come from expansion and 51.7 from replacement.<sup>316</sup>

- One construction firm owner forecasts that **higher costs and delays will be the norm** in the next 20 years unless replacements are found or trained to carry on the work of those who are retiring.
- Even though the economy was slowing in early 2001, a report for the Carolinas Association of General Contractors predicted labor shortages. “The increase in the general rate of unemployment will only temporarily ameliorate tight labor market conditions, as rising business activity in mid-2001 will lead to increased hiring, labor shortages and rising wage rates in the second half of 2001.”<sup>317</sup>

### Fastest Growing Occupations in North Carolina, By Percentage Growth, 1998-2008

Occupation	Change, 1998-2008		Average Wage	Minimum Education & Training Required
	Numerical	Percent		
Computer Engineers	10,413	108%	\$28.47	Bachelor's Degree
Systems Analysts	12,227	94%	\$24.74	Bachelor's Degree
Personal & Home Health Care Aides	3,644	58%	\$ 7.20	Certification Courses
Electronic Pagination System Workers	458	73%	\$13.45	Software Training
Occupational Therapists	455	35%	\$24.44	Bachelor's Degree

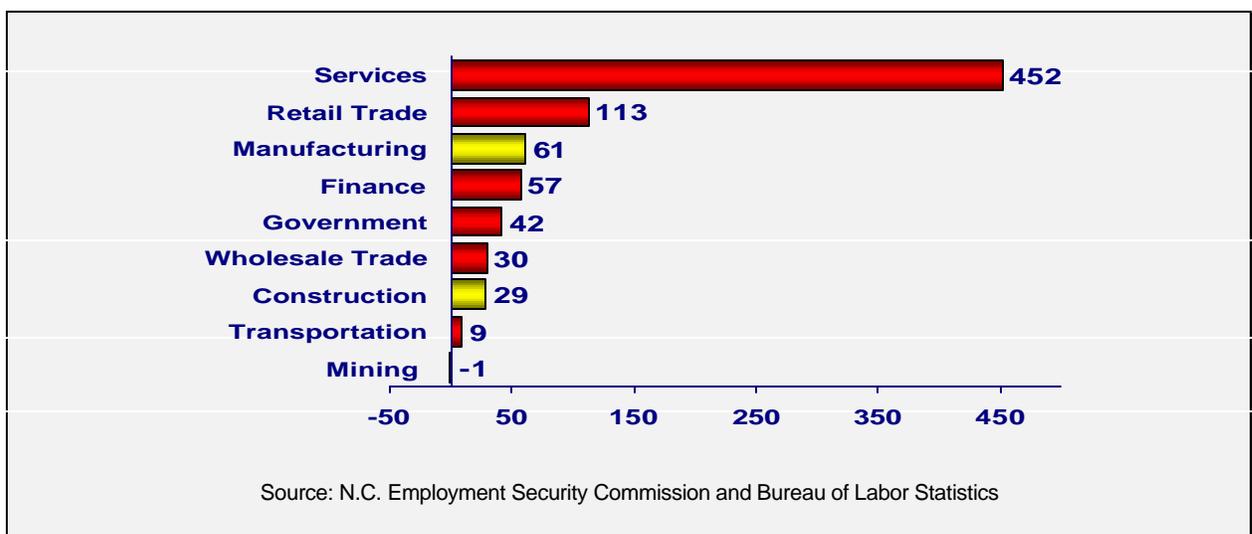
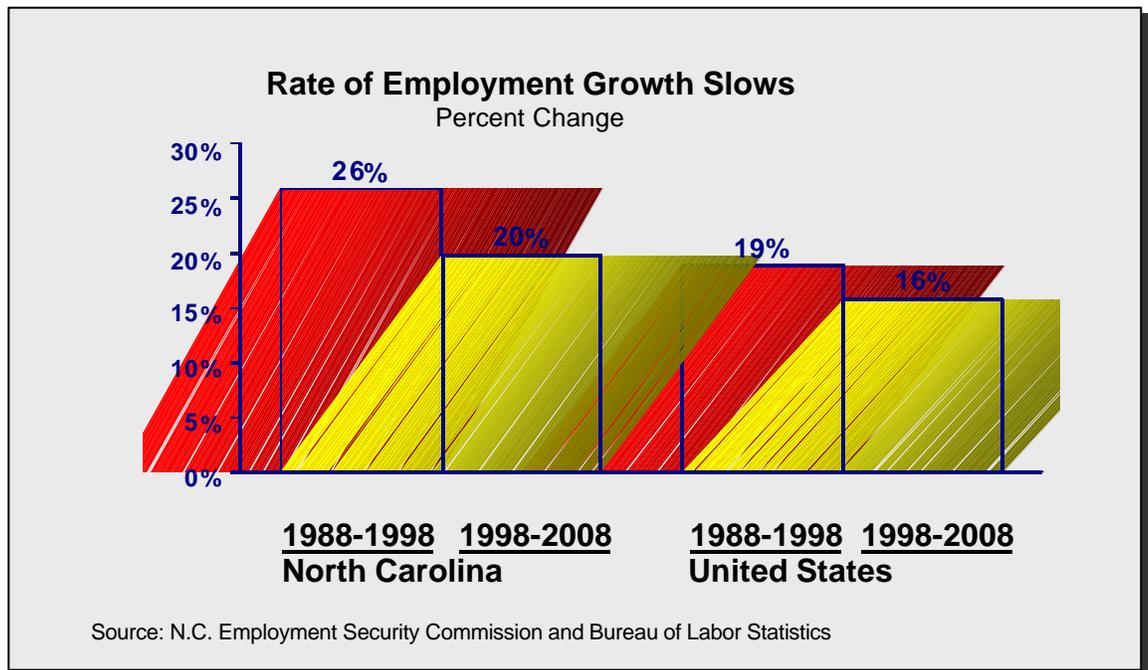
Note: Data are preliminary and subject to revision.

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### Job Growth Issues

Two very different issues confront the state.

1. Some of the *fastest growing occupations require at least 14 years of education* such as registered nurses, computer engineers and systems analysts.
2. The *greatest increase in actual job openings is in work that pays lower wages and demands less education and training* such as cashiers and retail sales.



### Long-term Care Industry

In the growing long-term care industry the shortage of skilled paraprofessionals is a chronic problem with serious consequences for the health and safety of citizens who cannot care for themselves. It is difficult both to recruit and retain workers in this field, where wages are relatively low, hours can be long and working conditions can be difficult. These workers are responsible for providing personal care for some of the state's most vulnerable citizens.

The Institute of Medicine's Long Term Care Task Force says "The state must act immediately to address the current workforce shortage in long-term care. One of the Task Force's top recommendations is to implement a wage enhancement to increase wages, benefits and/or pay differentials for paraprofessional staff in long-term care settings."<sup>318</sup> The Task Force also recommends that the General Assembly appropriate funds to develop a continuing education and paraprofessional development initiative, as well as a career ladder for long-term care paraprofessionals.

### Demographics

"Census projections suggest a pronounced decline in the number of prime age Southern workers over the next 25 years, which, if true, could put a serious damper on growth," according to a report by the Southern Growth Policies Board.<sup>319</sup> The Hudson Institute in its *Workforce 2020* report notes that "there will be as many Americans of 'retirement age' as there are 20-35 year olds. America's aging Baby Boomers will decisively affect the U.S. workforce, through their departure from and continued presence in it, and their role as recipients of public entitlements and purchasers of services."<sup>320</sup>

- Census Bureau figures also indicate the number of people 65 and older will increase by 102% between 2001 and 2005.
- The workforce, ages 25 to 34, is expected to decrease.
- The age group 45-54 is expected to increase.
- The youth labor force (ages 16-24) is expected to grow.
- Women and ethnic and minority groups will increase participation in the workforce. Studies show that women and minorities tend to earn lower wages.

The median age in North Carolina		
1990	1999	2000
33	35.5	39 white 31 nonwhite

*Source: Census Bureau*

### Where will we get workers?

"Employers face increasing challenges in their efforts to hire competent workers. They need employees who can read, write, calculate, and communicate sufficiently to perform their job duties. This need will become more serious as technology develops and applications demand greater knowledge," futurist Roger Herman reports.<sup>321</sup>

In the past, North Carolina has addressed workforce development needs of the public, private and nonprofit sectors by developing its own citizens and relying on the in-migration of workers from other states and countries. Now the tables are turning. **States will no longer be competing just for industries but also for workers.**

A Southern Growth Policies Board report calls for a “human capital approach” to workforce development. That approach would focus on improving workers skills, readiness and availability to change jobs quickly and to improve skills so they can move up in organizations.

The Board notes that “at present, most states divide up responsibility for workforce issues among a host of different departments and boards. A human capital approach may be more likely to overcome program segmentation to reduce the non-educational barriers to workforce participation and worker productivity.”<sup>322</sup>

## Challenges in Reaching the Vision

North Carolina does not have enough of the right information to prepare workers and to help employers meet these challenges.

- More needs to be known about North Carolina workers and their ability to adapt to changing jobs and to the changing economy. Information including tenure in current positions, use of technology and skill development should be addressed.
- North Carolina has at least 7 different state agencies that operate more than 40 workforce development programs in areas such as education, training, counseling, and placement services. However, the state has only sketchy information about the effectiveness of those programs. Tapping into these resources could provide an answer to the state's growing need for retraining. Should limited program resources be directed at workers needing basic skills education, those who need retraining, or on training for high-wage employment? Where will the state's resources be most effective?

**North Carolina cannot ignore these issues.** Our economic future depends on the skills of our workers to keep the state competitive with other states and countries. The state is expending great efforts on education reform to benefit future workers. The next step is increasing the skills of those already in the workforce.

Some might argue that once an individual enters the workforce it is the responsibility of the individual and employers to continue training and updating of skills, not the responsibility of the state. If that is the case, then state government leaders must make decisions about where resources go so that workers have knowledge about and the ability to access training and retraining so they can meet the demands of the local labor markets.

A State Auditor's report in 1996 and other studies have recommended consolidation of state programs. Three Legislative Commissions have tackled the problem, but turf issues among agencies make it difficult to reach a consensus. Even though a "Common Follow-Up System" has been developed to report outcomes of the training initiatives, it still remains difficult to determine the success of the programs.

An evaluation by the State Office of Budget and Management issued in 2000 states; **"There is no single, clear statement of North Carolina's overall objectives in the areas of employment and training that would tie all the fragmented programs into a measurable strategy or effort."**<sup>323</sup>

**Recommended Target :** By 2005, North Carolina will have a system designed for preparing workers for the changing global economy through a partnership that links government, education and employers. The partnership will focus on continuous learning opportunities for workers that target high-wage, high-skilled jobs and provides employers with skilled workers.

In developing a workforce training plan, the following possible components should be considered:

- Identify specific goals and outcomes for training and retraining workers.
- Investigate the trends for growth and need in the state and appropriate state money in these areas so that the global economy will benefit. Determine the workers who will best benefit from training and retraining to meet the overall economic needs of the state. Consider opportunities for workers in high paying jobs in technical areas, all workers or just on low skilled workers, disadvantaged youth. Another area would include how to attract more individuals into the trades' areas to replace retiring workers.

"Parents and students see what is on TV that looks glamorous. They don't want jobs where they will get their hands dirty." (Dr. Parker Chesson former chairman, N.C. Employment Security Commission)<sup>324</sup>

- A periodic assessment should be made of employers' current workforce needs and in 5-10 years.
- As part of the assessment, employers would be asked about the availability and skills of current employees.

A survey of Charlotte-Mecklenburg employers by the Charlotte Chamber of Commerce found that "only 64.3 percent of the employers reported that skilled employees were somewhat available and 86.1 percent of respondents reported that their companies were in 'some' to 'great' need of these workers."<sup>325</sup>

**The Charlotte employers perceived that training needs would increase during the next five years and that the top six training needs today and in five years are:**

<b>Teamwork ability</b>	<b>Interpersonal Skills</b>	<b>Leadership ability</b>
<b>Communication</b>	<b>Self-initiative</b>	<b>Listening</b>

- The assessment could determine how much training employers provide and the type of training that should be offered by the state.

The American Society for Training and Development reports that of the employers participating in its Benchmarking survey, on average companies spent about \$2 million on training in 1998.<sup>326</sup> Figures were not available by state.

- A survey should be made of workers to determine their training needs and their concerns about current and future employment opportunities.

North Carolina can continue its current course. **But no plan means no accountability of resources and no way to measure progress.** No plan also means no alignment and coordination of programs. North Carolina workers and employers, including state government, will not thrive in the 21<sup>st</sup> century economy on the current path.

### **Move Ahead**

With or without a plan, certain steps are crucial if North Carolina is to have skilled workers who can adapt to change. Our workers must be better educated and have opportunities to continuous learning opportunities. They must have safe work environments and earn higher wages to support their families. The North Carolina Progress Board adopted three goals to strengthen the workforce and established targets and measures to increase the state's competitiveness in the 21<sup>st</sup> century.

## **Goal 1: North Carolinians will have the knowledge, competencies and skills needed to adapt to the ever-changing global economy including the abilities to think critically, work in teams, and perform technological functions required in the workplace.**

Many North Carolina workers do not now have the knowledge and skills they need for the changing workplace. The North Carolina Workforce Commission states, “As work skill requirements increase across all enterprises and industries, the skill levels of our existing workforce will pre-determine North Carolina’s ability to sustain and increase business productivity and, thereby, our ability to retain and attract new industry to the state.”<sup>327</sup>

### **What New Economy Workers Do**

“The New Economy is a high-tech, services and office economy. This is not to say that mass production manufacturing is unimportant, or that the United States produces fewer manufactured goods or food (in fact we produce more than ever). But higher rates of productivity growth in manufacturing and agriculture have meant that almost 93 million workers (80 percent of the workforce) do not spend their days making things—instead, they work in jobs that require them to move things, process or generate information, or provide services to people,” according to *The New Economic Index* by The Progressive Policy Institute.<sup>328</sup>

### **Background**

#### **Global Competition**

Globalization is having a direct impact on low-skilled workers according to the Hudson Institute’s *Workforce 2020* study.

“They will compete for jobs and wages not just with their counterparts across town or in other parts of the U.S., but also with low-skilled workers around the globe. The U.S. will retain a comparative advantage in few low-skilled manufacturing industries. Jobs in that sector will disappear or be available only at depressed wages. Second or third jobs and full-time employment for both spouses—already the norm in households headed by low-skilled workers—will become even more necessary.”<sup>329</sup>

#### **High-tech, high-wage jobs fewer in N.C., the South**

Unfortunately for North Carolina and the South, high tech, high wage jobs are increasing but are still not a high percentage of the total workforce.

#### **High-tech, high wage workers as a proportion of the workforce**

N.C. Average	2.9%	Southern Average	3%
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Source: Hudson Institute

High-Tech Workers per 1000 private sector workers, 1998				
US Average	N.C.	VA	TX	GA
46%	40%	64%	56%	56%
Other Southern states have lower ranking than N.C.				
Source: MDC State of South and Cyberstates 4.0, American Electronics Association, 2000				

### Employers concerned about skills

Employers are growing more concerned about the skills of entry-level employees. At the 2001 N.C. State University Emerging Issues Forum, BellSouth President-North Carolina Krista Tillman told participants that her company has trouble finding qualified entry-level workers for service technicians and service representatives. All applicants must take a simple test to be considered for positions.

- Company records indicate that for every 100 individuals applying for the service technician position, only about 38 percent pass the test. And for the service representatives, out of every 200 taking the test, only 38 pass.<sup>330</sup>

“The most valuable assets of a 20<sup>th</sup>-century company were its production equipment. The most valuable asset of a 21<sup>st</sup> century institution, whether business or nonbusiness, will be its knowledge workers and their productivity,” Peter Drucker in *Management Challenges for the 21st Century*.<sup>331</sup>

### Rural Lens

For rural areas, which relied on low skill jobs in agriculture and manufacturing, the future looks bleak as manufacturing companies leave those communities for low-wage production in other countries. Many middle-age workers find themselves traveling to another county or another state to get a job unless they upgrade their skills. The North Carolina Rural Economic Development Center reports during 1998-99 60% of the layoffs that year were in rural areas even though they only had 41 percent of the jobs and 31 rural counties were at least 50 percent above the state average in unemployment rates.<sup>332</sup>

Many low-wage workers have difficulty reading and writing. North Carolina cannot prosper and workers cannot gain higher wages if many of our citizens lack basic skills.

**Target 1: By 2010, North Carolina will be one of the nation’s top 20 states in adult literacy.**

“Education becomes much more critical now with the unskilled and those who can’t read. They can ruin expensive machinery if they can’t read directions or put the wrong ingredients in food. We need to think about those who are giving us medicine (if we are in long-term care facilities) – can they read the directions.” (Linda Harrill, President, Communities in Schools of North Carolina)<sup>333</sup>

## Measure 1: North Carolina will be one of the top twenty states with adults holding high school diplomas

North Carolina must move up 26 places to become one of the nation's top 20 states in adults with high school diplomas.

Twenty-three percent of the population, or more than one million North Carolinians, lacks a high school diploma. The state has made progress since 1990 when 1.4 million adults (29.8%) did not have a high school diploma.<sup>334</sup>

## Measure 2: North Carolina will rank within the top 20 states in adult literacy

### Looking at Literacy Proficiency

North Carolina currently ranks 39<sup>th</sup> in adult literacy, and needs to move up 19 places to be among the top 20 states.

A diploma does not determine whether a graduate is literate. In 1994, 50% of the adults in North Carolina, including adults who graduated from high school, were estimated to score at the lowest two levels of literacy proficiency. This lack of literacy means they had difficulty finding and understanding information in forms, short written documents and in applying arithmetic operations. The 1997 estimates show the state actually slipped two percentage points.<sup>335</sup>

### Wearing Ethnic Lens

The gap in literacy levels is more glaring among ethnic groups. However, data indicate that blacks are making progress in attaining high school diplomas at a more rapid rate. Illiteracy means lost income for those individuals and the state.

Percentage of Ethnic Groups with High School Diplomas		
	1990	2000
Whites	74.7%	81.7%
Blacks	60.3%	72.1%
Hispanic	not available	41.4%
Other groups not available		

Source: U.S. Census Bureau

"This year, if all ethnic groups in North Carolina had the same educational attainment and earnings as whites, total personal income in the state would be \$8 billion higher, and the state would realize an estimated \$2.8 billion in additional tax revenues," states a national report, *Measuring Up 2000*.<sup>336</sup>

To know more about the skills workers need, it is important to have information about how employers view the workforce. The state has limited data in this area.

**Target 2: By 2010, nine out of 10 graduates of North Carolina's public schools, community colleges, colleges and universities will be rated satisfactory or better by their employers.**

### **Three North Carolina Surveys**

1. The Workforce Development Education Section of the Department of Public Instruction annually conducts a survey of employers to assess the job skills and satisfaction of employers of high school graduates who have completed vocational/technical education training. The 1999 survey on the previous year's high school graduates found that on average 71% of the graduates rated above average compared to 70% the year before. The vocational students rated four percent higher than those workers of the same age who have not completed the vocational training. (Source: Department of Public Instruction)
2. The University of North Carolina System is surveying employers to find out satisfaction rates. Results from the 1999 employer survey indicate that 94-99% would hire another graduate. (Source: UNC General Administration)
3. The Community College System is collecting data on employer satisfaction as one of its a critical success factors in order to reward colleges exceeding the System performance standard. The performance standard for employer satisfaction is 85% of employers surveyed to report satisfaction with the skills of employees trained or educated in a community college.

### **National ranking**

- In *Measuring Up 2000: The State-by-State Report Card for Higher Education*, employer satisfaction was not as high as measured by North Carolina. That report, based on 1997 Census survey and analysis by the Institute for Research in Higher Education, indicated that only 43% of the employers in North Carolina were satisfied with how colleges and universities in the state are preparing students for work, compared to the U.S. average of 46%.<sup>337</sup> *The disparity in the studies is another reason North Carolina needs to develop a better system for surveying employers.*

Basic skills and employer satisfaction are important steps to achieving a more competitive economy. North Carolina workers also need more technical knowledge.

**Target 3: By 2020, North Carolina will increase the number of graduates receiving computer science and engineering degrees from colleges and universities and the number of community college students seeking computer and other technical training by 30 percent.**

The President of the American Association for the Advancement of Science Mary L. Good told colleagues, “When one compares our work force to our global competitors, we find that we lag behind most of the industrialized world in the percentage of 24-year-olds with natural science and engineering degrees.” Pres. Good stated that China produces more than twice as many engineering graduates as the United States, while Japan produces one-and-a-half times as many.<sup>338</sup>

Nationally, corporations have lobbied the U.S. Congress for relaxation of rules regarding immigrants with engineering and computer skills.

Nortel, Cisco and other companies are partnering with high schools, community colleges and colleges to provide certification programs to ensure that they have a trained workforce.

**Measure 1: The number of undergraduate degrees awarded in computer science, mathematics and engineering will increase**

Before North Carolina can even increase the number of computer science and engineering degrees, it must halt the decline in numbers of undergraduate degrees in these areas. Data for the last three years indicates a downward rather than upward trend.

<b>Computer Science and Engineering Degrees in North Carolina</b>				
	<b>1999-2000</b>	<b>1998-99</b>	<b>1997-98</b>	<b>1996-97</b>
Bachelor’s degrees in Computer Science	877	731	743	740
Bachelor’s degrees in Engineering	1889	1945	1963	2003
<i>Source: UNC General Administration</i>				

**Measure 2: Number of undergraduate degrees awarded in mathematics will increase**

Math skills are also critical in the global economy, but the number of degrees awarded by the University system is declining. This decline presents a problem not only for the private sector but also for public schools having difficulty in recruiting math teachers.

The University System or the Education Cabinet needs to explore why the numbers are declining and what the state can do to increase the number of degrees.

### **Measure 3: Individuals seeking master's and doctorate degrees in science and engineering will increase**

Individuals seeking master's and doctorate degrees in science and engineering are important to the research base and overall development of the economy. Information compiled for the Vision 2030 study found that North Carolina ranked 28<sup>th</sup> in the U.S. in science and engineering grad students.<sup>339</sup>

As universities and colleges develop programs on biotechnology, genomics and bioinformatics (a hybrid of computer science, statistics and biology), graduates with science and math degrees are needed more than ever.

#### **Community Colleges See High – Tech Enrollments Increase**

While the number of students seeking university diplomas in math, computer science and engineering are flat or declining, it appears that increasing numbers of workers are hearing the message to upgrade skills through community college coursework.

- In the past three years community college enrollments in IT related degree, diploma, certificate and other occupational IT training courses have increased by as much as 50%.<sup>340</sup>
- North Carolina ranks 5<sup>th</sup> nationally in the number of people completing community college technical and vocational degrees each year.<sup>341</sup>

In 1999, about 179,000 N.C. community colleges students completed training in IT-related skills areas. That year over 22,000 students completed training requirements for IT industry certifications at their community colleges.

To ensure that workers stay competitive, that they have knowledge and skills for work, they must be able to upgrade their skills.

**Goal 2: Employees will have access to continuous learning opportunities for updating knowledge and skills so they can use changing technologies and new production processes in the workplace and be competitive in the global economy.**

“In the knowledge age, a state or person who fails to be constantly learning new things will fail. The Community College System is the primary vehicle for people of all ages to continue to learn, to gain new work skills, to expand their personal horizons, to be challenged to undertake new things, and continue to grow.” (Martin Lancaster, President, N.C. Community College System)

Training for workers is provided by the public and private sectors. National figures indicate that industry provides more training and retraining than the public sector, but there are no figures available for North Carolina employers.

North Carolina has been recognized for its efforts to prepare those entering the workforce for the first time and for its efforts to recruit jobs. The North Carolina Commission on Workforce Development has set out a strategic plan for preparing workers. “In 2000, the North Carolina Community College System’s workforce training programs were ranked as the best in the nation by *Expansion Management* for the second year in a row. The programs have been cited as a key reason for our state’s continued business growth.” North Carolina also received the 1999 Distinguished Performance Award from the National Alliance for Business for creating an education and workforce development system that prepares students and workers for the 21<sup>st</sup> century.<sup>342</sup>

### **Training Needs**

A study by the N.C. Commission on Workforce Development on incumbent workers and skills for the 21<sup>st</sup> century states, “Training is essential to help workers keep their jobs in industries that are transforming themselves as well as to provide individuals with good career options for the future. The success of the State’s business and industry depends on the availability of well-trained workers who keep learning throughout their careers.”<sup>343</sup>

### **Continuous Learning**

The need for continuous learning is emphasized in national reports and other studies in North Carolina. The American Society for Training and Development states in its 2000 Trends Report that, “Workers also must be equipped with the ability to learn. Educational institutions, governments, and training and development professionals throughout the world have been devoting increasing attention in recent years to helping individuals acquire not only basic knowledge and job-related skills but also the skills they need to make learning itself a lifelong process.”<sup>344</sup>

### **Distance Learning**

Distance learning opportunities are now available through the University and Community College Systems and through a variety of courses on the Internet provided by other universities and private companies. The University of North Carolina has pilot projects and is evaluating models and strategic challenges facing distance education before developing extensive collaborative projects. The North Carolina Community College System has developed its Virtual Learning Community, a growing common catalog of Internet-based curriculum and non-credit courses available to all members of the NCCCS.

The VLC enables community colleges previously without on-line courses to now provide distance learning opportunities.

“Forecasters predict that by the year 2002, more than 2.2 million students, most of them in their thirties or forties, will be attending college via electronic and virtual means. By 2020 over 85 percent of 4-year colleges and 85 percent of 2-year colleges are expected to support distance learning programs,” according to *Distance Learning Week*.<sup>345</sup>

The growth of “anytime, anywhere” education will be significant according to the National Governor’s Association.

“On-line learning technologies are an increasingly important vehicle to extend student-centered postsecondary learning and credentialing to adult and other ‘nontraditional’ students. The value of electronically mediated learning services delivered by distance learning organizations, portals, enablers, and e-commerce was estimated at \$7.1 billion in 2000; it is projected to reach \$40.2 billion by 2005.”<sup>346</sup>

However many North Carolinians do not have the computer skills and access to the Internet to take advantage of online offerings. (See report section in 21<sup>st</sup> Century Infrastructure for additional information.)

### **Rural Lens**

A report on *North Carolina Rural Communities in the Digital Economy* emphasizes the importance of continuous learning opportunities for rural residents, who need new skills so the region can attract new jobs to replace the loss of agricultural and manufacturing jobs.<sup>347</sup> The Rural Internet Access Authority established by the General Assembly in 2000 oversees efforts to provide rural areas with high-speed broadband Internet access. According to the Authority and the N.C. Department of Commerce’s Office of Information Technology Services, “Rural subscribers in North Carolina pay roughly \$230 per month for 128K Internet connection compared to a \$50 per month in the state’s urban areas.”<sup>348</sup>

As pointed out earlier in the report, the Hudson Institute projects many low-wage jobs will leave the state. If North Carolina is going to have a high quality workforce then retraining of workers is crucial.

**Target 1: Four percent of the North Carolina working age population is enrolled in vocational/technical community college programs by the year 2010.**

The North Carolina Community College System is the primary public provider of retraining in North Carolina.

**Training Options**

Several enrollment measures are used to indicate the needs of the working population and how the state is addressing that need. Enrollments are used rather than graduation rates because follow-up studies of a student's work experience indicate that enrollment has a positive impact on wage levels even if the student does not complete graduation.

In fact many workers seek training in order to update skills rather than to enroll in a specific program. Also many companies seek the Focused Industry Training (FTI) to get customized training for organizations who need to upgrade workers' skills because of technological or process advances.

The Community College System has developed short-term certification programs for workers who want skills in specific areas.

**Measure 1: By 2010, North Carolina will have 4% of the working population, an additional 75,000 people, enrolled in vocational/technical community college programs an increase of just over two percentage points**

	1999	1998	1997
Percent of working age population enrolled in community vocational/vocation community college programs	1.8%	1.8%	1.61%

<b>New and Expanding Industry in 1998-99</b>	
Percentage of North Carolinians involved in community college certification or focused industry training	19,960 enrollees in 193 projects

<b>Focused Industry Training</b>	
14,256 trainees 666 industries	47,256 participants small business clients <i>(Source: N.C. Community College System)</i>

**Future Measure:** *As part of planning, the Community College System is collecting information on the percent of high demand occupations encompassed by training programs and that information will be available in 2001 and will be used as a future measure.*

**Target 2: By 2010, the number of Basic Skill students who enroll in community college occupational extension and curriculum programs will increase by 30% over the 1998-99 rate.**

Many adults take basic skills courses in the Community College System to get an Adult High School Diploma or GED. Those adults left high school for a variety of reasons but often did not experience success in school. Basic Skill students often face a number of barriers in completing their education such as time and money demands and a lack of support.

- Completing the basic skills program should be considered just a beginning rather than an end point since workers need advanced skills and education in the 21<sup>st</sup> century workforce.

Moving beyond basic skills is particularly important as we look at the growing number of Hispanic workers who are participating in English as Second Language Courses. Many of these individuals often do not have a high school diploma so it is important to move these students through basic skill courses and then into the training programs. The Governor's Advisory Council on Hispanic/Latino Affairs is looking at these issues and working with the Community College System. Some colleges are not only teaching some courses in Spanish but also teaching small business courses for "wish-to-be" business owners.<sup>349</sup>

**Measure 1: Percentage of Basic Skill students enrolling in community colleges and also percentage that get a degree or certificate will increase**

In 1998-99, 9.8% (12,740) of the students who enrolled in Basic Skills courses in 1997-98 school year continued their education in a community college in either occupational extension course or curriculum programs.<sup>350</sup>

To determine progress, an important measure is the number of Basic Skill students who seek additional training by entering community college curriculum and occupational extension programs. This measurement indicates improvement in the literacy rate but also progress toward more than a K-12 education.

## **Goal 3: Workplaces in North Carolina will be safe places for employees to work, provide competitive salaries, offer growth opportunities and respect workers.**

### **The End of Certainty**

The work environment is an important factor for success. Yet in today's global economy, uncertainty permeates the workplace. Workers can no longer count on lifetime employment with one company. Many low-skilled jobs are disappearing. Workers may need new skills or they may be faced with working two or three jobs to earn enough money to support their families.

Not only is work changing, workers are also changing.

### **The Search for Fulfillment**

"Job security and high pay are not the motivators they once were, because social mobility is high and people seek job fulfillment...Generation Xers watched their parents remain loyal to their employers, only to be downsized out of work. As a result, they have no corporate loyalty at all. Many will quit their job at even the hint of a better position. For Generation X, the post-baby-boom generation, work is only a means to their ends, money, fun, leisure."<sup>351</sup>

### **The Need for Flexibility**

Workers faced with demands of children and aging parents are seeking more work flexibility. Companies trying to attract the best workers find that flexibility; telecommuting, childcare or elder care resources and referrals can be great recruitment tools.

National studies including one by the Center for Policy Alternatives in 2000 found that "71% of the women surveyed said they would choose a job with more flexibility and benefits over a job that offers more pay."<sup>352</sup> Several North Carolina companies have been recognized for their efforts in this area by *Working Mother* magazine and other publications.

### **The Disappearance of Benefits**

Even though some employers are offering more flexible benefits, the number and amount of benefits workers receive appear to be declining. *The New Economy Index* finds that "in general, a smaller percentage of American workers are receiving benefits today than 15 years ago. The share of workers receiving defined-benefit pension plans has fallen from approximately 30 percent of the workforce in 1981 to 20 percent today, while the share of workers receiving pension plans of any type has fallen slightly since the mid-1980s."<sup>353</sup>

The decline in benefits for workers has public policy implications.

- If workers, particularly low-income, don't have access to health care and retirement plans, will government step in to assist with health care? How will aging workers receive care after they retire?
- The growth in contingent workers and self-employed workers may force a new look at partnerships to provide benefits.
- The portability of benefits becomes more important with the growing mobility of the workforce through career changes and the downsizing and reorganization of companies.

*(Benefits are also discussed in the Healthy Children and Families)*

Two important measures of progress for workers are higher wages and safe workplaces.

**Target 1: By 2010, North Carolina will be among the top 20 states in per capita income and workers are earning a living wage**

North Carolina's prosperous economy, its communities, families and even government services depend on workers earning higher wages. Many North Carolinians still work two or more jobs to make ends meet. Police officers and government workers in urban communities find they must live outside of the communities they serve because they cannot afford living in those cities and towns.

**Rural lens**

For rural areas, an increase in wages is critical to the economic stability of the regions. The former Chair of the N.C. Employment Security Commission Parker Chesson says, "You can't do much in rural areas until you have jobs. Decent wages in those communities are just as important as highways and natural gas."<sup>354</sup>

Wage disparity is evident across the state. Workers in Wake County averaged \$664 per week in the first quarter of 2000 compared to \$377 a week in rural eastern Bertie county and \$461 in Alexander County in the western part of the state. (Source: N.C. Employment Security Commission)

## Measure 1: North Carolina will must move up 11 places in per capita income by 2010

North Carolina has made some progress in per capita personal income of its citizens, moving its ranking to other states from the 40s in the 1980s to 31 in 1999.

	1999	1998	1997
US	\$28,542	\$27,322	\$25,874
North Carolina	\$26,603	\$25,454	\$24,188
Ranking	31 <sup>st</sup>	31 <sup>st</sup>	30 <sup>th</sup>

Source: Bureau of Economic Analysis

The average North Carolinian earns \$2,000 less than the average U.S. citizen does. North Carolina must move up 11 places to be among the top 20 states in per capita income by 2010.

### Living Income

Recent studies have reviewed the federal poverty standard and what low income North Carolinians need to learn a “living income standard” or basic standard of living. A study by N.C. Equity and the N.C. Justice and Community Development Center found that 35 percent of North Carolina taxpayers in 1997 – 1.1 million families earned below a basic standard of income.<sup>355</sup> While the number has been disputed by some groups, the state needs a system for determining what citizens must earn to take care of basic necessities for families.

- Living Income Standard by N.C. Justice Center would be \$8.50 for one parent and one preschooler in rural areas and \$11 in urban areas. The current minimum wage is \$5.15 an hour.

(Additional information on wages can be found in Healthy Families and Children and Prosperous Economy.)

## Target 2: By 2010, the rate of workplace injuries and illness will be 4.0 per 100 full-time workers will decrease

A safe working environment is important if workplaces are to attract skilled workers. Since the fire at the Hamlet plant in 1991, North Carolina has passed legislation to improve worker protection.

## Measure 1: Rate of workplace injuries, illness and deaths will decrease

Workplace injuries and illnesses are declining in North Carolina Rates have improved for the last seven years according to the N.C. Department of Labor. To meet the target, North Carolina must reduce injuries by an additional 1.6 injuries per 100 workers.

	1999	1998
Injuries and illnesses per 100 workers	5.6	6

A special effort to increase safety in the construction industry resulted in a reduction of 8.2 injuries and illness from 8.2 in 1998 to 6.2 in 1999.

### Highway Safety - Fatalities

Nationally, highway crashes are the leading cause of on-the-job fatalities and on-the-job falls were the second-leading cause of fatalities. Violence in the workplace is a serious issue with robberies and violence by co-workers causing the third highest number of fatalities in the workplace.<sup>356</sup>

North Carolina's fatal occupational injuries rose from 222 in 1999 (6<sup>th</sup> in the US) to 234 in 2000 (4<sup>th</sup> in the US). Transportation incidents and assaults and violent acts were the first and second leading causes of deaths on-the-job.<sup>357</sup> If North Carolina is to make workplace progress, then it must also reduce the number of workplace fatalities.

