

CHAPTER 2

ECONOMIC DEVELOPMENT

The economic well-being of Town residents is an important determinant of the quality of life in Northfield. This economic well-being is directly tied to job opportunities and the Town's economic base. In recent years, the Town has had limited employment options and potential for economic expansion. Close to three-quarters of Northfield residents today commute outside of Town for employment, and the Town's economic base relies heavily on a single employer, Northfield Mount Hermon School, which has over 500 employees. Agriculture in Northfield, historically, a farming community, now comprises only a small part of the local economy and less than 2 percent of the Town's jobs. However, agriculture today contributes to Northfield's character and qualities that make Northfield special, providing scenic views and open space, and supporting the tourism sector. There is a need to balance future economic development, with the preservation of Northfield's open space and scenic resources.

In Northfield's 1977 Master Plan, *A Pathway to Tomorrow*, many of the Master Plan's primary goals focused on economic development. One key goal was to "promote economic activities that provide jobs for Northfield people, a greater choice of goods and services to residents, and greater potential for development of Northfield business enterprises." Another was to "encourage development in areas that will not cause excessive municipal cost or result in undue damage to Northfield resources." These goals are still at the forefront of the Town's thinking and planning for the future.

Today, there continues to be a strong interest in establishing more businesses and industry in Northfield to assist the local tax base. By increasing economic activities in Town, new employment options may be created which provide residents access to new potential part-time and full-time jobs. A full-time job paying a living wage with benefits is usually the most sought after type of employment. Often employers that offer these full-time positions indirectly support a mix of retail and service industries. The end result can be a dynamic mix of local businesses providing products and services for residents. In addition, as the value of commercial property increases, the relative amount of a community's tax levy supported by residential property valuations can potentially be reduced, and as it is, homeowners' local property taxes can be stabilized. Cost of Community Service analyses conducted by the American Farmland Trust and the Southern New England Forest Consortium for New England communities have shown that, unlike residential development, commercial and industrial uses generally have a positive net fiscal impact and generate more in property taxes than they cost communities in terms of services.

Although there is support for business expansion in Northfield, there is also concern about the potential impacts of business growth on the Town's rural and historic character. In 1993, the Town conducted neighborhood meetings and a community survey to follow-up on the 1977 Master Plan. At the meetings and in the survey, residents saw more small businesses as

the best way to help the local economy and stabilize the tax base while also preserving the community's character.

A main focus in Northfield's Community Development Planning process has been identifying potentially suitable locations within the Town for future development, particularly business development. Having sufficient land for business development was a primary issue expressed in the 1977 Master Plan, and it continues to be a concern today. The analysis for the Community Development Plan included a large GIS component and the mapping of potentially suitable development locations based upon infrastructure and environmental constraints. The planning process also included a discussion what type of future development may be most appropriate for Northfield, and where such development could potentially be sited.

The Economic Development chapter of the Community Development Plan contains the following sections:

- Goals and objectives for future economic development in Northfield;
- A summary of Northfield's current economic base and labor pool characteristics;
- An assessment of available infrastructure in Northfield, including water, sewer, transportation, and telecommunications, to support commercial and light industrial growth;
- A review of the current zoning for commercial and industrial development;
- An analysis of which geographic areas in Northfield may potentially be the most suitable for new commercial or light industrial development, based on the current infrastructure, environmental constraints, and other considerations decided upon during the planning process;
- Recommendations for potential zoning revisions which could support and facilitate Northfield's goals and for economic development, and
- A discussion of the strategies that the community intends to employ help attract and retain businesses which provide jobs for people with low, moderate, and middle incomes.

Economic Development Goals and Objectives

The goals and objectives for economic development have been established with input from the Community Development Committee and Town staff, and build upon the goals expressed in the 1977 Northfield Master Plan and the 1993 Master Plan update.

Goals:

- To diversify the types of businesses in Northfield, and promote a stable tax base.
- To encourage economic development that is balanced with the preservation of natural, historic, and scenic resources and the community's character.

Objectives:

- Through zoning, encourage the development of local businesses that can be integrated into the community without adverse impacts.
- Promote small commercial uses and home businesses that could provide new employment opportunities and contribute to tax revenues.
- Support tourism based on the Northfield's recreational, scenic, and historic assets.
- Encourage the development of infrastructure for local businesses, including water, sewer, and telecommunications, to areas identified by the Town as appropriate for economic growth.
- Investigate the demand for, and the feasibility of, developing a new office park or an industrial park for commercial and light industrial businesses. Suggest potential locations for such development.

