

## **NEW HAMPSHIRE IN THE NEW ECONOMY:**

### **A Vision for Expanded Prosperity**

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## **INTRODUCTION**

Technological innovation is changing the way Americans live, work and carry out business. The resulting "new economy," also identified as the information, digital or knowledge economy, is characterized by high-speed telecommunications, Internet use and e-commerce. The economy of today is based more on information sharing and service providing than it has ever been. Just 20 percent of the U.S. workforce now make tangible products, as opposed to the 80 percent responsible for generating, moving and processing information and providing services.

New Hampshire is on the cutting edge of this dynamic new economy, where success is founded on ideas, information and innovation. It has the second-highest concentration of high-tech workers in the nation, the third-highest export rate and is second in the nation in international growth and trade. New Hampshire has emerged as a national leader in the new economy, garnering the attention of

business and industry leaders worldwide. Its excellent quality of life, proximity to major East Coast cities, relatively low business costs and responsive government make New Hampshire one of the best states in which to live, work and do business. Maintaining this success will require a concerted effort by New Hampshire's public and private sectors.

This report was created to suggest ways to sustain and build upon New Hampshire's economic success. Extensive research and analysis was conducted statewide, including focus groups of business and community leaders. This research led to the emergence of three overarching goals for the state's future. First, the state must maintain its strong economic position through innovation and through its systems of education and workforce development. Second, the state must retain its excellent quality of life and quality of place. Individuals and businesses are drawn to the state in part because of its environment, and the state must work to implement state and regional policies that protect the state's natural and historic resources. Third, economic opportunity must be extended to all individuals and families throughout the state.

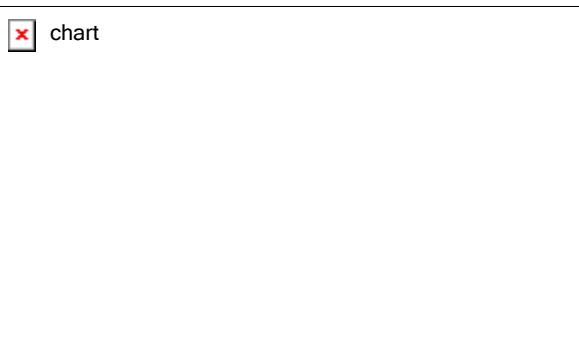
New Hampshire has made great strides in creating an environment in which businesses can flourish and individuals and families can thrive. The state is improving roads and bridges to ensure efficient markets and upgrading its telecommunications infrastructure. It is promoting energy efficiency and protecting its clean air and water. New Hampshire has also made a strong commitment to improving education, child care and health care because the vitality of the state's citizens is inextricably linked to the state's social and economic vitality.

While the state's robust economy has generated unprecedented prosperity throughout much of New Hampshire, not all individuals and families in New Hampshire are benefiting from this boost. Like other states, New Hampshire has citizens living in poverty, families struggling to find child care and lacking health insurance.

The new economy brings to New Hampshire residents improved financial success and enhanced quality of life. Ensuring continued prosperity, however, will take considerable planning and cooperation between the state's public and private sectors. It will also require a commitment to investing in education, worker training, health care, environmental protection and modernization of state government. By taking this holistic approach to planning, New Hampshire will ensure a prosperous future; one in which all its residents are afforded the opportunity to succeed.

## **Chapter One: New Hampshire's Economy: An Overview**

For decades New Hampshire's economy was based solely on the industries of agriculture and manufacturing. Since the middle of the 20th century, however, when entrepreneurs increasingly made their way into the business world, industries in the state have become much more diversified. As New Hampshire thrives in an economy of



fast-paced change and innovation, it is maintaining and building upon its economic traditions.

A majority of the businesses in New Hampshire are small businesses with less than 500 employees. Of the 36,000 businesses in the state, only about 100 are considered large businesses employing more than 500 people. In contrast, there are 18,000 firms in New Hampshire that employ fewer than five people. New Hampshire has a higher concentration of employment in firms with fewer than 100 employees, and less employment in establishments with more than 500 employees, than the national average.

New Hampshire is also a state of rapid economic growth. Its gross state product during 1992 to 1997, at 5.6 percent, far exceeded the growth rate in New England or the United States. The employment growth rate in manufacturing, trade and services during the same time period also exceeded regional and national growth. While employment in manufacturing, finance, insurance and real estate fields declined during the 1989-1992 recession, it increased dramatically between 1992 and 1997. Not only did New Hampshire recover the entire number of jobs lost in the recession, it has since seen steady growth in these sectors.

A brief outline of the state's major business groupings follows. With the exception of the tourism and agriculture sectors, the information reported below is drawn from 1999 Preliminary Benchmark Wage and Salary employment data provided by New Hampshire Employment Security's Labor Market Information Bureau.

## **Services**

The services industry is the state's largest and fastest growing employment sector, currently employing 177,700 people. The four major sectors within the services industry are:

- Health care services
- Business services
- Engineering and management services
- Educational services.

New Hampshire's health care services industry, including all jobs provided by hospitals, clinics, home care, nursing homes and private practices, employs approximately 50,600 people. This number is gradually increasing.

Business services, a broad industry category, employs 31,200. This is the fastest-growing branch of the services industry and includes software, a leading business in the state with more than 900 firms.

Engineering and management services firms employ close to 24,000 workers, while employment in the educational services category exceeds 20,000 jobs. New Hampshire has a 50 percent higher employment concentration in this sector than the nation as a whole. This is due largely to the fact that New Hampshire, like other New England states, has a relatively high number of private colleges and preparatory schools.

## **Wholesale and Retail Trade**

Wholesale and retail trade combine to make up the second largest major industry employer in New Hampshire. With 165,000 people employed in this sector, New Hampshire has a higher average employment concentration in this sector compared to other states. Though trade accounts for only a 15 percent share of gross state product, it makes up 27 percent of the state's employment. While the wholesale trade sector benefits from the state's concentration in the production of high value-added component parts, the retail sector tends to be characterized by low-wage jobs.

## **Manufacturing**

Manufacturing is the third-largest industry sector in New Hampshire, accounting for 25 percent of New Hampshire's gross state product, compared to the national average of 17 percent. Approximately 106,600 workers are employed in manufacturing in New Hampshire, comprising 17.6 percent of the state's total employment. The most current national data ranks New Hampshire 11th among the 50 states in the percentage of total state employment in manufacturing.

Growth in the value of New Hampshire's products since 1992 has been particularly impressive, with output growth more than doubling that of any other industry sector in the state. A noteworthy change in the composition and character of the state's manufacturing industry has been the shift from relatively low value-added (i.e., low product value per hour of labor input) non-durable goods such as paper or lumber, to high value-added technology durable goods like electronics.

Growth in durable goods manufacturing has helped to propel New Hampshire to its second-in-the-nation rank in the percentage of private sector employment in high technology, defined as jobs in electronics manufacturing, software and computer-related services and telecommunications.

## **Travel and Tourism**

The travel and tourism industry includes firms and workers in both the services and retail trade sectors. Total employment in the industry is estimated at just over 64,000 jobs and total direct spending by travelers accounts for 8.4 percent of New Hampshire gross state product, much of which is generated in the North Country. Travel and tourism contribute to the state economy by supplying jobs and by providing the state meals and rooms tax revenues.

Current state policy on tourism expansion focuses on "high value-added tourism." The goal of this policy is to encourage increased spending per visitor without necessarily expanding the total number of visitors to the state. This strategy will help maintain open space and a healthy environment, while limiting overcrowding at popular tourist destinations.

## **Finance, Insurance and Real Estate**

Though New Hampshire's finance, insurance and real estate (FIRE) sector employs just over 5 percent of the state's workforce, it makes the second-greatest contribution to the state's gross product at 22 percent. New facilities and employment in high value activities such as the mutual funds and securities industries have fueled recent job growth in this sector. Currently, these businesses

provides 32,600 jobs in New Hampshire.

## **Government Employment**

Federal, state and local governmental positions account for 81,400 jobs in New Hampshire. Nationally, New Hampshire has the fourth lowest percentage of its workforce employed by government. Despite sustained economic and population growth over the last decade, New Hampshire ranked 30th in the nation in adding new government jobs, a 16.3 percent increase, compared to 18.8 percent nationally over the past 10 years. This comparison highlights New Hampshire's tradition of maintaining a lean and efficient government.

## **Agriculture**

The mix of New Hampshire agriculture has changed over the years, evolving into a diverse industry encompassing many crop, livestock and specialty products. The value of New Hampshire's agricultural industry is over \$450 million per year, with an estimated 2,900 individual operations qualifying as commercial farms. This industry produces a wide variety of conventional agricultural products, the most significant of which are milk and apples.

The fastest growing segments of New Hampshire agriculture include greenhouse and nursery production, flowers, turf, landscape materials and services. On the international market, New Hampshire exports \$20 million annually in food and agricultural products.

Farming also contributes to the health of New Hampshire's environment and quality of life through its preservation of open spaces. The fields, pastures, silos and barns of the agricultural industry create a buffer to residential and commercial development and serve as a link to the state's rich history.

## **Forestry Products**

An estimated 4.9 million acres of the state is forested land; 83 percent is in private ownership and about 14 percent of the acreage is industrial forest land. The wood products industry employs an estimated 6,500 workers, primarily in the northern and western portions of the state. A \$1.7 billion industry, forestry is a major contributor to the state's economy.

In addition to providing direct employment opportunities for loggers, truckers and mill workers, the forests of New Hampshire supply clean air and water to New Hampshire communities. They also provide land and water access for recreation, a crucial component of the tourism industry. According to visitor surveys, an estimated 42 percent of total tourist expenditures in New Hampshire are dependent on forest- and open space-related travel.

## **Chapter Two Maintaining a Strong Economy**

In order for the state to maintain and expand upon its economic successes, it must continue to meld its traditional and new economies. Business and industry, whatever their products and whatever their size, must be supported in their efforts

to contribute to the state's economy. With 98 percent of New Hampshire firms employing less than 100 people, the state's economy depends greatly upon policies and initiatives that fully support small business.

Continuing to expand the state's economic base in the coming decades is critical to ensuring no one industrial sector bears the brunt of changing economic circumstances. In New Hampshire, such diversification began in early 1990s, to the benefit of New Hampshire's economy. The manufacturing sector is no longer dependent on one or two leading industries, a significant change from the mid-1980s, for example, when the state's manufacturing sector was highly concentrated in mini-computer manufacturing. A decline in that industry struck a blow to the state's economy leading to the recession of the early 1990s. Due in large part to entrepreneurial efforts throughout the state, the economy bounced back.