### Summary

North Carolina faces significant challenges in the next 10-20 years to provide employers with a high performance workforce and to provide employees with jobs that pay family supporting wages. The jobs and the workers are changing, requiring new skills and new training opportunities. The measures outlined here will give a strong indication of progress. The key is strong leadership in the public and private sectors willing to adapt quickly and continuously to the changing demands of the global economy.

# A Sustainable Environment

## Vision

**As stewards of the environment, North Carolinians preserve and protect the state's vast resources. The quality of the air, water, and land will be maintained and enhanced. The collection and dissemination of environmental data will reflect advanced technology and communication.**

### **The Environment in 2020**

The air we breathe, the water we drink, and the lands we live on are valuable, irreplaceable natural resources. The word "progress," if viewed through an environmental lens, focuses on conserving our assets. Progress in this sense refers to the desire to create a sustainable and safe environment for future generations. A vision for 2020 views our environmental assets as equal to the assets of a knowledge economy.

The myth of "jobs versus environment" cannot be supported; states can and do have strong economies and simultaneously protect the environment. In fact, states with the strongest environmental records also claim the distinction of having the best job opportunities and climate for long-term economic development.<sup>358</sup>

North Carolina is home to more than 8 million people, inhabitants of an irreplaceable and unique natural environment. The magnificence of the mountains, the rolling beauty of the Piedmont, and more than 300 miles of coastline make this a rich, rare and treasured environment worthy of our attention and protection.

Our goal is to make wise use of the air, water and land. The course set in motion now will sustain and protect the environment for generations to come. We seek to balance the current use of our resources with the long view of conservation for future use. We will leave an environmental inheritance equal to, if not better than, the one we received.

### **Sustainable Environment Goals**

Achievement of these environmental goals will maintain and further protect North Carolina's air, water, natural resources and land for future generations.

1. North Carolina's air and water will be of the highest quality.
2. Natural resources will be healthy and productive.
3. The quality of rural and urban life will be enhanced and preserved.

## Goal 1: In 2020, North Carolina’s air and water will be of the highest quality.

### Primary Performance Targets

Measure	Target	Impact
Air Quality	<p>By 2010, 50% of ozone season days will be “good” air quality days.</p> <p>By 2020, 100% of ozone season days will be “good” air quality days.</p>	<p>Positive impacts include protection of human health, the environment and a vibrant economy.</p> <p>The EPA may impose sanctions if the state does not act. Sanctions include loss of federal highway funds and limits on new and expanded industry.</p>
Water Quality	<p>There will be an increase in the percentage of assessed water bodies fully supporting their designated uses by 2020.</p>	<p>Positive impacts include more clean lakes, rivers and estuaries. The EPA may take action, or citizens may sue to compel the state to clean up impaired waters or to have the EPA clean them up.</p>
Drinking water and wells	<p>100% of residents will have access to water meeting drinking water standards.</p> <p>All counties will have well construction standards by 2010.</p>	<p>The highest quality drinking water for more residents.</p> <p>Safer well water.</p>
Contaminant Incidents	<p>100% of ground water contaminant incidents will be managed by 2020.</p>	<p>Protection of clean ground water.</p>
Water quantity	<p>Withdrawal from major aquifers shall not exceed the recharge rate of each aquifer.</p>	<p>Protection of aquifers and future water supply.</p>



## How ozone is created

The weather is but one contributing factor to the formation of ozone. Other factors, however, are more predictable and constant-- specifically, the emissions from burning fossil fuels.

Ground-level ozone is created in the atmosphere when an excess of nitrogen oxide (NO<sub>x</sub>) combines with volatile organic compounds (VOCs) in the presence of sunlight. Vehicles and coal-fired power plants are the greatest contributors to ozone. However, large and small industries such as gas stations and printers, and home-use products such as paints and cleaners all emit pollutants that react to create ozone. The ozone levels in some of our largest urban centers are among the highest in the nation.

### North Carolina 1995 Statewide Daily Ozone-Forming NO<sub>x</sub> Emissions

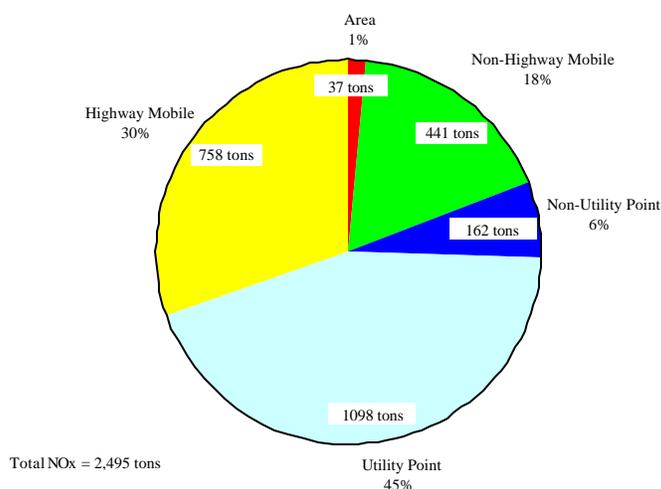


Chart Source: North Carolina Department of Environment and Natural Resources ; Division of Air Quality

## The endangering effects

Ozone inflames and damages the lining of the lungs.<sup>363</sup> High levels of ozone are an irritant to the respiratory system and can contribute to decreased lung function. Ozone can trigger asthma attacks and respiratory illness such as bronchitis and pneumonia. Negative health effects are present at any level of ozone pollution, with the greatest impact on the young and elderly.<sup>364</sup> In addition to endangering the public health, air pollution changes soil chemistry and creates an unhealthy environment for plants. Plant life is more susceptible to disease and pests, and agricultural crop yields are reduced.

## Asthma Studies

Between 1982 and 1996<sup>365</sup> the prevalence rate of people admitting to asthma symptoms increased 58.6 percent, with the largest number of cases occurring in the South<sup>366</sup>. In 1998 a National Health Interview Survey estimated that 26.3 million people had been diagnosed with asthma by a health professional within their lifetimes. Children between the ages of 5-17 had the highest prevalence rate: 135.0 per 1,000 in 1998, up from 130.1 per 1,000 in 1997.<sup>367</sup>

While similar data is not available for North Carolina, a baseline study shows that asthma is a serious problem in North Carolina. The State Asthma Initiative and the UNC School of Public Health conducted the N.C. School Asthma Survey (NCSAS) with 129,000 public school 7th and 8th graders during the 1999-2000 school year. The NCSAS measured asthma prevalence, risk factors, consequences, and healthcare use. More than 27% of the students reported either diagnosed asthma (10%) or undiagnosed wheezing (17%). It is estimated that more than \$15.4 million dollars were spent on asthma-related hospital visits for just these two grades.<sup>368</sup>

Another study by the State Center for Health Statistics used two sets of data to estimate the prevalence of asthma among children in North Carolina. Using Medicaid claims data, the study reports that that approximately 13% of N.C. children ages 0-14 served by Medicaid received prescriptions for asthma medications or were treated by their doctors for asthma symptoms during 1997-1998.<sup>369</sup> The cost was more than \$23 million for medical services and medication.<sup>370</sup> The same study used hospital discharge records to determine the prevalence of hospital use for all children with asthma, not just children enrolled in Medicaid. Asthma was the primary reason for 8% of the hospitalizations of all children under 14 during 1995-97, and the rate of hospitalization for children with asthma in North Carolina was 435.9 per 100,000 children for the three years. North Carolina's rate was better than the national average in 1995, but below the goal set in the National Year 2000 Health Objective.<sup>371</sup>

A study of children over a 15-year period in Toronto, Canada, associated high ozone concentrations with a 34.8 % increase in the number of hospitalizations for children under the age of two.<sup>372</sup>

## **Efforts to reduce ozone**

### **From power plants**

North Carolina's ranking as one of the top air-polluting states is due to the emissions of old, coal-fired plants and an increasing number of vehicles on the roads. Partial solutions to the ozone problem have been addressed by the Environmental Management Commission (EMC) with the adoption of new emission regulations in October 2000. The regulations require a reduction in ozone-forming emissions from stationary sources by two-thirds in five years. With the new standard, NOx emissions during ozone season for the two North Carolina utility companies will drop from 89,000 tons to 28,100 tons by 2006.

During the 2001 General Assembly, legislation was introduced by Progress Board member Senator Steve Metcalf and Representative Martin Nesbitt to further reduce emissions from coal-fired power plants – reducing NOx by 78% by 2009 and sulfur oxides by 73% by 2013. The bill calls for reductions in emissions generated within North Carolina, rather than allowing the purchase of pollution credits from other states. The bill also puts year-round controls on power plants, rather than seasonal ones.

### **From vehicles**

The second major contributor to ozone formation is vehicle use, accounting for up to 90 percent of NOx emissions in urban areas and almost half the ozone pollution statewide.

In 1999, the North Carolina General Assembly enacted the Clean Air Amendments to reduce the emissions from cars and trucks.

- Motor vehicle emissions testing will be expanded to 48 counties, which together account for 82 percent of the state's gasoline-powered vehicle fleet. Only nine counties currently require emissions testing.
- Car and truck ozone-producing emissions will begin to fall in 2002, along with the subsequent use of low-sulfur gasoline statewide by 2004.

Both initiatives were put in place to comply with standards set by the Federal Environmental Protection Agency. Subsequently, the EPA approved a nationwide standard for low sulfur gasoline, which would not be fully phased in until 2006. The N.C. General Assembly is considering legislation which would make North Carolina's low sulfur standard track the slower Federal timeline.<sup>373</sup>

### **From the air**

Monitoring in national parks and Southern Appalachian wilderness areas has documented the dramatic decline in visibility from pollution.<sup>374</sup> On any given summer day in the mountains, there is a good chance that views may be entirely obscured by man-made pollution. Visibility in the southeast has declined by 75% from natural levels.<sup>375</sup> Loss of visibility also undermines North Carolina's tourism industry. The loss in economic activity in the area around the Great Smoky Mountains National Park alone is valued at more than \$200 million each year.<sup>376</sup>

Reducing ozone will improve visibility, but reductions in sulfur oxides and soot are also needed to solve the problem. Nitrogen oxide and sulfur dioxide pollutants react in the atmosphere forming tiny particles called fine particulate matter. The particles create a haze that reduces visibility by reflecting and absorbing light. Like ozone production, the particles responsible for diminishing the view are primarily a result of power plant and vehicle emissions.

## Measure 2: Water Quality

Maintaining water quality is fundamental to the public health and the environment. North Carolina surface waters -- rivers, streams and lakes-- are classified in order to identify their best uses. The designated uses include aquatic life/secondary recreation, primary recreation, fish consumption, water supply and shellfish harvesting.

In the 1980s the state began evaluating water quality using a basin-wide approach to achieve the goals of restoring impaired waters, protecting high-value waters and protecting unimpaired waters.<sup>377</sup> The pollutants monitored by the state include nutrients, fecal coliform bacteria, metals, and soil sediment.

*Terms to note:* Assessing water quality is different from *monitoring* water quality. *Assessing* refers to data collected at one point in time, while *monitoring* refers to data collected from a water body within 5 years. In 1998, 23.9% of waters were assessed nationwide: in N.C., 87% were assessed. It is estimated that the percentage of waters monitored nationwide is less than the percentage of waters that are assessed, but no figures are available.<sup>378</sup>

### Targets

- **500 miles (20%) of presently impaired streams\* will fully support their uses by 2020.**
- **13,600 acres (43%) of presently impaired lakes\* will fully support their uses by 2020.**
- **14,000 acres (20%) of presently impaired estuaries\* will support their designated uses by 2020.**

\*As listed on the 2000 303 (d) list of impaired waters. This is a biennial report from the state to the EPA, which is required by the federal Clean Water Act.

### **Interim Targets**

- **No major fish kills in the Pamlico Sound in 2010**
- **Attain 40 percent nitrogen reduction goals in the Neuse and Tar-Pamlico Rivers as required by legislation and action of the Environmental Management Commission, by 2002 and 2007, respectively.**
- **Protect riparian buffers in all 17 river basins by 2010.**
- **Improve and expand water quality monitoring.**

### **Background**

Water quality is assessed to determine whether a water body is supporting its designated use. Waters are rated as:

- Fully supporting
- Partially supporting
- Not supporting

Based on a review of the state's biennial 305(b) reports to the EPA, there is evidence that *water quality has improved* over the past 12 years. There are waters in the state, however, that have measurably declined in quality during this time and the state faces major challenges in maintaining and improving water quality.

The federal Clean Water Act of 1972 contains a provision that protects existing uses of public waters in order to prevent further degradation.<sup>379</sup> North Carolina's adoption of the federal language actually strengthened the policy by stating that *attainable* uses of water also must be maintained.

According to *Water Quality Progress in North Carolina 1998-1999 305(b) Report*:

- Of the total 38,000 miles of streams, 29% are monitored. Of the monitored streams, 83% are fully supporting their designated uses, 14% are partially supporting, and 3% are not supporting.
- North Carolina has approximately 1,500 lakes covering 311,071 acres. Ninety-eight percent of lake acres are fully supporting their designated uses, 2% are partially supporting, and less than 1 % are not supporting.
- There are approximately 1,997,375 acres, or 3,122 square miles of tidal saltwater estuaries and sounds. The water quality of the estuarine areas is in good condition: 96% fully support their designated uses, 4% are partially supporting.

**Nonpoint source pollution** is pollution that runs off impervious surfaces like streets, houses and shopping centers, or from disturbed land such as logging sites, farms and construction sites. Nonpoint source pollution may also be carried through the air and deposited on the land.

Nonpoint source pollution presents the most crucial challenge to maintaining water quality in the next 20 years. The impairment of North Carolina's streams can be primarily attributed to non-point source pollution, referred to as "the most widespread source of degradation for North Carolina's streams."<sup>380</sup> Nonpoint source pollution also is identified as a prevalent source of pollution in estuarine waters. The state has focused much of its water quality efforts on reducing nitrogen and phosphorus loads in the Neuse and Tar-Pamlico Rivers to restore the Pamlico Sound.

Sediment, or dirt and other heavy contaminants from stormwater, is the biggest pollutant by volume in North Carolina.<sup>381</sup> Construction and other land-disturbing activities are the primary contributors to sedimentation. An increase of sediment in water can reduce fish populations and municipal water supplies' storage capacity. When sediment fills rivers and lakes, it harms the whole aquatic habitat, reducing light penetration, smothering plant life and reducing oxygen levels.

Sedimentation can be prevented in several ways:

- Limiting impervious surfaces
- Improving the use of Best Management Practices (BMPs) to control sediment from construction, forestry and agriculture
- Using development setbacks and requiring riparian buffers
- Protecting stream corridors
- Recycling and reusing wastewater
- Protecting and restoring wetlands

**Point source pollution**, stemming from industrial and municipal wastewater discharges, has declined over the past two decades due to more stringent water quality requirements. The causes of point source pollution are easier to address than nonpoint source pollution because they are more readily identified and controlled by the permitting process. Of the 1,556 permits issued, municipalities have approximately 300, industries have 150 permits and subdivisions, schools and water treatment plants are covered by the remaining permits.<sup>382</sup>

While the permitted wastewater flow from point sources has increased during the past 20 years, the amount of *harmful oxygen-demanding waste* going into the rivers has *significantly decreased*.

### **Mercury, water and the food chain**

Mercury gets into waters and streams through emissions from coal-fired power plants and other sources. In water, bacteria convert mercury to the highly toxic methylmercury, which is readily absorbed by fish. Mercury is a known health threat to humans.

Mercury accumulates very efficiently in the food web. Present in low levels of the food chain and water, it is taken up by large predatory fish such as king mackerel and largemouth bass that generally have higher mercury concentrations. North Carolina currently has 12 consumption advisories for fish in North Carolina waters covering the entire state and coast.<sup>383</sup>

“While the majority of North Carolina’s population is not at risk for adverse effects given current MeHg (methylmercury) exposures, human exposure data from Southeastern North Carolina include some of the highest levels documented in the United States,” according to Dr. George Lucier, chair of the Secretary’s Science Advisory Board on toxic air pollutants. “This is a critical issue for subsistence fishermen and their families and sensitive populations such as women of childbearing age and children.”<sup>384</sup>

## Measure 3: Drinking Water

### Targets

- **100% of North Carolinians will have access to safe drinking water meeting national and state standards by 2020.**
- **All North Carolina counties will have and enforce local well construction standards by 2010.**

### Background

The majority of North Carolinians drink water meeting drinking water standards set by the Environmental Protection Agency (EPA). Under the Safe Drinking Water Act, EPA sets standards, or maximum contaminant levels, and water meeting these standards is believed to be safe to drink. Public systems (based on both surface water and well water) provide drinking water to 5.7 million North Carolina residents, or 71% of the state’s population. All but a few of the public water systems meet EPA drinking water quality standards.<sup>385</sup>

Over half the citizens of the state -- 55%-- get their drinking water from surface water and 45% from wells. Several programs in the state address the current and future safety of water supplies.

### Protecting Surface Water

The *Water Supply Watershed Protection* program, designed to prevent pollution of surface drinking water supplies, is in place in 271 communities in North Carolina.

The Water Supply Watershed Protection program is designed to prevent and minimize pollution of the water supply watersheds by:

- Restricting the number and types of wastewater discharges in the water supply watersheds;

- Controlling stormwater runoff by minimizing impervious surfaces such as parking lots, pavement and buildings; and,
- Requiring buffers along surface waters to allow natural filtration of stormwater, stabilize stream banks and maintain temperature and habitat for aquatic animals.<sup>386</sup>

### **Maintaining Safe Well Water**

The ground water resource becomes threatened by contamination stemming from such activities as unsustainable withdrawals, industrial pollution, old landfills, failing septic systems, animal waste and overapplication of pesticides and fertilizers.<sup>387</sup> Once ground water becomes contaminated, the safety of water supplies is endangered.

The *Wellhead Protection* program, designed to protect public drinking water supplies using ground water, is in place in 38 public water supply systems across the state. Wellhead protection plans include:

- Delineating wellhead protection areas around each public supply well to obtain an inventory of all public supply wells in the plan;
- Identifying and locating potential sources of contamination;
- Developing a plan to manage the threat posed by any contaminant sources. A contingency plan, in the event of contamination, also is developed.<sup>388</sup>

Thirty counties currently enforce *local well construction standards* that meet or exceed state requirements. This is especially important for the 27 percent of state residents who depend on private wells. In some rural communities, 100% of the population depends upon ground water as a primary source for drinking water. A proactive program to promote counties' adoption and enforcement of well construction standards would assist in ensuring the safety of private water supply wells.

## **Measure 4: Contamination**

### **Target:**

- **100% of ground water contaminant incidents will be managed by 2020.**

### **Interim Target:**

- **90% of high-risk ground water contaminant incidents will be managed by 2010.**

Contamination occurs when products such as gasoline, oil, chemicals and biological constituents get into the ground water causing it to become unsafe in the environment or for use as a drinking water supply. Major sources of ground water contamination are underground storage tanks, surface waste impoundments, abandoned landfills, septic systems, hazardous waste sites, pesticides, land applied wastes, industrial facilities and spills.

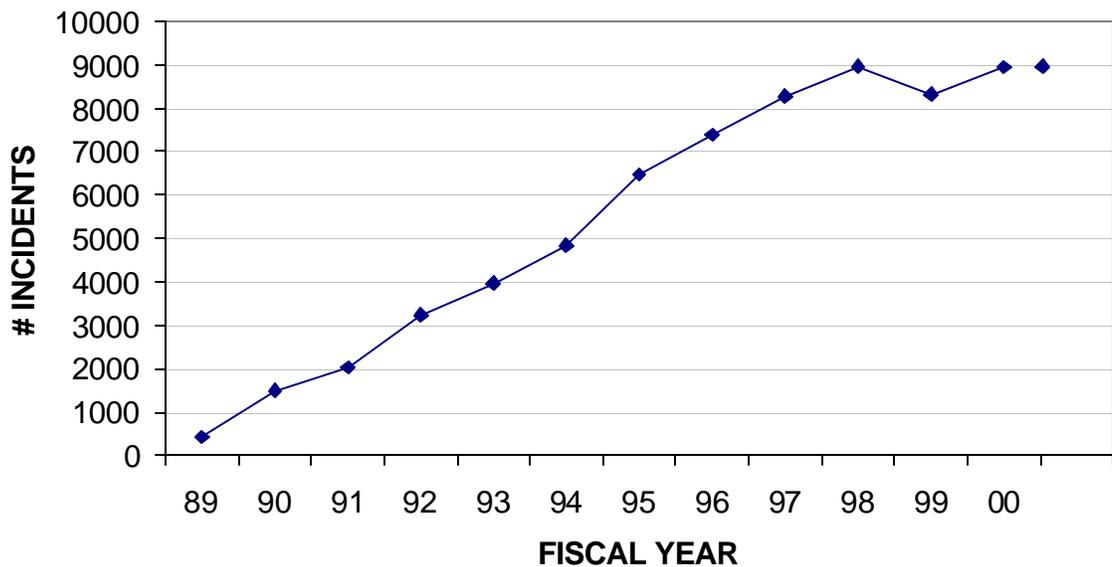
Managing contamination incidents refers to identifying and assessing contamination, determining human and environmental risk, and implementing corrective actions that will protect current and future uses of groundwater, prevent human exposure, and protect the environment. While the current approach to management is pragmatic, some say that conducting the risk assessment implies a willingness to forego cleaning up the contaminated water if the health risk is small.

### Underground Storage Tanks

Underground Storage Tanks (USTs) present a serious threat to citizens and the environment. To address the problem of leaking petroleum and other chemicals, the Leaking Petroleum Underground Storage Tank Cleanup Fund was created in 1988.

The primary purpose of the Fund is to provide financial assurance for tank owners and operators, as mandated by federal law. Secondly, the funds provide a means of reimbursement for tank owners and operators who incur the costs of assessment and cleanup of petroleum contamination at their facilities.

At the time of the first report to the N.C. General Assembly in 1989, there were 857 reported leaking petroleum underground storage tank incidents. As of March 2001, there were 14,839 reported incidents, of which 5,804 had been closed out (meaning no further work would be required). There are 9,035 open UST sites. The total number of open incidents has generally increased since 1988; however, recent data indicates that this trend may be leveling off.<sup>389</sup>



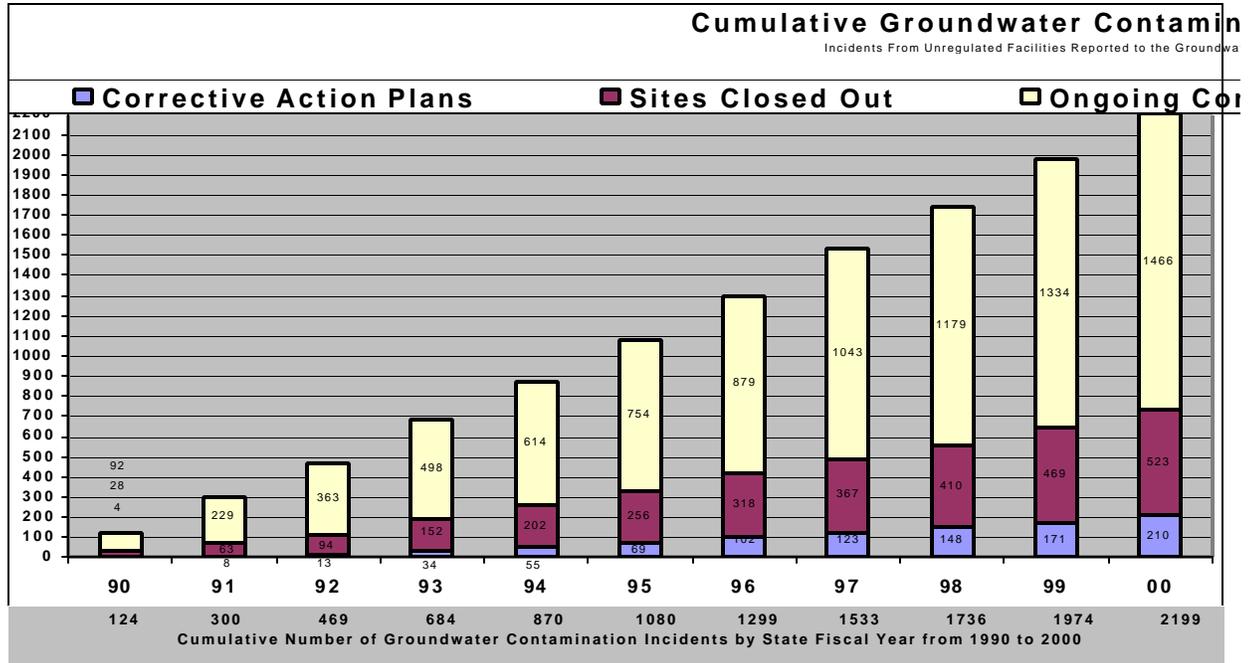
Open UST Incidents<sup>390</sup>

The number of known regulated underground storage tanks in North Carolina has decreased from 96,594 to 32,392 since 1989. However, an estimated 23% of the 32,392 currently active USTs are not in compliance with regulations designed to detect or prevent future leaks. Part of the administrative budget of the Leaking Petroleum Underground Storage Tank Cleanup Fund program is directed towards preventive measures, in an effort to bring all regulated USTs into compliance, and subsequently reduce the number of leaks. It is anticipated that by 2020 the compliance rate will be greater than 95% based on efforts to increase facility inspections and assist tank owners and operators in correct tank operation.<sup>391</sup>

### Other Causes of Groundwater Contamination

Of the 218 regulated landfills in North Carolina required to submit water quality data, corrective action or assessment of the water quality is being performed at 88 sites. Half of the sites are unlined, municipal solid waste facilities that are closed to accepting any new wastes. Corrective action is being taken at the other 43 locations.

There are 1,387 known leaks or spills from 2,187 regulated hazardous waste and superfund sites. Twenty-four percent are currently under corrective action. A new remediation program for dry cleaning facilities indicates that 95% of approximately 900 facilities have released dry cleaning fluids. Managing these incidents is expected to be in place by June 2001.



Over the last ten years, there have been 2,199 chemical, biological and petroleum leaks and spills that contaminated ground water at unregulated sites\* that are not part of the existing wastewater management, landfill, hazardous wastes, or underground storage tank programs. An average of 224 of these contamination incidents have been reported annually over the past five years. For example, in Wake County in 1998, over one-half of reported well contamination incidents were caused by these unregulated incidents. Statewide, corrective action plans for controlling contamination at unregulated sites has been completed for about 33% of the contaminant incidents reported. As the chart above indicates, the cumulative number of “open” incidents has risen, as state regulators have been unable to keep pace.

If the State is to reach the target of managing 100% of groundwater contamination incidents by 2020, increased efforts will be necessary to educate business, industry and the public about how to prevent groundwater contamination and improvement will need to occur in regulatory program response to pollution incidents.

*\*unregulated sites* are places whose normal usage is not specifically governed by environmental rules. For example, landfills and gas stations are subject to environmental regulations based on their uses; back yards and roadsides are examples of *unregulated sites*.

## Measure 1: Ground Water Supply

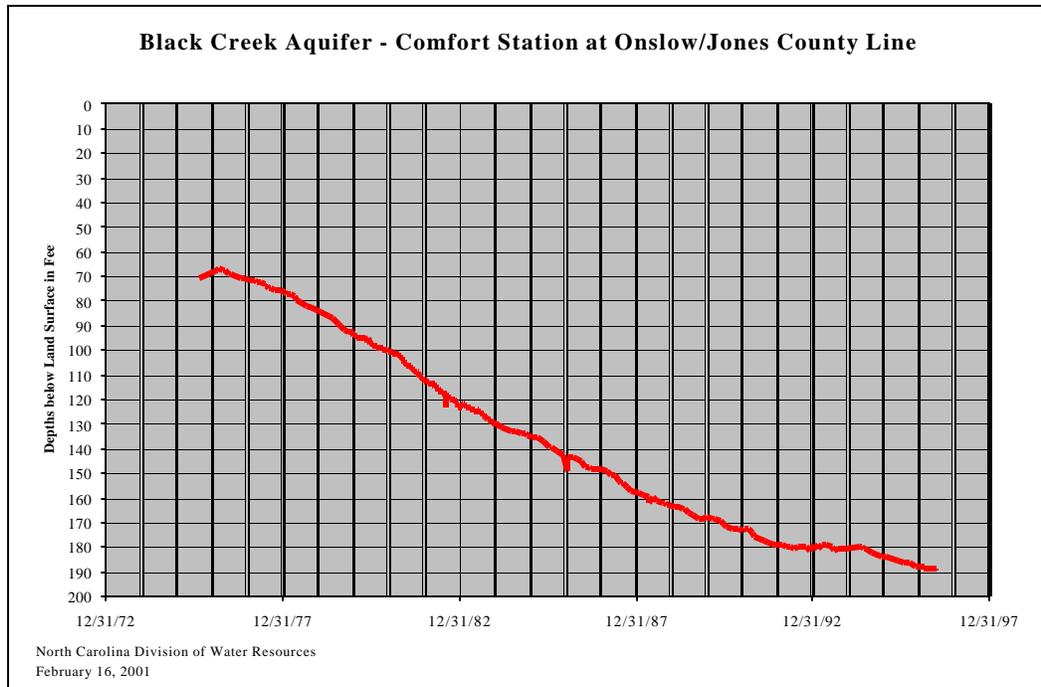
### Target:

- **Withdrawal from major aquifers shall not exceed the recharge rate of each aquifer by 2010.**

The increasing demand for water directly parallels growth of the state’s population. Growth in metropolitan areas on the I-85 corridor and along the coast continues to explode, and the resulting demand for water is becoming more focused in these areas. The state has been blessed with an abundance of water, but the supply for the next 20 years is a major issue with significant repercussions for the future. When aquifers are overused, they lose their ability to recharge, and the loss of capacity is permanent. The importance of protecting the ground water supply cannot be overestimated; ground water provides nearly half the state’s population with their water supply.<sup>392</sup>

Water levels in two major aquifers in N.C.’s central coastal plain, the Black Creek and the Upper Cape Fear, have been declining since the 1960s and are more than 200 feet below the land surface in some areas.

Current withdrawals are exceeding the available supply and ground water is being removed faster than the aquifers can recover.<sup>393</sup> The level of the aquifers has dropped from years of pumping for drinking water, in addition to meeting the needs of industry and agriculture.



In December, 2000 the Environmental Management Commission adopted rules requiring large users of the Black Creek and Upper Cape Fear aquifers to reduce siphoning by 75%. The mandatory reduction applies to daily users of more than 100,000 gallons of water, including municipal systems in New Bern and Kinston, and county wells serving Onslow, Craven and Wayne counties.

Declines are occurring faster than predicted, and in some areas water levels are falling below the top of the aquifer which may result in damage to the aquifers and ground water quality.<sup>394</sup> If water levels continue to decline without stabilizing, and ground water continues to be withdrawn faster than it can be recharged, the effects will include a reduced water yield and damage to the aquifers.<sup>395</sup> Water supply problems also exist in other areas of the state including the Piedmont Triad, Asheville and Buncombe County and the Research Triangle area. The southern coastal plain of North Carolina has experienced ground water reduction similar to that of the central coastal plain, but not as severe.

**Water: Highest Use and Reuse**

Having an adequate supply of clean water for all uses has become a priority for the state. Efforts to conserve and make best use of the resource require a reevaluation of the historical process of disposing all treated wastewater. Water reuse, or reclamation, is the use of highly treated wastewater for non-potable demands for water. Technological advancements have led to high quality results in the treatment of wastewater. Reclaiming of treated waters will improve overall water quality and increase the availability of surface and ground water. The highest quality water should be used for drinking and other personal use, while reclaimed water should be used for non-potable needs such as lawn watering, industrial make-up waters, cooling waters, irrigation, etc.<sup>396</sup>

## Goal 2: North Carolina will ensure healthy and productive natural resources.

North Carolina's valuable shellfish and marine fish stock, forests and wetlands are affected by air and water quality. The condition of these resources reflects the overall health of their ecosystem. Shellfish and marine fish are renewable, but only if the environment supports their sustainability. Forests and wetlands, once destroyed, require planning and many decades to restore.

The amount of open shellfish harvesting acreage and the health status of marine fish serve as general indicators of pollution in water. Open shellfish acreage has declined in the past two decades, and the percentage of healthy fish of total stock evaluated has recently declined. Acreage of forestland and wetlands also has decreased as growth and development convert farm, forest and natural lands.

The environmental challenge for the future involves protecting the ability of all of our natural resources to regenerate themselves and remain diverse and productive.

### Primary Performance Targets

Measure	Target	Impact
Open shellfish acreage	100% of current open shellfish acreage will remain open for harvesting over the next 20 years.	Closed shellfish waters provide evidence of pollution and reduce harvests.
Marine fish stock <sup>397</sup>	100% of evaluated fish stock will improve.	Increased commercial and recreational harvest.
Forests	100% of current forest lands will be maintained as to age, diversity, forest type, class and acreage through 2010.	Improves timber, wildlife, water quality, tourism and recreation.
Wetlands	100 % of current wetlands will be preserved through 2010.	Protects water quality, flood protection, wildlife and recreation.

## Measure 1: Shellfish Acreage

### Target:

- **Maintain the current open acreage of saltwater shellfish beds through 2020.**

The percentage of shellfish acreage open for harvesting is an important indicator of the level of pollution in coastal waters. Of the 2.3 million acres of coastal waters in North Carolina, 1.4 million acres have environmental characteristics suitable for commercial shellfish production.

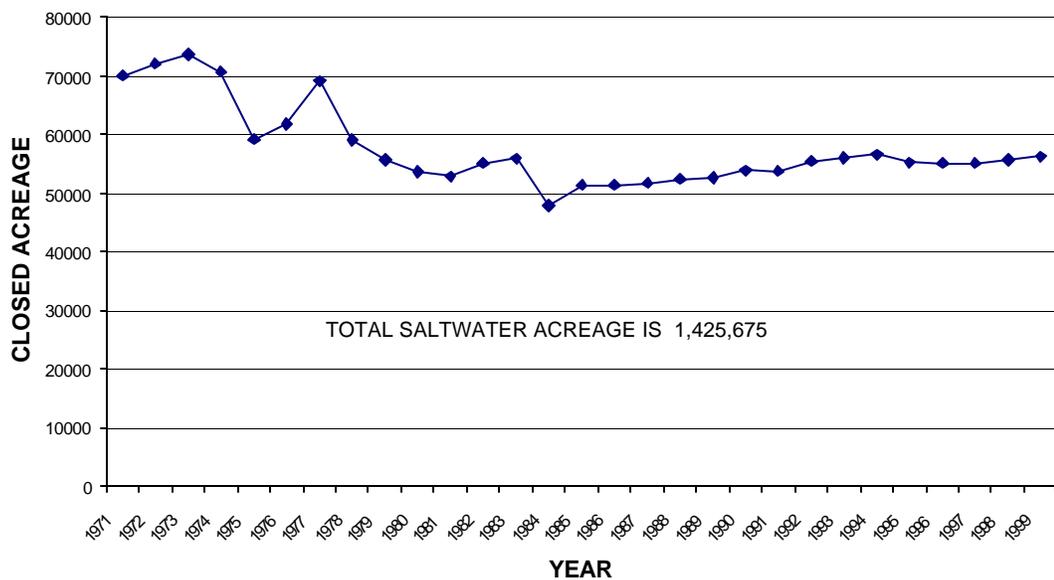
Approximately 3.9%, or 56,191 acres, are closed to shellfish harvesting. Between 1985 and 1999, the annual average of acreage closed to shellfishing was 54,156 acres. During that time there was a net decrease of 4,787 acres open to shellfishing.<sup>398</sup>

### Preventive Measures to Protect Shellfish

- Reduce impervious surfaces
- Prevent the draining and ditching of wetlands
- Maintain natural riparian buffers
- Maintain sewage treatment plants and septic systems
- Prevent livestock wastes from entering estuaries<sup>399</sup>

### SALTWATER ACREAGE CLOSED TO SHELLFISHING IN NORTH CAROLINA, 1971 - 1999

Source: NC Division of Marine Fisheries/NC Division of Environmental Health



### Causes of closure

Urban runoff, septic systems, agricultural runoff and marinas all contribute to increased closures of shellfish acreage. In areas with urban development, non-point source runoff from impervious surfaces also is a major source of many pollutants.