Current Economic Base and Labor Pool Characteristics

This section opens by reviewing demographic data related to employment, and by examining the characteristics of the local labor force. The section also discusses Northfield's current economic base, and regional labor force trends. The purpose of this section is to provide the Town of Northfield with information which can help it develop strategies for future economic development in the community.

Demographics

A review of the general demographic profile of Northfield residents is helpful for understanding the size and characteristics of the existing and potential labor pools. This

section discusses population trends, education levels, and incomes in Northfield, Franklin County, and Massachusetts as a whole.

Population

In 2000, the U.S. Census Bureau reported Northfield to have a population of 2,951. As shown in Table 2-1, between 1980 and 2000, the Town's total population grew by 24 percent, or 586 people. Over the twenty-year period, Northfield's rate of growth was much greater than that for the County or State, which each grew by approximately 11 percent.

Table 2-1: Population for Northfield, 1980-2000, Comparison to the County and State

Area	Total Population			% Change	% Change	% Change
	1980	1990	2000	1980-1990	1990-2000	1980-2000
Northfield	2,386	2,838	2,951	+18.9%	+4.0%	+23.7%
Franklin County	64,317	70,092	71,535	+9.0%	+2.1%	+11.2%
Massachusetts	5,737,037	6,016,425	6,349,097	+4.9%	+5.5%	+10.7%

Source: U.S. Census Bureau, *Census of Population & Housing, 1980, 1990, and 2000.*

Age Distribution

Age distribution data are used to predict how the labor force may change over time. Table 2-2 gives the population of different age groups for Northfield and Franklin County in 1990 and 2000. The table's information comes from the last two decennial U.S. Censuses. Over the decade, Northfield and Franklin County experienced similar population changes in most age groups, though the magnitudes of these changes sometimes varied.

Traditional workforce age groups are 25-44 year olds and 45-64 year olds. In Northfield and in Franklin County, the size of the age 45-64 cohort increased dramatically during the last decade, growing by 40 percent in Northfield and 51 percent in Franklin County. During the same period, the number of 25-44 year olds declined in both the Town (-14% change) and the County (-15% change). These changes were largely driven by the aging of the baby boomer generation (born 1946-1964) who began turning 45 in 1991.

Table 2-2: Population Change by Age Group, 1990 and 2000

Age Group	Northfield			Franklin County		
	1990	2000	% Change	1990	2000	% Change
Under Age 5	194	166	-14.4%	5,150	3,725	-27.7%
Ages 5-19	614	693	+12.9%	13,888	14,777	+6.4%
Ages 20-24	135	102	-24.4%	4,620	3,897	-15.6%
Ages 25-44	940	813	-13.5%	24,015	20,406	-15.0%
Ages 45-64	558	780	+39.8%	12,289	18,550	+50.9%
Ages 65-74	220	207	-5.9%	5,701	4,781	-16.1%
Ages 75 and over	177	190	+7.3%	4,429	5,399	+21.9%
Total	2,838	2,951	4.0%	70,092	71,535	+2.0%

Sources: U.S. Census Bureau, *Census of Population and Housing, 1990 and 2000.*

Individuals age 65 and over have traditionally not been active in the work force. Workers generally retire at age 60 or 65. However, it is likely that this older age group's participation in the work force will increase in coming decades. Polls of baby boomers have indicated that many intend to work, at least part-time, after reaching the traditional retirement age of 60 or 65. Many seniors are also postponing their retirements and staying in the work force longer for career or financial reasons. Often, members of these old age groups can be a valuable resource for experienced, part-time workers.

Population Projections

The Franklin Regional Council of Governments recently developed population projections out to 2025, as part of its 2003 Regional Transportation Plan. These projections are based on historic population trends for the 1970 to 2000 period (U.S. Census). For Northfield, it was projected that the Town's population would increase at the same annual average rate as it did between 1970 and 2000: 0.4 percent per year. Northfield also grew at this rate between 1990 and 2000. Between 2000 and 2025, Northfield is expected to grow less than Franklin County as a whole. It is projected that the Town's population will grow by approximately 10 percent by 2025, compared to the County's forecasted growth of 20 percent. Franklin County communities expected to see the greatest levels of growth over the next quarter-century are those in southern part of the County, such as Sunderland, Leverett, and New Salem, which have the closest access to employment opportunities in Hampshire County.

