

## 21st Century Infrastructure

### Vision for 20/20

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, and safe and extensive water, sewer, storm water, 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.



### Goal 1: Develop and maintain a balanced, nationally recognized transportation system.

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. To reconcile competing transportation demands and make each dollar count, we will have to reassess our traditional commitment to highway access and explore more efficient ways to move people, goods, and services.

#### Facts:

- NC has the 9th highest vehicle miles traveled per capita in the nation. North Carolinians on average drive 21% more than their national counterparts.
- In 2000, NC ranked 2nd in the nation in the total number of highway miles under state control.
- During the 1990s the state added over 4,600 lane miles to the state highway system (a 2.5% increase).
- North Carolina ranked 23rd in the nation in highway quality in 1999, according to the Corporation for Enterprise Development.
- North Carolina has the nation's 14th highest highway fatality rate.
- In 1998, NC ranked 37th in the US in urban mass transit system availability.
- NC needs an estimated \$1 billion per year in new highway construction and an additional \$300 million per year to meet highway maintenance standards.

**Targets:**

- 1.) **Transportation efficiency.** The average North Carolinian will drive less than does the average American. The number of vehicle miles traveled (VMT) per capita has risen every year since 1980 and NC currently has the 9<sup>th</sup> highest VMT per capita in the US.
- 2.) **Highway quality.** NC will rank in the top 10 states for the percent of state-controlled roads rated in fair or better condition. In 1999, NC ranked 23<sup>rd</sup> in US in highway quality, a significant improvement from its 1995 ranking of 47<sup>th</sup>.
- 3.) **Mass transit service.** NC will rank in the top 20 states for the total carrying capacity for urban public mass transit systems. In 1998, NC was ranked 37<sup>th</sup> in US in urban mass transit system availability.
- 4.) **Air service.** NC will rank in the top 10 states in per capita spending on state and local air transport. The state fell from 34<sup>th</sup> in the 1999 rankings to 36<sup>th</sup> in the 2001.
- 5.) **Inter-modal service.** NC will develop at least 4 inter-modal transportation facilities (linking aviation, rail, and highway systems) near the largest metropolitan centers or ports.

**Goal 2: Ensure affordable energy, including electricity and natural gas.**

Plentiful, reliable, and affordable energy will be required for a competitive economy. This in turn will require that the state maintain adequate oversight of energy supply and distribution, even in a deregulated environment. In the interests of energy independence and a clean environment, further emphasis should be placed on conservation and on alternative energy sources, including wind and solar power.

**Facts:**

- From 1990 to 1997, NC's per capita energy consumption grew by 11%.
- In 1997, NC was 22nd in the US in the portion of energy it consumed from renewable energy sources.
- From 1991 to 2000, NC's national rank fell from 23rd to 33rd in terms of the lowest residential electricity costs.
- As of May 2000, 26 of NC's rural counties had no natural gas service.
- Extending natural gas service to 22 of those rural counties would cost \$2.7 billion.
- In 1998, NC was 33rd in the US for affordability of natural gas.
- From 1992 to 1999, NC's natural gas prices rose from 108% to 126% of the national average.

**Targets:**

- 1.) **Energy efficiency.** NC will rank in the top 10 states in for energy efficiency, that is, with the lowest per capita energy consumption. In 1997, NC had the 18<sup>th</sup> lowest rate of per capita energy consumption in the nation, but its per capita usage is rising.

2.) **Energy renewability.** NC will rank in the top 10 states in the share of energy from renewable sources, such as solar or wind. In 1997, NC was 22<sup>nd</sup> in the country, up from 24<sup>th</sup> the prior year.

3.) **Power affordability.** NC will rank in the top 10 states in affordable electricity, as measured by the average cost of residential electricity service. The state has dropped from 23rd in affordability in 1991 to 33rd in 1999.

4.) **Natural gas service.** 100% of NC counties will be served by, or have adequate access to, natural gas. In 2000, 74% of NC's counties had natural gas service; this represents an increase in service over 1990.

5.) **Natural gas affordability.** NC will rank in the top 10 states in natural gas affordability, as measured by average industrial natural gas cost. In 1998, NC was 33<sup>rd</sup>, and its natural gas costs are rising at a faster rate than the national average.

### **Goal 3: Provide safe and cost-effective water, wastewater, stormwater, and waste management systems.**

North Carolina's unmet water and sewer demands are troubling, if not overwhelming. It is estimated that the state faces \$11.3 billion in water and sewer capital improvement needs. This does not include stormwater system requirements. The state's ability to manage its solid waste likewise is being tested. Per capita tonnage sent to landfills continues to rise. At the current rate, within 20 years, North Carolina will need twice its existing landfill capacity.