Water quality can be degraded when more than 10 percent of an adjacent area is covered with impervious surfaces such as pavement, sidewalks and roofs. When impervious surfaces reach 30 percent, it can be devastating to the water body receiving the runoff. Rainfall in excess of 1.5 inches within 24 hours can cause temporary harvesting closures. Closures may last from several days to more than a month.

More than 90% of shellfish acreage closures are attributed to stormwater runoff.<sup>400</sup>

The stormwater runoff from one inch of rain falling on one acre of meadow would fill a room with two feet of standing water. The same amount of rainfall on an acre of parking lot would generate enough runoff to fill three rooms with water from floor to ceiling.<sup>401</sup>

## Measure 2: Healthy Fish

### Target:

- **By 2020, all fish stocks will be classified as either Viable, Recovering, or under an approved rebuilding plan. The Unknown category will be eliminated.**

### Interim Targets

- **Fishery Management Plans (FMP) will be developed and adopted for all commercial and recreational fish stocks by 2010.**
- **Coastal Habitat Protection Plans (CHPP) will be developed and adopted for all coastal areas by 2010.**

North Carolina determines the health of its major coastal fisheries annually by evaluating trends in average length and weight, age, catch and other factors. The fish stocks are then categorized as Viable, Recovering, Concerned, Overfished or Unknown. The stock status report is used to prioritize development of Fishery Management Plans (FMPs), which map out long-term management strategies for the state's major fisheries.

In 1997, the state assessed 36 fish stocks, of which 31 percent were considered viable. Between 1997 and 1999, stock status categories and definitions changed and the number of stocks evaluated increased to be more compatible with the federal fisheries management system. In the 2000 stock status report, 39 stocks were evaluated, with only 23 percent considered Viable. The three stocks recently added were all listed as Overfished.

### **What causes fish stocks to decline?**

There are three main reasons why fish stocks decline: overfishing, habitat loss and declining water quality. Overfishing can be controlled by regulating harvest and is addressed in the state FMP process; however, habitat loss, degradation and poor water quality also jeopardize the health of the fisheries.

Coastal Habitat Protection Plans (CHPPs) are being developed for the long-term enhancement of coastal fisheries through protection and heightened consideration of fish habitat in resource management decisions. Individual CHPPs are being developed for all of the state's coastal river basins, sounds and the ocean and are scheduled to be completed by July 2003. Each CHPP will include habitat mapping, status and trends, threats, and a cumulative impact analysis. The plans will recommend research needs and management actions that need to be taken by state regulatory agencies to protect and restore habitat.<sup>402</sup>

## **Measure 3: Forest land**

### **Target:**

- **Maintain the total forest acres and diversity as measured by age, class and forest type through 2010.**

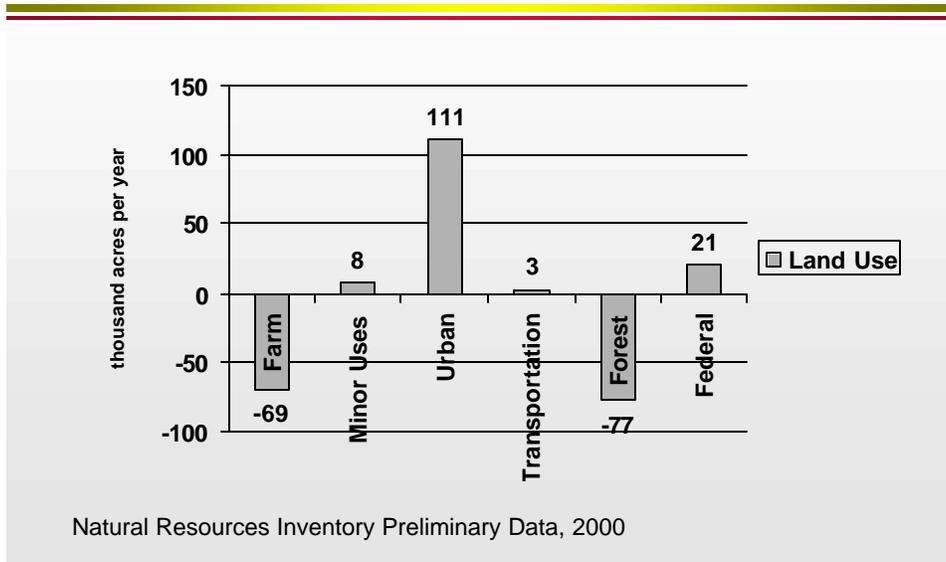
Forests protect water and air quality, provide wildlife habitat and support recreational and tourist uses. North Carolina has been losing forestland since 1964 and forested areas are decreasing rapidly in the mountains and Piedmont. In the Coastal Plain, where there are large cultivated timber tracts, mature forest types are in decline. These declines follow a 26-year period of increase in forestland that followed the Great Depression, from 1938 to 1964.

### **Background**

According to preliminary Natural Resources Inventory (NRI) data, large forest land losses occurred in North Carolina from 1982 to 1997, estimated at 77,200 acres per year, or a 6.8% decrease in forest land. There were other notable land losses during the same time span. The average annual cropland losses were 68,300 acres and pastureland losses were 2,000 acres.<sup>403</sup> Clear-cuts are the predominant form of timber harvests in the state; timber harvests are estimated to consume about 500,000 acres of forestland per year. At this level of harvesting, we will begin to lose more forests than can be regrown.

The loss of forestland has resulted in a gain for urban land. As forestland decreased, urban land area increased more than a million acres from 1982 to 1997, or 111,000 acres per year.<sup>404</sup>

## NC Annual Land Area Change NRI Data, 1982 - 1997



Changes in the volume of harvested timber over the past 60 years further illustrate the pressures on forests. Between 1938 and 1990, the volume of softwood timber increased by 69%, and hardwood increased by 175%. In the last ten years the rate of increase has slowed: softwood volume increased by 24% while hardwood volume increased by 17%. Data indicate that in 1990 we began to cut more softwood on private lands faster than the re-growth rate, and cutting of hardwood forests will exceed growth in only four more years.<sup>405</sup>

### Measure 4: Wetlands

#### Target:

- **Maintain current wetland acreage and riparian buffers in each river basin.**

Wetlands is the collective term for marshes, swamps, bogs and similar areas. Wetlands are important for maintaining a natural balance in the environment.<sup>406</sup> They are valuable for maintaining water quality, water storage, and flood protection. They protect our lakes, sounds and rivers by filtering runoff from adjacent lands before it flows into surface waters. Wetlands provide protection for rivers and streams by reducing the load that enters the waterways, and they are a habitat for aquatic organisms and wildlife. They store and convert sediments, nutrients and toxics carried by stormwater, providing protection for many of our drinking water sources and recreational sites.

It is estimated that there are five million acres of fully functioning wetlands and 2 ½ million acres of degraded wetland in North Carolina today.<sup>407</sup> State policy now calls for no net loss of wetland acreage and function. “Riparian buffers” occur along riverbanks and streams. They are primarily sustained by overbank flooding and the flow of surface and ground water parallel to the stream. They act as water storage systems, assist in nutrient assimilation, and sediment reduction, and stabilize banks and wildlife habitats.

### **Background**

Wetland areas in the state have undergone significant changes: agriculture, forestry, industry, transportation, residential and recreational development have resulted in conversions of wetlands to other land uses.

Since Colonial times wetlands have decreased by 49 percent in the coastal plain, 28 percent in the Piedmont, and 89 percent in the mountains, according to a 1999 Division of Water quality study. In addition, there have been wetland losses in the coastal plain associated with recent ditching and draining activities.<sup>408</sup> After the Federal courts removed federal wetland protection rules, developers in Southeastern N.C. disturbed and drained about 10,000 acres of wetlands in the first three months of 1999, before the Department of Natural Resources and Environment began enforcing state rules.<sup>409</sup>

## Goal 3: North Carolina will preserve and enhance the quality of rural and urban life.

North Carolina has experienced unparalleled growth and economic expansion in the past two decades. This tremendous expansion underlines a critical need for land use planning *and* implementation. If we are to honor important qualities that make our state unique we must preserve and set aside historic, cultural and ecological areas of our state. Redeveloping existing abandoned industrial sites makes sense from both environmental and economic perspectives.

Each of the targets takes into account the resource inherent in the land we occupy, and endorses its highest and best use.

Planning is a visionary process that is no longer an option; it is mandatory if North Carolina is to successfully meet the challenges of its future.

### Primary Performance Targets

Measure	Target	Impact
<b>Land use plans: Smart Growth</b>	All local governments will have and use land use plans incorporating growth management strategies, development monitoring measures and natural resource conservation policies. Growth should be directed to areas with existing infrastructure, including transportation, water and wastewater systems.	Planned urban and rural growth, protection of natural resources, higher quality of life and a healthier economy.
<b>Protected lands</b>	Increase permanently protected lands by one million acres.	Preservation of significant sites.
<b>Brownfields</b>	Increase number of brownfields redevelopment sites.	Cleanup and reuse of existing industrial and abandoned property and less development of farm and forest lands.

## Measure 1: Smart Growth

### Target:

- **All local governments will have and use plans incorporating growth management strategies, development monitoring measures, and natural resource conservation policies by 2020.**

### Interim Target:

- **By 2010, all state programs affecting growth should include land use planning incentives to encourage the use of existing infrastructure, including transportation, water and wastewater systems.**

North Carolina is experiencing unprecedented growth. The current population is 8,049,313 million residents, and projections call for the population to approach 9.6 million by 2020.<sup>410</sup>

The accelerated increase in population testifies to the challenges accompanying growth, including traffic congestion, air pollution and overcrowded schools. Designing safe communities with affordable housing in proximity to employment, providing open space and greenways, and protecting the state's natural and cultural resources are important planning tasks for the future. Creating prosperity in all regions of the state may be one of the biggest challenges of growth in the 21<sup>st</sup> century.

Growth across the state has not been uniform. Rural areas and those with high concentrations of minorities are being left behind. The economic prosperity enjoyed by the rapidly growing urban centers is not experienced in the rural regions of the state. A recent study by the Brookings Institute suggests that North Carolina must guide future growth so that it is more compact *and* balanced.<sup>411</sup>

The growth pattern of the state has stretched along the I-85 and I-40 Interstate systems. Urban areas are expanding from the Triangle through the Triad moving south into the Charlotte area. The five largest counties (Mecklenburg, Wake, Guilford, Forsyth and Cumberland) saw an average increase of 26% in their population between 1990 and 2000.<sup>412</sup> Rapid growth also is occurring in the coastal counties. From 1990-1997, Brunswick, Pender, Currituck, Dare and New Hanover counties all grew by more than 20 percent. The western counties of Macon, Clay, Henderson and Polk also are experiencing high growth due to tourism and an increase in the retirement population.<sup>413</sup>

Comprehensive land use planning *and* implementation are essential for the future of the state. Seventy-nine counties currently have land use plans, but the degree to which they effectively implement the plans varies from county to county.

And, as the work of the Smart Growth Commission has recognized, the State, regional groups and county governments all have collaborative and cooperative roles to play in responsibly managing growth. Working out these relationships will be a significant challenge to implementing 'smart growth.'

**Effective land use plans include four main components:**

- The plans analyze land suitability for various uses;
- Areas are allocated for future use based on suitability and need;
- Future development is directed into areas determined as suitable; and,
- Local land use plans and regulations are coordinated with regional plans and regulations. <sup>414</sup>

(All are recommendations of the Smart Growth Commission.)

The legislative Smart Growth Commission, created in 1999 to address growth management and development issues, completed its work earlier in 2001. The Commission promotes the development of state, local and regional planning measures which balance the use, conservation and protection of resources on behalf of the entire state. Strengthening the rural economy, protecting open space, and supporting existing communities are priorities. Sustainable land use and a variety of transportation options also are endorsed by the Commission. <sup>415</sup>

The Smart Growth Commission's recommendations also recognize that local governments need help in addressing Smart Growth by:

- Enhancing the smart growth 'tool box' at the local level, giving local governments the assistance and tools they need to manage growth.
- Strengthening coordination and cooperation among planning entities operating on a regional basis.
- Developing a state smart growth framework.
- Ensuring consistent oversight of state decisions related to smart growth.
- Ensure state decisions respect local and regional planning decisions.
- Link state infrastructure funding to implemented local land use plans.

## Measure 2: Permanently Protected Lands

### Target:

- **By 2010 increase total area of permanently protected land by one million acres**

North Carolina currently has 2.8 million acres of permanently protected land, the majority of which (72%) is owned by the federal government. The State owns 19% of the protected lands, local governments own 5%, and 4% of the land is included in land trusts.<sup>416</sup> Protected lands include parks, farm and forestland, historic or culturally significant sites, scenic vistas, watershed protection areas, floodplains, and wildlife.

As the population increases to an estimated 9.6 million people by 2020, the need for protected open space will continue to grow. Open space preservation is a concern to residents, and failure to protect lands will diminish the environment, the economy and the quality of life.

Between 1982 and 1997, farms and forests lost the greatest amount of land. Farmland decreased by 69,000 acres per year while forests lost more than 77,000 acres annually.<sup>417</sup> Stabilizing the trend of land conversion will require concerted effort and planning measures.

The protection of an additional one million acres of land over the next 10 years would increase North Carolina's protected lands by 35 percent.<sup>418</sup> The goal of one million additional acres would complement the state's efforts to provide high quality drinking water, economically sound rural and urban communities, the integrity of ecological systems, sufficient recreational lands, and a high quality of life.

Attaining the measure would require the protection of 100,000 acres per year over the next ten years. However, present funding levels allow for protection of only 43,000 to 63,000 thousand acres per year.<sup>419</sup>

## Measure 3: Brownfields Sites Redevelopment

### Target:

- **By 2010 2,000 brownfields properties will be fully utilized.**

Brownfields are abandoned, idled or underused industrial properties where expansion or redevelopment is complicated by real or perceived contamination. The goal of brownfields redevelopment is to revitalize old, industrial sites. The availability of liability protection makes the sites more attractive for development, and the sites are made safe by a combination of site cleanup and land use restrictions. Brownfields redevelopment helps to restore and protect the environment, and serves as an aid to economic redevelopment, job creation and community revitalization.<sup>420</sup>

The Brownfields Property Reuse Act of 1997 limits the liability of developers of brownfields and has enabled the completion of nine brownfields agreements to date. The State program has been effective in leveraging a large amount of private investment dollars with a small amount of public investment.

The need for success in the area of brownfields redevelopment can be substantiated. Because lenders, investors, and developers fear that involvement with brownfields sites may make them liable for cleaning up contamination they did not create, there is the tendency toward investing in undeveloped sites located in pristine areas, or greenfields. This practice, however, perpetuates the expansion of urban sprawl by putting all the burdens of growth on current open space.

The construction of new industrial and commercial facilities, new residential subdivisions, and new infrastructure maintains the practice of further development of new, extended areas in a community. This scenario continues the practice of abandoning sites with existing infrastructure for sites that must be built, literally, from the ground up.

The safe redevelopment of brownfields sites will help to slow this historic trend. Successful brownfields redevelopment will play an integral role in establishing new trends that will improve the quality of life for North Carolinians by facilitating sustainable growth and preserving open space.

The principal barrier to brownfield redevelopment is the lack of personnel to review and approve sites. The Division of Waste Management has only one position—funded by the EPA—dedicated to reviewing and approving brownfields. In an effort to overcome that constraint, the City of Charlotte has provided a grant to the Division of Waste Management to review and approve brownfield projects in the city because the property and other taxes generated by brownfields development will more than pay for the grant.

# A Prosperous Economy

## Vision

**North Carolina’s growing, dynamic economy is competitive in the global marketplace. It is diversified. High-quality jobs are plentiful across all economic, geographic and demographic sectors, without undue reliance on too few industries. “Knowledge workers” dominate the workforce and citizens take advantage of modern communications and technology to create new economic opportunities.**

**Sound, strategic investments in people and infrastructure have accelerated our transition from traditional to knowledge-based economies. Through our willingness to think boldly—and our faith in ourselves—we have built a new economy laboratory on the foundation of our traditional economic strengths. Through research and reinvention, we have made our agrarian and manufacturing past a vital part of today’s prosperous economy.**

### Overview of goals:

1. North Carolina will promote dynamic, diverse and sustainable economic growth across all regions and demographic groups
2. North Carolina will expand the emerging economy sectors, including technology and other knowledge-based businesses
3. North Carolina will revitalize the traditional economic sectors and ensure their competitiveness in national and global markets
4. North Carolina will promote the expansion of international markets and facilitates access to foreign capital and commerce

These four goals, along with their respective performance measures and targets, are discussed below in more detail.

## Goal 1: Promote dynamic, diverse and sustainable economic growth across all regions and demographic groups.

### 2020 Goals and Targets:

North Carolina will exceed the average US growth rate in Gross State Product between 2000 and 2020, but its economic growth will be sustainable and supportive of other statewide goals. Sustainable economic growth will produce good jobs for the short term, yet preserve our existing resources for future generations.

Economic growth should leave no North Carolinians behind. While a high standard of living cannot be guaranteed for every citizen, every effort should be made to eliminate income disparities and promote asset accumulation, especially home ownership, among historically-disadvantaged demographic groups. Similarly, economic prosperity should be enjoyed throughout all regions, from the mountains to the Piedmont to the coastal areas. Lifelong learning should characterize workers in this knowledge economy.

### Primary Performance Targets

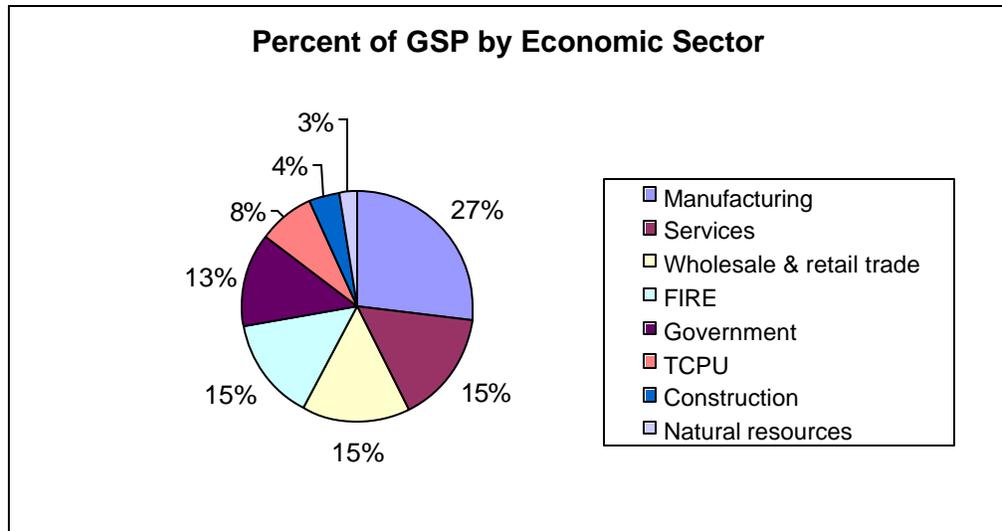
Performance Measure	Definitions	Relevance	2020 Target
<b>Long-term growth</b>	US rank in the long-term growth rate for Gross State Product, the value of all goods and services produced in the state	Steady and sustainable growth in the Gross State Product will support a high quality of life and generate ample revenues for public services	Top 10 in US
<b>Short-term growth</b>	US rank in the ratio of net business starts (starts / closings)	A high net business start ratio indicates short-term economic vitality and potential long-term economic resilience	Top 10 in US
<b>Employment</b>	US rank in the long-term growth rate for jobs	A consistently high job growth rate is one reliable indicator of a strong, prosperous economy	Top 10 in US
<b>Personal income</b>	US rank in per capita income (i.e., wages, proprietor income, dividends, interest, rent & government payments) or the ratio of N.C. per capita income to US per capita income	A per capita income in excess of 110% of the US level is an indicator of relative economic prosperity, business growth and high-wage jobs	Top 20 in US or at least 100% of the average US per capita income
<b>Economic disparity</b>	Ratio of per capita income in non-metro areas to per capita income in metro areas	Stagnating rural employment rates could reflect a widening economic gap between urban and rural areas	At least 80%

Selected aspects of the state's recent economic performance are summarized below.

**Recent Performance Trends:**

Long dominated by its *Big Three* manufacturing industries of textiles, furniture and tobacco, North Carolina is undergoing dramatic economic diversification. Traditional industries such as manufacturing remain important, but other sectors, including services and emerging industrial clusters, are growing at a much faster rate.

North Carolina's dominant economic sectors are manufacturing, services, wholesale and retail trade and government (see table below). In terms of economic output, measured as a percent of Gross State Product, manufacturing is the largest sector at 27.0 percent of Gross State Product. Services is ranked second at 15.4 percent, wholesale and retail trade is third at 15.3 percent, and the finance, insurance and real estate sector is fourth largest at 14.5 percent and government is fifth with 13.2 percent of the Gross State Product. Other sectors are transportation, communications and public utilities (7.9 percent of Gross State Product), construction (4.2 percent), and natural resources, including farming, forestry, fishing and mining (2.5 percent).<sup>421</sup>



Source: The North Carolina Atlas, Portrait for a New Century, University of North Carolina, 2000  
 Note: FIRE = Finance, insurance & real estate; TCPU = Transportation, communications & public utilities

In terms of jobs, the service sector is the largest economic sector in North Carolina. In 2000, North Carolina's non-farm employment was nearly 4.0 million, and service jobs accounted for 26.2 percent of that total. Wholesale and retail trade was second with 22.8 percent of total jobs, manufacturing was third at 19.8 percent and government was fourth at 15.8 percent. The construction and finance, insurance and real estate (FIRE) sectors accounted for 5.9 percent and 4.7 percent of total jobs, respectively.<sup>422</sup>

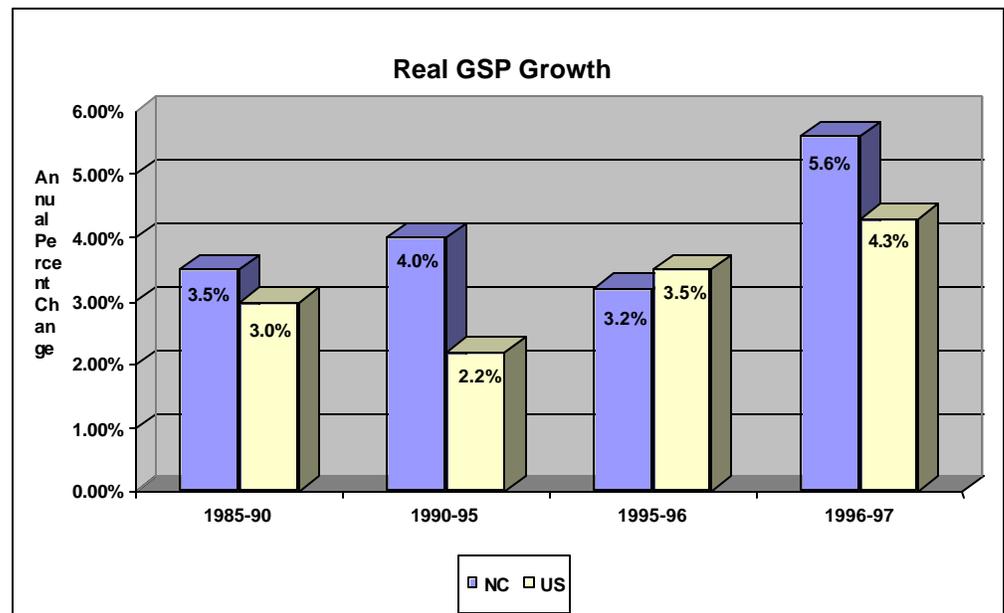
The state's recent performance trends, using the recommended performance measures, are summarized below.

### Summary of Key Performance Trends

Measure	Trend	Performance Highlights
Long-term growth	↑	From 1977 to 1997, N.C. ranked 9 <sup>th</sup> in its Gross State Product growth rate, but N.C. is ranked only 21 <sup>st</sup> in the US in per capita Gross State Product in 2000
Short-term growth	↓	N.C. ranked 7 <sup>th</sup> in the nation in net business starts in 1998, but fell to 11 <sup>th</sup> in 1999
Employment	↑	From 1990 to 2000, N.C. ranked only 26 <sup>th</sup> in long-term employment growth
Personal income	↑	From 1990 to 1999, N.C.'s per capita personal income grew from 87 percent of the US level to 91 percent and its per capita income national rank rose from 35 <sup>th</sup> to 32 <sup>nd</sup>
Income disparity	↓	The ratio of rural income to urban income fell from nearly 76 percent in 1991 to less than 75 percent in 1996

### Measure 1: Long-Term Growth

The growth of North Carolina's gross state product has exceeded the national average for two decades, but stalled in recent years. From 1977 to 1997, North Carolina had the 9<sup>th</sup> highest Gross State Product growth rate in the US.<sup>423</sup> From 1989 to 1997, North Carolina's Gross State Product grew by 23.5 percent (compared to the US rate of 16.7 percent).<sup>424</sup> As illustrated by the table below, North Carolina's growth rate outpaced the US average throughout the late 1980s and most of the 1990's.



Source: Bureau of Economic Analysis (Commerce), BEA News Release, June 7, 1999

Unfortunately, North Carolina has not seen its per capita Gross State Product ranking improve in the last few years. Our national ranking in per capita Gross State Product was only 21<sup>st</sup> in 1998 and 2000.<sup>425</sup>

## Measure 2: Short-Term Growth

As illustrated by the chart below, North Carolina's ratio of business starts to failures was twice as high as the nation's ratio in 1997 and 1998.

### Net Business Starts – North Carolina vs. US

Measure	North Carolina		US	
	1997	1998	1997	1998
Business starts	4,578	4,371	166,740	155,141
Business failures	1,051	846	84,342	71,857
Net business starts	3,527	3,525	82,398	82,284
Ratio of business starts/failures	4.3:1	5.2:1	2.0:1	2.2:1

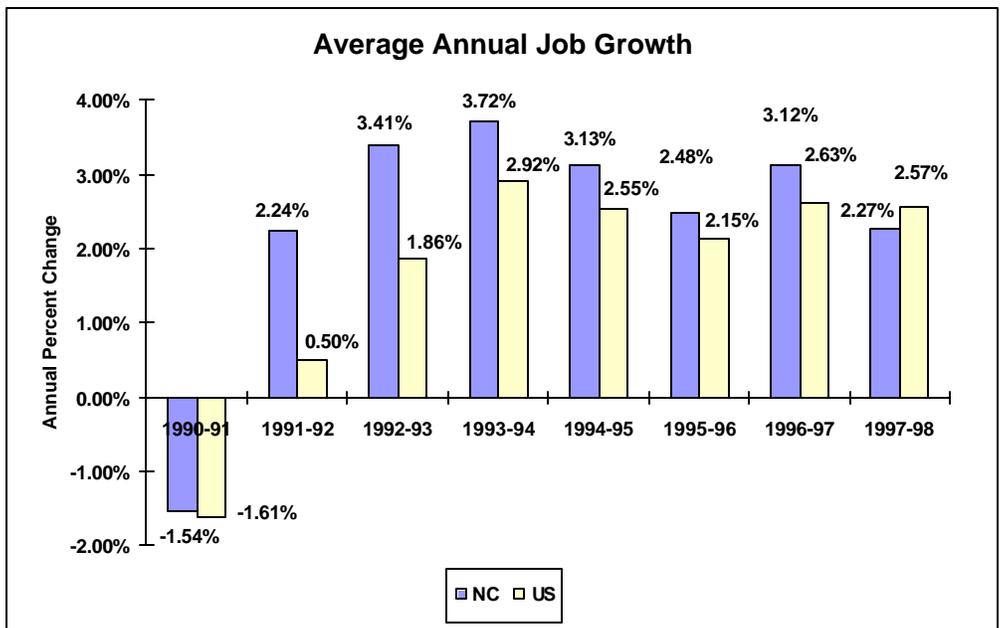
Source: Dun & Bradstreet Corporation, A Decade of Business Starts

However, there are some signs that North Carolina's short-term economic vitality, after strong performance during much of the 1990s, may be beginning to wane. North Carolina's ranking in net business starts fell from 7<sup>th</sup> in 1998<sup>426</sup> to 11<sup>th</sup> in 1999.<sup>427</sup>

North Carolina's short-term economic growth is also slowing according to the Index of State Economic Momentum, an average of the most recent one-year growth rates in employment, personal income and population. Using this indicator, North Carolina fell from a national ranking of 6<sup>th</sup> in 1997 to 15<sup>th</sup> in 1998 and then again to 22<sup>nd</sup> in 2000.<sup>428</sup>

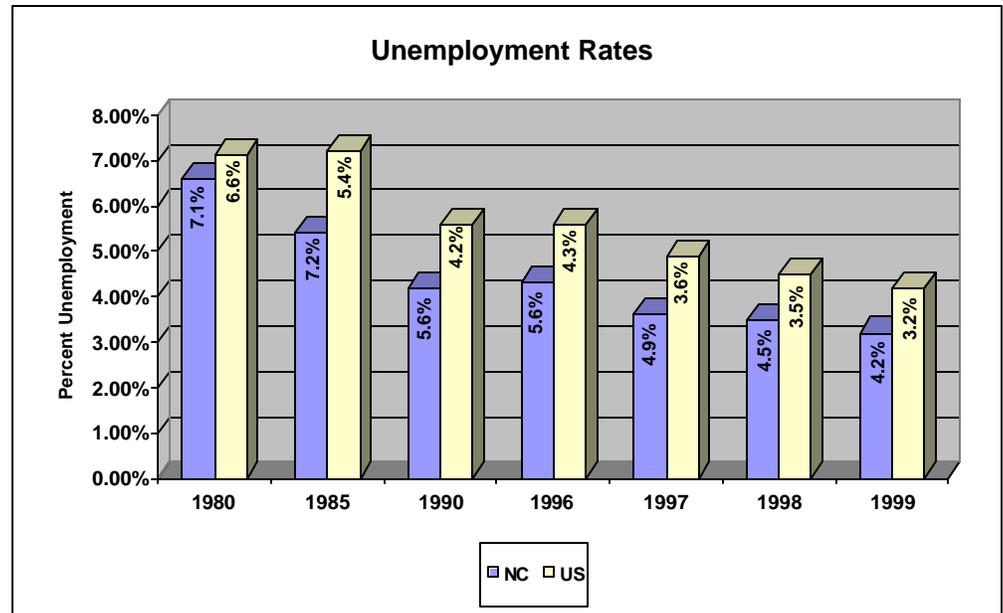
## Measure 3: Employment

From 1990 to 2000, North Carolina's employment expanded by 14.7 percent, matching the US growth rate.<sup>429</sup> As shown in the chart below, North Carolina exceeded the US average in job growth between 1991-92 and 1996-97. However, its national rank in job growth fell from 13<sup>th</sup> in 1996-97 to 26<sup>th</sup> in 1997-98.



Source: Bureau of Labor Statistics *Employment and Wages, Annual Averages*, Table 3

As illustrated by the chart below, North Carolina's unemployment rate was consistently below the national average throughout the 1980s and 1990s. Moreover, by 1999, our unemployment had fallen to about half the 1980 rate.



Source: Bureau of Labor Statistics (BLS), Local Area Unemployment Statistics, Table 1

However, the last two years have been less kind. In February 2001, North Carolina's unemployment rate (unadjusted) exceeded the national average<sup>430</sup>. As a result, our national unemployment ranking has declined from the 12<sup>th</sup> lowest unemployment rate among the states in 1996, to the 13<sup>th</sup> lowest unemployment rate in 1998<sup>431</sup> and the 15<sup>th</sup> lowest rate in 2000.<sup>432</sup>

North Carolina has long trailed the nation in real average wage per worker, due to its concentration of labor-intensive industries (e.g., textiles, apparel and furniture) and low cost of living. North Carolina's recent economic prosperity has narrowed the wage gap, but only slightly. Between 1989 and 1998, North Carolina's average wages grew faster than the US average wage.<sup>433</sup> In 1998, the average North Carolina worker earned about 88 percent of the US average wage.<sup>434</sup>

## Measure 4: Personal income

We have come a long way, but, despite some progress during the 1990s, North Carolina continues to trail the nation in per capita income. In 1930, our per capita income was only 47 percent of the US per capita income. From 1990 to 1999, North Carolina's per capita personal income rose from 87 percent to 91 percent of the US average, and its national rank for per capita income rose moderately from 35<sup>th</sup> to 32<sup>nd</sup>.<sup>435</sup> However, North Carolina's performance peaked in 1998. From 1994 to 1998, North Carolina enjoyed the 13<sup>th</sup> highest per capita income growth

rate in the nation.<sup>436</sup> In 1998, North Carolina ranked as high as 28<sup>th</sup> in the nation in per capita income.<sup>437</sup> However, in 1999, due in part to Hurricane Floyd damage, North Carolina had the slowest per capita income growth rate in the nation.<sup>438</sup>

In a broader sense, North Carolina's families are faring better than the per capita income data would indicate. Our median household income, adjusted for the cost of living, is 99 percent of the national average.<sup>439</sup> Our home ownership rate is higher than that of most states. In 1998, North Carolina's home ownership rate was 71.3 percent (compared to a national average of 66.3 percent), the 14<sup>th</sup> highest in the US.<sup>440</sup> We also enjoy a low cost of living, the 44<sup>th</sup> lowest in the nation in 1997.<sup>441</sup>

## Measure 5: Economic disparity

Despite our impressive statewide economic performance, some segments of the state have been left behind. As illustrated by the chart below, the state's rural areas have fared poorly in median family income and employment.