FRCOG's population projections include forecasts by age group. These projections are shown in Table 2-3. In Northfield, and in the Franklin County overall, the greatest growth is expected for the 65 years and over population. This again suggests that older workers beyond the traditional age of retirement will likely play an increasing role in the region's economy in coming decades and will offer an important source of labor.

Table 2-3: Projected Population Changes, 2000 to 2025

Age Group	Northfield		Franklin County	
	2025 Population	% Change from 2000	2025 Population*	% Change from 2000
Under 5 Years	180	8.4%	4,373	17.4%
5-19 Years	727	4.9%	16,822	13.8%
20-24 Years	126	23.5%	5,144	32.0%
25-64 Years	1,641	2.9%	44,065	13.1%
65 Years & Over	587	47.8%	15,753	54.7%
Total	3,261	10.5%	86,157	20.4%

Source: FRCOG population projections, developed as part of the 2003 Regional Transportation Plan, 2003. These projections are preliminary and will be finalized during the summer of 2003.

Education and Skills

The educational attainment level of a population is important for a number of reasons. First, from a business owner's perspective, educational attainment data provide insight into the ability of a community to provide labor and expertise for different types of businesses. Second, it can provide information regarding the potential customer base of different

prospective business locations. Educational attainment can be a critical element in a company's decision to locate to or remain in a community.

Data on educational attainment is collected for people ages 25 and higher, by the U.S. Census Bureau. According to the 2000 U.S. Census data, Northfield has a significantly higher proportion of residents with a college or graduate/professional degree, than Franklin County or Massachusetts overall. As shown in Table 2-4, Northfield has a higher proportion of residents with a graduate degree than the County or State. Northfield also has a lower percentage of residents without a high-school diploma. Ninety-three (93) percent of Northfield's residents have a high-school diploma, compared to 88 percent of County residents and 85 percent of State residents overall.

Table 2-4: Highest Educational Attainment, 2000

Area	Population Age 25 & over	% High School Graduate (Total)	Highest Level of Educational Attainment				
			% High School Graduate	% Some College	% Associate Degree	% Bachelor's Degree	% Graduate Degree
Northfield	1,992	93.3%	30.7%	21.1%	10.7%	15.8%	15.0%
Franklin County	49,121	88.0%	31.2%	19.0%	8.6%	16.2%	12.9%
Massachusetts	4,273,275	84.8%	27.3%	17.1%	7.2%	19.5%	13.7%

Source: U.S. Census Bureau, Census of Population & Housing, 2000.

The Massachusetts Department of Education releases selected statistical data regarding public schools in the State. These data include drop-out rates and graduates' plans after graduation. Public high school students in Northfield attend the Pioneer Valley Regional School District, which also serves Bernardston, Leyden, and Warwick. Information on the Pioneer Valley Regional School District and other districts in Franklin County is provided in Table 2-5. The Pioneer Valley Regional School District's drop-out rate falls in the middle range compared to the other districts. Plans of the district's graduates are also comparable to other districts. Approximately half (48%) of Pioneer Valley Regional High School graduates plan to attend a four-year college, 30 percent intend to attend a two-year college, and 19 percent plan to enter the workforce.

Table 2-5: Selected School District Data, 2001

School District (Location)	Number of Students in District	Drop-out Rate	Graduates Planning to go to 4- yr College	Average Annual Per Pupil Expenditure	Students per Computer	Computers Connected to the Internet
Pioneer Valley Regional School District (Northfield)	1,097	4.6%	48.0%	\$7,370	5.4	100.0%
Frontier Regional School District (Deerfield)	661	1.7%	55.1%	\$8,022	1.9	100.0%
Gill-Montague Regional School District (Turners Falls)	1,540	5.7%	33.3%	\$7,412	6	100.0%
Greenfield Public School (Greenfield)	2,433	4.1%	48.2%	\$6,817	10.4	80.0%
Ralph C. Mahar Regional School District (Orange)	764	5.9%	42.3%	\$8,203	6.2	94.0%
Massachusetts Average	-	3.5%	53.6%	\$7,149	5.7	77.0%

Source: Massachusetts Department of Education, 2001 School District Profiles, released October 2002.

Income

There are three primary statistics from the decennial U.S. Census that describe residents' incomes and reflect how well they are doing in the current economy. A review of these statistics shows that Northfield residents earn higher incomes than residents in Franklin County overall (*see Table 2-6*).