Even in strong economic times there is significant turnover of business, or churning, in the state economy. The Progressive Policy Institute describes churning as, "the number of new start-ups and business failures, combined, as a share of all companies in each state." In 1997 in New Hampshire, 4,000 firms employing 13,500 workers were created in the state, while 1,500 firms employing 11,000 people closed. While this churning resulted in instability for some workers and businesses, it also provided opportunities for growth and innovation.

Today there are a variety of highly successful business sectors in New Hampshire. Three of the state's top-ranked manufacturing industries are in instrumentation, industrial machinery and electronics. The software industry is a standout in the high-technology services sector, with employment growing 300 percent from 1992 to 1997. Software employment in New Hampshire is now 40 percent above the national average.

The major challenge facing New Hampshire business today is the shortage of labor, both skilled and unskilled. Largely due to such shortages, New England Economic Project (NEEP), a regional economic forecasting group, predicts a slowing of economic growth in New Hampshire.

To help address labor shortages, many New Hampshire firms have been recruiting employees from out of state. Most of the recent in-migrants to our state are highly educated and contribute greatly to our economy. And while New Hampshire businesses will always rely to some degree on the in-migration of specialized employees to meet the state's skilled labor requirements, it is important to enhance education and training for New Hampshire's own workforce. This is discussed in further detail in chapter four.

## **Research and Development**

In its *New Economy Index*, the Progressive Policy Institute outlined the opportunities the new economy presents:

- New economic opportunity
- Higher living standards
- More individual choice and freedom
- Greater dignity and autonomy for working Americans
- Stronger communities



- Wider citizen participation in public life

In July 1999, the Progressive Policy Institute ranked New Hampshire 7th highest among the 50 states in transitioning to the new economy. Only Massachusetts, California, Colorado, Washington, Connecticut and Utah were ranked ahead of New Hampshire.

Historically, technological growth and innovation have been important features of the New England and New Hampshire economies. This success is due in large part to the Research and Development (R&D) at the state and federal government as well as in the private sector and higher education institutions. R&D is essential to sustaining technological innovation, and has accounted for up to half of U.S. economic growth during the past five decades, according to the U.S. Office of Technology Policy.

Approximately \$270 million of federal R&D funds are spent each year in New Hampshire. Sources include:

- U.S. Dept. of Defense, \$182 million
- U.S. Dept. of Health and Human Services, \$39 million
- NASA, \$15 million
- National Science Foundation, \$12 million
- U.S. Dept. of Agriculture, \$5 million
- U.S. Dept. of Commerce, \$7 million
- Other federal agencies, \$11 million

According to the UNH Annual Report of Research and Other Competitive Sponsored Program Awards in Fiscal Year 2000, the University of New Hampshire received \$54.6 million in federal R&D dollars. In addition, UNH received \$8.5 million in R&D dollars from New Hampshire state agencies, \$6.3 million from business and industry, \$5 million from non-profits and \$3 million from other universities for joint ventures. This funding, totaling \$78 million, is directed primarily toward "basic research," research that is critical to expanding knowledge and understanding fundamental science phenomena.

The U.S. Department of Defense's Cold Regions Research and Engineering Laboratory in Hanover receives \$20 million each year to study aspects of the cold/winter environment and its implications for military activities. The U.S. Department of Interior's New Hampshire District Office of Water Resources in Pembroke receives nearly \$1 million to study surface and groundwater quality. The federal government also makes grants to small businesses through its Small Business Innovation Research program (SBIR). According to the RAND organization, in 1998, small businesses in the state received 38 SBIR awards totaling nearly \$10 million.

Though New England attracts more R&D support from the federal government than the U.S. economy as a whole, that gap is narrowing. Other regions are becoming increasingly successful in competing with the New England states in securing R&D funds. A national trend of lower public sector support for research since the early 1980s increases the competition for New Hampshire to receive these funds.

The New Hampshire Legislature and Executive Council in the early 1990s acted on

a belief that R&D stimulates a vibrant industrial base by approving the creation of the New Hampshire Industrial Research Center (NHIRC). The mission of the NHIRC is to assist New Hampshire industry in becoming more competitive, and therefore more successful at retaining and increasing industrial employment. The NHIRC helps companies by providing the following:

- assistance in basic and applied R&D and manufacturing improvement through a state-funded matching grant Technical Assistance Grant (TAG) program;
- market research assistance to select companies who successfully complete Technical Assistance Grants;
- hands-on training in powerful, money-saving Design of Experiments (DOX) courses; and
- low-cost assistance to inventors to develop, patent, copyright, and commercialize their ideas and innovations through the NHIRC Inventors Assistance Program (IAP).

An organization that complements the NHIRC is the New Hampshire Manufacturing Extension Partnership (MEP). Through its staff of engineering, technology and business management professionals, the MEP helps small- and medium-sized manufacturing firms implement changes that lead to greater productivity, increased profits and enhanced global competitiveness.

The private sector in New Hampshire has made important investments in research, as well. However, private sector investment in R&D in the state is not as high as in competing states. New Hampshire should continue its efforts in R&D investment and encourage the private sector to invest in this work, as well.

## **Venture Capital Investment**

Despite major changes in the control of banking assets over the past decade, there appears to be ample capital available for business needs in the state at the present time. In 1998 the state had \$24.26 billion in banking assets, 76 percent of which were controlled by out-of-state banks, according to the New Hampshire Bankers Association.

Venture capital investment is currently very strong in the state. New Hampshire ranks fourth in the nation in venture capital invested as a percentage of gross state product. New venture funding increased 460 percent in the state between 1995 and 1998 - the highest growth rate in New England and one of the highest in the nation.

In order to maintain this high level of venture funding, New Hampshire should continue to market its desirable investment location. A related challenge will be to diversify investment recipients and sources of capital. Currently, more than 60 percent of venture capital funding in New Hampshire goes to two industries: communications and software. A majority of the funds are from out-of-state, particularly Boston.

If more venture capital was New Hampshire based, more of the investment returns would remain in the state. MerchantBanc, formerly the New Hampshire Business Development Corporation, has addressed this issue by converting to a New Hampshire chartered merchant bank and by forming NHBDC Venture Partners, a limited partnership funded with \$20 million of capital. The purpose of NHBDC

Venture Partners is to fund mezzanine investment opportunities in promising companies in partnership with private investors and to provide training programs for seed investors.

## **Controlling Business Costs**

The Business & Industry Association of New Hampshire's 1996 *Agenda for Continued Economic Opportunity* describes New Hampshire as "a low-cost state in a high-cost region." New Hampshire has maintained a cost advantage, particularly relative to the Boston metropolitan area and other northeastern states such as Connecticut, New York, Pennsylvania and New Jersey, from which significant numbers of in-migrant residents have come. Maintaining these cost advantages must be a consideration in future policy making. The Governor and Legislature's recent effort to lower electric rates and bring competition to the electric industry is an example of what state government has done to help New Hampshire business become more competitive.

Another example of the state's commitment to small business is seen in recently passed insurance legislation. A new law will enable small businesses to save money on health insurance for their employees. By banding together into larger groups, or purchasing pools, small businesses will gain the purchasing power of larger firms. This will allow small firms to secure better health insurance rates and enable them to remain competitive with larger firms in attracting and retaining employees.

Small businesses are also receiving assistance through a unique partnership between the Department of Environmental Services, the New Hampshire Small Business Development Center, the University of New Hampshire and the U.S. Environmental Protection Agency. This effort, the Small Business Environmental Assistance Alliance, helps small businesses become more profitable while maintaining or enhancing environmental quality. The Alliance links existing environmental assistance programs, while providing free and confidential one-on-one counseling to small businesses.

## **International Trade**

International trade and exports play a significant role in the state's economy. In 1999, New Hampshire firms exported more than \$2.14 billion in goods and services and led every New England state in export growth.

Increased exports and foreign direct investment indicates the strength of New Hampshire firms, since exporters have a higher value-added impact on the economy than non-exporters. More than 850 manufacturers in the state export on a regular basis and 9,500 jobs are tied directly to exporting.

As a small state in an international economy, New Hampshire companies require ongoing support in marketing and promoting their products internationally. The New Hampshire Office of International Commerce located at the NH International Trade Resource Center provides companies with one-on-one counseling, training, and opportunities to participate in foreign trade missions. In addition to the Office of International Commerce, the Trade Center houses staff of the U.S. Commerce Department, the Export-Import Bank of the United States, and the Small Business

Development Center at a single location to facilitate business interactions.

Firms in the three leading industries in the state - industrial machinery, electronics and instrumentation - account for 60 percent of all exports. In order to sustain success in this area, New Hampshire companies must continue to develop new products. In addition, the state must continue to provide the infrastructure supporting their ability to export (*This is discussed further in Chapter 7*).

Foreign direct investment accounts for more than 7 percent of New Hampshire's gross state product. Overall, more than 5 percent of the state's workforce is employed by foreign companies, ranking New Hampshire 9th among the 50 states in this category. Foreign investment is concentrated in high value-added manufacturing. Four of the state's 15 largest manufacturing companies are foreign owned.

To help New Hampshire companies compete in the international marketplace, Governor Shaheen led 20 New Hampshire firms, almost all of which were small businesses, on a trade mission to Germany and Denmark in February 2000. These businesses continue to negotiate with potential partners, and have already struck several agreements as a result of the trade mission. Governor Shaheen led a similar trade mission to the United Kingdom and the Republic of Ireland in 1997. Businesses that accompanied her on that mission have projected sales worth \$395 million as a result of the mission.

## **Business Networking**

Business leaders understand that an efficient, accessible and responsive state government is an economic asset. During focus groups held by the Whittemore School at the University of New Hampshire, participants often noted the ease with which they could contact and speak directly with leaders in state and local government. This strong communication contributes to responsive and responsible public policies that benefit the business environment.

Business networking, both formal and informal, has been identified as a leading source of competitive advantage in Silicon Valley and other high-tech areas. This appears to be a factor contributing to the growth of high-tech industries in New Hampshire, as well. The state's effective system of business and trade groups enables firms to learn from each other, to collaborate on common problems and to interact with all levels of government. These organizations vary in location, membership and scope; examples of such groups are Network NH, the Business & Industry Association, the High Technology Council, the Software Association of New Hampshire and local chambers of commerce.

State government can support businesses by making available the resources and opportunities necessary for competing and prospering in the new economy. New Hampshire's traditional and low-technology industries, not just high-tech firms, should benefit from technology and innovation.

## **Recommendations**

1. Develop a long-term integrated approach to supporting new economic activity, while maintaining support for firms in traditional industries.

2. Develop a long-term strategy to encourage more investment in Research and Development, technology transfer and support for initiatives such as the New Hampshire Manufacturing Extension Partnership and New Hampshire Industrial Research Center.
3. Work specifically with small businesses to help them expand their market opportunities, obtain venture capital and benefit from technology transfer.
4. Encourage venture capital investment in a range of business sectors, and more in-state venture investment.
5. Continue to strive for a low-cost business environment.
6. Expand the state's penetration into foreign markets using technology, trade missions and joint partnerships.