### Regional Economic Disparities - 1998

N.C. Commerce Department Region	Largest County	Percent of N.C. Average	
		Median Family Income	Un-employment
Northeast (16 counties in northeastern N.C.)	Halifax	76.9%	174.3%
Advantage West (23 counties in the mountains)	Buncombe	81.2%	105.7%
Southeast (11 counties southeastern N.C.)	Cumberland	81.6%	154.3%
Global Transpark (13 counties in eastern N.C.)	Onslow	86.6%	148.6%
Piedmont Triad (12 counties in central Piedmont)	Guilford	98.0%	82.8%
Research Triangle (13 counties in eastern Piedmont region)	Wake	103.2%	62.8%
Carolina (12 counties in western Piedmont region)	Mecklenburg	104.1%	80.0%

Sources: US Department of Commerce and N.C. Employment Security Commission

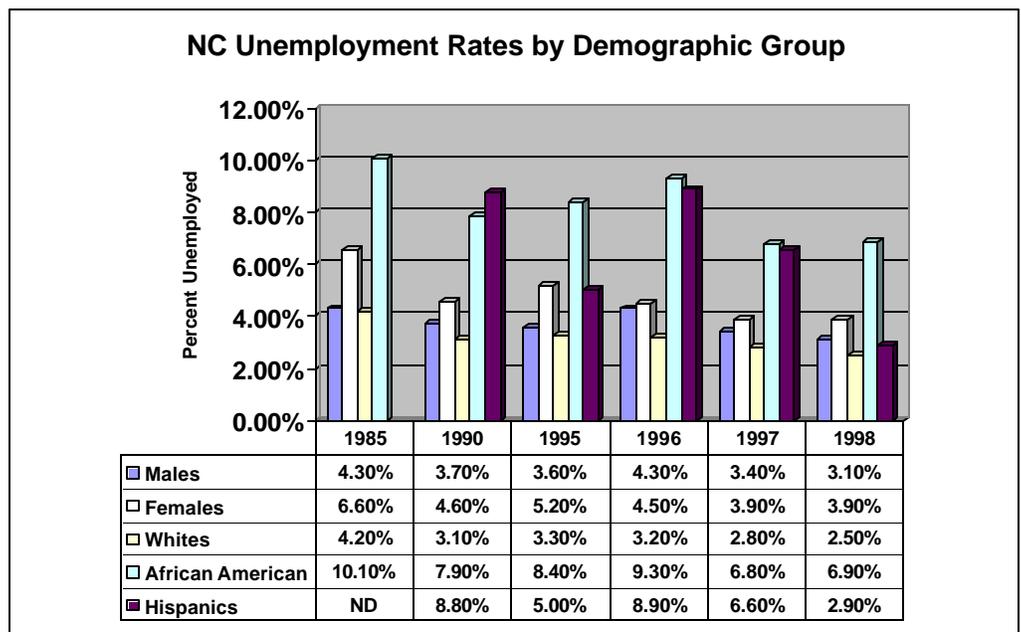
According to the North Carolina Rural Economic Development Center, Inc. (the Rural Economic Development Center), the economic gap between rural and urban North Carolina is not getting any smaller. The ratio of rural to urban per capita income fell slightly from 76 percent in 1991 to less than 75 percent in 1996.<sup>442</sup> In 1999, the Rural Economic Development Center reported 26 rural counties with persistent poverty (i.e., a poverty rate of at least 18 percent since 1980).<sup>443</sup> In 1998, 27 rural counties had unemployment rates above the state average.<sup>444</sup> In 1998-99, rural areas,

with only 41 percent of the jobs, incurred nearly 60 percent of the layoffs, and *two-thirds* of the manufacturing job losses.<sup>445</sup>

Rural areas may be losing their ability to compete. The Rural Economic Development Center has concluded that this rural-urban economic disparity reduces the capacity of rural communities to invest in their economic turnaround. According to the Center, urban areas have more than twice the capacity of rural areas to finance community investments.<sup>446</sup>

And the gap is widening between rich and poor. Persistent economic disparities among demographic groups may loom as potential threats to economic prosperity. From 1988 to 1998, the percent of North Carolinians living in poverty<sup>447</sup> declined from 13.6 percent to 12.7 percent.<sup>448</sup> However, the gap between the wealthiest and poorest households widened considerably. Between 1980 and 1998, North Carolina real average incomes increased by 39.5 percent for the wealthiest fifth households, but only 0.1 percent for the poorest fifth of households.<sup>449</sup>

The employment gap between African-Americans and other groups remains. As illustrated by the chart below, the Hispanics unemployment rate has improved dramatically. However, the African-American unemployment rate was nearly three times higher than the unemployment rate for whites in 1998.



Source: Bureau of Labor Statistics, *Geographic Profile*, Table 12.

Leaving rural areas or minority groups behind could serve as a drag on statewide economic performance and contribute to more serious social ills, such as higher crime. Even when the state's overall economic performance is strong, seemingly isolated economic disparities among regions or population groups may signify more fundamental structural problems.

## Taking Action:

Investments have been made in rural life. The state government has made significant investments in its economic future, much of it focused on rural communities, and so-called "low-wealth" counties. It created the Industrial Development Fund in 1995 to help poor counties renovate buildings and meet infrastructure needs. It enacted the William S. Lee Quality Jobs and Business Expansion Act in 1996 to encourage companies to invest in distressed areas.

In 2000, the Governor's Task Force on Rural Prosperity issued a report recommending several strategies for helping rural areas participate in economic growth:

- Create a Rural Internet Access Authority (RIAA) to ensure that all North Carolina residents have high-speed, affordable Internet access within three years;
- Create a Rural Redevelopment Authority to help rural communities improve economic development efforts;
- Create an Agricultural Advancement Consortium to develop proactive agricultural policies; and
- Enact legislation to provide rural North Carolina with water and sewer, roads, and affordable housing to sustain economic growth.

State government can have an impact on economic prosperity, but only if it correctly anticipates—and takes advantage of—prevailing market forces. A state government that tries to swim upstream, and spend tax dollars to redirect market forces—will likely fail. A successful competitive strategy is founded on knowledge—knowledge about one's competitors and the market environment in which they compete.

North Carolina's economic performance will continue to depend on the readiness of its workforce and the quality of its infrastructure—there is little doubt of that. Substantial investments in education, training and public infrastructure not only must continue, but most likely will have to be expanded to sustain the economic growth and prosperity that characterized much of the past decade. Our tax policy will have to be continually reexamined to ensure that it does not discourage economic investment.

However, as North Carolina makes big decisions about its economic future, it must look beyond parochial interests and short-term *crises*. We must see the global market for what it truly is—not what we would like it to be—and adopt a more business-like approach to economic investment. At the very least, this will require our state government to improve its tracking of economic data. Ultimately, it may compel our leaders to think more strategically about investing in our economic future.

## Goal 2: Expand the emerging economy sectors, including technology and other knowledge-based businesses.

### 2020 Goals and Targets:

The question is not whether we should pursue *New Economy* opportunities, but how.<sup>450</sup> To remain a new economy leader, North Carolina must stimulate private investment in technology and innovation. We can do so in a number of ways. For starters, we can create a receptive climate for new venture and research and development (R & D) spending, two of the building blocks of successful knowledge-based companies. R & D-intensive companies enhance high-wage jobs, personal wealth and state exports.

Our state must also make targeted investments in infrastructure that new economy companies need—telecommunications networks, modern transportation systems and logistics centers (e.g., airports). We should target workforce programs to produce strong skills on short notice (e.g., give community colleges the teaching resources they need to construct a wide array of certificate, licensing, and degree programs). Building world-class research universities will expand our pool of scientists, engineers and other knowledge workers and this, in turn, will fuel the growth of emerging businesses. Harnessing the full potential of our universities will promote the growth of new economy firms in all sectors, including the software, bioinformatics, pharmaceutical, medical and manufacturing sectors.

### Primary Performance Targets

Performance Indicator	Definitions	Relevance	2020 Target
<b>Economic transformation</b>	US rank in the Progressive Policy Institute's New Economy Index	States with high ratings are better positioned to participate in the emerging economic sectors	Top 10 in US
<b>Economic dynamism</b>	US rank in the value of initial public stock offerings as a percent of Gross State Product	IPOs indicate a state economy's ability to rejuvenate itself & produce enterprises with strong long-term growth potential	Top 10 in US
<b>Innovation capacity</b>	US rank in industry research & development spending as a percent of Gross State Product	R & D spending represents a key indicator of new product innovations & future growth	Top 10 in US
<b>New economy jobs</b>	National rank in the ratio of high-tech workers per 1,000 jobs	Access to high-tech workers is a predictor of future growth in the emerging economic sectors	Top 10 in US

North Carolina's recent performance in new economy sectors is summarized below.

## Recent Performance Trends:

New economy. The new economy is about tomorrow’s ideas, not just today’s technologies. In North Carolina, the new economy involves a broad range of industries. Our largest new economy cluster is information technology and instruments.<sup>451</sup> However, during the last decade, our greatest relative job growth has come not from information technology, but from the communications services, software and chemicals and plastics clusters.<sup>452</sup>

We are at the dawn of a revolution in knowledge-based industries. We have been a leader in many of these industries during the last 20 years, and we are poised to lead for the next 20 years—if we make the necessary investments.

Biotechnology. North Carolina’s biotechnology industry is just one example. With over 120 biotechnology companies, 65 contract research and testing firms, 20,000 jobs and \$1.8 billion in annual sales, North Carolina is one of the nation’s leading biotechnology states<sup>453</sup>. We enjoy the benefits of two large research parks, four medical schools and numerous prestigious universities. Three universities—Duke, University of North Carolina and North Carolina State University—have announced plans for genomics and bioinformatics research centers with a combined investment of nearly \$750 million.<sup>454</sup>

The reason for such investments is simple—and compelling. In 20 years, the biotechnology industry is expected by some to grow almost exponentially. Annual sales in North Carolina alone could reach \$24 billion, and the number of jobs in our state could grow to 125,000.<sup>455</sup> And this technology promises more than just economic benefits. With innovative health care, household, agricultural and environmental products, it could literally transform our every day lives. With its use of crops for pharmaceutical products it is also a technology that can be easily adapted to rural areas and help transform and reposition our traditional economy.

The new economy offers almost unlimited promise, but only for those states that provide the most receptive climate for innovation. The state’s recent performance trends, as summarized below, suggest that we our work is cut out for us.

### Summary of Key Performance Trends

Measure	Trend	Performance Highlights
<b>Economic transformation</b>	↔	In 1999, N.C. was ranked 30 <sup>th</sup> in the aggregate new economy measure of the State New Economy Index
<b>Economic dynamism</b>	↔	In 1998, N.C. was ranked 29 <sup>th</sup> in the US in the value of initial public offerings (IPOs) as a percent of Gross State Product
<b>Innovation capacity</b>	↔	In 1999, N.C. was ranked 27 <sup>th</sup> in US in industry R & D spending as a percent of Gross State Product and 10 <sup>th</sup> in venture capital disbursements as a percent of Gross State Product
<b>New economy jobs</b>	↔	In 1999, N.C. was ranked 23 <sup>rd</sup> in US in the number of high-tech workers per 1,000 jobs and 22 <sup>nd</sup> in the percent of civilian scientists and engineers

## Measure 1: Economic transformation

North Carolina has enjoyed considerable success in attracting new economy businesses. The Wall Street Journal ranked North Carolina among “America’s 13 Hottest High Tech Regions in 1999.”<sup>456</sup> The Research Triangle Park has evolved into a world-class technology center, Charlotte has become a renowned financial center and the Triad area shows promise as a regional distribution center.

However, as shown by several studies,<sup>457</sup> North Carolina cannot rest on its laurels if it is to remain competitive. North Carolina is the nation’s 11<sup>th</sup> largest state, but it languishes at 30<sup>th</sup> in overall new economy rankings, 39<sup>th</sup> in aggregated digital economy scores, 31<sup>st</sup> in aggregated knowledge jobs scores, 39<sup>th</sup> in workforce education and 29<sup>th</sup> in initial public offerings.<sup>458</sup> Since 1994, North Carolina has produced 31,100 high-tech jobs, but its national ranking in high-tech employment has remained unchanged at 14<sup>th</sup>.<sup>459</sup>

## Measure 2: Economic dynamism

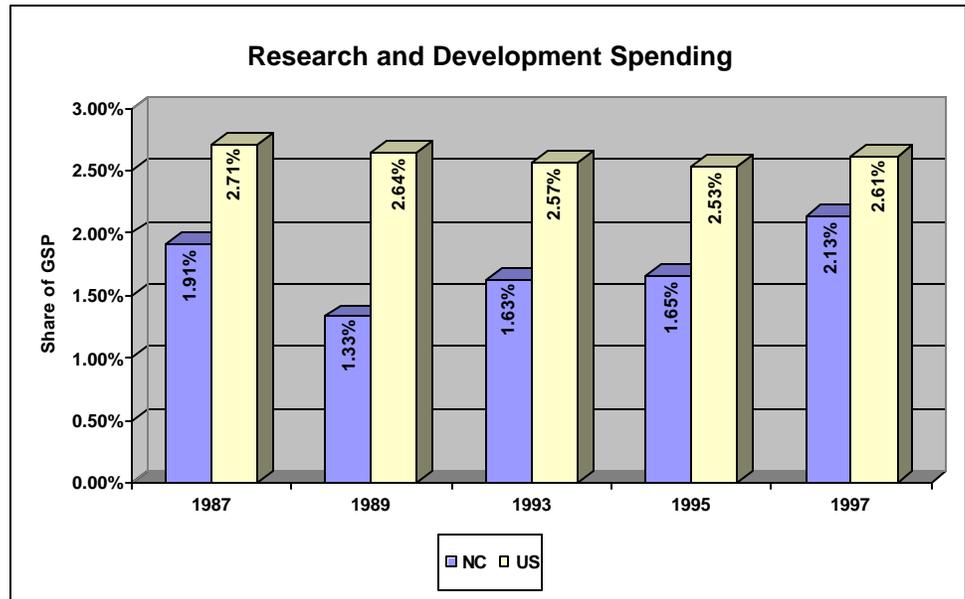
North Carolina is, at best, adequate in terms of economic dynamism, its ability to rejuvenate its economy.<sup>460</sup> Based on 1998 data, North Carolina was ranked 29<sup>th</sup> in the nation in initial public offerings (IPOs) as a percent of Gross State Product,<sup>461</sup> a leading measure of economic dynamism. IPOs provide an important indicator of a state economy’s ability to produce enterprises with substantial, long-term growth potential.

New enterprises. In 1999, North Carolina was ranked 23<sup>rd</sup> in the US in the percent of jobs generated by gazelle companies,<sup>462</sup> another measure of economic dynamism. *Gazelle firms* are young, high-growth companies.<sup>463</sup> In 1997, North Carolina was ranked 27<sup>th</sup> in the US in the percent of gazelle firms and 23<sup>rd</sup> in the percent of employment generated by gazelle companies.<sup>464</sup>

## Measure 3: Innovation capacity

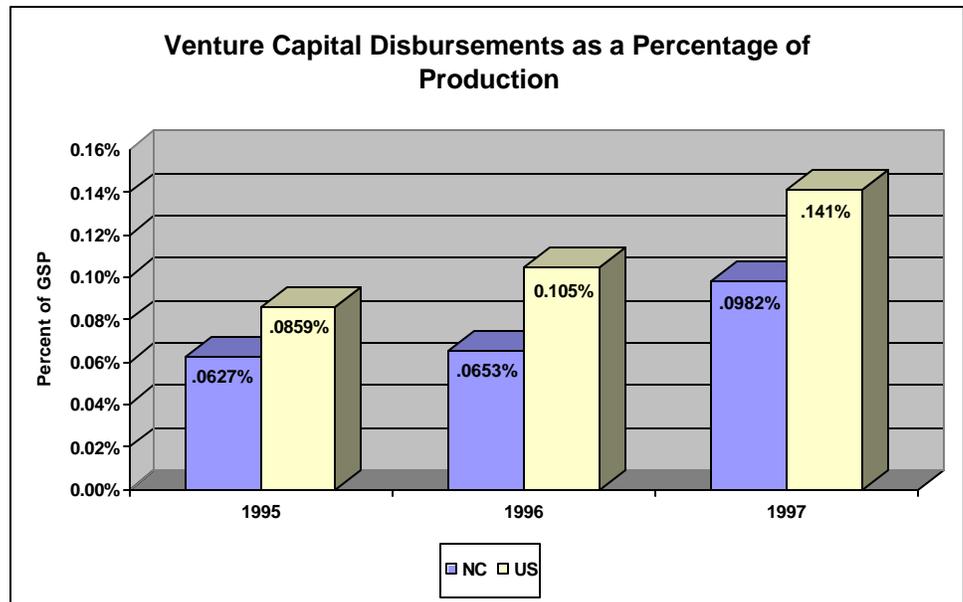
Our capacity for economic innovation, as measured by Research and Development (R & D) spending, venture capital spending and patents, is relatively limited compared to other states.

In 1999, North Carolina was ranked 27<sup>th</sup> in the nation in industry R & D spending as a percent of Gross State Product.<sup>465</sup> While our R & D spending rose throughout the 1990s as a share of the state’s Gross State Product, our relative ranking has not materially improved. As shown in the chart below, our R&D expenditures have remained below the US average since 1987.



Source: National Science Foundation's *Science & Engineering Indicators*, State R&D Expenditures

Our track record for venture capital investments has also been disappointing. As shown in the chart below, North Carolina fell below the US average in venture capital disbursements as a percent of Gross State Product in 1995, 1996 and 1998.



Source: PriceWaterhouseCoopers: Global Insights & Solutions: MoneyTree Survey Report

Ironically, North Carolina has a relatively high national ranking in joint venture activity. In 1999, its national ranking was 10<sup>th</sup>, up from 13<sup>th</sup> in 1997, but down slightly from 9<sup>th</sup> in 1995.<sup>466</sup> This ratio tends to fluctuate significantly from one year to the next.

Patent activity is strong. North Carolina's rate of patent activity growth has eclipsed the national rate in recent years. From 1989 to 1998, the number of patents issued in North Carolina increased by 111 percent compared to 66 percent for the US.<sup>467</sup> However, we still lag behind the national average in patent activity. In 1998, 24.4 patents were awarded per 100,000 population in North Carolina compared to 33.6 nationally. In 1997, North Carolina was ranked 25<sup>th</sup> in the US in the number of patents issued per 1,000 workers.<sup>468</sup>

## Measure 4: New economy jobs

We remain a mid-tier state in the generation of new economy jobs. In 1999, North Carolina was ranked 23<sup>rd</sup> in the nation in the number of high-tech workers per 1,000 jobs and 22<sup>nd</sup> in the US in the percent of civilian scientists and engineers.<sup>469</sup>

We are ranked no higher in the generation of managerial and professional jobs.<sup>470</sup> In 1997, North Carolina was ranked 22<sup>nd</sup> in the US in the number of managers, professionals and technicians as a percent of its total workforce.<sup>471</sup>

### Taking Action:

North Carolina state government has recognized the importance of promoting new economy initiatives, and demonstrated the willingness to make strategic investments of public resources. Representative initiatives are listed in the table below.

#### Selected North Carolina Initiatives

- Established the North Carolina Innovation Index under the auspices of the North Carolina Board of Science and Technology
- Created the North Carolina Department of Commerce's Center for Entrepreneurship and Technology (CE&T) in 1999
- Established the North Carolina Alliance for Competitive Technologies
- Created the North Carolina Microelectronics Center
- Established the North Carolina Biotechnology Center

The North Carolina Biotechnology Center is a particularly impressive model. Created in 1981 as the nation's first state-sponsored biotechnology center, the N.C. Biotechnology Center has helped keep North Carolina on the leading edge of biotechnological developments. It actively promotes the funding of biotechnology research and development, and the transfer of commercially-viable technology from university labs to biotechnology businesses.

Our state and local agencies also have invested in numerous business incubators and research parks, the most successful of which was the Research Triangle Park (RTP). While it will be difficult to duplicate the success of RTP on a similar scale, a statewide strategy for coordinating future investments in such centers with other public infrastructure investments could, in the aggregate, offer similar benefits.

Our state and local governments will continue to spend tax dollars on promoting economic growth, but will these investments be prudent? Will they make us more competitive? Without better planning and coordination among all programs, institutions, agencies, and state executive and legislative branch decision-makers, the benefits of such investments will be elusive. In the absence of reliable data, objective decision-making criteria and prudent investments that offer the greatest long-term return, the hard won gains of the last decade could be lost.

North Carolina must invest heavily to remain competitive in the new economy, but where should we target our economic investments? In our workforce? Certainly, we should invest in our workforce, but in what types of workers? In our infrastructure? Of course, but in what types of public infrastructure? Roads? Airports? Inter-modal transportation centers? Research centers and public universities? All of the above?

How should we improve our business and regulatory climate? What incentives should we offer, how frequently should they be offered and to whom? To what extent (if any) should our state's tax structure be revamped to achieve our economic goals? To what extent are North Carolina's effective state and local tax rates or marginal tax rates on work and investment competitive—nationally and regionally?

We do not suffer from a lack of ideas, but rather from a lack of information. We lack knowledge about where we're headed and how we're going to get there. North Carolina needs a viable platform for monitoring new economy trends and determining where our public investments are likely to have the greatest impact. Recent state efforts represent a good start, but we need more than a simple inventory of key indicators, disparate data and anecdotes. What is urgently needed—now—is a sophisticated and thoroughly integrated “economic knowledge base” that captures, aggregates and connects data and produces useful insights for public policy decisions and initiatives.

## Goal 3: Revitalize the traditional economic sectors and ensure their competitiveness in national and global markets.

### 2020 Goals and Targets:

In an increasingly unforgiving global economy, some industries will die. Our challenge is not to save archaic industries or preserve old ways of doing business. Rather, it is to incorporate the best elements of our traditional economy—pride, work ethic and integrity—into the very foundation of our emerging economy.

North Carolina’s traditional economy will navigate the challenges of globalization, competition and technological change. Our traditional economic sectors, including natural resources,<sup>472</sup> manufacturing,<sup>473</sup> construction and tourism, will find new ways to adapt to their changing environments, and maintain their economic vitality. They will do so by investing in innovation, modernization and new ventures. For those industries that are no longer viable, we will formulate an explicit strategy for transitioning workers into the new economy.

### Primary Performance Targets

Performance Indicator	Definitions	Relevance	2020 Target
<b>Industrial transition</b>	Ratio of average wages for major growth sectors to average wages for declining sectors as a percent of the US ratio	Reflects the likelihood that N.C.’s displaced workers will find work at a wage equal to or better than their previous wage	110% of the US ratio
<b>Traded sector strength</b>	US rank in relative strength of traded sectors <sup>474</sup>	States with high traded sector rankings export relatively more goods & services from their traditional industries, an indicator of relative vitality	Top 10 in US
<b>Manufacturing vitality</b>	US rank in manufacturing jobs as percent of non-farm jobs	The manufacturing job ratio measures the state’s success in retaining manufacturing jobs	Top 10 in US
<b>Agriculture vitality</b>	US rank in net farm income	The state’s ability to maintain a leadership position in agriculture is vital to its rural counties	Top 10 in US

North Carolina’s recent performance in traditional economy sectors is summarized below.

### Recent Performance Trends:

The transformation of North Carolina’s traditional economy, including the manufacturing and agriculture sectors, is well underway. In economic terms, this transformation involves a shift from traditional to knowledge-based manufacturing and a greater focus on international exports. In human terms, it often means layoffs and economic hardship, a burden inordinately felt by our rural communities.

Our manufacturing sector remains a critical part of our states' economy. In 1998, apparel, fabricated textiles and wood products alone accounted for over 415,000 jobs.<sup>475</sup> But, the manufacturing sector is a particularly critical component of the rural economy, generating 3 of every 10 rural jobs,<sup>476</sup> mostly in textiles, tobacco and furniture.

The agriculture sector also remains an important part of North Carolina's traditional economy, especially in rural counties. The agribusiness industry<sup>477</sup> contributes \$46 billion a year to the state's economy.<sup>478</sup> It is estimated that nearly one-fourth of North Carolina's Gross State Product and total jobs is related to agriculture, forestry, fiber, food processing or related industries.<sup>479</sup> Clearly, this sector cannot be overlooked.

The state's recent performance trends, using the recommended performance measures, are summarized below.

### Summary of Key Performance Trends

Performance Indicator	Trend	Performance Highlights
Industrial transition	↔	In 1997, N.C.'s industrial transition ratio was 106.7% of the US ratio (97.3 for N.C. v. 90.4 for US)
Traded sector strength	↓	In 2000, N.C. was ranked 20 <sup>th</sup> in traded sector strength and 10 <sup>th</sup> in traded sector competitiveness
Manufacturing vitality	↓	Despite declines in manufacturing jobs, including sharp drops in textile and apparel jobs, N.C. ranked 4 <sup>th</sup> in 1998 in manufacturing employment as a percent of total employment
Agriculture vitality	↔	In 1997, despite restructuring and other challenges, N.C. ranked 4 <sup>th</sup> in the US in net farm income and 8 <sup>th</sup> in total agriculture cash receipts

## Measure 1: Industrial transition

North Carolina has experienced relatively modest industrial restructuring, at least as measured by layoff actions and displaced worker wages, but the worst is probably not over. From 1997 to 1999, North Carolina averaged 5.7 layoffs per 1,000 workers compared to 9.5 for the US.<sup>480</sup> However, the North Carolina Board of Science and Technology has suggested that, because North Carolina industrialized later than many other states, it faces further restructuring and layoff activity.

Although our traditional sectors have incurred profound job losses, our emerging sectors have been able to absorb many of these losses. Displaced workers in North Carolina have been more likely to find work at better or equal pay than workers elsewhere. In 1997, for example, the ratio of average wages for major growth sectors to average wages for declining sectors was 97.3 in North Carolina compared to 90.4 in the US.<sup>481</sup> This means that displaced workers in North Carolina take a hit, but a lesser hit than displaced workers in other states.

## Measure 2: Traded sector strength

North Carolina's traditional economy has been hurt in recent years, but remains relatively competitive, at least in terms of the strength of its traded sectors.<sup>482</sup> In North Carolina, the most significant traded sectors, such as manufacturing, agriculture, forestry and banking, tend to be traditional economic sectors as well. The traded sector's strength is a function of the amount of income it brings into the economy for each civilian worker.

In 2000, the Corporation for Enterprise Development (CFED) ranked North Carolina 20<sup>th</sup> in traded sector strength, 27<sup>th</sup> in traded sector strength change and 10<sup>th</sup> in traded sector competitiveness.<sup>483</sup> These rankings have declined since 1995.<sup>484</sup> CFED is an independent organization that publishes an annual Development Report Card ranking states in a variety of measures, including traded sector strength, change in traded sector strength and traded sector competitiveness.

## Measure 3: Manufacturing vitality

North Carolina has been a national leader in manufacturing. In 1998, North Carolina was ranked 8<sup>th</sup> in the nation in manufacturing Gross State Product<sup>485</sup> and 4<sup>th</sup> in manufacturing employment as a percent of total non-farm employment.<sup>486</sup> Moreover, from 1994 to 1998, North Carolina had the 7<sup>th</sup> highest increase in average hourly earnings of manufacturing production workers.<sup>487</sup>

Unfortunately, this picture may be misleading. From 1990 to 1998, the total number of manufacturing jobs in North Carolina declined only slightly from 861,500 to 825,300, a mere 4.2 percent decline.<sup>488</sup> Job losses since 1998 have been more dramatic, due in no small part to global competition. North Carolina lost nearly 49,000 manufacturing jobs from July 2000 to July 2001. Unemployment reached 5.3% in July 2001, the highest since April 1993. In addition, job losses have been more severe in certain industries, especially tobacco, textiles and apparel.<sup>489</sup> From 1990 to 2000, the number of textile and apparel jobs declined by 117,000 jobs.

These job losses are profound, but perhaps even more troubling is the muted response. North Carolina is failing to make adequate investments in the renewal of its production capacity. In 1997, based on Census Bureau data on new capital expenditures per manufacturing employee, North Carolina was ranked 43<sup>rd</sup> in the US in manufacturing capital investment.<sup>490</sup> This in spite of the estimate that those traditional industry firms that invest in research and innovation account for over three-fourths of net new manufacturing jobs in rural communities.<sup>491</sup> (Also see High Performance Workforce.)

## Measure 4: Agriculture vitality

North Carolina remains a national leader in agriculture. In 1997, it ranked 4<sup>th</sup> in the US in net farm income and 8<sup>th</sup> in the nation in total agriculture cash receipts.<sup>492</sup> North Carolina is ranked 1<sup>st</sup> in the nation in tobacco and turkey production, 2<sup>nd</sup> in hog, Christmas tree and trout production and 3<sup>rd</sup> in poultry and egg production.<sup>493</sup> However, several factors (e.g., Hurricane Floyd, falling tobacco support prices and escalating global competition) could adversely affect the state's rankings.

With the agribusiness industry undergoing massive restructuring, North Carolina's ability to adapt to change has become a critical issue. The number of large farms<sup>494</sup> has tripled and, while representing only 8 percent of total farms, account for 73 percent of sales.<sup>495</sup> Hogs and poultry have surpassed tobacco as product sales leaders,<sup>496</sup> and the state's farm products have become increasingly diverse.<sup>497</sup> From 1994 to 1997, North Carolina's agricultural exports increased by 37 percent, but hog sales fell by \$800 million (due in part to deflated Asian markets) and tobacco growers experienced depressed US consumption and rising foreign competition.<sup>498</sup>

### Taking Action:

Perhaps our state faces no greater economic challenge than helping our traditional industries navigate the uncharted waters of the global economy. The strength of North Carolina's traditional economic sectors is important to all regions, but especially its rural regions. Without appropriate investments in our traditional industries—and related infrastructure and education (see Infrastructure, Workforce and Education), we will find it increasingly difficult to maintain the viability of our distressed rural counties.

"The corporate freight train is heading straight for those countries where pay people \$1 or \$2 an hour, and then they're shipping it back to us to buy. But how are we going to buy those \$330 shirts if we don't have any jobs?"  
- Gregory Cummings, Executive Director, Robeson County Economic Development Commission

An industrial renaissance. On the other hand, with creative, bold leadership, and sustained commitment, North Carolina could spur a renaissance for its traditional industries. For example, North Carolina State University's College of Textiles, the nation's largest textiles school, is promoting new textile products and processes that could revolutionize that industry. Similarly, our public universities could help natural resource companies (e.g., chip mill and timber companies) find cost-effective ways to minimize adverse environmental impacts. Traditional industries with innovative environmental technologies could have an important competitive edge in tomorrow's global economy.

Here's the thing: Is there any reason that North Carolina should not be a leader in pioneering, embracing, investing in, learning from and benefiting from such technologies?

## Goal 4: Promote the expansion of international markets and facilitate access to foreign capital and commerce.

### 2020 Goals and Targets:

North Carolina will do what it takes to be competitive in the global economy. It will encourage more North Carolina-based companies to engage in international trade and expand their international markets and reduce unnecessary competitive barriers for North Carolina businesses that compete globally. It will strive to increase exports in traditional as well as emerging industries. It also will promote international travel and trade among its businesses and citizens.

In short, we will adopt a whole new perspective about global trade. Instead of deciding which of our products we will export, we will determine what we will produce based on what the global market needs. Ultimately, this new perspective, coupled with disappearing trade barriers, will result in more export trade activity and high-quality jobs throughout the state, and make North Carolina a force to be reckoned with in the global market place.

### Primary Performance Targets

Performance Indicator	Definitions	Relevance	2020 Target
<b>Global trade</b>	US rank in merchandise exports as a percent of Gross State Product	International exports reflect the level of N.C.'s integration into the global economy	Top 10 in US
<b>Export-oriented jobs</b>	US rank in percent of jobs in export-oriented industries	Workers employed in export-oriented firms earn about 10% more than those in other firms	Top 10 in US
<b>Foreign investment</b>	US rank in foreign direct investment (FDI)	FDI introduces new jobs, technologies & business practices	Top 10 in US

North Carolina's recent global competitiveness is discussed below.

### Recent Performance Trends:

North Carolina dramatically increased its global trade during the 1990s. From 1993 to 1999, for instance, state exports increased by nearly 68 percent.<sup>499</sup> In 2000, North Carolina business exports exceeded \$17.9 billion, of which the largest contributors were machinery, electronic equipment, tobacco, medical instruments, chemical and allied products, textiles, apparel and pharmaceutical products.<sup>500</sup>

North Carolina also became a preferred site for foreign investment in the last decade. By 1997, foreign investment generated 225,000 jobs or 7.5 percent of total private industry employment, the third highest percent in the nation.<sup>501</sup> In 1998, there were 738 foreign-owned companies from 35 countries in North Carolina, about 75 percent of which were located in the state's larger metropolitan areas.

In the future, the world will only get smaller. For example, the proposed Free Trade Area of the Americas (FTAA), an extension of the North American Free-Trade Agreement (NAFTA), will reduce trade barriers among the democratic nations of the Western Hemisphere. By 2005 (when it is expected to be implemented), the FTAA would be the largest trade bloc in world history—twice the size of the European Union. At home, the FTAA will expand export opportunities and pose added threats to many jobs in our traditional economic sectors. (See High Quality Workforce.)

As summarized below, North Carolina has not relied as heavily on exporting as many other states, but it has been a popular state for foreign investment.

### Summary of Key Performance Trends

Performance Indicator	Trend	Performance Highlights
Global trade	↔	In 1997, N.C.'s export intensity <sup>502</sup> ratio was below the US average, ranking it only 25 <sup>th</sup> in the nation
Export-oriented jobs	↔	In 1997, N.C. ranked 37 <sup>th</sup> in the US in its percent of jobs in export-oriented companies (1992 data)
Foreign investment	↓	In 1997, N.C. ranked 3 <sup>rd</sup> in the nation in foreign direct investment (FDI), but our national rank in workers employed by foreign companies, a FDI indicator, shows signs of slipping

## Measure 1: Global trade

We have made great strides in increasing our state's export activity, an important indicator of global economic competitiveness, but, given our strategic location, we could do better. While North Carolina's exports increased by nearly 68 percent from 1993 to 1999, some states have realized even greater export growth. For instance, Georgia increased international exports by 109 percent and Texas increased exports by nearly 82 percent.<sup>503</sup>

North Carolina continues to fall short of the national average in export intensity, the ratio of exports to Gross State Product. In 1997, North Carolina's export intensity was 6.0 percent, compared to a national average of 7.6 percent.<sup>504</sup> This performance earned North Carolina an export intensity ranking of only 25<sup>th</sup> in the nation.<sup>505</sup> In manufacturing exports, North Carolina enjoys a higher national ranking. In 1999, the total value of our manufacturing exports reached \$13.3 billion, ranking us 11<sup>th</sup> among the 50 states.<sup>506</sup>

## Measure 2: Export-oriented jobs

North Carolina has a relatively low ranking in the share of export-dependent manufacturing jobs,<sup>507</sup> another important indicator of a state's global competitiveness. In 2000 (using 1992 U.S. Census Bureau data), the Progressive Policy Institute found that North Carolina ranked only 37<sup>th</sup> in the nation in export-oriented jobs.<sup>508</sup> Again, most would agree that we could do better.

## Measure 3: Foreign investment

It is indeed encouraging that North Carolina remains a preferred choice for foreign investors. In 1998, Site Selection magazine ranked North Carolina first in the nation for foreign-owned business location.<sup>509</sup> The primary siting factors for foreign-owned firms are proximity to key industries or markets, access to air transportation, labor quality, labor costs and living conditions.<sup>510</sup>

Perception is not necessarily reality, however. Our national ranking in the percent of workers employed by foreign companies, an important measure of the degree of foreign direct investment (FDI) in our state, shows signs of slipping. From 1997 to 1998, North Carolina's national ranking in FDI fell from 3<sup>rd</sup><sup>511</sup> to 14<sup>th</sup>.<sup>512</sup> Considering our envious location on the East Coast, our ranking should be higher.