#### **Facts:**

- Of the \$11.3 billion in water and sewer capital improvement needs, 61% is required for the state's 15 urban counties and 39 percent for the 85 rural counties.
- NC is ranked 26th in the US in the percent of water systems with health-based violations.
- Of the NC water systems inventoried, 67% reported the need to replace or repair distribution lines.
- In 1998, NC was 31st in the nation in the capacity of its sewage treatment facilities to meet future needs.
- In 1989, North Carolina set a goal of reducing to 0.64 tons per capita the amount of solid waste going to landfills. Today, we send twice that amount to the landfill.

#### **Targets:**

1.) **Water safety.** 100% of residents will be served by public drinking water systems meeting established health standards. 7% of NC's water systems have reported monitoring violations, ranking the state 26<sup>th</sup> in the US in this water safety indicator.

2.) **Water capacity.** 80% of water systems will have adequate capacity for economic growth. About 45% of NC residents rely on groundwater sources for drinking water, often a source with limited excess capacity.

3.) **Sewer safety.** 100% of residents will be served by sewage disposal systems meeting established health standards. Of systems surveyed by the NC Rural Economic Development Center, 62% need to replace sewer lines and over 50% have inflow and infiltration problems.

4.) **Sewer capacity.** NC will rank in the top 20 states in the capacity of sewer systems to meet future needs. In 1998, NC was 31<sup>st</sup> in US in ability of its sewage treatment facilities to meet future needs.

5.) **Stormwater Management.** NC will establish a strategic measure for stormwater management. The state lacks such a measure now. Effective stormwater systems are critical to water quality and other environmental issues.

6.) **Solid waste.** North Carolinians on average will send less than a ton of solid waste to landfills each year. In 1999, NC generated solid waste of 1.22 tons per capita, up about 20 percent from 1992.

**Goal 4: Support a modern technology infrastructure that will help residents, communities, and businesses achieve their economic, educational, and social goals.**

In North Carolina, we are astute enough to see the need for innovation, but not always bold enough to pay for it. Despite early movement to establish affordable, high-speed access to the Internet, the state today lags behind most others in its performance on technology infrastructure issues. Perhaps the greatest challenge lies in determining the state's appropriate role in promoting technology and identifying the most cost-effective opportunities for public investment.

**Facts:**

- North Carolina was ranked 45th in the nation in the percentage of households with computers in 1998.
- Only 35% of NC households had computers and only 20% had Internet access in 1998.
- In 1999, NC was ranked 48th in the nation in the number of students per Internet-connected computer.
- NC is 33rd in the nation in the digital delivery of governmental services (28th in using digital technologies to improve public services).
- Nationally, households with incomes of at least \$75,000 are 20 times more likely to have access to the Internet than are lower-income households.

**Targets:**

1.) **Personal technology access.** At least 90% of households will have personal computers and Internet access. In 1998, only 35% of NC households had computers and only 20% had Internet access.

2. **School technology access.** NC will rank in the top 20 states for the ratio of students to 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.

3. **Digital government.** NC will rank in the top 10 states for its digital delivery of governmental services. In 1998, NC was 28<sup>th</sup> in the US in using digital technologies for improving public services.

4. **Digital divide.** At least 90% of counties will have affordable access to the latest data delivery technology. The rural/urban connectivity cost ratio is over 10:1 (based on the cost of a T-1 line).

### **Goal 5: Adopt flexible public policies and partnerships with regard to infrastructure development.**

As the pace of economic and social change accelerates, the way in which our public agencies make decisions will have to become more "foresighted," far-sighted, flexible, fleet of foot, collaborative, *and* competitive. We will need government structures that can make quick, effective shifts 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.

#### **Facts:**

- North Carolina was 43rd in the nation in per capita highway spending.
- Over 60% of NC's rural communities have low bond ratings.
- 90% of NC's water systems serve fewer than 3,300 customers.
- Only 33% of North Carolinians are served by water systems with more than 100,000 customers.

#### **Targets:**

1.) **Business climate.** NC will rank in the top 10 states as a place to do business. In 2000, *Site Selection* magazine ranked NC 2<sup>nd</sup>, 4<sup>th</sup> and 5<sup>th</sup> in the nation for three key business climate indicators (new and expanded facilities, new jobs, and capital investments), but two of these rankings had dropped from the previous year.

2.) **Public-private partnerships.** NC will rank in the top 10 states for university R&D spending and spin-outs. In 1997-98, NC was 10<sup>th</sup> in the US in university R&D spending and 24<sup>th</sup> in university spin-outs.

3.) **Capital investment.** NC will rank in the top 10 states for per capita state and local capital expenditures. In 2000, NC ranked 39<sup>th</sup> in per capita state and local government debt and 35<sup>th</sup> in debt as a percent of revenue.

4.) **Infrastructure planning.** At least 90% of residents will be served by large water systems (i.e., those serving more than 100,000 persons). Currently only 33 percent of NC residents are served by large water systems.