### **Chapter 3**

#### **PRESERVING QUALITY OF LIFE AND QUALITY OF PLACE**

Today, as the use of new communications technology becomes more widespread, people can work from nearly any location. As a result, new economy businesses have the option of operating from the places their employees choose to be. In 1996, extensive research by the Business & Industry Association of New Hampshire identified the quality of life in New Hampshire as the state's most important economic asset. A November 2000 study by the Institute for Southern Studies, *Green and Gold 2000*, supports this finding. States with strong economies, their research shows, do not achieve that economic success at the expense of environmental quality. In fact, states are often able to protect their environments while offering good jobs and opportunities for long-term economic development. In this study New Hampshire ranks well above average for its strong economy and environmental record.

Much of what contributes to quality of life is *quality of place*. A research project conducted for the Mellon Foundation, *Competing in the Age of Talent: Quality of Place and the New Economy*, contends that regions are economically successful today largely based on their ability to quickly mobilize skilled workers and needed resources. The report states that "the nexus of competitive advantage has thus shifted to those regions that can generate, retain and attract the best talent."

Natural, recreational, cultural and lifestyle amenities are vital in attracting skilled workers and supporting leading-edge high-technology firms and industries to the state. Because job opportunities are excellent in many parts of the country, workers are able to weigh economic and social opportunities in making decisions about where to live and work. New Hampshire is a state that combines a beautiful natural environment with social and cultural opportunities and strong job prospects in emerging fields.

Focus group research with high-tech business executives conducted by the Taylor Group for the Greater Portsmouth Chamber of Commerce Technology Roundtable found that the existing quality of life and the management of future growth are keys to that region's success. Lack of traffic and short, stress-free commutes were cited as important factors in determining a good quality of life. Executives in the

Portsmouth area were emphatic that they did not want to see the area develop into the sprawl of Silicon Valley.

A successful balance must be reached between growth and the protection of natural and cultural resources. Maintaining New Hampshire's unique quality of life and quality of place will require careful consideration of issues such as urban sprawl and environmental protection.

New Hampshire is losing 20,000 acres of farm and forest land each year to development.

## **Managing Growth**

New Hampshire is the fastest growing state in New England. Its population is forecast to grow from 1.2 million today to 1.5 million in 2020 - an increase of 25 percent. At the same time, studies show that New Hampshire is losing 20,000 acres of farm and forested land each year to development.

For the first time since the Civil War, forest cover decreased from 87 percent in 1983 to 84 percent in 1997 and in the next two decades the state is projected to lose 144,000 acres of forest to development. Access to wild places and recreation areas is vanishing in heavily populated regions.

As the state grows, it becomes increasingly challenging to protect traditional communities, working farms and forests, and historic buildings and downtowns. Protecting New Hampshire's environment and heritage is an important part of keeping the economy strong. In 1999, the New Hampshire Legislature approved a bill directing the Office of State Planning to undertake a statewide study of growth and development patterns. A report, including recommendations for enhancing local, regional, and state growth management and planning, was published in Fall 2000.

In addition to the natural landscape, New Hampshire's built, or human-made, environment also contributes to the state's unique sense of place. Just as the natural environment is at risk, so too is the built environment. For example, only 25 of the state's 3,800 sites on the National Register of Historic Places are permanently protected from redevelopment or destruction.

The restoration of historic structures can be economically as well as culturally beneficial to New Hampshire. For example, the restoration and re-use of older buildings maintains open space, provides jobs for planners, contractors and laborers and enhances a site's historical value. The Amoskeag Millyard in Manchester, which houses a variety of businesses, is a good example of the way in which industrial age mill buildings can be re-developed for information age use.

New Hampshire recently passed legislation creating the Land and Community Heritage Investment Program (LCHIP). This public-private partnership establishes a fund for land and community heritage preservation projects and provides \$3 million in one-time start-up funds for the program. The program will provide up to 50 percent of the appraised market cost of purchasing land, historical buildings and renovation of historical structures. Lawmakers and the public have expressed a strong commitment to extending the life of this project through state funding.

In addition to its natural and historic flavor, New Hampshire is home to some of the finest cultural centers in New England. The state's art galleries, opera houses and theater groups thrive because of public/private partnerships. Working together, the arts community and private sector businesses are building support for the arts as a vital component of quality of life and as a key contributor to economic vitality. Recent studies conducted by the New England Council reveal that the arts sector, or "creative cluster," employs 17,952 New Hampshire residents-2.9 percent of the state's total employment. The growth rate for the arts industry exceeds that of all other industries in New Hampshire.

New Hampshire's population is expected to grow from 1.2 million today to 1.5 million in 2020, a 25% increase.

### **State and Local Coordination**

New Hampshire has long valued a local approach to decision making. Volunteer boards at public meetings consider municipal permitting and zoning questions and citizens who are directly impacted by the results of the decisions have a voice in what happens in their communities.

Increasingly, the impacts of local projects spill across municipal boundaries, requiring regional communication and dialogue among all parties impacted by large-scale projects. The impact of a shopping mall, for example, can affect retail activity in the host community and in surrounding towns. Office parks, large housing developments and recreation attractions likewise impact towns and cities beyond the host communities. Planning processes for these projects should provide meaningful opportunities for all impacted communities to work together.

Local communities must continue to play a leading role in land use management. Identifying those natural, cultural and historic resources that are the foundation of a community's heritage must be a priority. Without this sense of place, a community's character is at risk. Too many times in the past, assets such as waterfront access have been sacrificed to the demands of commercial and residential growth, forever altering the nature of a community's identity. The new LCHIP program and other public and private resources must be tapped to the maximum extent possible to ensure the continued diversity of New Hampshire's natural and built landscape.

### **Recommendations**

1. Pursue the recommendations coming out of the statewide growth management study undertaken by the Office of State Planning.
2. Find a sufficient source of funding for the Land and Community Heritage Investment Program.
3. Continue to promote the public/private partnerships that support arts and culture.
4. Encourage improved training and support for local planning and zoning boards and conservation commissions.
5. Encourage and provide incentives at the federal, state and local levels for private investment in downtowns and rehabilitation of existing structures.

- 6. Provide incentives for increased inter-municipal cooperation and support for regional planning efforts.
- 7. Encourage municipalities to identify and protect natural, cultural and historic resources, and to provide public access along waterfronts.

## Chapter Four DEVELOPING A GLOBALLY COMPETITIVE WORKFORCE

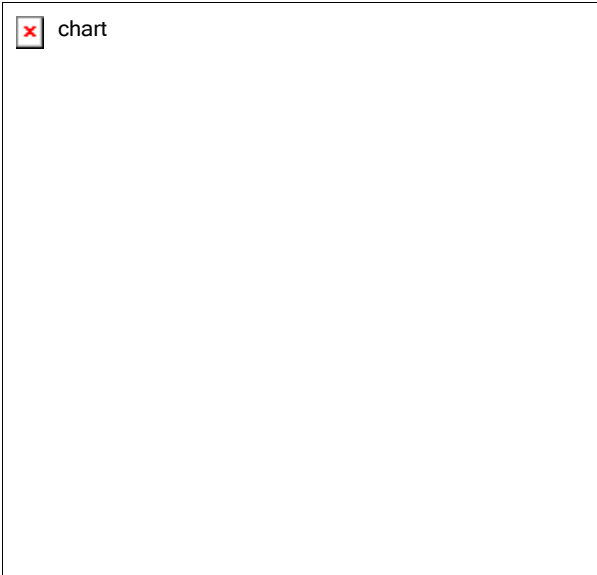
To a great extent New Hampshire's economic success since the early 1990s has been due to its ability to attract and develop high-technology jobs. The rapid transformation of the state's economic base from a traditional economy to a high-technology durable goods and professional services economy has increased the need for better-educated workers. This presents a pressing economic challenge within New Hampshire, which is currently experiencing a labor and skill shortage.

To continue to successfully compete in the new economy, New Hampshire must provide a system of education that creates well-prepared citizens and a highly-skilled workforce. As the economy becomes increasingly knowledge driven, a quality education is essential. In addition to strong preK-12 education, there is a critical need for ongoing education and training. The state's Community Technical College and University systems and continuing education programs are fundamental components of a comprehensive education system. Maintaining a focus on lifelong learning is essential in an economy that demands high-skilled workers in rapidly changing industries.

This chapter will focus on the growing need for an educated workforce, and how the state's systems of education and job training can meet this demand. Divided into three parts, the first section summarizes employer needs. The second section describes improvements that have been made across the education spectrum-from early childhood education to continuing education and job training-that provide a foundation on which to build future efforts to ensure a globally competitive workforce. Finally, the third section, as with the other chapters in this report, lists recommendations for action, ways we might address remaining challenges to workforce development.

### Employer Needs

While New Hampshire companies have generally been successful in hiring high-tech workers from other states, recruitment efforts are becoming less successful and costs are increasing as skilled labor markets tighten nationally. To the extent that New Hampshire firms are unable to fill their skilled labor requirements or are placed at a labor cost disadvantage relative to firms in other states, their ability to compete and sustain economic growth into the future will be limited.





It is generally easier and less costly for companies to recruit in-state college graduates, compared to those from out of state. As a result, states that are unresponsive or unable to expand their indigenous supply of skilled workers may be less successful in supporting high-tech companies in the future. For example, computer science and engineering graduates are currently in high demand, but there are not enough graduates to fill the openings. The ability of a college to attract students into math and science programs is dependent upon multiple factors: the quality of the math and science education students receive in high school, student interest, the strength of the college's reputation in computer science or engineering and the affordability of the institution. Each of these factors, in turn, affects companies' abilities to recruit skilled labor in computer science and engineering.

The State must do its part to foster conditions that enhance higher education's ability--and ultimately New Hampshire firms' ability--to attract students into high-tech fields. Opportunities exist for the State to support policies and programs that encourage a citizenry better prepared to benefit from and meet the needs of the new economy exist along the continuum of lifelong education. The following sections outline what the State can do across the education spectrum to advance a better prepared citizenry. In addition, they highlight some of the progress the State has made in improving education and training, as well as ways to meet the remaining challenges to workforce development.

## **LIFELONG EDUCATION**

### **Early Learning**

Research shows that children's educational opportunities in their earliest years are indicators of their future success. Scientific evidence suggests that high-quality early care, starting right after birth, and participation in high-quality pre-school, even as late as age 3 or 4, results in significant and lasting benefits. Children who are exposed to such early learning opportunities are more likely to perform better in school, have a reduced need for special education, are less likely to repeat grades and are less likely to commit crimes later in life.