### Taking Action:

Our state government has taken steps to improve North Carolina's global competitiveness. The North Carolina Commerce Department's International Trade Division helps North Carolina businesses exploit overseas market opportunities by tracking trade resources and maintaining strategic relationships with industrialized nations. Like most large states, we maintain several foreign trade offices. But are we really doing enough?

"If globalization were a sport, it would be the 100-meter dash, over and over and over. And no matter how many times you win, you have to race again the next day."  
-- Thomas Friedman, *The Lexus and the Olive Tree*.

Our economic competitiveness will be, to an ever-increasing degree, a function of our ability to export goods and services to other nations, and attract foreign investment. Our public infrastructure, public education system, environment and overall quality of life will continue to be critical factors in attracting international investment. Improving these factors will require investments, but how much and where?

MDC, in its *State of the South 2000* Report, noted that globalization has elevated the economic importance of our metropolitan areas. It concluded that our new economy cities (those with concentrations of strong universities, technology industries and entrepreneurial activity) serve as the “booster rockets for the South’s economic rise.” Does this suggest that we should target our economic investments in metropolitan areas, at the expense of our rural areas? Not necessarily, but it does underscore the need—already self-evident in this time of scarce resources—to be disciplined and selective.

Prospective foreign buyers and investors will not likely share our concerns about economic disparities among regions or demographic groups. They will make their investment decisions based on cold, hard business factors and, to a certain degree, so must we—whether we like it or not. Our strategies for attracting foreign investment and promoting foreign trade must be practical, based on a shrewd analysis of global markets and an unvarnished assessment of our competitive strengths and weaknesses.

In order to compete successfully in the global arena, we must think globally. This will require smart investments, not necessarily fair investments. To secure a prominent place on the global stage, we must first convert our metropolitan areas—our new economy thrusters—from centers of congestion to centers of distinction.

We have big decisions to make concerning our economic future. In making these decisions, we must look beyond narrow interests and short-term crises. Instead, we must first determine what the markets—global, regional and local (in that order)—want and then grow new enterprises and reposition our traditional industries to produce the goods and services that those markets want.

What will be the engines of our economic growth? Much of it will come from the emerging economic sectors, from knowledge-based industries and from ideas that are just beginning to percolate in our universities, labs and research centers. But, some will come from our traditional sectors, such as manufacturing, agriculture forestry and banking, as they find new ways to navigate the uncharted waters of the global economy.

We no longer have the luxury to debate who will be left behind. If we do not succeed globally, we all may be left behind. What we can—and must—do is to support investment strategies that offer the greatest promise for nurturing long-term and sustainable statewide economic growth.

# 21<sup>st</sup> Century Infrastructure

## Vision

North Carolina—long recognized as the *good roads state*—wins renewed acclaim for a globally-competitive public infrastructure, and is considered *the best practice state* for public infrastructure—both *hard* and *soft* public infrastructure.

Its *hard* infrastructure effectively integrates efficient transportation modalities, reliable and affordable energy generation and distribution networks, safe and extensive water, sewer, stormwater and solid waste management systems. Coupled with low-cost, high-bandwidth information and telecommunication networks, the hard infrastructure provides the platform for the state's prosperous economy and renowned quality of life.

The *soft* infrastructure encompasses the state and local government fiscal, regulatory and financing framework. It enables public officials and business leaders, together with heads of non-profit agencies, to respond creatively and quickly to new challenges. This soft infrastructure energizes the state to compete in a dynamic, knowledge-based and communications-driven global environment.

### Overview of goals:

1. Develop and maintain a balanced, nationally-recognized transportation system for moving people, services and goods safely and efficiently
2. Ensure affordable energy, including electricity and natural gas, to fuel the state's economy and ensure a high quality of life for all North Carolinians
3. Build and maintain safe and cost-effective water, wastewater stormwater and waste management systems throughout all regions of the state
4. Support an information and telecommunications technology infrastructure that will help all residents, communities, organizations and businesses achieve their economic, educational and social goals
5. Adopt flexible public policies and partnerships for competing in a dynamic economic, environmental and social environment

We discuss these five goals, along with their respective performance measures and targets, in more detail below.

## Goal 1: Develop and maintain a balanced, nationally-recognized transportation system for moving people, services and goods safely and efficiently.

### 2020 Goals and Targets:

The state's transportation system must be about efficient commerce—not just good roads—to be truly competitive. In the years ahead, North Carolina's leaders will be forced to make some tough choices as they allocate scarce resources for transportation. In order to reconcile competing transportation demands—and make each tax dollar count—we will have to reassess our traditional commitment to highway access, and explore more efficient ways to move people, goods and services.

The 21<sup>st</sup> Century economy will demand that North Carolina build a balanced, world class transportation *system* that seamlessly links people and goods with roads and other transportation modes—mass transit, rail, air and seaport service. State and local governments should upgrade **their** public transportation systems to alleviate roadway congestion in its urban centers. It should develop and maintain competitive airports, seaports and rail systems—and develop efficient inter-modal facilities that connect these systems—for promoting global, intra-state and inter-state commerce. Finally, the State should promote the development of world class logistics centers near its most prominent aviation facilities.

### Primary Performance Targets

Measure	Definitions	Relevance	2020 Target
<b>Transportation efficiency</b>	Average number of vehicle miles traveled per person	A high vehicle miles rate may indicate an excessive and costly reliance on cars and roadways	Less than US average
<b>Highway quality</b>	US rank in highway quality ratings (percent of state-controlled roads rated in fair or better condition)	With most goods shipped by truck, good highway conditions reflect infrastructure capacity and economic competitiveness	Top 10 in US
<b>Mass transit service</b>	US rank in total urban public mass transit system carrying capacity	Mass transit availability indicates overall transportation system capacity and work force mobility	Top 20 in US
<b>Air service</b>	US rank in per capita state & local air transport spending	Airport capacity is an increasingly vital component of an effective statewide transportation system	Top 10 in US
<b>Inter-modal service</b>	Develop at least 4 inter-modal facilities near the largest metropolitan centers or ports	Inter-modal facilities improve the overall efficiency of a state's transportation system	N/A

It will not be easy to develop strategic performance measures for transportation. For instance, transportation efficiency is very difficult to measure, especially on a statewide basis. The number of vehicle miles traveled (VMT) per person is relatively easy to track, but it provides only a crude measure of efficiency. It does not adequately account for important differences among the states in population density and historical development patterns. Nevertheless, a strategic measure is needed to help ensure that transportation funds are spent on the most critically-needed projects and per capita VMT provides a useful starting point. At the very least, the per capita VMT measure could encourage policy-makers to consider the inter-relationships among transportation funding decisions, growth and development patterns and environmental impacts.

Mass transit service may be measured by urban mass transit system carrying capacity or usage. Carrying capacity reflects the public investment in mass transit service while actual passenger usage may provide a better indication of demand. In this case, comparable state data on carrying capacity is more readily available than comparable state data on transit passenger miles per capita.

Similarly, air service may be measured by per capita state and local air transport spending or actual passenger or freight data. To the extent that statewide data is readily available, originating passenger enplanements or the value of freight tonnage would provide more useful indicators of air service than spending levels. However, comparative state data on spending levels was more readily available at the time this report was prepared.

The North Carolina Department of Transportation is working on a statewide transportation plan. An important part of this planning process is to develop strategic performance criteria and measures for the system. Once these targets are in place, they should be used to refine the measures suggested here.

Selected aspects of the state's recent performance in transportation are summarized below.

### **Recent Performance Trends:**

North Carolina first earned recognition as the *good roads state* in the 1920s when it enacted gas taxes, approved a highway bond issue and assumed responsibility for all roads outside of cities. Its reputation for good highways was a direct result of public vision and leadership. At the dawn of the 21<sup>st</sup> century, the state's resolve on transportation issues is being tested once again.

There is growing doubt that North Carolina's transportation system can meet the needs of its growing population and dynamic economy. As the state's population has grown (about 10.5 percent over the past decade) and become increasingly urban, its highways have become more congested, especially along urban corridors. Such congestion is a function of population growth, but it also may be exacerbated by excessive reliance on single occupancy vehicles. Other transportation investments, including inter-modal terminals near interstates and aviation-related infrastructure, have become vital contributors to economic prosperity. Will good roads—assuming we can maintain them—be enough to meet our diverse transportation needs?

## Summary of Key Performance Trends

Measure	Trend	Performance Highlights
<b>Transportation efficiency</b>	↓	The number of vehicle miles traveled (VMT) per capita has risen every year since 1980 and N.C. has the 9 <sup>th</sup> highest VMT per capita in the US
<b>Highway quality</b>	↑	In 1999, N.C. ranked 23 <sup>rd</sup> in US in highway quality, a significant improvement from its 1995 ranking of 47 <sup>th</sup>
<b>Mass transit service</b>	↔	In 1998, N.C. was ranked 37 <sup>th</sup> in US in urban mass transit system availability
<b>Air service</b>	↓	N.C. fell from 34 <sup>th</sup> in the 1999 rankings of per capita air transport spending to 36 <sup>th</sup> in the 2001 rankings
<b>Inter-modal service</b>	N/A	N.C. does not track inter-modal performance

### Measure 1: Transportation efficiency

In 1990, the General Assembly approved construction of a 3,100 mile *Intrastate* highway program designed to bring 90 percent of the residents within 10 miles of a major multi-lane highway (a four-lane road). During the 1990s, the state indeed increased access to multi-lane roads, but it also witnessed steady increases in the number of vehicle miles traveled (VMT) per person. As we struggle to keep pace with our growing population and transportation needs, will we be able to afford a policy that promotes access rather than efficiency?

North Carolina does not measure transportation efficiency. Ironically, North Carolina lacks a strategic measure for tracking the efficiency of its transportation system. While transportation efficiency is difficult to measure, some states use per capita VMT as an indicator of transportation efficiency. Using this measure, it appears that North Carolina's transportation system is not only less efficient than most other state systems, but becoming less efficient with every passing year.

We can no longer ignore our increasing reliance on the automobile. North Carolina has the 9<sup>th</sup> highest per capita VMT in the nation and its annual per capita VMT is 21 percent higher than the national rate.<sup>513</sup> As the chart below illustrates, this is due in part to the fact that North Carolina is not as urbanized as many other large states.

### Vehicle Miles Traveled Per Capita – Comparative Data

Entity	Percent Land Urban	Percent Population Urban	Annual VMT Per Capita
North Carolina	6.0%	49.1%	12,050
US Total	3.1%	72.8%	9,930
Georgia	6.3%	68.7%	12,689
South Carolina	4.7%	55.0%	11,360
Tennessee	6.6%	59.7%	11,862
Texas	3.2%	68.5%	10,521
Virginia	6.3%	67.9%	10,753

Of the states shown above, only Georgia has a higher per capita VMT rate, and Georgia has enacted sweeping growth management and transportation planning legislation to help address the issue.<sup>514</sup> Other states with higher VMT per person than North Carolina are Alabama, Indiana, Kentucky, Mississippi, Missouri, New Mexico and Wyoming. As North Carolina has approached its goal of greater highway access, it may have compromised, if not impaired, its overall transportation efficiency (and its air quality as well).<sup>515</sup>

Many public leaders would like to consider a strategic realignment of our transportation priorities. A bill is pending in the current session of the General Assembly to establish a legislative study commission to re-examine the long-standing spending priorities in the legislative trust fund (the funding source for about 70 percent of highway expansion initiatives). Such an analysis, which would include an objective review of the “equity formula” by which such transportation resources are allocated, is long overdue.

Until the state shifts its focus from highway access to overall system efficiency, effectiveness and balance, research suggests the problem could get worse before it gets better. Certainly, traffic congestion is expected to worsen.<sup>516</sup> Such congestion not only increases motorist stress, fuel consumption and air pollution, but also undermines worker productivity and inflates the costs of goods and services. To assure a solid competitive position with other states for quality economic growth, North Carolina will have to find new ways to improve the efficiency of its transportation system. A large, access-driven highway system that promotes inefficiency and congestion—and is difficult to maintain—is not the answer.

## Measure 2: Highway quality

Today, the North Carolina Department of Transportation (NCDOT) maintains one of the largest state-controlled road systems in the nation.<sup>517</sup> In 2000, North Carolina ranked 2<sup>nd</sup> in the nation in the total number of miles under state control and 4<sup>th</sup> in the nation in the percent of miles under state control (79 percent).<sup>518</sup> However, a state-controlled highway system, while probably more efficient than a decentralized system, does not guarantee quality—not without effective planning.

The state's traditional commitment to highways cannot be questioned. During the 1990s, the state added over 4,600 lane miles to the state highway system (a 2.5 percent increase).<sup>519</sup> Voters approved a major bond issue in 1996. Despite these investments, the quality of our highway system may not be nearly as good as we think it is.

Have we expanded our highway system beyond our ability to maintain it? Some experts think so. A report issued by the University of North Carolina at Charlotte in 2000 found that the State's highway maintenance spending fell from 35 percent of the highway budget in the mid-1980s to only 25 percent in 1998.<sup>520</sup> Despite the expansion of our highway system, our inflation-adjusted spending on road maintenance did not increase during the 1990s.<sup>521</sup>

Although it is getting better, North Carolina's highway quality does not compare favorably to other states.<sup>522</sup> According to the Corporation for Enterprise Development, North Carolina ranked 23<sup>rd</sup> in the nation in highway quality in 1999.<sup>523</sup> This represents a significant improvement in highway quality since 1995 when North Carolina ranked 47<sup>th</sup> in the nation.<sup>524</sup> Highway safety is a related issue. North Carolina has the nation's 14<sup>th</sup> highest highway fatality rate (per million VMT).<sup>525</sup> As our highways become increasingly clogged, they will likely become more dangerous.

The quality of North Carolina's bridges is also a serious concern. In 1999, according to the Corporation for Enterprise Development, North Carolina ranked 36<sup>th</sup> in bridge quality, the same as in 1995.<sup>526</sup> According to AAA Carolinas, North Carolina is ranked in the bottom quartile of the 50 states in bridge quality, with one of every three of its bridges rated substandard. AAA Carolinas rates bridges as *functionally obsolete* or *structurally deficient* based on federal guidelines and then uses traffic volume data to identify those bridges that deserve the worst substandard rating.

### Measure 3: Mass transit service

Given North Carolina's history and geographic dispersion, it is not surprising that its mass transit systems are relatively small. In 1998, N.C. was ranked 37<sup>th</sup> in the US in urban mass transit system availability (as measured by the Federal Transportation Administration's carrying capacity indicator).<sup>527</sup> This represents an improvement from its national ranking of 43<sup>rd</sup> in 1992, but it is by no means a satisfactory performance rating for the nation's 11<sup>th</sup> largest state, and one that is rapidly becoming more urbanized.

The state's largest urban regions have public transit systems, but they are relatively small (by urban standards) and lack rail components. The Raleigh-Durham, Charlotte and Triad metro areas are authorized to establish regional transit authorities, but only Raleigh-Durham has done so.<sup>528</sup> Efforts by regional leaders in the Triangle to build a \$622 million, 35-mile light rail system have not yet secured federal funding.<sup>529</sup> The state did increase mass transit funding during the 1990s, but greater investments will be needed to make public transportation systems cost-effective alternatives to driving, and thereby reduce traffic congestion and promote commerce.

Passenger rail service. Inter-city passenger rail service remains an unfilled dream. While such service, ranging from intrastate to high-speed rail service, is available to North Carolinians, it is relatively limited. NCDOT contracts with AMTRAK to provide inter-city passenger rail service that connects major North Carolina cities with the entire Eastern seaboard.<sup>530</sup> NCDOT is working with Norfolk Southern, Amtrak and local governments to expand passenger rail service in Western North Carolina. One barrier is that all rail service providers, including freight rail companies, operate on the same right-of-ways.

### Measure 4: Air service

North Carolina has 74 airports—14 with scheduled air carrier passenger service and 4 hub airports. According to a 1995 study by the University of North Carolina at Charlotte, the 74 public airports contributed \$9.1 billion to the state economy, but 90 percent of these benefits were associated with three airports—Charlotte, RDU and Piedmont Triad. Total enplanements from North Carolina increased from 8.5 million passengers in 1985 to 17.1 million passengers in 1997.<sup>531</sup>

Many believe that, as the economy increases its dependence on speed and agility, air-based commerce will "become its logistical backbone."<sup>532</sup> It is estimated that air service already accounts for 40 percent of the value of global trade.<sup>533</sup>

“The Web cannot move a box...international gateway airports will be as important to urban development in the 21<sup>st</sup> century as automobiles and trucks were in the 20<sup>th</sup> century...”

-- John Kasarda, University of North Carolina, *Aerotropolis: Airport-Driven Urban Development*

Despite the strategic importance of public airports, North Carolina has invested less in aviation facilities than many other states. In 2000, North Carolina was ranked 36<sup>th</sup> in the nation in per capita state and local air transport spending and 37<sup>th</sup> in state and local air transport spending as a percent of personal income.<sup>534</sup> With the growing interest by air carriers in North Carolina (e.g., the decision by Federal Express to open a major hub at Piedmont Triad, and the decision of Southwest to expand service at Raleigh Durham), this trend could change.

## Measure 5: Inter-modal service

Many North Carolina transportation experts recognize the need to develop and maintain sufficient airport, seaport and railroad capacity, and to improve inter-modal connections. Indeed, it is difficult to develop an effective state transportation system without such connections. Perhaps due in part to its focus on roads, NCDOT lacks strategic measures for tracking the state’s progress in inter-modal service and an objective methodology for evaluating major investment decisions.

North Carolina has made some investments in large inter-modal facilities. While some initiatives (e.g., Global Transpark) have not met expectations, the need to develop strategically-located inter-modal centers remains. Railroads have become a vital element in linking the state’s total freight distribution system, and inter-modal services between truck and rail continue to increase. Seaports and areas close to seaports increasingly depend on railroads to transport freight and bulk commodities to major commerce centers. In the future, international airports or sea ports in large metropolitan centers could be the most viable locations for inter-modal facilities linking aviation, rail and highway systems.

Freight rail service. Rail remains an important part of the state’s transportation system. North Carolina’s network of freight railroad systems encompasses 4,115 track miles, nearly 80 percent of which are controlled by two Class I railroads—CSX Transportation and the Norfolk Southern Railway.<sup>535</sup> Through the North Carolina Railroad, a private, state-owned corporation, the State owns four railroads and has invested in a right-of-way purchase and route preservation program.

Ports. Our ports contribute to over 80,000 jobs and nearly \$300 million in tax revenues<sup>536</sup>, but they face major challenges. The North Carolina State Ports Authority, a political subdivision of the state, manages North Carolina’s two major seaports at Morehead City and Wilmington as well as inland terminals in Charlotte and Greensboro. These two ports face

serious competitive challenges.<sup>537</sup> The Port of Morehead City, chiefly a bulk cargo facility serving industries in northeastern North Carolina, has limited highway access. The Port of Wilmington, which ships containerized freight for customers in Charlotte and southeastern North Carolina, has begun a critical project to deepen the shallow Cape Fear River channel.

### **Taking Action:**

The state has made significant investments in transportation systems, but these investments have not been enough to meet growing demand, especially in our congested urban areas. The state faces an estimated \$1 billion per year in new highway construction needs, and an additional \$300 million per year to meet highway maintenance standards, but these needs far outpace available funding. The pressures of meeting these needs, as well as those associated with other transportation modes, within projected resource constraints will likely require strategic planning and bold financing ideas, such as market-oriented funding approaches for alleviating traffic congestion in urban areas.

An effective and efficient transportation system is one of the critical building blocks of a prosperous economy. Our failure to build and maintain a balanced, efficient transportation system will have many profound consequences. It could stall the engines of our economic prosperity—the largest metropolitan areas—that depend heavily on regional, inter-city and air service connectivity for commerce.

We do not have to be transportation engineers to understand the problem. The I-40 corridor between Raleigh, Durham and the Research Triangle Park is becoming a virtual *parking lot* at rush hour. Similar complaints are voiced about I-40 and I-85 around Greensboro, and I-77 between Charlotte, Lake Norman and Statesville, recently rated the best small town in America for business location by *Site Selection* magazine. But, as these choke points occur, the entire system begins to break down. Highway congestion threatens safety, wastes fuel, worsens pollution, fuels "road rage" behaviors, delays deliveries and impairs quality of life.

The good news is that, with sound planning, highway congestion can be managed, if not mitigated! Instead of trying to build our way out of the traffic morass with wider highways—a strategy that will likely beget more congestion—we urge a more balanced and practical approach. This approach should emphasize networks of alternative modalities (including bus and carpool lanes, rail services and bike paths), and take advantage of more creative revenue generation techniques and public-private partnerships to finance these needs.

## Goal 2: Ensure affordable energy, including electricity and natural gas, to fuel the state’s economy and ensure a high quality of life for all North Carolinians.

### 2020 Goals and Targets:

North Carolina will preserve the “*public*” in public power and energy. It will reinforce, rather than abrogate, its public regulatory role. It will continue to ensure—even in an increasingly deregulated environment—that sufficient power is available to meet the needs of a growing population and economy, across all regions. It will support efforts to make electrical service universal, safe and reliable, and rates competitive.

North Carolina will also ensure that its natural gas supply is sufficient for meeting the needs of its general population and business community. It will promote the pursuit of alternative energysources, including wind and solar power and conservation, in order to enhance the energy independence of its citizens and businesses. In short, it will help assure the plentiful and affordable energy required for a competitive economic environment.

### Primary Performance Targets

Measure	Definitions	Relevance	2020 Target
<b>Energy efficiency</b>	US rank in energy efficiency (per capita energy consumption)	A more energy efficient economy tends to help ensure more sustainable economic growth	Top 10 in US
<b>Energy renewability</b>	US rank in share of energy consumed from alternative sources (e.g., solar or wind)	A more energy efficient economy tends to help ensure more sustainable economic growth	Top 10 in US
<b>Power affordability</b>	US rank in energy affordability (average costs of residential electrical service)	Energy costs significantly contribute to business and living costs, and impact siting decisions	Top 10 in US
<b>Natural gas service</b>	Percent of counties served by or with adequate access to natural gas	Natural gas service is a prerequisite for many business expansion or relocation decisions	100% of counties
<b>Natural gas affordability</b>	US rank in US in natural gas affordability (average costs of industrial natural costs)	Natural gas cost is an important factor for many business expansion or relocation decisions	Top 10 in US

Selected energy performance trends are summarized below.

### Recent Performance Trends:

Some states, led by California, deregulated electric power generation in the late 1990s. Proponents hoped that the deregulation of generation would help lower power costs. However, in 2000, only four years after deregulating its electric industry, California is experiencing alarming power shortages and price increases. Its reserves have plummeted<sup>538</sup> and, in the face of rolling blackouts, it has been forced to pay exorbitant rates to import power. The impact on its economy could be devastating.

North Carolina is served by three major electric companies, 32 electric membership corporations (EMCs) and 71 municipal electric systems.<sup>539</sup> The three major investor-owned utilities (IOUs) are Carolina Power & Light Company, a part of Progress Energy, Duke Power (Duke), a division of Duke Energy, and Virginia Electric and Power Company (Vepco), which does business as Dominion North Carolina Power.<sup>540</sup> Together, the two largest IOUs—Duke and Progress—supply 95 percent of the electricity consumed in North Carolina.<sup>541</sup>

The IOUs sell about 24 percent of their electricity to the wholesale market, including the EMCs and municipal utilities. Most of the municipal systems are ElectriCities members. After the energy crisis of the 1970s, 51 cities formed partnerships with Progress and Duke to develop their own generation capacity.<sup>542</sup> These municipal systems now have high stranded costs (i.e., the difference between generation costs and market prices)<sup>543</sup> and substantial debt.<sup>544</sup> This situation, one of several issues pending before the legislative study commission, could lead to higher electricity costs for all North Carolinians, depending on the path we choose.

North Carolina is also served by six natural gas companies and eight municipal gas utilities, but does not produce any natural gas. The state's only major supplier of natural gas is Transcontinental Gas Pipeline Corporation (Transco). The state is served by three (and sometimes four) 36- to 42-inch diameter, high-pressure interstate pipeline (operated by Transco). Columbia Natural Gas also serves the state on the Virginia/North Carolina border at Pleasant Hill. Houston-based Duke Energy Gas Transmission plans to build a 95-mile pipeline extension from Wythe County, Virginia, to Eden in Rockingham County by 2002. This will increase competition in natural gas markets in North Carolina.<sup>545</sup>

### Summary of Key Performance Trends

Measure	Trend	Performance Highlights
Energy efficiency	↓	In 1997, N.C. had the 18 <sup>th</sup> lowest rate of per capita energy consumption in the nation, but its per capita usage is rising
Energy renewability	↔	In 1997, N.C. was 22 <sup>nd</sup> in US in the portion of energy it consumed from renewable energy sources, up from 24 <sup>th</sup> the prior year
Power affordability	↓	N.C. has dropped from 23rd in US in the affordability of residential electricity (per kilowatt hour) in 1991 to 33rd in 1999
Natural gas service	↑	In 2000, 74% of N.C.'s counties had natural gas service, but this represents an increase in service over 1990
Natural gas affordability	↓	In 1998, N.C. was 33 <sup>rd</sup> in US in the affordability of natural gas (per 1,000 cubic foot), but its natural gas costs are rising at a faster rate than the national average

## Measure 1: Energy efficiency

We are using more energy than ever before. While increased energy consumption does not necessarily mean reduced efficiency, per capita energy consumption provides a proxy indicator of our overall energy efficiency—at least until we can develop a more reliable indicator.

Consumption. North Carolina is experiencing steady growth in its average rate of energy consumption. During the 1990s, our average annual residential electricity consumption for the major electric utilities rose 5.5 percent, from 12,130 kWh per customer in 1990 to 12,809 kWh per customer in 1999.<sup>546</sup> From 1990 to 1997, North Carolina's per capita energy consumption (million BTUs) grew from 294 to 326.5, an 11 percent increase.<sup>547</sup>

Our per capita energy consumption may be on the rise, but we still use less energy per capita than most states. In 1996, North Carolina's per capita energy consumption rate was 93 percent of the national rate, and the 15<sup>th</sup> lowest consumption rate in the nation.<sup>548</sup> In 1997, North Carolina was still 93 percent of the national rate, but had the 18<sup>th</sup> lowest rate of per capita energy consumption in the US.<sup>549</sup>

Our energy usage should continue to rise in the years ahead. According to the North Carolina Utilities Commission (NCUC), the agency that monitors the state's capacity for meeting future energy needs, the major energy companies project system-wide annual growth rates in energy use of 1.4 to 2.7 percent through the year 2009.<sup>550</sup> The IOUs also project lower reserve margins than they have maintained in prior years. If, however, our actual consumption outpaces these estimates, perhaps in response to a warmer climate, our energy capacity could be inadequate. (See North Carolina climate information.)

Capacity. From 1990 to 1996, the number of electricity customers in North Carolina increased by 13.6 percent.<sup>551</sup> It is also important to monitor the capacity of North Carolina's power system. One indicator of capacity is the reserve margin. Unlike their counterparts in California (where reserves are not required), power companies in North Carolina use reserve margin targets to determine the generating resources required to meeting projected demand. These margins range from 9.4 to 17.3 percent in North Carolina (down from a traditional target of 20 percent).<sup>552</sup> While this may reflect industry practice, does it still make sense in light of the California situation or other scenarios that could significantly affect energy demands (e.g., climate warming)?

## Measure 2: Energy renewability

Alternative energy sources, including renewable energy, co-generation and conservation, may offer the most cost-effective ways to improve our energy capacity. As part of North Carolina's annual Integrated Resource Planning (IRP) process, each IOU must assess the economic feasibility of renewable energy, energy conservation and other demand side management programs. Although the IOUs have usually determined that renewable energy could not compete economically with more *traditional* technology sources, it may be time to revisit their methodologies.

While aggregate indicators of alternative energy usage are not readily available, energy renewability may be used as a proxy indicator of our commitment to finding alternative, cost-effective energy sources. In 1997, North Carolina was 22<sup>nd</sup> in the US in the portion of energy it consumed from renewable energy sources (e.g., wind and solar power), up from 24<sup>th</sup> the previous year.<sup>553</sup> The use of such sources is affected by many factors, including site availability and local energy economics.

Co-generation is difficult to measure and costly to develop. Encouraging companies to develop co-generation capacity could materially affect public utility rates for other consumers. Thus far, only a few large companies in North Carolina have demonstrated the capability to build generation capacity to meet part of their needs in an economical manner. Requiring companies to expand co-generation capabilities could have serious implications for individual consumer rates.

## Measure 3: Power affordability

North Carolina's power is slightly more affordable than the national average, as reflected by its average residential electricity costs. In 2000, North Carolina's average residential electricity costs (assuming 1,000 kilowatt hours of consumption) were 96.5 percent of the national average.<sup>554</sup> North Carolina's electric costs also are lower than the average costs of the states in the South Atlantic Region.<sup>555</sup>

However, North Carolina's electricity costs have increased relative to other states since 1991. From 1991 to 1998, North Carolina's national ranking in residential electricity costs declined from the 23<sup>rd</sup> lowest to the 31<sup>st</sup> lowest (based on a typical bill for January 1<sup>st</sup> assuming 1,000 kilowatt hours of consumption).<sup>556</sup> In 2000, North Carolina's national ranking in residential electricity costs fell again to the 33<sup>rd</sup> lowest.<sup>557</sup> The indicator of power affordability used for this ranking is the average price of residential electricity service (cents per kilowatt hour).

In North Carolina, the electric utilities, fiscal stress of the 51 municipal electric utilities could contribute to further rate increases, especially in conjunction with deregulation. Some fiscal repercussions have already

been felt. In 1999, bond rating agencies downgraded the general obligation bonds of three ElectriCities members. In 2000, ElectriCities officials warned that, unless the State finds a way to cover their stranded costs, cities could have higher rates and, as a result, “find themselves with no customers.<sup>558</sup>” A warmer climate could further contribute to higher rates for ElectriCities members. (See North Carolina Climate.)

## Measure 4: Natural gas service

As of May 2000, 74 of North Carolina’s 100 counties had natural gas service—26 rural counties in the eastern and western parts of the state had no natural gas service.<sup>559</sup> Since May 2000, natural gas service has been extended to three more counties. Barriers to rural natural gas service include such factors as low population densities, physical barriers and the locations of natural gas pipelines.

In addition, most of the unserved counties are not within established franchise territories. As illustrated by the table below, only six of the unserved counties are located within the franchise territory of an existing natural gas local distribution company (LDC).<sup>560</sup>

**Counties with Natural Gas Franchises and Service**

Company	Service Area	Population	Customers	Counties Served
NCNG	19,947 square miles in Eastern & South Central N.C. including the Wilmington, Fayetteville & Rocky Mount areas (41% of N.C.)	2,340,000	163,000	33 of 33
PSNC Energy	10,022 square miles including the Triangle & Asheville areas	2,240,000	339,000	25 of 25
Piedmont	6,811 square miles including the Charlotte & Triad areas	2,200,000	397,000	15 of 18
NUI N.C. Gas	641 square miles in Rockingham & Stokes counties	99,000	14,000	2 of 2
Frontier	3,209 square miles including Warren & Wilkes counties	260,000	N/A	4 of 7
Toccoa	Macon County (Franklin)	N/A	N/A	1 of 1

Note: NCNG = North Carolina Natural Gas Company & NUI N.C. Gas = NUI North Carolina Gas. Some counties are served by more than one LDC.

The North Carolina Natural Gas Company (NCNG) is the only North Carolina LDC with two connections with interstate pipelines (i.e., Transco and Columbia). Proximity to interstate pipelines is an important issue for North Carolina as it strives to extend service to rural counties.

From 1990 to 1996, the number of natural gas customers in North Carolina increased by 33 percent.<sup>561</sup> The state's LDCs report moderate increases in the percent of customers served within their respective franchise areas. For example, NCNG reports that the percent of total customers served in its franchise area climbed from 16 percent in 1991 to 17 percent in 2000. PSCN Energy reports that its service ratio increased from 29 percent in 1992 to 33 percent in 2000 and Piedmont reports an increase of 38 percent in 1992 to 40 percent in 2000.<sup>562</sup>

Industrial customers are the biggest natural gas users. Generally, industrial customers have the greatest needs for natural gas service (in terms of volume). To illustrate, while industrial customers represent only 1 percent of NCNG's total customers, they account for 70 percent of total gas deliveries.<sup>563</sup> PSCN Energy reports that industrial customers represent 0.6 percent of its customers, but receive 51 percent of all gas deliveries (in contrast, residential customers account for 87 percent of all customers, but only 30 percent of deliveries).<sup>564</sup>

## Measure 5: Natural gas affordability

Our natural gas prices are high, and getting higher. North Carolina's natural gas costs are relatively high compared to other states. In 1998, North Carolina was 33<sup>rd</sup> in the US in the affordability of natural gas (per 1,000 cubic feet).<sup>565</sup> Our higher rates are due to such factors as limited supplier competition and pipeline access.

North Carolina's natural gas costs are also rising at a faster rate than the national average. From 1992 to 1999, the state's average residential natural gas rates rose over 31 percent from \$6.14 to \$8.07 per Dekatherm.<sup>566</sup> During the same time period, the state's average natural gas rates, expressed as a percent of the national average rates, rose from 108 percent to 126 percent of the national average.<sup>567</sup>

The state's natural gas costs also have increased more rapidly than the inflation rate. For the period from 1990 through 1999, the CPI increased 28.7 percent, but average residential gas rates per dekatherm (dollars) increased 34.5 percent.<sup>568</sup> Given the fact that natural gas prices skyrocketed in 2000 in many parts of the country, it is likely that North Carolina's natural gas costs will outpace the inflation rate by a wider margin next year.

## **Taking Action:**

The North Carolina General Assembly and Public Utilities Commission recently studied deregulation and corporate competition, and assessed their impact on new generating capacity and state energy costs. The General Assembly is considering a major initiative in the 2001 session to reduce emissions from coal-fired power plants by as much as 70 percent. If enacted, North Carolina would have one of the most stringent emission reduction statutes in the country.

The investor-owned utilities (IOUs) operating in North Carolina have begun to address energy capacity and efficiency issues. They are joining the General Assembly in considering emission reduction legislation (partly because the associated costs would be passed onto businesses and citizens through future electric bills). The IOUs also have begun implementing such measures as demand-side management (DSM) programs, including bill credits for interruptible loads, cash incentives or low interest loans for using more efficient equipment.

Natural Gas Service Legislation. The North Carolina General Assembly enacted G.S. § 62-36A in 1989 to promote the extension of natural gas service to all counties and enacted the Clean Water and Natural Gas Critical Needs Bond Act of 1998 (G.S. § 62-159) to provide \$200 million for natural gas infrastructure.<sup>569</sup> The North Carolina Public Utilities Commission has approved construction projects in four of the six unserved, franchise counties and received requests to use natural gas bond funds to extend service into the other two counties.<sup>570</sup> However, extending service to the remaining counties will be costly. It has been estimated that North Carolina will require an investment of \$2.7 billion to extend natural gas service to 22 rural counties.<sup>571</sup>

To ensure that North Carolina consumers will have access to sufficient, affordable energy, the state government must possess sufficient authority and resources to plan, monitor and regulate power supply and consumption. For example, the Public Utilities Commission must have sufficient capabilities to forecast and track electricity loads and capacity requirements over 20 years, and direct IOUs to address potential gaps. The state also must consider innovative ways to promote conservation and more efficient energy technologies, including co-generation and wind generation.

The State has a pivotal role in ensuring safe and affordable energy. Energy affordability and dependability are essential to a prosperous economy, especially the emerging economic sectors. They are important siting criteria for businesses and foreign investors. They also have a direct bearing on the safety, health and vibrancy of communities, and the quality of life of residents, especially those living in rural areas. The conditions and manner under which power is generated can have a direct impact on the quality of the state's air and water, as well.

## Goal 3: Provide safe and cost-effective water, wastewater, stormwater, and waste management systems throughout all regions of the state.

### 2020 Goals and Targets:

North Carolina will ensure that its water, wastewater and stormwater systems meet applicable public health and environmental standards, and are of sufficient capacity to meet the projected demands of a growing economy and population. There will be an effective statewide solid waste management system that protects the environment and minimizes demands on landfill capacity.

### Primary Performance Targets

Measure	Definitions	Relevance	2020 Target
<b>Water safety</b>	Percent of residents served by public drinking water systems meeting established health standards	Safe drinking water is a vital public health issue	100%
<b>Water capacity</b>	Percent of systems with sufficient capacity for supporting economic growth	Adequate water capacity is critical to economic growth and groundwater sources tend to have limited excess capacity	80%
<b>Sewer safety</b>	Percent of residents served by sewage disposal systems meeting established health standards	Effective sanitation facilities are vital for both public health and environmental considerations	100%
<b>Sewer capacity</b>	US rank in capacity of current sewer systems to meet future needs	Businesses require adequate sewer treatment facilities to support relocation or expansion plans	Top 20 in US
<b>Stormwater management</b>	N.C. lacks a strategic measure for stormwater management	Effective stormwater systems are critical to water quality and other environmental issues	N/A
<b>Solid waste</b>	Statewide waste disposal rate (tons per capita)	Continued escalation of the waste disposal rate could exhaust current landfill capacity	Under 1.0 tons

Selected performance trends pertaining to water, wastewater, stormwater and solid waste management systems are summarized below.

## Recent Performance Trends:

North Carolina’s unmet water and sewer demands are troubling, if not overwhelming. It is estimated that North Carolina faces \$11.3 billion in water and sewer capital improvement needs—61 percent is required for the state’s 15 urban counties and 39 percent is required for the remaining 85 rural counties.<sup>572</sup> This is substantially higher than previous estimates<sup>573</sup> and *does not include* stormwater system needs.

The state’s ability to manage its solid waste is also being tested. North Carolina generated 9.2 million tons of solid waste in 1999, nearly 7.2 million tons of which were disposed in municipal landfills.<sup>574</sup> Its ten most populated counties, with only 33 percent of the state’s population, generated 51 percent of the state’s solid waste.<sup>575</sup> It is estimated that, within 20 years, North Carolina will need twice its existing landfill capacity to meet its waste disposal needs.<sup>576</sup>

### Summary of Key Performance Trends

Measure	Trend	Performance Highlights
Water safety	↔	7% of N.C.’s water systems have reported monitoring violations ranking the state 26 <sup>th</sup> in the US in this water safety indicator
Water capacity	↔	45% of N.C. residents rely on groundwater sources for drinking water, often a source with limited excess capacity
Sewer safety	↔	62% systems surveyed by the Rural Economic Development Center need to replace sewer lines and over 50% have inflow and infiltration problems
Sewer capacity	↓	In 1998, N.C. was 31 <sup>st</sup> in US in the ability of its sewage treatment facilities to meet future needs
Stormwater management	N/A	No data available
Solid waste	↓	In 1999, N.C. generated solid waste of 1.22 tons per capita, up about 20 percent from 1992

## Measure 1: Water safety

In North Carolina, there are 2,253 community water systems.<sup>577</sup> This number changes virtually every week. The State’s Department of Environment and Natural Resources (DENR) reportedly maintains a wide variety of data on these systems, including contaminant levels, public notices and inspections. However, despite the critical importance of safe drinking water—to our health and economy—DENR does not have a single strategic measure for tracking the overall safety of our public water treatment, supply and distribution systems on a statewide basis.

Based on available national data, there is reason for concern. According to the US Environmental Protection Agency (USEPA), about 7 percent of North Carolina’s community water systems have reported health-based

violations. As a result, North Carolina is ranked 26<sup>th</sup> in the US in the percent of water systems with such violations.<sup>578</sup> It should be noted that the systems with reported violations may include systems that failed to submit the required reports.

According to the North Carolina Rural Economic Development Center, North Carolina's water systems are among the oldest in the Southeast. Of the 405 water treatment and distribution systems surveyed by the Rural Economic Development Center in 1998, over 50 percent were at least 40 years old, and many were at least 60 years old.<sup>579</sup> Moreover, at least 67 percent of the water systems inventoried reported the need to replace or repair water distribution lines.<sup>580</sup> While nearly 200 water systems contained some asbestos concrete pipe, about 69 percent of the water distribution pipe was more recent vintage polyvinyl chloride (PVC) or ductile iron pipe.<sup>581</sup>

## Measure 2: Water capacity

In accordance with G.S. 143-355(1), the State requires local governments that supply public drinking water to prepare a Local Water Supply Plan (LWSP). A LWSP provides an assessment of water supply needs for 20 to 25 years and, for systems with average daily demands over 80 percent of available supply, a specific plan for meeting those needs. It must be updated every five years. The LWSPs are the building blocks for the State Water Supply Plan (SWSP). DENR has adopted new capacity development rules for reviewing water system technical, managerial and financial capacities when it receives expansion requests.

The State recognizes that monitoring the capacity of our public water systems is critical to managing effectively our anticipated growth. DENR recently created a new Capacity Development group to address this issue. Nevertheless, our statewide water capacity for accommodating growth remains unclear. We do not yet track water capacity in a thorough manner. The North Carolina Rural Economic Development Center has initiated an effort to do so, at least for our state's rural water systems. Based on this preliminary work, the prognosis is not encouraging.

Public community water systems are expected to maintain at least one half-day supply of stored water. Against this standard, 185 of North Carolina's rural water systems (about 46 percent) need more storage.<sup>582</sup> Public water systems in growing areas also should offer sufficient excess capacity for economic development. Unfortunately, 45 percent of North Carolinians rely on groundwater sources as their source of drinking water<sup>583</sup> and such sources have limited excess capacity. In fact, only 28 percent of the groundwater systems surveyed by the North Carolina Rural Economic Development Center in 1998 had any excess capacity, compared to 87 percent of the surface water systems it surveyed.<sup>584</sup>

### Measure 3: Sewer safety

DENR does not maintain sufficient statewide data on public sewer systems. The very lack of statewide data is in itself a serious problem. It makes it extremely difficult to report on the overall quality of the state's public sewer systems, let alone determine where the greatest future needs lie. The North Carolina Rural Economic Development Center recently assessed rural systems and this important work provides at least a glimpse into statewide sewer issues—and this study was done before the substantial damage done by Hurricane Floyd.

Of the 254 sewer systems studied by the Rural Economic Development Center, 62 percent need to replace sewer lines and over 50 percent have inflow and infiltration problems (i.e., problems associated with the intrusion of groundwater and storm water runoff).<sup>585</sup> Of the over 7,500 miles of sewer pipe inventoried by the Rural Economic Development Center, nearly 40 percent is made of vitreous clay.<sup>586</sup> Most of this vitrified clay pipe is 60 to 70 years old and much of it experiences problems due to improper bedding, joint leaks and tree root intrusion.

Our rural wastewater treatment plants are not in a whole lot better shape than our sewer pipes. While 89 of the sewer systems surveyed the Rural Economic Development Center have undergone major plant upgrades,<sup>587</sup> North Carolina has 92 sewer systems (14 urban and 78 rural) under orders to upgrade their treatment plants to more effectively meet state permit limits for treated wastewater.<sup>588</sup> The average age of the wastewater treatment plants reviewed by the Rural Economic Development Center is 43 years.

### Measure 4: Sewer capacity

North Carolina's sewer systems may lack sufficient capacity to support future growth. In 1998, North Carolina was 31<sup>st</sup> in the US in the ability of its sewage treatment facilities to meet future needs, down from 28<sup>th</sup> in 1990.<sup>589</sup> This measure reflects the ability of publicly owned wastewater treatment facilities to meet documented needs for the State's estimated population for the next 20 years.

Only 25 percent of the sewer systems inventoried by the Rural Economic Development Center in 1998 had at least 100,000 gallons of excess sewer capacity—a standard measure of expandability for economic development—and most had no excess capacity at all.<sup>590</sup> It is estimated that 101 of North Carolina's sewer systems (primarily rural systems) must expand or upgrade their treatment plants to increase capacity.<sup>591</sup>

## Measure 5: Stormwater management

Long regarded as a local issue, North Carolina is just beginning to address stormwater management from a statewide perspective. With its 1987 amendments to the Clean Water Act, the US Congress ordered the US EPA to develop a tiered implementation strategy for the national stormwater program. In late 1999, the US EPA Administrator signed an order requiring states to develop a comprehensive, statewide stormwater management program.

Urban development, by increasing impervious surfaces, changes the flow of runoff water and seriously aggravates North Carolina's stormwater problems. Instead of following natural channels, stormwater picks up speed across roads and parking lots, and flows in dramatically different (and faster) ways. It increases the threat of flash floods and absorbs additional pollutants. Existing storm drains (where there are any at all) are being overwhelmed. Pressures are mounting to find new ways, such as bio-retention ponds (rain gardens), to cleanse contaminated runoff before it flows into natural waterways.

## Measure 6: Solid waste

The Solid Waste Management Act of 1989 (as amended in 1991 and 1995) established a 40 percent statewide waste reduction goal to 0.64 tons per capita. However, despite some impressive improvements in solid waste management practices, the statewide goal is farther from our grasp today than it was a decade ago.

We are doing a better job of regulating our public landfills. From 1990 to 1999, North Carolina closed 130 unlined municipal solid waste landfills so that, today, all 39 of the state's municipal solid waste landfills comply with the state's environmental standards.<sup>592</sup> However, we are generating more waste. In 1999, North Carolina generated solid waste of 1.22 tons per capita, up about 20 percent over 1992.<sup>593</sup> Coupled with our projected population growth, it is clear that the state's landfill capacity could become exhausted much quicker than expected.

Our recycling initiatives are also losing momentum. The state's recycling efforts, after several years of steady progress, are no longer keeping pace with rising waste disposal trends. From FY92 to FY97, the state's recycling ratio (i.e., per capita tons recycled / per capita tons disposed) more than doubled from 0.06 to 0.13.<sup>594</sup> However, in FY99, the state's recycling ratio fell to 0.10, indicating a reduced commitment to recycling.<sup>595</sup> This negative trend is due to several factors, including market factors and the failure of many local governments to institute comprehensive recycling programs with such components as curbside pickup and backyard composting programs.

## **Taking Action:**

In 1998, the North Carolina Rural Economic Development Center published an important study of 405 water systems and 254 sewer systems in 73 rural counties and two urban counties (Buncombe and Forsyth).<sup>596</sup> This study provided the first comprehensive assessment of water and sewer system needs throughout the state as well as the ability of communities to finance those needs. A similar effort is needed to develop reliable statewide data on all water and sewer systems, including urban systems. In addition, the strategies offered by the Rural Economic Development Center for improving water and wastewater systems merit strong consideration.

In October 2000, the North Carolina Environmental Management Commission (EMC) issued a report<sup>597</sup> on its State Stormwater Management Initiative 2000. The EMC recommended a statewide stormwater program that would consolidate existing state stormwater programs, ensure regional flexibility<sup>598</sup> and protect surface waters from stormwater impacts. Aggressive state action will be needed to carry out this strategy. The State must adopt strategic measures for monitoring the quality of local stormwater management systems throughout the state (e.g., the percent of local governments with state-certified stormwater management programs and tracking systems).

In 1989, when it adopted the Solid Waste Management Act, the General Assembly established statewide solid waste management goals and guidelines. The legislation helped spur public and private recycling initiatives, improved the environmental standards of municipal landfills and resulted in an exemplary statewide solid waste planning and reporting system. Since 1989, DENR has developed several new waste management programs including scrap tire management, medical waste regulation, and government recycling programs. This kind of leadership is needed once again.

Out of sight, out of mind... It is often harder to win voter approval for those elements of the public infrastructure that are less visible, but that does not mean that we should take the quality of that infrastructure for granted. The quality of our water, sewer, wastewater, stormwater and solid waste management systems is inextricably linked to our environment and public health.

"There ain't no free lunches – never have been." Economic development decisions are heavily influenced by the availability, and capacity, of public water and sewer systems. If our investments in these systems fall short, so will our economic performance. If our economic performance is at risk, so are our incomes, and the tax revenues that will be needed to maintain our infrastructure and stimulate new economic growth. "...the ankle bone's connected to th' footbone....etc."

## Goal 4: Support a modern technology infrastructure that will help all residents, communities and businesses achieve their economic, educational and social goals.

### 2020 Goals and Targets:

Inside North Carolina's geographical borders, an around-the-clock information and telecommunications technology infrastructure will connect citizens to each other—and the world. This infrastructure will help ensure a dynamic economy, healthy families and children, a quality education for all, safe and vibrant communities, a highly skilled workforce, a sustainable environment, and accountable government, and engaged, active, knowledgeable citizens.

North Carolina will lead the nation in e-government services. It will dramatically improve the technology platforms of its public schools and higher education institutions. It will modernize state and local government technology infrastructure, increase the availability of on-line, citizen-centered government services, and provide citizens with personalized and secure account options. It will leverage state, university and private network resources to increase citizen access to information and help make citizens full participants in our democratic processes.

North Carolina will eliminate its digital divide. A seamless information and telecommunications technology network will blanket all 100 counties. That network will encompass high-speed bandwidth deliverable at telephonic, cable or wireless operating centers in every county, and it will enable public institutions, businesses and citizens to meet their networking and e-commerce needs in a secure, fast, efficient and effective manner.

### Primary Performance Targets

Measure	Definitions	Relevance	2020 Target
<b>Personal technology access</b>	Percent of households with personal computers & Internet access	Personal computer ownership is a proxy indicator of Internet usage and infrastructure	At least 90%
<b>School technology access</b>	Ratio of students to Internet connections	School technology access is key predictor of future Internet usage and a critical component of the public technology infrastructure	Top 20 in US
<b>Digital government</b>	US rank in digital delivery of governmental services	Business and citizens need greater access to Internet resources to promote the digital economy	Top 10 in US
<b>Digital divide</b>	Percent of counties with affordable access to latest data delivery technology	Internet access is needed to enhance the participation of rural communities in the new economy	At least 90%

Selected performance trends regarding the state's technology infrastructure are summarized below.

**Recent Performance Trends:**

In North Carolina, we are astute enough to see the need for innovation, but not always bold enough to pay for it. The North Carolina Board of Science and Technology concluded that “affordable, high-speed access is a non-negotiable requirement for full participation in the global marketplace.”<sup>599</sup> However, despite a national reputation for innovation, North Carolina lags behind most other states in its performance on technology infrastructure issues.

There are numerous national ranking systems for comparing state technology infrastructures. Regardless of which ranking system is used, North Carolina does not compare favorably with other states.

**Summary of Key Performance Trends**

Measure	Trend	Performance Highlights
Personal technology access	↔	In 1998, N.C. was 45 <sup>th</sup> in the US in the percent of households with computers and 46 <sup>th</sup> in the US in the percent of households with Internet access
School technology access	↔	NC has improved Internet connections. In 2001 there were 5.7 students per Internet connected computer. National rankings put NC 48 <sup>th</sup> in students per Internet-connected computer based on 1999 data, 47 <sup>th</sup> in students per multimedia computer and 43 <sup>rd</sup> in classrooms with Internet access
Digital government	↔	In 1998, N.C. was 28 <sup>th</sup> in US in using digital technologies for improving public services
Digital divide	↔	The rural/urban connectivity cost ratio is over 10:1 (the cost ratio is based on the cost of a T-1 line)

**Measure 1: Personal technology access**

In a 1998 survey by the National Telecommunications and Information Administration (NTIA), North Carolina was ranked 45<sup>th</sup> of the 50 states in the percent of households with computers and 46<sup>th</sup> in the percent of households with Internet access.<sup>600</sup> This placed North Carolina just ahead of such states as Louisiana, Arkansas and Mississippi. Only 35 percent of North Carolina households had computers and only 20 percent had Internet access.<sup>601</sup> Nationally, over 40 percent households owned computers and 25 percent enjoyed Internet access.

Other, and more recent, surveys indicate that North Carolina may be making some progress in this area. In 1999, North Carolina was ranked 34<sup>th</sup> in the US in household Internet connections.<sup>602</sup> In 2000, a *Governing* magazine survey reported that 26 percent of North Carolina adults had Internet access, for a national ranking of 40<sup>th</sup>.<sup>603</sup> These survey results, while more positive than those of the NTIA, should not provide much comfort to North Carolinians.

## Measure 2: School technology access

North Carolina has lagged behind most states in educational technology. For example, based on a 1999 Education Week survey, North Carolina was ranked 48<sup>th</sup> in the nation in the number of students per Internet-connected computer.<sup>604</sup> Also in 1999, North Carolina was ranked 47<sup>th</sup> in the US in students per multimedia computer and 43<sup>rd</sup> in the percent of classrooms with Internet access.<sup>605</sup> However a survey by the North Carolina Department of Public Instruction in 2001 found that schools in North Carolina have moved from 102 students per Internet computers in 1997 to 5.7 students per Internet computer connections in 2001.

The Progressive Policy Institute, using a weighted measure of the percentage of classrooms wired for the Internet, teachers with technology training and schools with school-based email accounts for teachers, gave North Carolina a more favorable rating in school technology access. It ranked North Carolina 24<sup>th</sup> in the nation in school technology<sup>606</sup>, but this measure clearly focuses more on teacher access to technology than student access.

## Measure 3: Digital government

The state's relative performance is no better in providing digital government services. North Carolina is 33<sup>rd</sup> in the nation in the digital delivery of governmental services.<sup>607</sup> In 1998, North Carolina was 28<sup>th</sup> in US in using digital technologies for improving public services.

North Carolina was a leader in adopting advanced telecommunications, but our state government's investments in science and technology have not kept pace with those of many other states. From 1998 until 2000 (when the Vision 2030 Report was published, North Carolina state government invested only \$16.2 million in science and technology while, in contrast, Georgia has invested \$37.8 million, Maryland \$500 million, Oklahoma \$300 million and Minnesota \$1.6 billion.<sup>608</sup> Since 2000, North Carolina has invested an additional \$30 million in the Rural Internet Access Authority.

## Measure 4: Digital divide

Many rural communities lack high-speed access and others must dial long distance to the nearest network. The availability of technology to rural areas is largely a function of cost, and the costs of providing access to rural areas is dramatically higher than in urban areas. In 1998, the cost of T-1 line connectivity was \$247 per month in Wake County, the largest urban county, compared to \$2,670 per month in Vance County, resulting in an urban/rural connectivity cost ratio of 9.2 percent.<sup>609</sup>

Nationally, there remain alarming disparities among different income and demographic groups. In 1998, households with incomes of at least \$75,000 are 20 times more likely to have access to the Internet, and 9 times more likely to have computers at home, than those at lower income levels.<sup>610</sup> Whites are more likely to have access to the Internet at home than Blacks or Hispanics at any location and urban residents are twice as likely to have Internet access than rural residents.<sup>611</sup> Unfortunately, many of these digital divides are widening.

### **Taking Action:**

There are numerous initiatives for improving the state's technology infrastructure, many of them involving private sector organizations. The North Carolina General Assembly created the Rural Internet Access Authority to provide high-speed, affordable Internet access to all citizens and businesses by 2003. The Connect North Carolina Project will increase telecommunications connectivity in 29 Western North Carolina counties.

The greatest challenge for the state government will be to determine its appropriate role in promoting technology and the most cost-effective opportunities for public investment. To that end, North Carolina should build on the work of the North Carolina Board of Science and Technology and develop and track a statewide technology index. This will better position state leaders to evaluate potential strategies for improving the access of citizens and businesses to new technologies.

Standing still is not an option. North Carolina must build a digital economy to effectively compete in the new economy. In turn, the success of its digital economy will hinge, at least to a degree, on the success of technology initiatives in education, higher education and other units of state and local government.

## Goal 5: Adopt flexible public policies and partnerships for competing in a dynamic economic, environmental and social environment.

### 2020 Goals and Targets:

North Carolina cannot compete in a global economy with an obsolete infrastructure. This will be true for both the *hard* infrastructure of transportation, energy, water, sewer and technology systems and the *soft* infrastructure of public taxation, regulatory, financing and service delivery systems. As the pace of economic and social change accelerates, the very way in which our public agencies make decisions will have to be more "foresighted", far-sighted, flexible, fleet of foot, collaborative *and* competitive. We will need government structures that can make quick, effective changes in direction, and respond to lightning-like changes in conditions and requirements.

To remain competitive in the 21<sup>st</sup> century, we will have to reinvent what are largely 19<sup>th</sup> century governmental structures. Our public institutions will have to make investments in the future, and those investments will have to be made in a more efficient and coordinated fashion than ever before. To that end, the state government should build a *soft infrastructure* that effectively reconciles—and enhances the prospects of achieving—competing educational, economic, environmental and social goals.

North Carolina should create a legislative, regulatory and legal environment that continues to be supportive of sustainable economic growth and technological innovation. It should provide for a competitive business climate, including a coherent and competitive tax system, for maximizing the state's potential for attracting new business investment. It should also consider fundamental organizational changes to better meet the needs of citizens and clients in a rapidly-changing competitive environment, in which many private, non-profits can provide services more effectively and cheaper than government. Period!

This approach will call for new models, including public-private partnerships, collaborations with non-profits, and collaborative, regional governance and financing structures, for improving the capacity of local governments to meet future public infrastructure needs. Happily, at least some North Carolina local governments have recognized these criteria for 21<sup>st</sup> century operations already and are "reinventing" themselves, and becoming more streamlined, responsive and creative.

## Primary Performance Targets

Measure	Definitions	Relevance	2020 Target
<b>Business climate</b>	US rank as place to do business based on 15 factors (e.g., job growth, exports, poverty, income & workforce size)	A high ranking indicates a positive climate for retaining or recruiting businesses in N.C.	Top 10 in US
<b>Public-private partnerships</b>	US rank in university R&D spending & spin-outs	R&D spending reflects university capacity for economic innovation and commercial development	Top 10 in US
<b>Capital investment</b>	US rank in per capita state & local capital outlay expenditures	Public capital outlays measure the commitment of state and local government to public infrastructure	Top 10 in US + top bond rating
<b>Infrastructure planning</b>	Percent of residents served by large water systems (over 100,000 persons)	Regional water and sewer systems represent one indicator of efficient infrastructure management	At least 90%

North Carolina’s performance involving soft infrastructure issues is summarized below.

### Recent Performance Trends:

Public policy decisions matter, and often have long-lasting implications. North Carolina became known as the *Good Roads State* because of the public policy decisions its leaders made. It became known for fiscal strength because of legislatively-imposed controls on local government debt financing. Its banking legislation contributed to its international reputation as a banking center. Its ability to maintain relatively low tax rates has helped promote economic growth.

Yet, despite fundamental shifts in North Carolina’s competitive environment, many of its state and local agencies continue to employ slow and outmoded planning, financing and decision-making structures. Many state agencies make massive capital infrastructure decisions with insufficient regard to their impact on other agency plans, let alone their statewide implications. Frequently, neighboring local governments build and maintain separate infrastructure facilities when a regional facility would be more efficient. Further, there are few, if any, state-funded infrastructure initiatives that encourage regional collaboration—a stark contrast to regional programs in mental health, community colleges and economic development.

In short, North Carolina faces the extraordinary competitive challenges of the 21<sup>st</sup> century with state and local government structures that were first crafted in the 19<sup>th</sup> century. It is time for local and state decision-makers to pay attention to this simple fact: Ones and zeroes that ride on electrons at nearly the speed of light, processing information at literally millions of bits per second, do not recognize city or county lines!

## Summary of Key Performance Trends

Measure	Trend	Performance Highlights
Business climate	↓	In 2000, <i>Site Selection</i> magazine ranked N.C. 2 <sup>nd</sup> , 4 <sup>th</sup> & 5 <sup>th</sup> in the nation for 3 key business climate indicators, but two of these rankings dropped from the previous year
Public-private partnerships	↔	In FY98, N.C. was 10 <sup>th</sup> in US in university R&D spending and 24 <sup>th</sup> in university spin-outs
Capital investment	↔	N.C. ranks 39 <sup>th</sup> in per capita state & local government debt and 35 <sup>th</sup> in debt as a percent of revenue
Infrastructure planning	↔	Only 33 percent of N.C. residents are served by large water systems (i.e., those serving more than 100,000 persons)

### Measure 1: Business climate

North Carolina has sought to adopt tax and regulatory policies that keep it competitive with neighboring states and refrained from excesses of interstate competition. Not surprisingly, it scores well in business siting studies. In 2000, for example, *Site Selection* magazine ranked North Carolina among the nation's top states in three key business climate indicators—second in new and expanded facilities, fourth in new jobs and fifth in capital investment.<sup>612</sup> North Carolina's rank dropped slightly from the prior year in new and expanded facilities and new jobs.

Many of North Carolina's small towns also received high marks for corporate facility creation and expansion from *Site Selection* magazine in 2000. Statesville received the top rating for the second year in the row. Sanford was ranked sixth. In total, North Carolina had 18 towns in *Site Selection* magazine's top 100 small towns, the second highest total of any state.<sup>613</sup>

Credit access continues to be an important issue, especially for small businesses. North Carolina has a strong banking system, but some small businesses can find it difficult to access credit markets due to bank consolidation and regulatory impediments. Many believe that such businesses—the greatest job generators—will need greater access to credit and equity finance and venture capital in order to continue their growth.

## Measure 2: Public-private partnerships

State and local governmental agencies throughout North Carolina recognize the strategic value of public-private partnerships, but, given the wide variety of their purposes and forms, it is difficult to measure progress in employing such arrangements. However, the ability of the state government to leverage its public university system for economic innovation is one indication of such ventures.

North Carolina appears to be doing relatively well in leveraging its public universities for commercial purposes. For example, in FY98, North Carolina was ranked 10<sup>th</sup> in the US in university research and development spending<sup>614</sup>, an indicator of its potential capacity for generating technology-related commerce. In 1998, North Carolina was ranked 24<sup>th</sup> in the nation in the number of university spin-outs per \$10 million in university research and development spending.<sup>615</sup> Technology transfer activity measures the ability of research institutions to help business bring academic research to market.

## Measure 3: Capital investment

North Carolina lags behind most states in capital investment effort, as measured by the level of capital debt. In 1999, North Carolina's total state and local government debt was \$21.5 billion, 59.9 percent of total revenues (compared to the national total of 77.3 percent).<sup>616</sup> In 2000, North Carolina was 39<sup>th</sup> in the nation in per capita state and local government debt and 35<sup>th</sup> in the US in state and local debt as a percent of total revenue.<sup>617</sup> In 1998, North Carolina's rankings were 39<sup>th</sup> in per capita debt and 34<sup>th</sup> in debt as a percent of revenue.<sup>618</sup> However, with the recent passage of a \$3.1 billion general obligation bond package for university and community college capital construction, the state's capital investment portfolio will increase substantially.

North Carolina also lags behind other states in state and local highway spending, a reasonable proxy indicator for capital investment effort (aggregate capital expenditures are not available for state and local governments). With total state and local highway spending of \$1.9 billion, North Carolina was 43<sup>rd</sup> in the nation in per capita highway spending and 36<sup>th</sup> in highway spending as a percent of personal income.<sup>619</sup> In 2000, North Carolina's ratings climbed to 37<sup>th</sup> in per capita highway spending, but remained at 36<sup>th</sup> in the nation in highway spending as a percent of personal income.<sup>620</sup>

North Carolina's relative low capital investment ratings are more a function of its level of effort than its fiscal capacity. The state and most of its metropolitan areas enjoy strong fiscal capacity for future capital investments. In 2000, North Carolina was one of only 9 states receiving the highest bond ratings from all three major bond rating organizations.<sup>621</sup>

A favorable state general obligation rating indicates a strong capacity for future infrastructure spending. In addition, most of North Carolina's large local governments maintain excellent credit ratings.

However, many areas of the state, particularly rural areas, face capital needs that easily exceed current financing capabilities. For instance, rural North Carolina needs \$4.4 billion to bring rural public community water and sewer systems into compliance with 1997 regulatory requirements. Over \$60 million will be needed to begin equipping rural communities with information technology.<sup>622</sup> Rural governments, caught in a spiral of increasing property tax rates, increasingly lack the requisite capacity to pay for capital investments.<sup>623</sup> Over 60 percent of our rural communities have low bond ratings.<sup>624</sup>

## Measure 4: Infrastructure planning

Water towers, a source of small town pride, also provide a powerful metaphor for our state's boundary-limited and jurisdiction-driven approach to public infrastructure planning and financing. Local control has been a way of life for a long time in North Carolina, and there are few incentives available to local jurisdictions to pool resources and realize economies of scale.

About 90 percent of North Carolina's water systems serve less than 3,300 customers<sup>625</sup> and 95 percent serve less than 10,000 customers.<sup>626</sup> Only 33 percent of North Carolinians are served by large water systems (i.e., those with more than 100,000 customers).<sup>627</sup> The sheer number of small water systems is a serious barrier to efficient infrastructure planning and financing.

State and local governments in North Carolina often in response to federal mandates, have created a bewildering array of regional planning and program divisions, offices and agencies. Every state agency with significant economic development and public infrastructure responsibilities has its own planning process and structure. For example, the North Carolina Department of Transportation has 14 highway divisions and 7 funding regions. The North Carolina Department of Commerce has 7 economic development regions. Virtually every state department (e.g., Environment and Natural Resources, Health and Human Services, Revenue and Insurance) has regional structures, but the regional boundaries vary by department and program.

Since the 1960s, the General Assembly has authorized the creation of numerous regional planning agencies for local governments. In 1961, it authorized the creation of regional planning commissions and economic development commissions and, in 1971, it authorized the creation of regional councils of governments.<sup>628</sup> In 1971, pursuant to state legislation, Governor Scott established the lead regional organization (LRO) structure which now has 18 regional entities. While many state agencies realigned

their organizations with this regional structure in the early 1970s, the state has not reexamined its structure since then. Moreover, the state has not fully explored ways to leverage the LROs for improving regional infrastructure planning and financing.

### **Taking Action:**

The state government has demonstrated a willingness to improve the state's business climate and foster public-private partnerships. For example, the General Assembly reduced the corporate income tax rate from 7.75 percent to 6.9 percent and repealed the intangibles tax on stocks and bonds. It eliminated an inventory tax on goods—and reimburses the counties for that annual loss—and enacted the "Bill Lee Act" to provide tax credits to business that create jobs in low wealth counties.

The State's public universities are committed to elevating their national stature in the sciences and the commercialization of scientific research. The North Carolina Biotechnology Center, the nation's first state-sponsored biotechnology center, has become a model for leveraging public funds and encouraging the movement of biotechnology from the lab to the market. The Centennial Campus at North Carolina State University is considered one of the nation's best public/private research campuses."

In 1999, the General Assembly created a Smart Growth Commission to examine ways to preserve undeveloped land, encourage redevelopment and promote mass transit. However, the state has not yet conducted a comprehensive analysis of its governmental structures, and their capacity for innovation and competitiveness. Its state and local planning and infrastructure financing mechanisms remain fragmented.

As it faces the competitive challenges of the 21<sup>st</sup> century, North Carolina may have to reinvent the public institutions and structures that served it well in the 19<sup>th</sup> and 20<sup>th</sup> centuries. It should consider a comprehensive assessment of its soft infrastructure, especially the manner in which its state and local governments coordinate public infrastructure investments and manage growth. This strategy could involve a restructuring of state and regional planning agencies to improve the coordination of major public infrastructure initiatives, and new local government models to finance public infrastructure investments in that would support regional growth management plans.

North Carolina needs a soft infrastructure that prepares it for the challenges of the future. It needs a taxation and regulatory framework that will sustain the state's economic prosperity, and spur greater innovation and growth. It also needs adequately-funded, effectively-managed and accountable government, at all levels, and public planning and financing models that adapt quickly to rapidly changing economic conditions. Building both a world class hard infrastructure and an innovative soft infrastructure will give North Carolina a competitive edge for the 21<sup>st</sup> century.

# Active Citizenship / Accountable Government

## Vision

**Knowledgeable, informed citizens actively participate in their state and local governments and hold their governments accountable for the resources they receive and the services they provide. Citizens are empowered and actively engaged in government. As the owners of government, they have a vested interest in governance, demanding accountability, effective and appropriate services, and responsiveness.**

**Accountable government is effective, efficient, and responsive government. It addresses the changing needs of the state and its citizens in an efficient, appropriate and equitable manner. It demonstrates sound planning and fiscal management. It encourages its citizens to be informed participants in civic affairs and actively involved in the governing process.**

### Overview of Goals

1. Citizens assume an active, informed and meaningful role in civic affairs at all levels, including local, state and international communities.
2. State and local governments are accountable and accessible to all citizens.
3. State and local governments are effective (i.e., do *the right things*),<sup>629</sup> efficient (i.e., do things *right*), fiscally sound and responsive to all citizens.

Civic engagement and the skills necessary for effective engagement are the foundation of participatory government. “The- public should have the opportunity to influence government action. Regardless of whether the public uses the opportunity, in a democracy it is important to keep that option available.....”<sup>630</sup> Participation must be cultivated by individuals, taught in schools, and reinforced by communities. When this occurs, citizens become greater stakeholders in the governing process.

Government is responsible for providing services needed by citizens, and it must do so in an effective and efficient manner.<sup>631</sup> Communication and interaction with the public are equally important. Finally, public officials, through leadership development and skills training, must be prepared for the tasks of governing and service delivery.

The three goals, their performance measures, targets and rationale follow.

## Goal 1: Citizens assume an active, informed and meaningful role in civic affairs at all levels, including local, state and international communities.

The citizens of North Carolina have great power. This power is set out in our State Constitution: “All political power is vested in and derived from the people; all government of right originates from the people, is founded upon their will only, and is instituted solely for the good of the whole.”<sup>632</sup>

Good government doesn’t just happen. It is created, and re-created, by committed citizens who possess the knowledge, skills, and experience necessary to participate effectively in government. Voting, participation, volunteerism and other forms of citizen engagement do not occur automatically. Participation in government's business and in the "business" of government is learned from parents, teachers elected and appointed government officials, and from the community. So, we suggest requiring community service for high school students as an alternative to the spirit of “me-ism” that threatens the traditional sense of community.<sup>633</sup> And the concept of "community" should include the global community. International studies are recommended for both teachers and students to better understand the world and our role in it as citizens of the State of North Carolina.