Parents are by far the most important influences in their children's lives, their first and most important teachers. However, they no longer do the job on their own, as more parents of young children work outside of the home than at any time in our history. In New Hampshire, nearly three out of four children between 6 weeks and 13 years old have working parents. An estimated 60 percent of those children need care outside of the home. The businesses employing the parents of these children are also facing new challenges as a result, losing up to \$24 million annually due to child care-related absenteeism. Businesses have a double stake in the child care issue--both in terms of the pressures it places on their current workforce and also in terms of the implications poor quality child care now has for their future workforce. Recognizing this, Governor Shaheen created the Business Commission on Child Care and Early Childhood Education to develop strategies for improving child care. The Business Commission helped to establish the Governor's Business Partners for Early Learning, which currently works to:

- increase the availability of quality child care;
- promote family-friendly work policies;
- develop a parent Outreach and Education Campaign to help working parents

- locate and identify quality child care; and
- promote partnerships designed to offer business assistance and quality training for providers.

Wherever a child is, at home with parents, or in someone else's care, we know the experiences that child has now will have a lifelong impact. New Hampshire has a role to play in helping those who care for our youngest children to provide them the best start possible in life.

Governor Shaheen's Kids Cabinet, made up of the top officials in state government whose agencies have programs that affect children and their families, is working to help improve the lives of young children through programs that improve parent support, children's health and early care and education. The Kids Cabinet has supported the development of Growing Up Healthy, a guidebook for parents of children ages 0 to 5 that provides the best information available about early childhood development, health, and nutrition. Their efforts have helped secure health coverage for more than 12,000 previously uninsured children through the Healthy Kids insurance program. In addition, they are working to improve child care in New Hampshire by increasing support for child care providers, and by encouraging more providers to become accredited and more family care providers to become licensed.

### **NH Education Snapshot**

- 200,000 students are enrolled in K-12 public schools in New Hampshire.
- 65,000 students are enrolled in 23 institutions of higher learning; 40 percent are from out of state.
- 27 percent of our population has a college degree, ranking us 15th among the 50 states.
- Among New Hampshire high school graduates going on to college, only 50 percent choose to attend New Hampshire institutions, the 4th lowest rate in the U.S.

### **K-12 Education**

In 1997, the New Hampshire Supreme Court ruled that the way the State funded public education was unconstitutional. It confirmed the State's obligation to ensure for every child in New Hampshire, no matter where that child lives, an adequate education. The Court's ruling required the state to define educational adequacy, cost it out and develop the means to ensure that adequacy was available to every child across the state.

While Governor Shaheen and the legislature passed legislation in 1999 substantially increasing the amount of State dollars that support public education, the bill was a stop-gap measure and expires in January 2003. This issue has broad economic development implications for the State of New Hampshire. The kind of school funding solution developed may affect the state's ability to attract and retain new businesses. At the same time, the state must develop a solution that preserves our growing economy and ensures the best quality public education we can provide our children. This is an urgent matter. Without a permanent funding solution by July

2001, the state's bond rating and strong fiscal position will be jeopardized. But most importantly, without a permanent funding solution, New Hampshire's public schools--and therefore New Hampshire's prosperity--will be threatened.

While school funding is a critical and urgent matter to resolve, funding alone will not ensure excellent schools. Rather, adequate resources for our schools must be accompanied by high standards and school accountability. New Hampshire has made significant strides in recent years in this area. In 1993, the state implemented the New Hampshire Education Improvement and Assessment Program (NHEIAP). NHEIAP established educational standards that identify what New Hampshire students should know and what skills they should have at each grade level. These standards in math, science, social studies and language arts have guided the development of statewide assessments for students in grades three, six and ten. Administered annually, the assessment tests generate information about student performance and inform local school districts' improvement efforts.

The annual reporting of assessment results has provided new information to parents, educators, policymakers, and the general public about school performance across New Hampshire. This reporting alone has triggered unprecedented school improvement efforts at the local level. Even so, policymakers and others have recognized that state assessment results provide only one snapshot in time of student and school performance. So in 1999, the legislature passed and Governor Shaheen signed into law the establishment of a statewide report card on New Hampshire schools that would make available a broad array of school performance and demographic data. The first such report card was published in December 2000, including data on the percentage of graduates enrolling in post-secondary education, percentage of graduates entering the workforce, NHEIAP test scores, percentage of teachers teaching outside their subject area of expertise, and dozens of other measures. Reporting on a broader set of performance indicators will help the public more accurately assess schools' performance and make better informed decisions about where to target improvement efforts in the future.

One program that is helping communities set higher standards at the local level and translate performance data into school improvement is The Best Schools Initiative (Best Schools), and its flagship program, the Best Schools Leadership Institute. The goal of Best Schools is to give schools the tools they need to improve and to help students perform better in school. Local teams of teachers, parents, administrators and businesspeople attend the Leadership Institute to identify ways to improve their schools. Teams monitor their success through measurable outcomes such as lower dropout rates or improved performance on assessment tests.

Perhaps one of the most important advances in K-12 education in the last 4 years has been the establishment of the Governor's Kindergarten Incentive Program (KIP). Governor Shaheen recognized that one of the most effective ways we can ensure children are able to reach the high standards we set for in elementary and secondary school is to provide quality, public kindergarten to all five-year-olds. Enacted in 1997, KIP provides financial incentives for school districts to make public kindergarten available. Since the program's inception, the number of districts without public kindergarten has been reduced by more than half, from 53 to 24 districts, and the number of additional children attending public kindergarten has exceeded 1,800.

Another important program aimed at improving the quality of K-12 education is

Project Lead the Way, an innovative partnership of the NH Community Technical Institute, New Hampshire Department of Education, and New Hampshire high tech businesses. The program is specifically targeted to increase the number of high school students pursuing engineering and engineering technology programs that require a two- or four-year college degree. Project Lead the Way is currently active in eight high schools in the state. More than 350 New Hampshire students are now offered a five-course sequence designed to help them explore technology-related careers and prepare for higher education.

Finally, our ability to ensure all New Hampshire students reach high standards rests to a large degree on our schools' ability to attract and retain quality educators. Currently, New Hampshire is beginning to experience a shortage of educators. The New Hampshire Department of Education has identified critical shortages in seventeen professional certification areas, including middle/junior high and secondary mathematics and technology education. A majority of New Hampshire teachers are approaching retirement and will soon leave school districts with many vacancies to fill. Governor Shaheen has charged the State Board of Education with examining this critical issue and identifying ways we might avert a serious teacher shortage problem through better recruitment and retention efforts.

## Higher Education

The shift from an industrial economy to a knowledge economy has dramatically increased the need for not only better-educated workers, but, more specifically, it has increased the demand for more **college**-educated workers. The demand for college graduates, particularly for science and engineering majors, far exceeds the number of state residents who earn college degrees. Currently, New Hampshire post-secondary institutions have yet to expand and re-orient their degree programs to meet this demand. This skills gap between industry's labor needs and the output of New Hampshire post-secondary institution graduates is expected to worsen in the near term. From 2000 to 2005 the demand for college-educated workers in the state is projected to more than triple.

Many states competing with New Hampshire for skilled workers are actively working to graduate more highly qualified candidates from their own community colleges and universities. This enhances the ability of resident high school graduates to access higher education in their home states and encourages residents who are educated out of state to return after graduation. Similar initiatives in New Hampshire would help the state's firms compete in a tight skilled labor market.

While there is an unprecedented demand for college graduates and other skilled workers among New Hampshire companies, a considerable percentage of the state's high school students do not pursue post-secondary degrees or attend college out of state and do not return for employment. It is estimated that there are as many as 13,000 New Hampshire high school students annually who either do not remain in school through college and/or do not return to New Hampshire after graduation. This represents a potentially significant skilled labor resource that is currently lost to New Hampshire employers. It also represents a lost opportunity for many of these young workers to participate in and benefit from the state's new economy.

Many factors influence post-secondary enrollment in New Hampshire. Chief among

them are the affordability and accessibility of our public post-secondary institutions, as well as the quality of programs these institutions provide. Tuition at our public institutions is among the highest in New England. At the same time, transferability of credits across our community technical college and university systems is limited, and significant improvements in our institutions' capital infrastructure are necessary in order to ensure our colleges and university are able to continue to provide excellent programs in science, engineering, and technology.

In recent years, increases in state funding for both our community technical college and university systems have at once helped slow increases in tuition and helped our campuses make capital improvements necessary to support quality programs. This kind of commitment to our post-secondary system must be sustained over time if we are to adequately address both the affordability of higher education in New Hampshire and our public institutions' ability to continue to provide educational excellence. The affordability issue may be further addressed by increasing the availability of scholarships to talented New Hampshire students who might otherwise be persuaded to pursue post-secondary education out of state.

We have also taken important steps to address the transferability of credits, an issue that has hampered the accessibility of higher education for too many students, for too long. Leaders from both the university system and community technical college system will announce a plan in March 2001 that will signal a significant breakthrough, paving the way for more students to access our public institutions and move with much greater ease between our two- and four-year schools.

Other ways to address the accessibility of higher education involve building stronger linkages between the K-12 and post-secondary systems and business. One such program is the New Hampshire Department of Education Benchmark Communities program. This effort brings together local school districts, business leaders and higher education officials to design strategies that help students make smooth transitions from high school to post-secondary education and/or employment. A key strategy of the project has been the development of competency-based high school transcripts designed to:

- better prepare students for college or the workforce;
- provide meaningful evidence of what students know and are able to do upon their completion of high school;
- improve college retention rates and reduce the need for remediation in college; and
- enhance the ability of employers to assess the skills and competencies of high school graduates.

The New Hampshire Forum on Higher Education is another effort designed to improve coordination between institutions of education and business. Comprised of K-16 educators, business leaders and public policy officials, the Forum is focused on positioning New Hampshire's institutions of higher education to meet the state's educational and training needs. Currently in its organizing phase, the Forum will consider such objectives as increasing the alignment of New Hampshire graduates to changing business needs, assisting New Hampshire higher education with job recruitment and teacher training, and reducing the loss of New Hampshire talent to businesses and post-secondary institutions in other states.

## **Integrating Technology**

A strong education today must successfully integrate technology. One way this is happening in New Hampshire is through the Technology Literacy Challenge Fund, a federally funded program administered by the New Hampshire Department of Education (NHDOE) to support teacher training in educational technology. In addition to this fund, NHDOE recently received a three-year, \$2.1 million grant from the U.S. Department of Education to train 3,000 future teachers to use technology to improve student performance.

Federal technology in the schools programs are enhanced by the Governor's Computers in the Schools Program (CITS), a public-private partnership that puts up-to-date computers in public school classrooms. Computers donated by individuals, businesses and government are upgraded for New Hampshire schools lacking the resources for sufficient education technology. To date, CITS has placed over 1,200 computers in over 70 New Hampshire schools that would not have otherwise had the resources to purchase the systems themselves.