### Primary Performance Targets

Measure	Target	Impact
<b>Voting</b>	High levels of voter registration and turnout. By 2020, 80% of eligible voters will be registered to vote, 85% of registered voters will cast ballots in presidential elections, 75% will vote in even-year, non-presidential elections and 60% will vote in odd-year, local elections.	More accountable and responsive government
<b>Community service</b>	Volunteerism and community service will be promoted, and this effort will begin in our schools. By 2010, 50% of all high schools will require community service hours for graduation.	Greater, life-long community service and volunteerism rates, and higher voter participation rates
<b>Civic knowledge</b>	A higher percentage of citizens who understand their governments and the way they work based on a statewide “Civic Index” survey of citizens.	A baseline “snapshot” of citizen knowledge and involvement will support more targeted public education efforts
<b>Global knowledge</b>	We will be well-informed about international issues, and this knowledge will begin in our schools. By 2010, 25% of our high school students will take international studies (50% by 2020) and teachers will have to demonstrate competency in international studies.	A more informed citizenry for competing in the global community

## Measure 1: Voting

Voting is the most common form of political involvement, The percentage of voters casting ballots serves as an important gauge of involvement in civic-related activities. “Voters are more likely to be interested in politics, to give to charity, to volunteer, to serve on juries, to attend community school board meetings, to participate in public demonstrations, and to cooperate with their fellow citizens on community affairs.”<sup>634</sup>

The 2000 census shows 6,085,266 residents over the age of 18 in North Carolina. The State Board of Elections registered 5,206,051 citizens as voters in the 2000 presidential election, over 85 percent of the voting age population (VAP). As shown in the table below, this represents a major increase over 1972 registration ratio. However, this high percentage of registered voters is considered inflated and will be revised this year to reflect greater accuracy.

### General Voter Registration Statistics

Year	Voting Age Population (VAP)	Registered Voters	Registration % of VAP
1972	3,541,399	2,357,645	66.6%
1976	3,884,477	2,553,717	65.7%
1980	4,222,654	2,774,844	65.8%
1984	4,585,788	3,270,933	71.3%
1988	4,887,358	3,432,042	70.2%
1992	5,182,321	3,817,380	73.7%
1996	5,499,000	4,315,769	78.5%
2000	6,085,266	5,206,051	85.5%

Statistics for Presidential Election Years, 1972-2000<sup>635</sup>

Duplicate voter registrations, death listings, convicted felons, and inactive voters may inflate the total number of voter registration records by as many as 900,000 names.<sup>636</sup> As a result, it is estimated that closer to 71 percent of the VAP are actually registered.

The percentage of registered voters casting ballots has declined over the past 15 years. The highest voter turnout was recorded in 1984 when 68.5 percent of registered voters went to the polls. Since that time, voter turnout—as a percent of registered voters—has dropped. As shown by the

table below, voter turnout in the 2000 presidential election, recorded at 58.2%, was the lowest recorded voter turnout since 1972.<sup>637</sup> This ratio may not, however, provide an accurate picture of actual voting behavior.

### General Voter Registration and Election Statistics

Year	Voting Age Population (VAP)	Registered Voters	Turnout	Turnout % of Reg. Voters	Turnout % of VAP
1972	3,541,399	2,357,645	1,518,612	64.4%	42.9%
1976	3,884,477	2,553,717	1,677,906	65.7%	43.2%
1980	4,222,654	2,774,844	1,855,833	66.9%	43.9%
1984	4,585,788	3,270,933	2,239,051	68.5%	48.8%
1988	4,887,358	3,432,042	2,134,370	62.2%	43.7%
1992	5,182,321	3,817,380	2,611,850	68.4%	50.4%
1996	5,499,000	4,315,769	2,602,409	60.3%	47.3%
2000	6,085,266	5,206,051	3,015,964	58.2%	49.6%

Statistics for Presidential Election Years, 1972-2000<sup>638</sup>

As indicated by the table above, voter turnout in presidential election years has actually increased since 1972—at least as a percent of total VAP. Voter turnout in non-presidential, even-numbered election years has increased from 27.4 percent in 1972 to 28.6 percent in 1994. Statewide data is not available for odd-numbered (local) election years.

While our progress is commendable, our level of voting participation is far from satisfactory. According to the Corporation for Enterprise Development's 2000 Development Report for the States, North Carolina has the 36<sup>th</sup> worst voter participation rate in the nation.<sup>639</sup> Moreover, our voting participation rates remain well below our established targets for presidential and even-numbered, non-presidential election years.

## Measure 2: Community Service

Volunteerism and community service will be promoted and increased in North Carolina, and this effort will begin in our schools. Community service projects teach citizenship skills through service to others. They contribute to the good of the community or school, but at the same time teach citizenship skills and the value of serving others, and offer students an opportunity to gain a connection to the larger community.

Considering the data on declining civic participation over the past two decades, it is appropriate to encourage and promote to students the ethic of service to community. “At a time when altruism is on the wane and self-centeredness in ascendancy, the nation should nurture in its young a sense of caring about the common good and caring about each other. The health of our democracy depends on students gaining a sense of their connection to the larger community.”<sup>640</sup>

Data is unavailable on the number of high schools in North Carolina that require community service hours for graduation. There is, however, the North Carolina Department of Public Instruction administers a service learning program that combines community service *with* curriculum, “Learn and Serve K-12.” The program grew out of the National Service Act, passed by Congress in 1993. 59 schools in North Carolina offer the curriculum-based “Learn and Serve” programs, and more than 12,000 students have participated. Sixty-two schools are scheduled to offer the program next year. “Students engaged in service learning are more likely to vote, become active in community, stay in school and improve academic performance.”<sup>641</sup> There is a cost of approximately \$113 per student, however, grant money is available to schools.

## Measure 3: Civic Knowledge

The beginning of the 21st century brings with it a noted hesitancy to become involved in politics and community activities. Since the 1970s, the number of Americans taking part in the democratic process has steadily declined. The disinclination toward civic engagement, as documented by Roper Social and Political Trends Surveys 1973-1994, is extensive: Americans are 15-20% less interested in politics; 25% less likely to vote; 35% less likely to attend public meetings; and, 40% less engaged in party politics and civic organizations of all sorts.<sup>642</sup>

But how do North Carolinians fare in civic engagement activities? Comprehensive statewide data has not been compiled on political trends, however, indicators show North Carolinians demonstrate involvement in one key area – volunteerism – at levels higher than the national average. In 1995, a Carolina Poll of 619 residents indicated 53% of respondents donated their time as volunteers compared to the national rate of 48 percent.<sup>643</sup> There is, however, very limited statewide data to measure citizens’ interests or preferences in participating in other civic activities.

The Civic Education Consortium of the Institute of Government at Chapel Hill has proposed a statewide *Civic Index* for youth and adults, to examine the public's understanding and support of civic activity. To be conducted every three to four years (starting in 2002), the *Civic Index* would establish a benchmark measuring civic knowledge. And civic knowledge is a key factor influencing civic engagement. When a citizen has political knowledge, research verifies that this facilitates participation in public life.<sup>644</sup> This *Index* can be a valuable barometer to measure and promote civic engagement and the Progress Board supports its implementation.

## Measure 4: Global Knowledge

Citizenship in the 21<sup>st</sup> century extends far beyond North Carolina's borders and the United States into the international, global community. Increasingly the global focus and implication on politics, trade, medicine, and even athletics suggests the urgency and importance of including a specific international component in teacher and student education. An understanding and appreciation of different cultures, customs and mores becomes essential in an increasingly interdependent world. The US Census Report for 2000 verifies that increasing numbers of the international community are calling North Carolina home. Statistics show the international community has grown substantially in the past decade. Between 1990 and 2000, the Hispanic population in the state increased by 394 percent, from 76,745 to 378,963 residents. The Hispanic population comprises 4.7 percent of the total state population. Likewise, the Asian and Pacific Islander population increased 118 percent, from 53,102 in 1990 to 115,581 in 2000 and comprises 1.44 percent of the total population of North Carolina.<sup>645</sup>

As interdependency and global awareness becomes more a part of everyday life and work, it is critical that all of us are knowledgeable and prepared for citizenship in the global community. Preparing students for the international context of life requires a specific international component to teacher education curriculum.... "Good global education encourages understanding of cultural differences and similarities, tolerance, and a globally interdependent view of the world."<sup>646</sup> Teacher preparation is the key. If social studies teachers are not adept at teaching international and global studies, their students will not have the opportunity to obtain a wider perspective of world cultures and communities.... "A global approach to instruction calls for increased *teacher learning*."<sup>647</sup>

### **Teacher preparation and competencies.**

Current guidelines, issued by the North Carolina Department of Public Instruction, for the preparation and licensure of high school social studies teachers, require competencies in history, economics, political science, geography, and sociology.<sup>648</sup> International studies are not included among the required competencies for teacher licensure. In the past, it has been considerable acceptable to view citizenship education and global,

international education as mutually exclusive. Continuing in that direction, however, no longer serves students or their future. “An important part of the challenge of citizenship education today is to recognize that global education and citizenship education are not mutually exclusive, but uniquely compatible.”<sup>649</sup>

Requiring social studies teachers seeking renewal certification to complete in-service course work in international studies serves as recognition of the importance of global education. “Schools, from kindergarten through high school and in post secondary education, must accelerate and enrich their provision of the skills and knowledge necessary to live and work effectively and comfortably in an interdependent world.”<sup>650</sup> This target will ensure that, beginning in 2005, all social studies teachers will include international studies as part of their ongoing education coursework required for recertification. When teachers appreciate the global implications of social studies, they will be prepared to educate their students on international perspectives.

### **Selected Learning Resources**

- The University Center for International Studies (UCIS) at UNC-Chapel Hill offers programs in international education to schools and resources for teachers. The UCIS Outreach Program K-12 brings UNC-CH faculty, foreign visitors, students and artists into schools across the state, providing information on international cultures, languages, and customs.<sup>651</sup>
- The International Social Studies Project (ISSP) was established in 1996 by the General Assembly. The ISSP promotes collaboration with the School of Education, the N.C. Department of Public Instruction and the Southern Center for International Studies and works to support teachers in international studies teaching and learning. Resources include workshops, materials and teaching materials provided free to teachers consistent with the N.C. Standard Course of Study.<sup>652</sup>
- The North Carolina Council for International Understanding (NCCIU) offers international education opportunities to educators, citizens and state leaders. The programs include global studies for educators, policymakers, citizens and professionals. Since 1979, more than 6850 North Carolinians have traveled abroad through the program, and 4030 international visitors have been welcomed to our state as part of NCCIU.

**Students in international education.** Statistics from the 1999-2000 school year indicate a very small percentage of high school students completing courses focusing on international studies. Last year there were a total of 1,250,000 students in public schools, grades K-12. The total population for grades 9-12 was 339,129 students. Of the high school population, 4.2 percent (13,692 students) took courses in International Relations or World Cultures.<sup>653</sup>

Increasing the number of students taking courses in International Relations and/or World Cultures follows if North Carolina students are going to be better prepared for citizenship in the global community. Global awareness is becoming as important as computer proficiency. "Skilled graduates who enter the job market with global knowledge, international experience and cross-cultural skills are the key to their and the state's continued economic competitiveness in the global marketplace."<sup>654</sup>

An educational approach which incorporates the implications of living in the global community will require a revised, international component for social studies certificate renewal in teacher education. Once this target is realized, students will benefit from new "learnings" which emphasize understanding the interrelationships and responsibilities of living and thriving in the global "neighborhood" of the 21<sup>st</sup> century.

## Goal 2: State and local governments are accountable and accessible to all citizens.

### Primary Performance Targets

Measure	Target	Impact
<b>Election system integrity</b>	The state will maintain voting systems that ensure that every eligible and interested voter finds it easy to register and vote, every vote cast is accurately counted, and every election dispute is resolved in an objective and prompt manner.	Election systems that ease registration and voting, and instill public trust in voting results, maximize public participation
<b>Public information access</b>	State and local governments will provide citizens with state-of-the-art, multi-modal access to public information. By 2020, N.C. will be ranked among the top 10 states in web site use and quality.	Increasing citizen access to useful public information makes them more effective participants, and enhances government accountability
<b>Government performance measurement</b>	State & local governments will use performance measures for planning, budgeting, decision-making & monitoring. The state will use performance measures to support budgetary decisions, and earn the Government Finance Officers Association (GFOA) Distinguished Budget Presentation Award.	Measuring and tracking non-fiscal results helps elected officials and citizens ensure governmental effectiveness.
<b>Government financial accountability</b>	N.C.'s state and local governments will employ accounting and financial reporting, systems that comply with applicable professional standards, and maintain the GFOA Certificate of Achievement for Excellence in Financial Reporting.	Good financial controls and reports contribute to higher bond ratings and public trust

## **Measure 1: Election system integrity**

In North Carolina, all citizens may register to vote when they obtain the driver licenses (motor voter registration), but voter registration rolls are not always current. The N.C. General Statutes, in conformance with the National Voter Registration Act of 1993, require the state to conduct list maintenance immediately following the year of a presidential election. State officials estimate that the current registration rolls may be inflated by as many as 900,000 duplicate or ineligible names.

North Carolina's election systems, while in much better shape than those in Florida, are decentralized and in various stages of modernization. According to an article by the Raleigh News & Observer, only 33 of North Carolina's counties use modern, automated touch-screen voting systems. Another 49 counties use optical scan readers that are subject to miscounts of ballots that damp, dusty or imperfectly marked. Only 8 counties use the punch-card machines made famous in Florida and 7 counties use antiquated lever machines.

## **Measure 2: Public information access**

Accessibility to government information remains a critical issue. For government to be an effective disseminator of information to all citizens, "traditional" methods, such as the broadcast media, community meetings and citizen advisory boards, must be supplemented by multi-lingual and innovative alternatives, including information and communications technology and customer satisfaction surveys.

State government is making progress in increasing the accessibility of information technology and communication services to citizens. Using web sites as an indicator of accessibility, it appears that North Carolina is ranked ahead of many states in this area. In 2000, a Brown University study found that N.C.'s state government web site was tied for 11<sup>th</sup> in the US in terms of quality, accessibility and security. Also in 2000, N.C. was tied for 26<sup>th</sup> in the US in the percent of adult internet users visiting state or local government web sites.

Local governments, as well, are challenged in the area of electronic information accessibility. A 1997 study by the Institute of Government assessed the needs of local governments in responding to changing technology. It found critical needs in technology connectivity and coordination, as well as public access.

Many of our citizens are being left out of the digital information age. A national ranking of Internet access shows North Carolina in 46<sup>th</sup> place. Minorities, low-income families, and those with less education are not likely to have access. Those living in rural areas do not have the same degree of access to the Internet, in fact, the state's urban dwellers are twice as likely

to have access to the Internet as rural residents.<sup>655</sup> (See also Infrastructure and Prosperous Economy) To address this inequity, the General Assembly established the N.C Rural Internet Access Authority to plan and implement high-speed, broadband Internet access in all rural areas of North Carolina within three years.

### Measure 3: Government performance measurement

When performance measures are identified, organized and implemented, they can provide a valuable planning or evaluation tool for decision-makers. "Performance measures are concerned with the *results* of the services governments deliver, and help to provide a basis for assessing the economy, efficiency, and effectiveness of these services."<sup>656</sup>

*Measuring* performance requires the identification of factors throughout the process that are causally related to success, and the factors that can be measured. *Managing* performance requires an in-depth knowledge of these causal relationships, detecting when a measure drifts off course, and the ability to effectively redirect the measure back on course. Measuring and managing performance must be aligned to successfully employ the process. The Government Accounting Standards Board (GASB) endorses the use of performance measures to determine the results of services delivered.

Performance measures are not new to North Carolina, however, optimizing their use remains a challenge. The State Government Performance Audit (GPAC) in 1992 recommended implementation of program performance budgeting, followed by legislative action requiring operations plans and performance targets from all state agencies. The first Performance Agreements, including objectives and performance targets, were included in the 1999-2001 Recommended Budget. The Office of State Budget and Management and the Office of State Planning studied agencies' efforts and reported them in *North Carolina Performance Measures Status Report* in January 2000.<sup>657</sup>

While performance measures were identified for every program in state government, information is not available to determine if they are salient *or if they are used* for decisions. Information on the use of performance measures will be collected within the next budget cycle.<sup>658</sup> North Carolina State agencies identified more than 3,000 key performance measures, the sheer number an indication of commitment to the process among executive branch agencies, assuming they are viable output measures. Even with performance measures, questions persist regarding the extent to which the right targets have been identified for measurement.

In 1998, the Maxwell School of Citizenship & Public Affairs at Syracuse University found that, there is little evidence documenting how the state uses performance measures for decision-making or planning purposes. "North Carolina's leaders have gotten bogged down in moving beyond the goal-setting process to a useful strategic plan for the state."<sup>659</sup> More recent

data is not available on the status of the state government's performance measurement initiative (the N.C. Performance Measures Status Report 2000).

The Government Finance Officers Association (GFOA) Distinguished Budget Presentation Award is one indicator of governmental commitment to performance-based budgeting. The state government has not yet earned the GFOA budget presentation award. In contrast, 41 local governments in North Carolina, including 43% of all county governments serving over 100,000 residents and 62% of all cities serving over 50,000 residents, have earned the GFOA budget presentation award. The City of Charlotte is nationally recognized as a leader in using balanced scorecard systems for performance measurement, budgeting and planning.

#### **Measure 4: Government financial accountability**

North Carolina's state and local governments enjoy an excellent reputation for their commitment to effective accounting and financial reporting, systems. The GFOA Certificate of Achievement for Excellence in Financial Reporting is one indicator of effective financial reporting and controls, including compliance with applicable professional standards and regularly independent audits of financial results.

The state government has earned the GFOA Certificate of Achievement for Excellence in Financial Reporting, as have UNC at Chapel Hill and North Carolina State University. In addition, 150 local governments in North Carolina, including 78% of all county governments serving over 100,000 residents and 94% of all cities serving over 50,000 residents, have earned the GFOA financial reporting award. Few states have a higher level of achievement at all levels of state and local government.

**Goal 3: State and local governments are effective (i.e., do the right things)<sup>660</sup>, efficient (i.e., do things right), financially sound and responsive to all citizens.**

Effective government is doing the right things. Efficient government **is doing things right.**

The fiscal health of governments is a prerequisite to effective government. It matters little how effective or efficient a government is if it lacks the financial capacity to carry out its mission. One critical indicator of fiscal health is the ratings that governments obtain from independent bond rating agencies.

Leadership is a skill that must be developed. The government depends upon qualified elected leaders as well as trained, knowledgeable and inventive appointed officials. Competition for talented people is fierce, and the governments that fail to provide professional development and continuing education will lose their very best people to competing organizations. To recruit and retain the best people, governments of the 21<sup>st</sup> century will have to commit substantial resources to training and development.

**Primary Performance Targets**

<b>Measure</b>	<b>Target</b>	<b>Impact</b>
<b>Governmental effectiveness</b>	N.C. will employ governance structures and technology to enhance public sector effectiveness. 100% of N.C.'s largest cities (serving at least 25,000 persons) and 100% of N.C.'s counties will employ the manager form of government. N.C. will be among the top 10 states in using digital technologies for improving public service.	Governmental effectiveness reinforces public trust in government and heightens voter support for tax levies and bond issues
<b>Governmental efficiency</b>	N.C. governments will meet the needs of their citizens with below-average per capita expenditures.	Governmental efficiency reinforces public trust in government and heightens voter support for tax levies and bond issues
<b>Fiscal health</b>	State government will maintain its AAA bond rating and, by 2010, all local governments will maintain or improve their bond ratings by at least one grade.	Maintaining fiscal capacity and stability improves the ability of state and local governments to make needed investments in public infrastructure and services
<b>Public sector training</b>	State and local government officials and employees will receive adequate training to ensure their effectiveness. By 2020, 90% of local elected officials will complete leadership and training courses. By 2020, 2% of personnel costs will be spent on employee training and skill development.	Improved opportunities for citizen involvement and interaction with government

## Measure 1: Governmental effectiveness

Citizen satisfaction surveys provide perhaps the most thorough way of gauging effectiveness, but statewide surveys have not been conducted in recent years. While there is no simple aggregate measure for governmental effectiveness, there are some proxy indicators of public sector effectiveness that should be considered.

In 1998, the Maxwell School of Citizenship & Public Affairs at Syracuse University initiated the Government Performance Project (GPP). The GPP project rates the management performance of local and state governments based on the effectiveness of their management systems. For each of the past two years, North Carolina received a grade of “B” in finances, human resources, information technology, capital management and results-oriented management.

The use of technology to improve government services is one proxy indicator of governmental effectiveness. The N.C. Office of Information Technology Services is working aggressively with businesses and state agencies to deliver services and offer citizens easier access to information. The state received a grade of “B+” in Information Technology (IT) from the Syracuse University 2000 Government Performance Project, receiving high marks for its enterprise approach to IT management. North Carolina was recognized by *Government Technology* magazine as a leader in e-government initiatives, using technology to transform government.

The “Best of the Web” award was bestowed upon [N.C. @Your Service](#) for innovation in online technology, efficiency, savings and ease of use.<sup>661</sup> Its use by citizens has been impressive. Between August 2000 and March 2001, for example, 126,324 citizens visited [N.C. @ Your Service](#) to renew vehicle registrations online through the Department of Motor Vehicles.<sup>662</sup> Additionally, Governor Easley recently announced a statewide e-procurement initiative to automate the purchase and delivery of goods for all state and local governments with cost savings expected to exceed \$52 million a year.<sup>663</sup>

In 1998, N.C. was ranked 28<sup>th</sup> in the US in using digital technologies for improving public service. Another indicator of effectiveness to be considered would be the percent of local governments using automated geographic information systems to manage facilities and services.

At the local level, governance structure—more specifically the use of professional managers to administer public services—is a proxy indicator of governmental effectiveness. North Carolina’s local governments have made a strong commitment to the use of the council-manager form of governance. That is, they employ professional managers to direct local services. For instance, 100% of N.C.’s largest cities (serving at least 25,000 persons) employed the council-manager form of government.

North Carolina is a strong County Manager/Administrator state. Nearly all 100 of North Carolina's counties (99 to be precise) employ the council-manager form of government. Only one county—Jackson—elects a full time manager and even this county is in the process of hiring a new manager. Graham County has a full-time manager, but elected commissioners have served as full-time, interim manager on a basis in recent years.

## Measure 2: Governmental efficiency

State and local governments in North Carolina are relatively efficient, at least in terms of aggregate expenditures. In 2000, N.C. had the 34<sup>th</sup> highest state and local government expenditures per 10,000 residents. This indicates that N.C. spends less on public services than most other states. However, N.C. also had the 19<sup>th</sup> most state employees and the 28<sup>th</sup> most local government employees per capita, an indication that N.C. may lag behind other states in its outsourcing efforts.

## Measure 3: Fiscal health

Bond ratings from the national credit rating agencies serve as bedrock indicators of the fiscal health of governments. Ratings demonstrate the ability to repay debt, and a high rating enables a government to issue debt at a lower interest rate, providing a cost savings. Bond ratings tend to create more interest from investors, and a higher rating can generate a lower overall issuance cost. Credit ratings are needed only when debt is issued.

Rating agencies view the big picture in establishing credit ratings. The determining factors include reviewing the economic base, financial indicators, (accounting and reporting methods, revenue and expenditures, operating and budgetary performance), debt factors and administrative factors. Additional weight is placed on management as a deciding factor in final ratings. "The management or administrative structure of a government will move a rating up or down probably more significantly and swiftly than any other element of a credit review."<sup>664</sup>

North Carolina has a proud record of maintaining a "AAA" bond rating with the major national rating agencies. The three national credit rating agencies (Fitch, Moody's, and Standard & Poors) have consistently awarded the State of North Carolina their highest rating since 1963. If ever there were a case of "steady as s/he goes" this is it! While considered conservative investments by many, the record of prudent investments by the State is hard to argue with, and is the envy of many other states. So, maintaining high bond ratings remains a major point of measuring our fiscal health. The state does not report the accuracy of its revenue forecasts or the degree to which actual expenditures stay within budget, but this would

be an invaluable measure of an important aspect of its financial stewardship.

Many of North Carolina’s local governments enjoy high bond ratings as well. Cities and counties that have received AAA ratings (by one or more the national credit rating agencies) share certain characteristics.<sup>665</sup>

- Strong and proactive administrations
- Effective debt management with moderate to low debt
- A vibrant and diverse economy or participation in one
- Strong finances

Larger counties and municipalities have higher bond ratings while smaller counties and towns tend to have lower ratings or are unrated. As shown in the table below, most of North Carolina’s local governments are rated at Grade A or higher; 69 counties are rated “A” or above by one or more of the bond rating agencies, 5 are rated “BB” or higher, and 26 are unrated.

Bond Ratings	Counties	Municipalities
AAA rating	6 counties	6 municipalities
AA rating	15 counties	11 municipalities
A rating	48 counties	60 municipalities
BBB rating	5 counties	20 municipalities
BB rating	None	None
B rating	None	None
Unrated	26 counties	445 municipalities

County governments, too, generally have stronger credit ratings than counties nationwide, and more are in the “A” range compared with the rest of the nation.<sup>666</sup>

Economic prosperity in North Carolina fuels the engine of growth, furthered by diversity in industry and wise investments in infrastructure, education and financial services. The challenges of the future include management and prioritization of expenditures and a long-term plan that will balance the needs of the state.<sup>667</sup> Large capital needs, future borrowing for school facilities, the population growth, and rural communities with stagnant economies will provide additional credit challenges in the future.<sup>668</sup>

## Measure 4: Public sector training

The range of knowledge required today by effective public officials is substantial. Typically, they need to understand the legal requirements of office, current laws, regulations, or ordinances, and, how to make policy decisions that will stick, budgeting and finance, and ethics. Most critically, they must understand key connections and relationships among and between issue areas that require policy actions, e.g., how environmental concerns compete with economic development concerns, etc. In a word, they must "steer" - not "row"! They must govern, not "do".

" Any attempt to combine governing with 'doing' on a large scale, paralyzes the decision-making capacity. Any attempt to have decision-making organs actually 'do', also means very poor 'doing' -- ,Peter Drucker, *Age of Discontinuity*(1968)

Courses are available through the Institute of Government for newly elected county commissioners, mayors and city council members, school board members, elections directors and soil and water conservation supervisors.<sup>669</sup> Registration statistics on attendance at the "schools" for new county commissioners, new mayors and council members show an increase in attendance over the past ten years.<sup>670</sup>

In the legislative arena, the National Conference of State Legislatures, in an online survey of respondents, shows training to be an issue for legislative members and staff. Orientation programs for new members have been expanded to include the legislative process, and seminars on policy and conflict management are offered in some states.

Employee training and development are vital to governmental effectiveness. Public services, and the nature of governmental work, continue to evolve. New technologies and work techniques can increase worker productivity. To keep pace with the rate of change driven by technology, service demands and expectations for increased productivity, all governmental employees need access to useful, timely educational and training opportunities.

The State government lacks an effective approach to training. In 1992 the Government Performance Audit Committee (GPAC) found that... "the state does not effectively monitor its training and development expenditures nor does it monitor the use of training..." GPAC recommendation creating a system to monitor the costs associated with training and development of state employees. The intended result was to enable the state to monitor and track training costs.<sup>671</sup> Another finding in the GPAC report documented an absence of consistent, coordinated training efforts across the various branches of state government.

The GPAC report's recommendations included the identification of training and development needs and the development and coordination of employee training courses with statewide applicability.<sup>672</sup> The GPAC report recommendations have not been implemented. The State does not capture training costs across all agencies and universities. Each department conducts its own training. Research on state employee turnover verifies that experienced workers are becoming a rare breed. In a recent article, the News & Observer reported: "Ten years ago, nearly 60 percent of [state] employees hired three years earlier were still on the state payroll. As of December 31 last year, just 49.9 percent of those hired in 1997 remained."<sup>673</sup>

While North Carolina's training costs are unknown, it is known that, in general, public sector training expenditures are quite low compared to the private sector.<sup>674</sup> In contrast, the private sector regards training as crucial in attracting and retaining employees and maintaining competitiveness. The private sector spends an average of 2% of personnel costs on training expenditures in the private sector. Since 1993, private sector training budgets have increased by 24 percent. Ninety percent of training departments use live classroom instruction, yet more are using computer-based training (e.g., CD-ROM, Web or a company intranet). The types of training most used by the private sector involve computer applications, communication skills, management skills and customer service.<sup>675</sup>

In 2000, approximately 9 billion of the \$14.2 billion dollar state budget was spent on personnel.<sup>676</sup> Appropriating 2 percent of total personnel costs (\$180,000,000 for a workforce of about 212,000 people - including public school personnel) toward training and development would signify a substantial investment in the professional development of government employees.

## On The Horizon: Demographics

### Major Population Trends Affecting North Carolina in 2020

Excerpted from a paper by  
William Tillman  
State Demographer

#### How we have grown

The population of North Carolina increased by almost 3 million people from 1970 to 2000, but the growth during the 1990s was nearly as much as during the two previous decades combined. During the last decade, net migration into the state more than doubled. *If this level of net migration continues, the state's population will reach 10.895 million by 2020*, a growth of almost 3 million in two decades. Over 2 million of this growth would be due to net migration into the state.

If, however, net migration for the 2000s and the 2010s is lower, as it was in the 1970s or the 1980s, *the state's population could easily grow by only half as much*, not reaching even 10 million until after the year 2020.

What will growth really be like between now and 2020? History alone would say that the growth of the 1990s is unlikely to be repeated. It is possible, however, because it has just happened.

#### Population growth among whites

The white population of the state grew by roughly the same amounts for both the 1970s and the 1980s, and more whites moved into the state than were born here. In the 1990s, white net migration increased substantially, more than in the two previous decades combined.

#### Nonwhite population growth shifted during the 1990s

The nonwhite population of the state grew by only about 75% as much during the 1980s as it did during the 1970s, with many more nonwhites being born here than immigrated to the state. However, during the 1990s, tremendous changes occurred in the nonwhite growth, as net migration into the state swelled to over 11 times the amount for the 1980s and over three times the amount for the 1970s. For the 1990s, nonwhite growth, like white growth, was mostly due to the high level of net migration.

#### Population growth not evenly distributed

This growth was not at all evenly distributed across the state. For each of the three decades from 1970 to 2000, some counties grew very fast, while others lost population. For example, during the 1970s, Wake County grew by over 30%, more than twice the average state growth rate, while three counties, Hertford, Jones and Northampton, lost population. During the 1980s, Wake

County grew by more than 41%, more than three times the average state growth, while 19 counties, most of them in the Coastal Plain, lost population. In the 1990s, Wake County grew by more than 47%, more than twice the average state growth, while three counties, Bertie, Edgecombe and Washington, lost population.

### **1990s growth more than expected**

The growth for the 1990s was 315,000 more than was projected. Almost 70% of these people (220,000) were in the younger working age groups (18-44), where traditionally there has been a large amount of migration. The group 60 years of age and over actually had almost 32,000 fewer people than was expected.

There were 259,000 more Hispanics counted in North Carolina in the 2000 Census than were projected. (379,000 were counted; 120,000 were projected). While no one can know for certain, it is reasonable to assume that most of the additional 259,000 Hispanic immigrants were part of the unexpected 315,000 total population growth during the 1990s.

### **Birth rates declined and then increased**

Birth rates in general declined during the early 1970s from the “baby boom” highs of the mid-to-late 1960s. They stayed the same or dropped slightly from 1975 to 1985, before starting to increase.

One composite measure of changes in birth rates is changes in the total fertility rate. The total fertility rate for a given year is an estimate of the total number of children born to the average woman during her entire life, assuming that age-specific fertility rates throughout her life were the same as those of the given year.

The total fertility rate for white women in North Carolina dropped from 2.2 in 1970 to roughly 1.5 by 1975 and remained at that level until the mid-1980s. Between 1985 and 1990, white total fertility rates rose to over 1.7, and remained at that level until 1996. Between 1996 and 1999 white total fertility rates increase further, reaching more than 2.0 by 1999. In 1970, the nonwhite total fertility rate for North Carolina was almost 3.0. It had dropped to 2.1 by 1975 and to 1.9 by 1980, reaching 1.8 by 1985. It increased to 2.2 by the early 1990s, before slowly dropping below 2.0 by 1999.

Currently, total fertility rates are close to the same for white and nonwhite in North Carolina.

### **Out of wedlock births**

One of the most significant trends in North Carolina between 1970 and 1999 is the dramatic increase in the number of children born out of wedlock. The percent of all children born out of wedlock rose from 12.6 in 1970 to 19.0 in 1980, increased to 29.4 by 1990, and reached 33.2 by 1999. For white mothers, the increase was from 3.8% in 1970 to 6.4% in 1980, rising to 14.2% by 1990, and reaching 21.7% by 1999. For nonwhite mothers, the increase was from 33.9% of all births in 1970 to 45.6% in 1980, continuing upward to 61.9% by 1990, and dropping slightly to 61.7% in 1999.

### **Life expectancies increase for all sex and race groups**

During the last three decades life expectancies increased significantly for all races and both sexes, although racial disparities remain. From 1970 to 2000 the life expectancy at birth of white males increased by 8.1 years, reaching 74.8 by the year 2000. For white females, there was an increase of 4.7 years, reaching 80.4 by 2000. For nonwhite males, the 2000 value of 68.8 represents an increase of 10.0 years. For nonwhite females, life expectancy at birth rose by 9.4 years, reaching 77.2 by the year 2000.

### **Baby boomers**

During these years the “baby boom” population has been aging. This large group of people was born between 1946 and 1964, a result of high birth rates after World War II. In 1970, these people ranged in age from 6-23 years old. By 2000 “baby boomers” were aged 36-53 years, and in 2012 the oldest “baby boomers” will become 65 years old. Due to the sheer size of the group, they will begin to put pressure on retirement and health care systems.

### **Municipalities' growth patterns**

One of the more interesting trends during this period is the pattern of municipal growth. From 1970 to 1990 municipalities grew at about the same rate as the rest of the state. In 1970 the total municipal population was 2.251 million (44.3% of the state). By 1990 it was 3.083 million (46.5% of the state). During the 1990s municipalities grew *faster* than the rest of the state, and by 2000 the total municipal population was 4.054 million (50.4% of the state).

Much of this growth was due to annexation, as cities took in less-dense suburbs. Total municipal land area doubled from 1970 to 2000, finally reaching 3,160 square miles. However, average municipal *density declined* as municipal *land area grew faster* than *population*. In 1970 average municipal density was 1,528 persons per square mile; by 2000 it had reached 1,283. North Carolina increased in population by 58% from 1970 to 2000. And, since municipal density has dropped, the unincorporated areas of the state have absorbed all of the increase in density. The result is to lessen the differences in density between incorporated and unincorporated areas.

### **Conclusion**

There is no guarantee that the amounts or rates of change we have had in the past will continue. We do have many more people than we did have, although growth may slow down. It is too early to tell if Hispanic growth will continue, and we cannot be sure that all of the current new Hispanics are here to stay. While one would expect life expectancies to increase in the next two decades due to improved medical care, they will approach limits. The maximum age at death has not changed significantly in the last 100 years. Concerning the distribution of growth, some municipalities are already approaching their geographic limits. They will not grow from 2000 to 2020 like they did from 1970 to 2000, because many of them do not have the room.