## **Continuing Education and Job Training**

In an economy based on technology and innovation, it is critical for the state to respond to workers' and employers' need for ongoing education and job training opportunities. In July 2000, the federal Workforce Investment Act of 1998, designed to prepare states' workforces for the new economy, went into effect throughout the country. In preparation for implementing this new legislation in New Hampshire, Governor Shaheen created the Workforce Opportunity Council and charged its members with constructing a world-class, business-driven workforce development system.

The Council is a private/public group that serves as a catalyst for creating a secure and sustainable workforce development system in New Hampshire. The Council is working to align the efforts and resources of businesses, labor, state government, educational institutions and others to:

1. determine labor and skill requirements by industry sectors and occupational groups;
2. identify the labor force and skill requirements for emerging and strategic industries;
3. analyze the enrollments and output of students from New Hampshire's education and training institutions to ensure the preparation of adequate labor supply;
4. prepare and upgrade the skills of young people, current workers, transitional, and at-risk individuals for employment and further education;
5. focus public resources and investments to increase labor supply in areas with identified labor and skills shortages;
6. remediate skills gaps for industries where applicants are unable to meet entry level skills standards and performance expectations by entering into partnerships and consortia arrangements with businesses and education and training providers;

and

7. meet the current and future needs for educated, multi-skilled workers to support a competitive advantage for businesses, and growth opportunities for workers and regions within New Hampshire.

The Council is focusing on what it has identified as the state's two main economic challenges: shortage of labor, both skilled and unskilled, and the economic disparities throughout the state. To that end the Council is implementing a variety of programs and initiatives, in conjunction with a variety of partners. Below are just some of the projects led by the Council:

- **Youth Council**

The Youth Council focuses on ways to increase high school completion among the state's students. The Youth Council also helps to transition young people to post-secondary education and skilled employment through linking and expanding a host of education reform and youth development programs as part of an overall workforce strategy. Youth Council funded programs help youth 14-21 earn their high school diplomas or GEDs and prepare for jobs and careers.

- **Technical Skills Training Grants**

The Council will make \$1.5 million in federal funds available in 2000-2001 to qualified businesses and individuals to assist in the acquisition and upgrade of technical skills critical to employment in high-technology fields.

- **NH WORKS Job and Information Centers**

A network of career centers is available across the state and offers a wealth of information and services to job seekers and businesses. The one-stop system has multiple points of entry and state-of-the-art resources. The long-term goal for New Hampshire WORKS is to become the "first stop" for employers and individuals seeking education, employment, and training services.

- **Rapid Response to Dislocations**

Businesses and workers have a single point of contact when they require rapid response services for a major layoff or plant closing. A team of representatives from the local NH WORKS Job and Information Center, led by the Department of Resources and Economic Development, provide businesses and workers with an orientation to the range of services available to dislocated workers.

- **Business-Driven Customized Training**

In partnership with the Department of Resources and Economic Development, the Council makes matching training dollars to companies to upgrade their workforce skills and create advancement opportunities for businesses.

- **Work Incentive Grant**

The Council, in coordination with the Governor's Task Force on Economic Opportunity, has been awarded \$1 million in federal funds to make the employment services in the NH WORKS Job and Information Centers more available for individuals with disabilities and to provide support and counseling for individuals with disabilities in the workforce.

One of the most significant considerations of the Council to date has been the

development of a Job Corps Center in New Hampshire. New Hampshire is one of only two states that does not have a site for this federally funded job training project. Creating a Job Corps program in New Hampshire has been identified as a key strategy to help meet the business community's need for skilled workers and to meet the needs of disadvantaged young people to obtain academic and occupational skills and credentials.

## **Recommendations**

1. Develop a long-term school funding solution that is good for the New Hampshire economy and ensures every child in New Hampshire the best public education possible.
2. Improve parent support and training for early childhood educators to ensure New Hampshire's youngest children get the best foundation possible for learning and school achievement.
3. Work to make public kindergarten available to every five-year-old.
4. Encourage the adoption of meaningful, locally determined, public school goals and indicators that are consistent with NHEIAP standards to ensure greater school accountability and help improve school performance.
5. Enhance K-12 educator recruitment and retention efforts to avert a potential shortage precipitated by the large percentage of New Hampshire K-12 educators currently advancing toward retirement at a rate that outpaces the entry of new educators into the field.
6. Identify ways to increase support for the University and Community Technical College Systems to make higher education more affordable and accessible to New Hampshire residents and increase the likelihood that New Hampshire will retain talent that may otherwise be persuaded to leave the state.
7. Provide opportunities for lifelong learning through continuing education and training programs.
8. Improve K-12 math, science and technology education so that more students will have the option of pursuing technology careers.
3. Continue to make the best use of the flexibility of the federal Workforce Investment Act to create a highly responsive workforce development system that enables New Hampshire's businesses to be the most productive and creates a high standard of living for those they employ.
4. Pursue the development of a New Hampshire Job Corps center.

## **Chapter Five ADDRESSING ECONOMIC DISPARITIES**

Most New Hampshire workers and families have benefited from changes in the state's economy. But some of the state's residents are not doing as well. Poverty, lack of health insurance and accessible health care, limited decent affordable



housing and access to quality child care are problems that must be addressed in order to expand economic opportunity throughout the state. New Hampshire has experienced a widening gap between rich and poor in recent decades. Over the past 20 years, the average income of poor and middle class families with children decreased, while the average income of wealthier families increased. At the same time, there exists a gap in economic performance between the New Hampshire southern tier and the more rural and less-populated counties in the north and west.

The benefits of economic growth in the state have been concentrated among skilled and educated workers, primarily in the state's southern tier.

<b>2000 U.S. HEALTH AND HUMAN SERVICES DEPT. POVERTY GUIDELINES</b>	
Size of Family Unit	Annual Household Income
1	\$ 8,350
2	11,250
3	14,150
4	17,050
5	19,950
6	22,850

Counties in the northern and western parts of the state have higher overall rates of poverty than the southern tier. Employment growth in the state is exceptionally strong in lower-paying service and retail positions, yet the people working these jobs are having an increasingly difficult time finding affordable housing, finding child care or obtaining health insurance. Though New Hampshire has the lowest rate of poverty in the nation (8 percent versus a national average of 13 percent) one child in 10 in the state lives in poverty.

A key to addressing the challenges of economic disparities is sustained economic growth and the creation of a high-quality workforce. New workers need enhanced educational preparation to meet the rising demands of employers. Disadvantaged workers and individuals with disabilities need help finding and retaining jobs, while displaced workers who bear the brunt of economic change need assistance with rapid reemployment and training. In addition, current workers must be able to upgrade their skills so that they can retain their jobs and advance in their chosen fields. Efforts to assist employees must be combined with successful collaborative social service programs to ensure economic opportunity throughout the state.

### **Making Ends Meet**

A recent study conducted by the Josiah Bartlett Foundation for the North Country Council established a "living wage" by calculating basic expenses (food, child care, rent for an apartment and utilities, clothing, health care, transportation, personal expenses, etc.) for seven household types.

### **The Livable Wage For New Hampshire Families**

North Country	Southern NH	NH Average
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Family Unit	Hourly Wage Needed Per Adult		
2 parents & 2 children (both parents working)	\$10.69	\$11.48	\$11.42
2 parents & 2 children(1 parent working)	\$15.28	\$16.86	\$16.74
2 parents & 1 child(both parents working)	\$9.01	\$9.84	\$9.77
2 parents & 1 child (one parent working)	\$13.92	\$15.58	\$15.45
Single person & 2 children	\$17.37	\$19.06	\$18.92
Single person & 1 child	\$14.12	\$15.86	\$15.72
Single person	\$8.04	\$9.09	\$9.01

The report reveals that in New Hampshire, a single mother supporting two children has to earn nearly \$19 per hour to make ends meet or \$39,000 a year. Given that the federal minimum wage is \$5.15 (\$10,700 per year) and that the federal poverty rate for a family of three is set at \$14,000, the discrepancy between numbers and reality is clear. Single parents in particular must have substantial job skills in order to support a family at a modest level.

Source: New Hampshire Basic Needs and a Livable Wage, 6/00. This study defined the North Country as all of Coos County, but only the northern parts of Caroll and Grafton counties.

Poverty and income disparities are complex issues without simple solutions. Just as a strong economy is the best defense against poverty, so too is a strong and effective public education system. Access to employment and training programs, affordable child care and health insurance are also crucial to people who want to improve their family's standard of living.

## Regional Disparities

The counties in the northern and western regions of the state (Coos, Grafton, Carroll, Belknap, Sullivan and Cheshire) are not experiencing the same level of growth as the southern tier (Hillsborough, Rockingham, Strafford, and Merrimack counties). Though jobs are available and unemployment is low in the north and west, few new companies are locating there and workers in the regions complain of inadequate employment opportunities, which are tied largely to the traditional industrial and agricultural economy, rather than the new information age economy. Broadband telecommunications access, the superhighway of the new economy, is not as available or affordable in much of the north and west as it is in the southern part of the state. Many students in the North Country leave the region for college or improved job opportunities after graduating from high school.

Job growth has been markedly different between the northern/western and southern parts of the state, resulting in higher levels of unemployment and lower income levels in the northern and western regions. (Leading industries in these

regions are also very different from those in the southern tier and income levels in New Hampshire vary by region.) For example, the per capita income in Rockingham County in 1997 was roughly \$27,000, compared to \$20,000 in Coos County. In addition, the 1999 annual average unemployment rate in Coos County was 4.1 percent, compared to 2.7 percent for the state as a whole. The less developed areas of the state are experiencing higher high school drop out rates and are actually losing population, partially due to limited employment opportunities.

Given the differing needs of these regions, a different economic approach must be taken in northern and western New Hampshire. While laying the foundation for the expansion of the new economy in less-developed parts of the state, it is important to recognize the value of traditional industries such as manufacturing, forestry, wood products and tourism. These industries are the core of these regions' economies and are likely to remain so for some time. The challenge for these firms may not be to "make" high technology, but to use it to improve their competitiveness.

For industries in the southern tier, the area's rapid growth creates its own difficulties. Not everyone in southern New Hampshire has a high-paying high-tech job. For residents at or below the poverty level, it is increasingly difficult to make ends meet. Growth is altering not just the character of towns and quality of life, it is taking a toll on human resources. Expanding communities means a greater need for social services, housing and workforce training, putting a strain on state and local resources.

## **Gender Inequality**

New Hampshire's labor force is highly dependent on women workers. According to a 2000 report by the Institute for Women's Policy Research, *The Status of Women in New Hampshire*, the state ranks eighth nationally the number of women actively participating in the labor force (66.1 percent in New Hampshire versus 59.8 percent nationally). Women in New Hampshire are also more likely to work in professional and managerial positions than women in the nation.

Despite the high number of working women in the state, New Hampshire women have not benefited from the strong economy as much as men. New Hampshire ranks 34th when comparing women's earnings to men's earnings. A woman in the state today make 70 cents for every dollar a man makes.. New Hampshire also lags far behind the national average in women's business ownership, ranking 40th. In general, women in New Hampshire have a more difficult time than the state's men do in becoming economically self-sufficient.

New Hampshire is working to improve the economic status of all women in the state. To address the existing wage gap, for example, Governor Shaheen recently signed pay equity legislation that enables a worker to bring a pay dispute before the New Hampshire Department of Labor. In addition, innovative programs across the state are giving more women than ever the opportunity to participate in the business community.

One initiative that has increased business opportunities for women in rural parts of the state is the Woman's Rural Entrepreneurial Network (WREN). Created in 1994, the organization set out to provide an alternative job-training program that could

assist low-income women in achieving business ownership in northern New Hampshire. Today, WREN includes over 450 members and 175 woman-led affiliated businesses. WREN has proven to be an effective force in creating and sustaining a variety of enterprises from Main Street retail operations to home-based businesses that include artisans, service providers, health care practitioners and a variety of product producers.

Another factor that complicates women's economic autonomy is the number of women in the labor force who have children under 18 (75 percent compared to 67 percent nationally). The following section describes efforts designed to help working mothers and fathers.

## **Child Care**

One of the biggest challenges facing all working parents in New Hampshire is obtaining safe and affordable child care. Businesses feel the crunch in child care availability when their employees miss work or are forced to leave their jobs because they can not find care for their children. Forty-four percent of children age 16 and younger are in child care during the regular school year, but existing child care centers can only accommodate about half of the New Hampshire children who need care.

Research by Governor Shaheen's Business Commission on Childcare and Early Childhood Education found that the average New Hampshire family spends 18 percent of its annual income on child care, and that New Hampshire businesses lose up to \$24 million annually due to child care related absenteeism. The availability, affordability, and quality of child care clearly impacts the long-term economic health of New Hampshire.

The Business Commission's report recommended a number of ways that business, government and communities can work together to increase the availability and affordability of child care, including:

- creating business partnerships to enhance benefits for child care workers;
- launching a public education campaign to help parents make informed choices in selecting quality care for their children;
- establishing a Child Care Fund to expand funding for child care centers;
- encouraging businesses to partner with child care providers to reduce overhead costs; and
- creating a Business Mentoring Program to help child care centers with management and planning.

Existing child care centers can accommodate only half of the New Hampshire children who need care

Continuing the work of the Business Commission is Business Partners for Early Learning, a 501(c)3 organization made up of business and community leaders. The goal of the organization is to improve the quality, availability and affordability of child care throughout New Hampshire. Drawing on the recommendations of the Business Commission, the Business Partners is currently working to promote family-friendly work place policies, increase working parents' awareness of the importance of quality early care and education, and increase the quality of care

available to young children.

## Health Care

A state's economic health depends upon the health of its citizens. New Hampshire enjoys the highest rate of insurance in the nation with ninety one percent (91%) of its residents insured. However, the high cost of insurance has made it prohibitive for many of New Hampshire's small employers to offer coverage to employees, or for individuals to purchase it individually. Additionally, projected increases in health insurance costs in the future will make it difficult for many employers to maintain their benefit programs. To address this problem, Governor Shaheen has worked with business partners and legislators to create solutions.

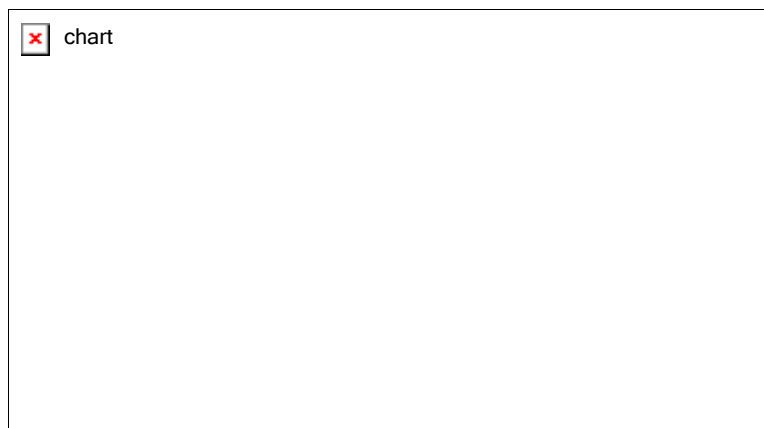
A significant accomplishment was the creation of the Children's Health Insurance Program (CHIP) in January 1999. CHIP expanded options for working families to access free or low-cost health insurance for their uninsured children. A strong focus for the program has been outreach and simplification of the application process. The result is that more than 12,000 children have been enrolled in the program. Governor Shaheen is committed to the goal of enrolling every eligible child over the next three years.

Making insurance more accessible and more affordable will take implementing many creative options. This is why Governor Shaheen authorized legislation to allow small businesses to form purchasing alliances to increase access to affordable choices in health coverage. Because of New Hampshire's commitment to affordable coverage, the state received a federal grant to help gain input from stakeholders like small business leaders and residents from across the state to ensure stabilization of affordable private sector-based coverage as well as coverage options for those currently uninsured.

Protection for health insurance consumers is a high priority for the state. In March 2000 Governor Shaheen signed into law the HMO Accountability Act, legislation she proposed in 1999. The Act provides New Hampshire families with the information and tools to hold their HMO accountable for providing the health care they need. Consumers are now protected through an external grievance procedure to appeal decisions; a requirement that HMOs reveal any financial incentives that may influence decisions on patient care; and through oversight of HMO medical directors by the state Board of Medicine comparable to other physicians.

## Affordable Housing

New Hampshire's strong economy has led to an affordable housing critical situation, making it increasingly difficult for New Hampshire residents to find homes they can afford. Addressing the issue of safe and affordable housing is not only essential to the health and safety of the



state's residents, it is also fundamental to the success of businesses and the economy.

Housing vacancy rates in many parts of the state are at historic lows, and less than 1% in some municipalities, according to recent studies by the New Hampshire Housing Finance Authority. Construction of new units lags far behind job growth and the new units that are being constructed are predominantly higher-priced homes.

Because employment growth in the state is exceptionally strong in the lower paying service and retail positions, workers in this sector are having increasingly difficult times finding affordable housing. Rental rates and purchase prices for existing housing continue to rise dramatically. Since 1995, the median rent for a two-bedroom apartment has risen by over 24 percent in Hillsborough and Rockingham counties and by over 20 percent in Merrimack and Strafford counties. In the North Country, the housing shortage is less severe but the quality of the housing stock is older and in need of re-investment.

There are a number of factors contributing to the shortage of new affordable housing stock in the state. While new units may benefit a regional economy, for example, individual municipalities dislike additional residential construction because the perceived educational costs to the town far surpass the additional tax revenue received.

Almost all of the funds available to subsidize affordable housing development are federal funds administered by state entities. The number of units that can be developed using available funds is simply inadequate when compared to the number of units needed. Most of the subsidized affordable housing developments that do exist are concentrated in New Hampshire's cities. However, this does not meet the need for affordable housing that exists in many more rural communities. As a result of this discrepancy, a number of municipalities that have traditionally supported affordable housing are now hesitant to build additional new units until the equity imbalance with surrounding towns has been addressed. Addressing this imbalance must be a focus of New Hampshire's affordable housing efforts.

To address the state's need for affordable housing, Governor Shaheen formed an interagency Task Force on Housing and Homelessness, directing public and private entities to work together to help make more affordable homes available to New Hampshire families. Because different families have different needs, the group suggested undertaking a number of initiatives to help make more affordable homes available for New Hampshire's families.

The New Hampshire Housing Finance Authority (NHHFA), which is represented on the Task Force, agreed to increase by 50 percent the number of new affordable housing units it will help produce in the next year. In addition, NHHFA has agreed to double funding for its emergency rental assistance program and establish a pilot housing referral network that will help New Hampshire residents find affordable housing.

The State has also doubled, from \$1 million to \$2 million, the guarantee authorization for its security deposit loan program through the Department of Health and Human Services and has secured 500 additional Section 8 vouchers, in

partnership with the Housing Finance Authority, to subsidize the rents of low-income New Hampshire residents.

Affordable housing is an economic development issue and one the state must address with creative solutions to ensure the success of the state's families, businesses and economic future.

## **Recommendations**

1. Encourage development programs with financial incentives such as the Community Development Finance Authority, Community Development Block Grant program and the Business Finance Authority to give priority to projects aimed at economically disadvantaged regions and populations.
2. Increase access to education and job training programs to increase the overall educational attainment and skill level of underemployed and lower income residents.
3. Support efforts that encourage women to own businesses, receive fair pay and become economically self sufficient. Encourage the development of organizations such as the Women's Rural Entrepreneurial Network.
4. Implement the recommendations of the Governor's Business Commission on Childcare and Early Childhood Education.
5. Pursue strategies with federal, state, and local entities to increase availability of affordable housing.
6. Support the Governor's Kids Cabinet goal of enrolling and covering every eligible New Hampshire child in the Children's Health Insurance Program.

## **Chapter Six Integrating Telecommunications**

A strong communications infrastructure is crucial to maintaining New Hampshire's position as a high-tech leader. New Hampshire has the second-highest concentration of high-tech workers in the nation, ranks second nationally in the percentage of households with Internet access and has the 10th largest number of companies doing business on the Internet.

In economic markets, change tends to build slowly and then take off in a blast of growth. The point at which change has accelerated, the tipping point, has arguably been reached on the telecommunications front throughout much of New Hampshire. Just four years ago, consumers outside of the state's southern tier cities were crying out for local Internet access and businesses, no matter where they were located, had few affordable options to meet their high bandwidth needs. That scenario is rapidly changing.

### **Internet Access**

According to the New Hampshire Public Utilities Commission, all New Hampshire consumers have local access to Internet service providers and every New

Hampshire consumer can log on to the Internet without incurring a toll call. The New Hampshire 2000 Survey, conducted in July 2000 by the UNH Survey Center, discovered that 78 percent of New Hampshire residents have a personal computer at home and 80 percent of them (66 percent of the total population) are connected to the Internet at home. Half of all New Hampshire residents are using broadband connections at work, 28 percent dedicated high speed connections and 11 percent cable modems, according to a 1999 report by the Progress and Freedom Foundation.