### What's the weather going to be like in 2020, and what will that mean for North Carolina?

*This is excerpted from a longer document prepared by Dr. Sethu Raman, Ryan Boyles and Dev Niyogi of the State Climate Office of North Carolina.*

#### Impact of Climate on People

Citizens of North Carolina are individually affected by weather and climate in a wide variety of ways, depending on where they live, where they work, and their resources. For example, ground wells in eastern North Carolina are slowly drying up as the water tables continue to drop. At the same time, many residents in eastern N.C. are worried about potential flooding given the forecasts for more hurricanes in the next 25 years. North Carolina needs to plan now to prepare for future emergency situations including:

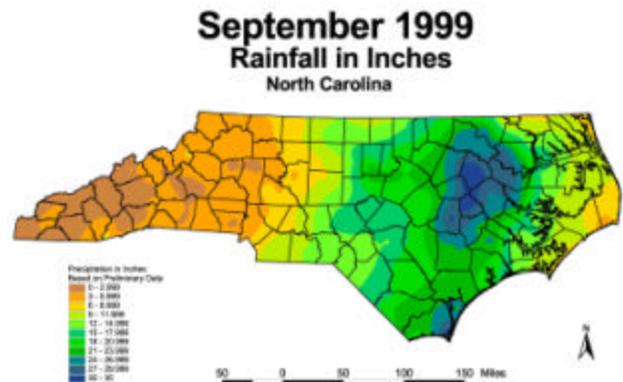
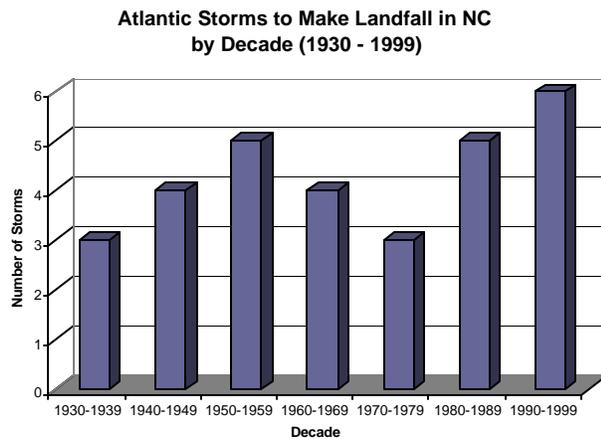
- Tropical storms and hurricanes
- Flooding
- Winter storms
- Drought

Also, North Carolina needs to educate its citizens on weather and climate issues so that they can prepare and plan effectively to protect lives and property. Additionally, improved education of weather and climate issues will improve planning of business and lifestyle choices.

#### Tropical Cyclones and Hurricanes

Tropical storms have been the cause of tremendous damage in North Carolina since settlers first arrived to our shores. Recently, scientists have been able to identify and document large-scale forces that impact the frequency and strength of tropical storms.

- The number of tropical storms are expected to continue to be greater than average in the Atlantic for the next 20-25 years.
- With increasing population and wealth along the coastal areas, loss to life and property will likely also increase unless steps are taken to mitigate damages.



## Drought and Water Issues

- Historically, water has been readily available for most needs in North Carolina. Recent droughts have shown that water is becoming an increasingly precious resource.
- Almost all water resources in North Carolina come from precipitation – rainfall supplies moisture for agriculture and most river systems in N.C. originate within our state boundaries and are fed by precipitation.
- The likelihood of future droughts and increasing demand on water supplies needs to be accounted for in planning initiatives.
- Preliminary research on the Pacific Decadal Oscillation suggests that the next 10 years could bring more drought to parts of North Carolina.

## Impact on Commerce

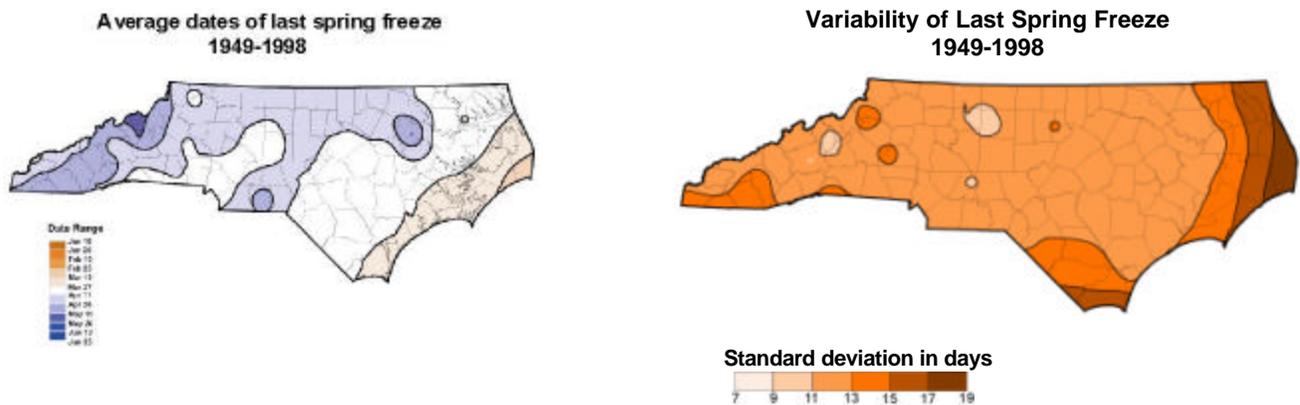
Weather and climate directly affect business in North Carolina in several ways. First, most businesses require energy, and energy production is directly linked to the climate. Utilities constantly monitor weather and climate forecasts in order to ensure power is available when and where it is needed.

- A forecast error of 5 °F results in \$25 million loss in revenue for utilities in North Carolina. A 50% improvement in forecasts would help save \$12 million.

Second, the geography and climate of North Carolina, from its mountains to the coast, brings many visitors and permanent residents to our state. This is not only important to the tourism industry, but also to businesses that need a strong, growing workforce.

- Tourism is a \$10 billion industry in North Carolina. At least \$10 million increase could be expected with improved weather and climate information at the local scale (assuming at least 0.1% increase in tourism).

When severe weather occurs, commerce can be devastated if proper emergency management and hazard mitigation is not implemented. Recent hurricanes, floods, and winter storms have proven just how important management of weather and climate events are for day-to-day business as well as future commerce growth. More than anything, North Carolina needs improved weather monitoring and forecasting in order to better mitigate possible damages.



## Impact on Agriculture

Weather is the primary driving force behind the strength of any agricultural industry.

- Crop Management - 6% of planted area is not harvested due to weather-related events. This translates to \$4.8 million lost in harvesting alone.
- Pest Management – The number and timing of pesticide applications depend on weather information. An estimated \$144 million is used for pest management in North Carolina. Improved weather information would yield at least 10% saving, or \$14.4 million per year.

North Carolina needs to utilize scientific advances to improve crop planning and damage mitigation, especially given the prospect of more extreme variations in a regional climate change scenario.

## **Policy Issues**

Local and state agencies and decision makers need to take into account weather and climate in their planning initiatives. Despite increasing press coverage of weather and climate events, many policymakers do not understand the basic issues of climate and so cannot account for its impacts. The State Climate Office of North Carolina exists to help educate citizens, businesses, and policymakers on the importance of weather and climate in short- and long-term planning.

## **Short-term Climate Variability**

Our understanding of short-term climate variations has greatly improved over the past 10-20 years.

- Recent research in the State Climate Office has linked Pacific Ocean temperatures to precipitation and temperature patterns in North Carolina during El Nino (warm sea surface temperatures) and La Nina (cool sea surface temperatures).
- Similarly, changes in air pressure and water temperature patterns in the North Atlantic Ocean have been related to climate variations in North Carolina.
- Scientists are currently investigating the possible influences of longer-term factors, such as the Pacific Decadal Oscillation on climate in N.C. Preliminary research suggests that as the surface of the northern Pacific Ocean cools or warms over longer periods of time, there is a linkage to weather in our state.

Continued research in these areas will improve seasonal and short-range climate forecasts, which are critical for such industries as agriculture and energy management.

## Acknowledgements

One cannot speak about the future without acknowledging the past. Over the last three decades several organizations and individuals have provided the vision, leadership and hard work that created the foundation for the North Carolina Progress Board. They were determined that North Carolina would be a great state in the future, and they created or led a series of future-oriented commissions, studies and reports that inspired generations of state policymakers.

So, this report is grounded in the earlier work of former Governors Bob Scott and Jim Hunt; former UNC President Bill Friday and Duke University President Nannerl Keohane; Betty Owen, Mack Pearsall, Tom Lambeth and Rick Carlisle. The initiatives they supported included: the State Goals and Policies Board; N.C. 2000; the Commission for a Competitive North Carolina, and the Emerging Issues Forum. Governor Mike Easley has continued that tradition as chair of the current N.C. Progress Board. We salute them for having the courage to take the long view, because that view is not always rosy, nor necessarily politically popular.

The Progress Board staff would especially like to thank the members of the North Carolina Progress Board. Many boards meet just once a year and rarely get below the surface of the subject matter, but this Board took its responsibility very seriously and held numerous meetings, teleconferences and community forums throughout the year. They envisioned and discussed all of the goals, measures and targets, and debated the best strategies for moving North Carolina forward.

Recent and current Board members include: Governors Mike Easley, Jim Hunt and Bob Scott; former Chief Justice Burley Mitchell; Dr. Doug Orr, Janice Cole, Clark Plexico, Senator Steve Metcalf, Dr. Delilah Blanks, Jim Goodman, Representative Phil Baddour, Harrison Hickman, Daniel Dawson, Leigh Harvey McNairy, David Dodson, Randall Kaplan, Roger Perry, Will Spence, Sharon Decker, Dr. Jim Leutze, Phil Kirk, Bill Gibson, and Selby Wellman.

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## Summary of NC20/20 Goals

### Imperative 1: Healthy Children and Families

**The Vision:** Families and individuals of all ages thrive in North Carolina. From early childhood well past retirement, our citizens are mentally and physically fit, with no significant differences in health across racial, ethnic, or geographic lines. Our most vulnerable citizens -- children and the elderly -- are surrounded by a supportive family and community.

#### Goal 1: Fewer North Carolinians live in poverty and near poverty.

- a. **Poverty** - The proportion of North Carolinians at 200% of poverty will be cut in half to 14 percent.
- b. **Annual Wage** - North Carolinians will earn at least the national median annual wage.
- c. **Retirement Incomes** - In 2020, 70 percent of North Carolinians will receive retirement income rather than Social Security.
- d. **Home Ownership** - The overall rate of home ownership will increase to 73% as more minorities and first-time buyers are able to buy homes of their own.

#### Goal 2: North Carolinians will follow good health practices.

- a. **Smoking** - Both teen and adult tobacco use will decline to 10 percent or less.
- b. **Obesity** - The percentage of overweight children in each age group will decline to 7 percent. No more than 37 percent of adults will be overweight, and 13 percent, obese.
- c. **Syphilis/HIV** - The rate of new HIV infections will decline to 9 per 100,000 population, and syphilis will be eliminated in North Carolina.
- d. **Substance Abuse** - The rate of binge drinking will decline to 8 percent overall and, among age groups, to 4 percent among those ages 12 to 17; to 15 percent among those ages 18 to 25; and to 8 percent among those 26 and older. Use of illicit drugs will decrease to 3% overall and, among those 12 to 17, to 6%; among those 18 to 25, to 7%; and among those 26 and older, to 2%.
- e. **Vaccinations** - All children will receive recommended vaccinations. By 2020, 85 percent of adults 65 and older will receive annual flu vaccinations and one-time pneumococcal vaccinations.

#### Goal 3: North Carolinians will have access to health care.

- a. **Health Insurance** - All North Carolinians will be covered by health insurance.
- b. **Health Care Professionals** - The supply of health care professionals in these three fields will be adequate to serve all North Carolinians, regardless of where they live.
- c. **Substance Abuse Treatment** - 20 percent of adults in need of substance abuse treatment will receive it.
- d. **Suicide Death Rate** - Reduce the overall rate of death by suicide to no more than 6 per 100,000 population and the rate of youth suicide to no more than 4 per 100,000.

#### Goal 4: Safety and stability will be at the heart of every family.

- a. **Spouse/Partner Abuse** - The rate of domestic violence against women will decline to no more than 5 incidents per 1,000 adult females. This target may need to be adjusted as better data become available.
- b. **Child Abuse/Neglect** - No child will die as a result of abuse or neglect. The overall rate of child abuse and neglect will decline to no more than 27 per 1,000 children younger than 18.

## **Imperative 2: Safe and Vibrant Communities**

**The Vision:** Communities of every size and in every region of the state offer their citizens a desirable quality of life. Citizens live in safety and in harmony. Communities achieve economic and environmental sustainability as home, civic, and cultural life prospers. And everywhere, communities celebrate a vitality evident in the proportion of young people who choose to remain at home, or to return home, for their adult years.

### **Goal 1: All members of the community will be valued and their civic participation welcomed.**

- a. Voter Registration** - Voter registration and turnout will be equally high across all racial/ethnic groups.
- b. Law Enforcement Treatment** - At least 40% of all racial/ethnic groups will agree that "Law enforcement officers treat all suspects the same." At least 70% of all racial/ethnic groups will agree that the "Courts are concerned with the defendant's constitutional rights."
- c. High Wage Jobs** - Representation of minorities and women in the top wage-earning categories and among business owners will be equal to their proportion of the workforce.

### **Goal 2: Residents will feel safe in their homes and neighborhoods.**

- a. Safe at Home** - 85% will feel safe in their own homes from people who want to take their possessions - 99% will feel safe in their communities in the daytime - 65% will feel safe in their communities at night.
- b. Violent Crime Rate** - The violent crime index rate will decline to 520. The property crime index rate will decline at least to 4370.
- c. Emergency Preparedness** - The state emergency management program will become the first such program to receive national accreditation. Targets for county emergency management programs will be developed once current preparedness levels have been assessed.

### **Goal 3: North Carolinians will have adequate and affordable housing options.**

- a. Affordable Housing** - The proportion of North Carolina renters paying 30% or more of their income in rent will decline to 25%. The proportion of homeowners with housing expenses exceeding 30% of income will decline to 13%.
- b. Housing Prices** - Average families in North Carolina will be able to afford a home of their own.
- c. Complete Plumbing/ Overcrowded Housing** - By 2020, all occupied housing in North Carolina will have complete plumbing and only 1% of occupied housing will be overcrowded.

### **Goal 4: In every community, residents will have access to essential programs and services.**

- a. Day Care** - By 2020, 85 % of children in child care will be in facilities rated with three stars or higher.
- b. Long Term Care** - Every North Carolinian will have ready access to a core set of long-term care services.
- c. Caregiver Resource Centers** - North Carolina will have at least 10 comprehensive caregiver resource centers to provide support for family members caring for impaired older adults.

### **Imperative 3: Quality Education for All**

**The Vision:** A quality education is essential to success in an increasingly competitive, ever changing workplace. In order for citizens to be contributors to the state's economy, culture, social and religious communities, as well as the overall well-being of the state, a sound education is necessary to provide the tools needed to make wise and informed decisions. So that North Carolina's children and adults will also actively participate in our democratic government, it is crucial they are offered a quality education from early childhood past retirement.

North Carolina's education system will strengthen public schools so every child has an equal opportunity to succeed, and every graduate is ready for work or additional education. All citizens will have access to continuing education opportunities through a seamless education partnership between the secondary and post-secondary educational systems in the state. *For the education system to be effective, every child will start to school healthy and ready to learn.*

**Goal 1: North Carolinians have a basic 14-year education, and graduates can demonstrate competencies in critical and analytical thinking, teamwork, communication skills, problem solving, use of numbers, and data and technology. They have the knowledge and skills needed to be competitive in the global economy and to fully participate in our democratic system.**

- a. Student Testing** - By 2010, nine out of 10 students score at or above grade level on End-of-Grade (EOG) and End-of-Course (EOC) examinations.
- b. NAEP** - NC is one of the top 10 states on NAEP examinations by 2010.
- c. Global Rank** - NC students rank above the national average on The Third International Mathematics and Science Study (TIMSS) and have scores competitive with the countries in the top tier of the study.
- d. High School Diplomas** - 95 percent of North Carolina students finish high school and 50% will have at least two years of education beyond high school by 2010.
- e. SATs** - The average SAT score (math and verbal) will be equal to the national average by 2010.

**Goal 2: All public school students have access to schools that create a supportive learning environment in which every student is provided an equal opportunity to reach his or her potential.**

- a. Dropout Rates** - North Carolina is among the top 20 states with the lowest high school dropout rate.
- b. Qualified Teachers** - By 2010, NC is among the top 10 states in the percentage of teachers who are fully licensed and one of the top 10 states in the percentage of teachers teaching in their field.
- c. ABCs** - Nine of 10 schools are recognized as Schools Making Everyday Growth/Gains or meeting Expected Growth/Gain Standards as designated by the NC ABCs of Public Education.
- d. Attention to Students** - Nine out of 10 parents say their child is known and cared about as an individual.

**Goal 3: More North Carolinians complete two- and four-year degrees so they are prepared for a knowledge-oriented economy and society.**

- a. Bachelor Degrees** - North Carolina reaches the national average in bachelor's degree attainment by 2010 -and the gap will be narrowed between whites and nonwhites.
- b. Community Colleges** - 60 percent of the fall students of community colleges have completed their program or are still enrolled the following fall at the community college.

**c. Financial Aid** - By 2010, grants make-up 50 percent of student financial aid and loans and work-study programs are 50 percent of the aid.

**Recommendation:** North Carolina should establish a Blue Ribbon Commission to look at education needs for the 21<sup>st</sup> century to develop a seamless education system.

#### **Imperative 4: A High Performance Workforce**

**The Vision:** North Carolina workers will adapt quickly to changing demands of the global workplace through their abilities to use information, think analytically, work in teams, and use technology. North Carolina workers will be prepared for these changes as a result of a partnership between the public and private sector that recognizes the importance of family sustaining wages and benefits for all jobs. This combination will result in establishing a standard for a prosperous economy. Employers will recognize employees as an important asset and provide compensation and work environments that value workers.

**Recommendation:** By 2005, North Carolina has a system designed for preparing workers for the changing global economy through a partnership that links government, education and employers. The partnership will focus on continuous learning opportunities for workers that target high-wage, high-skilled jobs and provide employers with skilled workers.

- **Rate Skills & Satisfaction**
- **Training: How Much & Type**
- **Future Training**
- **Workforce Needs**

**Goal 1: North Carolinians have the knowledge and skills needed to adapt to the ever-changing global economy including the abilities to think critically, work in teams, and perform technological functions required in the workplace.**

- a. **Adult Literacy** - By 2010, North Carolina is one of the nation's top 20 states in adult literacy.
- b. **Employer Satisfaction w/Graduates** - By 2010, nine out of 10 graduates of North Carolina's public schools, community colleges, colleges and universities are rated satisfactory or better by their employers.
- c. **Certificates and Diplomas** - By 2020, North Carolina will increase the number of graduates receiving computer science and engineering degrees from colleges and universities and the number of community college students seeking computer and other technical training by 30 percent.

**Goal 2: Employees will have access to continuous learning opportunities for updating knowledge and skills so they can use changing technologies and new production processes in the workplace and be competitive in the global economy.**

- a. **Continuous Learning** - Four percent of the North Carolina working age population is in enrolled in vocational/technical community college programs by the year 2010.
- b. **Basic Skills Training** - By 2010, the number of Basic Skill students who enroll in community college occupational extension and curriculum programs will increase by 30% over the 1998-99 rate.

**Goal 3: Workplaces in North Carolina are safe places for employees to work, provide competitive salaries, offer growth opportunities and respect workers.**

- a. **Workplace Safety** - By 2010, the rate of workplace injuries and illness is 4.0 per 100 full-time workers.
- b. **Per Capita Income** - By 2010, North Carolina is among the top 20 states in per capita income and workers are earning a living wage.

## **Imperative 5: Sustainable Environment**

**The Vision:** As stewards of the environment, North Carolinians preserve and protect the state's vast resources. The quality of the air, water, and land will be maintained and enhanced. The collection and dissemination of environmental data will reflect advanced technology and communication.

### **Goal 1: In 2020, North Carolina's air and water will be of the highest quality.**

- a. Air Quality** - North Carolina's air quality will improve by 2020, so that 100% of the ozone-season days will be "good" air quality days.
- b. Water Quality** - By 2020 the goal is significant improvement in the percentage of water bodies supporting their designated uses:
  - 20% improvement in stream miles (500 miles cleaned up)
  - 43% improvement in lake acres (13,600 acres cleaned up)
  - 20% improvement in estuary acres (14,000 acres cleaned up)
- c. Drinking Water** - By 2010 all counties will have and enforce such standards, an increase of 233%.
- d. Contaminants** - All contaminant incidents threatening damage to groundwater will be managed by 2020, requiring a 186% improvement over current management levels.
- e. Water Quantity** - Withdrawal from major aquifers will not exceed the recharge rate.

### **Goal 2: North Carolina ensures healthy and productive natural resources.**

- a. Shellfish** - 100% of the current acreage for saltwater shellfish will remain open for harvesting through 2020.
- b. Marine Fish Stock** - By 2020, 100% of evaluated fish stocks will improve and be classified as either Viable, Recovering, or under an approved rebuilding plan.
- c. Forestland** - 100% of the current forest acres will be maintained through 2010, and forest diversity will be maintained as to age, class and type.
- d. Wetlands** - 100% of the current wetlands and riparian functions will be preserved through 2010.

### **Goal 3: North Carolina preserves and enhances the quality of rural and urban life.**

- a. Land Use Plans** - All local governments will have and use plans incorporating growth management strategies, development monitoring measures, and natural resource conservation policies by 2020.
- b. Protected Land** - There will be a 35% increase in the total area of permanently protected land, from the current 2.8 million acres to 3.8 million acres.
- c. Brownfields** - By 2010 2000 brownfields properties will be fully utilized.

## **Imperative 6: A Prosperous Economy**

**The Vision:** North Carolina's growing, dynamic economy is competitive in the global marketplace. It is diversified. High-quality jobs are plentiful across all economic, geographic and demographic sectors, without undue reliance on too few industries. "Knowledge workers" dominate the workforce and citizens take advantage of modern communications and technology to create new economic opportunities.

Sound, strategic investments in people and infrastructure have accelerated our transition from traditional to knowledge-based economies. Through our willingness to think boldly—and our faith in ourselves—we have built a new economy laboratory on the foundation of our traditional economic strengths. Through research and reinvention, we have made our agrarian and manufacturing past a vital part of today's prosperous economy.

### **Goal 1: North Carolina promotes dynamic, diverse and sustainable economic growth across all regions and demographic groups.**

- a. **Long-term growth** - Top 10 in US.
- b. **Short-term growth** - Top 10 in US.
- c. **Employment** - Top 10 in US.
- d. **Personal Income** - Top 25 in US or at least 100% of the average US per capita income.
- e. **Economic disparity** - Per capita income in non metro is at least 80% of the per capita income in metro areas.

### **Goal 2: North Carolina expands the emerging economy sectors, including technology and other knowledge-based businesses.**

- a. **Economic Transformation** - Top 10 in US.
- b. **Economic Dynamism** - Top 10 in US.
- c. **Innovation Capacity** - Top 10 in US.
- d. **New Economy Jobs** - Top 10 in US.

### **Goal 3: North Carolina revitalizes the traditional economic sectors and ensure their competitiveness in national and global markets.**

- a. **Industrial Transition** - 110% of the US ratio.
- b. **Traded Sector Strength** - Top 10 in US.
- c. **Manufacturing Vitality** - Top 10 in US.
- d. **Agriculture Vitality** - Top 10 in US.

### **Goal 4: North Carolina promotes the expansion of international markets and facilitates access to foreign capital and commerce.**

- a. **Global trade** - Top 10 in US.
- b. **Export-Oriented Jobs** - Top 10 in US.
- c. **Foreign Capital** - Top 10 in US.

## **Imperative 7: 21<sup>st</sup> Century Infrastructure**

**The Vision:** North Carolina—long recognized as the *good roads state*—wins renewed acclaim for a globally-competitive public infrastructure, and is considered *the best practice state* for public infrastructure—both *hard* and *soft* public infrastructure.

Its *hard* infrastructure effectively integrates efficient transportation modalities, reliable and affordable energy generation and distribution networks, safe and extensive water, sewer, stormwater and solid waste management systems. Coupled with low-cost, high-bandwidth information and telecommunication networks, the hard infrastructure provides the platform for the state's prosperous economy and renowned quality of life.

The *soft* infrastructure is the state and local government fiscal, regulatory and financing framework. It enables public officials and business leaders, together with heads of non-profit agencies, to respond creatively and quickly to new challenges. This soft infrastructure energizes the state to compete in a dynamic, knowledge-based and communications-driven global environment.

**Goal 1: North Carolina develops and maintains a balanced, nationally recognized transportation system for moving people, services and goods safely and efficiently.**

- a. **Transportation efficiency** - Less than US average.
- b. **Highway quality** - Top 10 in US.
- c. **Mass transit service** - Top 20 in US.
- d. **Air service** - Top 10 in US.
- e. **Inter-modal service** - Not Available.

**Goal 2: North Carolina assures affordable energy, including electricity and natural gas, to fuel the state's economy and ensure a high quality of life for all.**

- a. **Energy efficiency** - Top 10 in US.
- b. **Energy renewability** - Top 10 in US.
- c. **Power affordability** - Top 10 in US.
- d. **Natural gas service** - Top 10 in US.
- e. **Natural gas affordability** - Top 10 in US.

**Goal 3: Safe and cost-effective water, wastewater, stormwater and waste management systems are provided throughout all regions of the state.**

- a. **Water safety** - 100% of NC residents served by public drinking water systems meeting established health standards.
- b. **Water capacity** - 80% of systems with sufficient capacity for supporting economic growth.
- c. **Sewer safety** - 100% of residents served by sewage disposal systems meeting established health standards.
- d. **Sewer capacity** - Top 20 in US.
- e. **Stormwater Management** - 100% of residents served by sewage disposal systems meeting established health standards.
- f. **Solid waste** - Top 20 in US.

**Goal 4: North Carolina supports a modern technology infrastructure that helps all residents, communities and businesses achieve their economic, educational and social goals.**

- a. Personal technology access** - At least 90% of households with personal computers & Internet access.
- b. School technology access** - 100% of schools with high-capacity Internet connections.
- c. Digital government** - Top 10 in US.
- d. Digital divide** - At least 90% of counties with affordable access to latest data delivery technology.

**Goal 5: Adopt flexible public policies and partnerships for competing in a dynamic economic and social environment.**

- a. Business climate** - Top 10 in US.
- b. Public-private partnerships** -Top 10 in US.
- c. Capital investment** - Top 10 in US + top bond rating.
- d. Infrastructure planning** - Top 10 in US + top bond rating.

## **Imperative 8: Active Citizenship/Accountable Government**

**The Vision:** Knowledgeable, informed citizens actively participate in their state and local governments and hold their governments accountable for the resources they receive and the services they provide. Citizens are empowered and actively engaged in government. As the owners of government, they have a vested interest in governance, demanding accountability, effective and appropriate services, and responsiveness.

Accountable government is effective, efficient, and responsive government. It addresses the changing needs of the state and its citizens in an efficient, appropriate and equitable manner. It demonstrates sound planning and fiscal management. It encourages its citizens to be informed participants in civic affairs and actively involved in the governing process.

### **Goal 1: Citizens assume an active, informed and meaningful role in civic affairs at all levels, including local, state and international communities.**

**a. Voting** - By 2020, 80% of North Carolina's eligible voters will be registered to vote. By 2020, 85% of registered voters will cast ballots in presidential elections, 75% will vote in even-year, non-presidential elections and 60% will vote in odd-year, local elections.

**b. Community service** - By 2010, 50% of all high schools will require community service hours for graduation.

**c. Civic knowledge** - There will be an increasing percentage of citizens who understand their governments and the way they work.

**d. Global knowledge** - By 2010, 25% of our high school students will take international studies

### **Goal 2: State and local governments are accountable and accessible to all citizens.**

**a. Election system integrity** - The state will maintain voting systems that ensure that every eligible and interested voter finds it easy to register and vote, every vote cast by voters is accurately recorded and counted, and every election dispute is resolved in an objective and prompt manner.

**b. Public information access** - By 2020, NC will be ranked among the top 10 states in web site use and quality.

**c. Government performance measurement** - State government agencies and institutions (including the executive, legislative and judicial branches) and local governments will use performance measures for planning, budgeting, decision-making and monitoring purposes.

**d. Government financial accountability** - By 2020, NC will be ranked among the top 10 states in government financial accountability.

### **Goal 3: State and local governments are efficient (do things right), and effective (do the right things), financially sound and responsive to all citizens.**

**a. Governmental effectiveness** - State and local governments in North Carolina will be effective at providing public services to their constituents.

**b. Governmental efficiency** - State and local governments in North Carolina will provide public services in an efficient manner.

**c. Fiscal health** - By 2010, 100% of all local governments in NC will either maintain their current level of "A" or above, or will demonstrate a one-step increase in their rating.

**d. Public sector training** - By 2020, 90% of local elected officials will complete leadership and training courses.

## Endnotes

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- <sup>476</sup> Choices for a New Century, North Carolina Rural Economic Development Center, Inc., December, 1999.
- <sup>477</sup> The agribusiness industry includes farming and the retail trade of agricultural products.
- <sup>478</sup> Choices for a New Century, North Carolina Rural Economic Development Center, Inc., December, 1999.
- <sup>479</sup> Impressions, A Survey of North Carolinians' Views on Agriculture and N.C. State University, N.C. State University College of Agriculture & Life Sciences, 1999.
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- <sup>482</sup> Traded sectors comprise industries that compete in multi-state, national and international markets and, as a result, bring added wealth back to the state.
- <sup>483</sup> *Development Report Card for the States*, Corporation for Enterprise Development, 2000.
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- <sup>485</sup> North Carolina Department of Commerce Economic Development Information System (EDIS).
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- <sup>487</sup> U.S. Department of Labor, "Employment & Earnings," May 1999.
- <sup>488</sup> North Carolina Employment Security Commission.
- <sup>489</sup> According to Choices for a New Century, North Carolina Rural Economic Development Center, Inc., December, 1999, employment declined by 38 percent in tobacco, 25 percent in apparel, 19 percent in textiles and 10 percent in furniture from 1988 to 1996.
- <sup>490</sup> Corporation for Enterprise Development and Census Bureau, May 2000.
- <sup>491</sup> Choices for a New Century, North Carolina Rural Economic Development Center, Inc., December, 1999.
- <sup>492</sup> N.C. Department of Agriculture & Consumer Services, 1997 Farm Cash Receipts.
- <sup>493</sup> N.C. Department of Agriculture & Consumer Services, 1997 Farm Cash Receipts.
- <sup>494</sup> Defined as farms with annual sales of at least \$500,000.
- <sup>495</sup> Choices for a New Century, North Carolina Rural Economic Development Center, Inc., December, 1999.
- <sup>496</sup> Choices for a New Century, North Carolina Rural Economic Development Center, Inc., December, 1999.
- <sup>497</sup> North Carolina's farm products include traditional crops like cotton, soybeans and corn, and specialty products like nursery stock, organic fruits and pond-grown fish.
- <sup>498</sup> Choices for a New Century, North Carolina Rural Economic Development Center, Inc., December, 1999.
- <sup>499</sup> *Tracking Innovation*, North Carolina Innovation Index 2000, North Carolina Board of Science and Technology, University of North Carolina at Chapel Hill, 2000.
- <sup>500</sup> North Carolina Department of Commerce Economic Development Information System (EDIS).
- <sup>501</sup> The North Carolina Atlas, Portrait for a New Century, University of North Carolina, 2000.
- <sup>502</sup> Export intensity is defined as the ratio of exports to Gross State Product.
- <sup>503</sup> *Tracking Innovation*, North Carolina Innovation Index 2000, North Carolina Board of Science and Technology, University of North Carolina at Chapel Hill, 2000.
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- <sup>506</sup> North Carolina Department of Commerce Economic Development Information System (EDIS).
- <sup>507</sup> Defined as the percentage of manufacturing jobs in companies dependent upon exports.
- <sup>508</sup> The State New Economy Index, Benchmarking Economic Transformation in the States, Progressive Policy Institute, July, 1999.
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- <sup>512</sup> North Carolina Department of Commerce Economic Development Information System (EDIS).
- <sup>513</sup> Federal Highway Administration 2000 Highway Statistics, February 2001.
- <sup>514</sup> National Conference of State Legislatures and Governing Magazine.
- <sup>515</sup> See the Sustainable Environment chapter.
- <sup>516</sup> The North Carolina Department of Transportation (NCDOT)'s most recent ten-year Transportation Improvement Plan.
- <sup>517</sup> The system includes over 77,000 miles of state-maintained roadways, 11,956 miles of rural primary highways (including Interstate, federal and state routes), 59,361 miles of rural secondary roads, 6,223 miles of state-maintained urban roads and 17,000 bridges.
- <sup>518</sup> Governing Sourcebook 2001 and Federal Highway Administration.
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- <sup>520</sup> Raleigh News & Observer, January 1, 2001 and University of North Carolina at Charlotte.
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<sup>528</sup> The Triangle Transportation Authority.

<sup>529</sup> In early 2001, the Federal Transit Administration approved the environmental impact statement for the Triangle's commuter rail system, but will not decide whether to approve funding until 2002; the NCDOT has not approved a plan for funding its 25 percent share of the project.

<sup>530</sup> Amtrak serves seven cities and towns between Raleigh and Charlotte and 12 cities and towns.

<sup>531</sup> The North Carolina Atlas, Portrait for a New Century, UNC Press, 1999.

<sup>532</sup> Aerotropolis: Airport-Driven Urban Development, John D. Kasarda, UNC at Chapel Hill, ULI on the Future: Cities in the 21<sup>st</sup> Century, Urban Land Institute 2000.

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<sup>535</sup> The North Carolina Atlas, Portrait for a New Century, UNC Press, 1999.

<sup>536</sup> North Carolina Ports *Stem to Stern*, Second Quarter 2000.

<sup>537</sup> The North Carolina Atlas, Portrait for a New Century, UNC Press, 1999.

<sup>538</sup> Reserves are reportedly falling before the implementation of deregulation.

<sup>539</sup> North Carolina is also served by two other electric utilities.

<sup>540</sup> Nantahala Power and Light Company was acquired by Duke in 1988 and merged with Duke in 1998.

<sup>541</sup> Annual Report of North Carolina Utilities Commission Regarding Long Range needs for Expansion and Electric Generation Facilities for Service in North Carolina, July 2000.

<sup>542</sup> Applications for the sale of generating facilities to the two Power Agencies (comprising the 51 municipal organizations) were filed in 1981 with the NCUC.

<sup>543</sup> Stranded costs typically arise when a utility deregulates, tries to sell its generating facilities and finds that its imbedded cost of generation exceeds the market cost/price of power sales. While there is no stranded cost until the facility is sold, stranded costs can be calculated assuming certain market power rates and embedded cost values.

<sup>544</sup> The current debt for the purchase of generating facilities has been estimated at \$5.4 billion.

<sup>545</sup> New Pipeline Proposed, Charlotte Observer, October 25, 2000, Ted Reed.

<sup>546</sup> North Carolina Utilities Commission, 2000 Report – Volume XXXI (Draft), May 2001.

<sup>547</sup> U.S. Census Bureau State Profile and Statistical Abstract of the United States, 2000.

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