New Hampshire has a much higher deployment rate of fiberoptic cable than other New England states, as measured per capita, and more than high-tech states such as California, New York and Massachusetts. In excess of 193,000 miles of fiber has been laid throughout the state and many independent telephone companies have incorporated fiber into their structures. Advanced fiber telecommunications networks have been deployed in cities as far north as Hanover and Berlin.

Digital subscriber line (DSL) and cable modem services are now becoming more readily available in southern New Hampshire, making broadband more accessible and affordable to homes and small businesses. Bandwidth deployment is not limited to the southern tier; high speed cable modem service exists throughout the state.

Finally, exciting new technology is coming to consumers in the form of satellite-delivered Internet access. The New Hampshire National Guard is working with ThirdRail, a Nashua-based broadband wireless solutions firm, to establish an advanced broadband Microwave-based Wide Area Network. This network will connect all 18 New Hampshire Guard facilities within the state and support day-to-day communications, including its Emergency Management and distance-learning missions. This network will provide the high bandwidth required to support voice, video and data communications. The project is considered a test model for potential nationwide application to meet the communications and mission needs of the National Guard throughout the country. This project will also allow for collaboration among groups representing education, health care, public safety and economic development from around the state.

### **Aggregation - a Rural Solution**

Geography, demographics and economics combine to make much of rural New Hampshire a less attractive target for telecommunications companies to invest in infrastructure and new services. The return is often perceived to be too small to justify the initial investment. In fact, iAdvance, a Washington-based coalition of Internet and technology businesses, estimates that right now urban Americans are 18 times more likely to be able to access broadband services than rural Americans.

One way to address this issue is to create new markets in rural parts of the state by pooling, or aggregating, consumer demand. Federal, state and local government can play a key role in this effort. Government, including educational and health care entities, constitutes a larger percentage of telecommunications demand in rural communities than in urban communities. With governmental participation and cooperation, rural areas have a better chance of attracting private companies that are willing to develop shared general-purpose broadband networks. This collaboration will stimulate local economies in addition to serving government



agency needs.

The Monadnock Bandwidth Initiative is an example of public-private collaboration between the state and numerous business and nonprofit organizations. Designed to boost economic development in the Monadnock area and increase career opportunities for its residents, the project aims to attract telecommunications providers to the area, while lowering the costs to businesses and nonprofits. The state has also joined with North Country economic development leaders in a similar collaborative project called North Country Connect.

In addition to working with government, communities can work with other potential users, including businesses. These larger customers become "anchor tenants" for new broadband networks, making it possible for small businesses and residential users to have their needs met. To achieve these partnerships, community needs assessment and demand aggregation surveys should be conducted. An inventory of the potential technology providers should be available to community groups interested in aggregation.

Recognizing the substantial impact aggregation can have in the state, the New Hampshire Legislature recently approved funding for a telecommunications development initiative within the Department of Resources and Economic Development. The Department will step up its efforts to market the state to telecommunications companies and work with local communities to aggregate demand for telecommunications services - including using state government's significant purchasing power. In addition, the Department is researching the creation of a Telecommunications Answer Center on the Internet that will help match small businesses with telecom providers and allow businesses to easily compare the offerings of various telecom companies.

The telecommunications legislation also creates a telecommunications advisory panel, comprised of small and large business customers, residential users, local government officials, and regional economic development groups to advise the Department on consumer issues.

Urban Americans are 18 times more likely to be able to access broadband services than rural Americans. --iAdvance, 1999

## **e-NH Government**

Governor Shaheen's Information Technology Strategic Planning Commission, a group of senior executives appointed from the public and private sectors, is working to develop a new strategy for state government's use of information technology.

New Hampshire's completion of a comprehensive information technology plan will benefit businesses and will also enable state and local government to streamline operations, improve service delivery and reduce costs. Because available technology holds the promise of improved services, lower costs and better access to state government statewide, it will be important for the state to review and implement recommendations of the Commission. A report from the Commission is due early this year.

## **Recommendations**

1. Encourage public/private consumer aggregation partnerships to attract advanced telecommunication infrastructure investment and reasonably priced access in the northern, western and other rural parts of the state.
2. Promote the state's substantial existing telecommunications infrastructure to existing and relocating companies..
3. Continue to use economic development funding to stimulate private investment in broadband infrastructure in rural areas.
4. Implement the recommendations of the Governor's Information Technology Strategic Planning Commission.

## **Chapter Seven**

### **INVESTING IN ESSENTIAL INFRASTRUCTURE**

Maintaining and improving New Hampshire's infrastructure is fundamental to the state's continued economic prosperity. A solid infrastructure enables residents to go to and from work, allows businesses to move goods and services to markets throughout the world and supports the travel and tourism industry.

The Corporation for Enterprise Development prepares an annual report ranking each state according to criteria contributing to economic growth . While New Hampshire ranks very well in terms of overall economic performance and business vitality, the state is rated average in infrastructure capacity. The report notes sizeable deficiencies in the areas of bridges, urban mass transit, telecommunications, and affordable housing. It rates the state highway system as average.

Essential infrastructure systems, including drinking water and waste disposal capacity, are often taken for granted - until they can't meet demand. Substantial planning and lead time is needed to maintain an infrastructure that can accommodate growth while maintaining the state's quality of life and place.

### **Intermodal Transportation**

Transportation policy in New Hampshire is planned and implemented by the Department of Transportation and the State Legislature, along with nine regional planning commissions, the New Hampshire Port Authority, the Manchester Airport Authority, the Pease Development Authority and a network of smaller municipal airports and public transit systems.

While New Hampshire's existing transportation system has served the state well, growth and development over the past several years is putting strain on existing systems. Historically, the state's transportation system has been built on the basis of individual modes of transit, each with its own strengths and weaknesses.

A new concept of transportation planning emphasizes an interconnected structure of vehicle, rail, air, boat, bicycle and pedestrian modes of travel to meet the state's future transportation needs. Known as intermodal transportation, this system builds on the strengths of individual transportation modes and increases the connection and fluidity of the systems. For example, the airport at the Pease Development

Authority is co-located with a Park and Ride commuter lot and a bus depot. This provides multiple and connected transportation options for travelers. In addition to increasing convenience, such planning reduces adverse impacts on the environment through the use of carpooling and public transportation.

## Roads and Bridges

The state highway system consists of 794 miles of major routes, including 225 miles of interstate highway. In any given year, 25 percent of the state's major roads require major work, 45 percent require minimal work and the remainder no work. New highway construction that is forecast for the future includes the Nashua Circumferential Highway, the Manchester Airport Access Road, and the widening of I-93.

The state has pressing needs in the area of highway improvements and bridge repairs. The federal government has provided considerable funding, which requires a state match, through TEA-21 legislation. The state needs to take maximum advantage of this funding and continue to provide matching funds.

In the area of road planning, effective corridor management can help preserve and extend the life of existing highway capacity, and can also help preserve scenic vistas, an important element of the state's quality of place. The State Department of Transportation (DOT), in cooperation with the Office of State Planning, has initiated efforts to work with local communities to prepare corridor management plans. The Route 16 Corridor Protection Study serves as a model for future endeavors of this type.

New Hampshire also has a state aid reconstruction program that provides a 2/3 state funding match to 1/3 local funds for roadway projects. This amounts to approximately \$2.5 million each year being invested under this partnership program. Block grant aid is sent to municipalities from the state highway fund according to formulas set out in law. In fiscal year 2000, approximately \$23.5 million was sent from the state highway fund to New Hampshire's municipalities.

The state is also working to improve its bridges. In 1999 there were 578 "red-listed" bridges in the state - bridges that are in very poor condition, a majority of which are municipal. Through the municipal bridge aid program, the state works with local municipalities to fund bridge improvement. The state and federal government provide 80 percent of project costs, resulting in a \$13.5 million dollar annual investment in municipal bridges. This funding has been largely responsible for the removal of 42 bridges from the municipal red list inventory over the last two years, while 35 were added to the inventory over the same time. The municipal bridge aid program will continue to make steady progress to reduce the municipal red list bridge numbers in the future. Currently, there are 40 bridges programmed for work and 105 potential projects are awaiting municipal action to raise funds so the work can begin.

## Air Transportation

Investments in aviation-related infrastructure and facilities have transformed the Granite State into



Northern New England's commercial passenger, charter, general aviation and air cargo leader. Manchester Airport passenger traffic increased 260 percent from 1990 to 1999, and the facility is forecasted having 3.2 million passengers for the year 2000.

Both the Manchester Airport and Pease International Tradeport have shown considerable growth in cargo transportation in recent years and both airports have significant long-term growth potential. The Lebanon Airport, serving the Upper Valley, offers daily passenger service to Philadelphia and New York. Nashua's Boire Field serves smaller planes and corporate jets.

The New Hampshire Department of Transportation is currently working on creating a Statewide Aviation Plan. The first phase of the project, now underway, is an economic impact analysis of airports throughout the state. The second phase will focus on the overall role of aviation in New Hampshire, the potential role for each airport and the establishment of an environment of cooperative competition among airports.

### **Rail and Public Transit**

Aside from the Amtrak passenger train line from Claremont to Washington D.C., New York and Vermont, it has been 35 years since commuter rail was actively serving New Hampshire residents. The New Hampshire Department of Transportation's current priority is examining the extension of the Massachusetts Bay Transit Authority commuter rail line from Lowell to Nashua, and then possibly Manchester. This proposed rail line would help reduce highway congestion in New Hampshire's most populated travel corridor. The Department of Transportation has also been working on a Portland-to-Boston rail connection, scheduled to begin operation in April 2001. This rail line is expected to relieve congestion on I-95. The train will make three stops in New Hampshire, in Exeter, Durham and Dover.

Another state priority for rail is the acquisition and preservation of abandoned rail corridors. In the interim these corridors are being used for recreational purposes such as biking and snowmobiling. In the long term they may once again become viable rail lines.

Public and private transit service plays a quiet but important role in the state's transportation system. Most public transit companies are not economically self sufficient, with less than one-third of their funding coming from rider fares. In 1998, nine public transit services transported more than 1.4 million passengers. Private services carrying people to and from Massachusetts have also increased.

### **Port of New Hampshire**

The New Hampshire Port Authority promotes waterway management, public safety and economic development. Through the use of part-time seasonal harbor masters, the Port Authority regulates and manages moorings in New Hampshire tidal waters and coordinates commercial and recreational activities in Portsmouth and Hampton harbors and the Piscataqua River/Great Bay estuary.

The Authority also owns and operates the Market Street marine terminal, which provides an important public access, deep water bulk and break-bulk terminal, and

is a foreign trade zone. One of 10 marine terminals on the Piscataqua River, the Port Authority terminal in Portsmouth supports commerce and economic activity and provides an alternative for the shipment and handling of specialized cargoes. The Market Street marine terminal is the state's only deepwater docking facility, and as such it is an irreplaceable facet of the state's economic development profile.

The New Hampshire Port Authority has just completed a five year master plan process for its terminal facility. This plan identifies the need to maintain a public terminal, which supports hundreds of current and future manufacturing jobs, and includes recommendations for expanding and improving the services provided by the Port.

## **Water Supply and Wastewater Management**

New Hampshire is generally perceived to be a water-rich state, and for the most part this is true. However, population and business growth have resulted in competing demands on this critical resource. In addition to an adequate drinking water supply, competing demands include wastewater assimilation, natural resource protection, agriculture, industry and snowmaking. Managing these pressures on water resources is an important challenge, because maintaining adequate water supply is crucial to sustaining growth into the future.

Water supply infrastructure includes surface water and groundwater sources; distribution systems, including pipes and storage tanks; water treatment plants; and measures to protect watershed lands, including buffers, to ensure water quality. New Hampshire has more than 2,000 public drinking water systems, 700 of which are community water systems with the largest 100 serving municipalities. These 2,000 systems provide water to about 65 percent of our population. The remainder of the population is served by private wells.

Over the last 30 years, New Hampshire has made significant progress in improving drinking water quality. More than 70 municipal public water supplies have completed major upgrades, most during the 1980s and 1990s, to comply with federal Safe Drinking Water Act requirements. These projects were funded 20 percent to 30 percent by state aid grants, with the remaining 70 percent to 80 percent covered by low-interest loans administered by the New Hampshire Department of Environmental Services.

Within the next five years, many small public water supplies will need upgrading, both to meet stringent new drinking water standards for contaminants like MtBE, radon and arsenic, and to continue expansion for future growth. In recent years, water supplies in fast-growing southeastern New Hampshire have experienced system-specific source capacity problems during dry periods that have dictated water use restrictions. These problems in part result from the growth that this region has sustained.

Although municipalities in most regions of the state currently have adequate water supplies, it is expected that water shortages will occur more frequently unless action is taken to protect the quality and quantity of existing water supplies throughout the state.

## **Source Water Protection**

In response to the concern over drinking water availability, New Hampshire has taken several important steps to protect public water supply sources. Over the last 10 years, a number of community public water supplies have worked with the New Hampshire Department of Environmental Services to delineate source water protection areas and inspect potential contamination sources within those areas to ensure that best management practices are being employed to prevent contamination.

A 1998 report by the Society for the Protection of New Hampshire Forests, *Our Drinking Water Supply Lands in New Hampshire - How Safe Are They?* found that only 11 percent of the critical lands supplying existing sources of public drinking water are permanently conserved and 39 percent of community systems do not even control the sanitary radius around their wells as required by state law.

In response to this problem, Governor Shaheen and the New Hampshire Legislature established a new matching grant program to help municipalities acquire land that protects drinking water supplies. The state now contributes 25 percent funding toward the purchase of these lands. The Society for Protection of New Hampshire Forests has estimated that state and municipal governments will have to invest approximately \$75 million over 10 years to meet the need to protect these critical lands.

Only 11 percent of the land supplying existing sources of public drinking water are permanently conserved.

### **Wastewater Infrastructure Needs**

Over the past 20 years, three-quarters of a billion dollars in state and federal funding has been provided to New Hampshire communities to build or upgrade wastewater treatment plants and sewer lines. Despite this investment, the improvement of New Hampshire's wastewater infrastructure remains a work in progress.

Treatment plants continue to require upgrades to meet federal standards that are becoming more stringent over time. Areas with known public health or water quality problems, such as neighborhoods with failed septic systems, need sewer service developed for them. Sewer systems require rehabilitation to eliminate combined sewer and sanitary sewer overflows which cause raw sewage to be discharged directly into rivers during periods of heavy rainfall. New Hampshire municipalities have estimated that \$742 million is needed to make wastewater infrastructure improvements in the next 20 years. Traditionally, the federal government has provided significant funding to meet these needs, which include:

- \$101 million to upgrade wastewater treatment plants
- \$202 million for new collection and interceptor sewers to solve existing problems such as neighborhoods with failed septic systems
- \$439 million for rehabilitation of existing sewers to address problems associated with storm water discharge to wastewater systems, including projects to eliminate combined sewer overflows and groundwater infiltration into leaky sewers

### **Solid Waste Management**

New Hampshire has made significant progress toward correcting the environmental problems attributable to past solid waste disposal activities.

As of March 2000, the State of New Hampshire has awarded 87 grants worth nearly \$ 20 million for the closure/capping of municipally owned unlined landfills. In addition, municipalities have been provided with more than \$60 million in loans from the State Revolving Loan Fund since 1995 for unlined landfill closures. Most closed unlined landfills have been replaced with transfer stations/recycling centers from which recyclables are diverted for re-use and the remaining solid waste is transported to regional disposal facilities. New Hampshire expects to have its remaining unlined municipal solid waste landfills capped by the year 2010, completing a 20-year initiative to close these old facilities.

Significant progress has also been made in recycling, but more needs to be done to meet the state's statutory goal established in RSA 149-M. In 1998, the recycling/diversion rate was 26 percent, well short of the state's goal of 40 percent. The rate is consistent, however, with the national average recycling rate of 27 percent.

Recycling increased dramatically in New Hampshire and across the country during the 1990s. In 1988, only 78 of New Hampshire's 234 municipalities offered recycling. By 1999, there were 227 communities with access to recycling, open to nearly 99 percent of the state's population and contributing over 95,000 tons of recyclable material annually. The commercial sector contributes an additional 164,000 tons of recyclable material per year.

According to recent estimates of municipal recycling, the growth rate of recycling has not increased since the early 1990s. This is due to increased disposal encouraged by economic prosperity, lightweighting (the conversion of glass products to lower weight plastics) and the tendency of the state to rely on less intrusive, voluntary mechanisms to encourage recycling. Municipalities with high recycling rates tend to be those that have mandated recycling through local ordinances.

Statewide recycling efforts have mitigated the impact of growth and solid waste importation into the state. Until recently there was concern that the existing disposal capacity within the state would fall short within a decade. Such concern was eased when a voluntary agreement to reduce solid waste importation by 45 percent was reached by DES and the state's large waste disposal companies.

In recognition of the ongoing challenges posed by solid waste management issues, through Executive Order 99-6, Governor Shaheen established a task force in September 1999 to analyze solid waste management in New Hampshire. The Task Force is focusing on the increased costs of solid waste disposal, the need to



improve recycling rates and strategies to ensure adequate solid waste capacity. Its recommendations are expected in early 2001.

## **Air Quality**

Clean, healthy air contributes to the overall quality of life in New Hampshire, and to the state's appeal as a tourist destination. New Hampshire has been working to improve air quality over the last decade, but many challenges still lie ahead. The state continues to be adversely affected by air pollutants blown in from states to its west and south. This results in higher pollution concentrations in New Hampshire, making it difficult for the state to meet federal regulatory requirements.

In addition to statewide efforts, the U.S. Environmental Protection Agency has recently adopted more stringent standards for ozone, fine particulate matter (airborne soot) and regional haze. Meeting these new standards will require a significant effort on the part of the state to reduce its own emissions, in addition to advocating for reductions of air pollution originating in other states.

A key component to the state's environmental protection strategy is the New Hampshire Department of Environmental Services' Pollution Prevention Program. Pollution prevention means the use of materials, processes, or practices that reduce or eliminate the creation of pollutants, or minimize their release into the environment. The benefits of pollution prevention, in addition to reducing pollution and environmental contamination, include reduced operating costs for businesses, improved efficiency, lower waste management and disposal costs, and healthier workplaces. As an environmental protection strategy, pollution prevention should continue to be an important part of DES' activities.

## **Energy Conservation**

Shortly after taking office, Governor Shaheen updated and streamlined the Governor's Office of Energy and Community Services (ECS) to increase its responsiveness to the energy needs of the state. This office implements the State Energy Program. In collaboration with private and public entities, the ECS Program promotes a sustainable, environmentally sound and least-cost energy future for the state. The Program also encourages conservation and renewable resource use.

The holistic approach the State Energy Program takes toward energy use and conservation is making a positive difference throughout New Hampshire. Specific ongoing goals of the program are:

- To substantially increase energy and resource efficiency and reduce energy costs in state buildings
- To establish ECS as a source of technical energy expertise and resources for the business, industry and commercial sectors, and for the state in the event of an energy emergency
- To establish local community partnerships that improve the energy efficiency of new and existing buildings and generate interest in local energy planning
- To assist schools in becoming more energy efficient and to educate students about renewable energy
- To promote public awareness of and support for renewable energy and clean fuels in New Hampshire



- Encourage energy conservation and efficiency throughout New Hampshire to reduce the need for power generation, cut pollution and save consumers money.

## **Recommendations**

1. Prepare and regularly review integrated statewide aviation, rail, transit and highway plans to promote the development of a seamless multi-modal transportation system that accommodates the needs of citizens, businesses and travelers. For example, the state should:
  - a. Foster cooperation, rather than competition, among airports in New Hampshire to maximize their potential and assure their success.
  - b. Expand the availability of intermodal access points such as Park-and-Rides that connect to rail and/or bus systems or other public transit and incorporate bike paths and pedestrian walkways.
2. Develop an integrated water resources management strategy. This strategy must address current and projected demands on surface and groundwater resources, drinking water and wastewater systems, and the protection of water supply lands around the state.
3. Pursue the recommendations of the Governor's Task Force on Solid Waste Management.
4. Promote the concept of pollution prevention as a way to reduce pollution while reducing and minimizing business costs.
5. Continue state funding for water and sewer improvements and closure of solid waste facilities. Seek additional federal grant funding to help New Hampshire cities and towns meet their needs.
6. Encourage the ongoing efforts of the Governor's Office of Energy and Community Service State Energy Plan.

## **CONCLUSION**

New Hampshire has experienced unprecedented economic growth over the last decade. Once a state built on the industries of agriculture and manufacturing, the line between the state's new and old economies is blurring. New Hampshire's public and private sectors have worked well together to maximize the economic strength of the state.

To build upon the state's success in the coming years, New Hampshire must continue its collaborative approach to economic growth and development. Using the resources of government, businesses and communities, the state must plan now to maintain its strong economic position, retain its excellent quality of life and place, and expand economic opportunity to all New Hampshire residents.

The recommendations of this report can serve as a guide to government, business

and community leaders as they work to expand economic opportunity, protect New Hampshire's unique quality of life, and continue New Hampshire's economic success. The state should consider assembling a working group of business, industry, government, academic and nonprofit leaders to oversee the implementation of the recommendations. The creation of a New Economy Council, for example, could review and provide ongoing assessment of New Hampshire's competitive position in the new economy and coordinate efforts among various public and private entities regarding economic development planning.

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[Governor Jeanne Shaheen](#)