One income measure is per capita income, which is determined by dividing the total amount of income earned in a town by its number of residents, including residents who do not have jobs, such as children. Northfield's per capita income, as reported in the 2000 Census, is \$21,517, which is higher than that for Franklin County (\$20,672), and lower than that for Massachusetts overall (\$25,952). Incomes reported in the 2000 Census are for 1999.

Table 2-6: Selected Income and Poverty Statistics, 1999

Area	Per Capita Income 1999	Median Household Income 1999	Percent of Population Below Poverty Level* 1999
Northfield	\$21,517	\$49,141	5.0%
Franklin County	\$20,672	\$40,768	9.4%
Massachusetts	\$25,952	\$50,502	9.3%

* Poverty percentages are based on the people with household income data. Over 99% of Northfield population has this data available.

Source: U.S. Census Bureau, Census of Population & Housing, 2000.

Another income measure is median household income. Median household income figures describe the middle income level for a population, with half the households earning more than the median income, and half the households earning less. Because median income figures are relatively unaffected by atypical very wealthy or very poor households, they are considered a useful way for measuring the income in a community. The median household income for Northfield, as of 1999, is \$49,141, which is higher than for Franklin County (\$40,768) and lower than that for the State (\$50,502).

Poverty level data provide another way to describe a community's income. Poverty status is established using federal income thresholds that vary according to family size and composition. Individuals are then determined to have income levels above or below these thresholds. According to the 2000 Census, 5.0 percent of Northfield residents (148 residents) live below the poverty level. This is significantly less than the percentage of residents living in poverty in Franklin County (9.4%) and Massachusetts (9.3%) as a whole. According to the 2000 Census, in none of the Northfield families living in poverty in 2000, did the head of household (householder) work full-time the previous year. Thirty families in Northfield live below the poverty level. In 19 of these families, the head of household (householder) did not work the previous year, and in the other 11, the householder worked part-time. Similarly, of the 67 individuals age 15 and over who were in non-family households (living people living by themselves, or with unrelated people), 51 did not work and 16 worked only part-time.

Labor Force Characteristics

This section discusses and characterizes Northfield's local labor force. It also provides comparative information for Franklin County and Massachusetts. Data for this section come from two different sources, one Federal and one State. The Federal source is the decennial U.S. Census. The 2000 Census surveys offer a snapshot in time of the employment status and characteristics of the labor force. These data are detailed and may be compared to previous decennial census surveys. However, data available on an annual basis may be of greater value for identifying current trends. State data from the Massachusetts Division of Employment and Training (DET) are available on an annual basis for employment by sector and for unemployment rates. This information is useful for determine the employment patterns occurring in the Town of Northfield.

Labor Force Participation and Employment

The labor force is defined as the pool of residents who are age 16 and over, and who are actively employed or seeking employment. Northfield's labor force include residents who work in Northfield and residents who work in other communities, as well as residents looking for work. Students, retirees, stay-at-home parents, and others who are not employed or actively looking for work are excluded from the labor force.

When comparing 1990 and 2000 labor force characteristics, it is important to consider the very different economic climates of those years. The recession of the early 1990s led to high unemployment rates for many regions across the country. By the latter part of the decade, many areas began to experience economic recovery and increases in employment levels. In 1990, Northfield's labor force consisted of 1,552 people. By 2000, it had grown to 1,690 people, an increase of 8.9 percent (*Table 2-7*). As *Table 2-7* indicates, between 1990 and 2000, Northfield's labor force and number of employed workers experienced greater percentage increases than were seen at the County and State levels.

Table 2-7: Selected Labor Force Characteristics, 1990 and 2000

Geography	Population 16 Years and Over	Labor Force (Civilian)	Total Employed	Unemployment rate	Participation Rate	Female Participation Rate
Northfield						
1990	2,153	1,552	1,495	3.7%	72.1%	62.8%
2000	2,265	1,690	1,659	1.8%	74.6%	71.5%
% Change/Difference*	+5.2%	+8.9%	+11.0%	-1.9%	+2.5%	+8.7%
Franklin County						
1990	54,597	37,723	35,245	6.6%	69.1%	62.1%
2000	56,950	39,357	37,577	4.5%	69.1%	64.4%
% Change/Difference*	+4.3%	+4.3%	+6.6%	-2.1%	0.0%	+2.3%
Massachusetts						
1990	4,809,772	3,245,950	3,027,950	7.2%	67.5%	60.3%
2000	5,010,241	3,312,039	3,161,087	4.8%	66.1%	60.4%
% Change/Difference*	+4.2%	+2.0%	+4.4%	-2.4%	-1.4%	+0.1%

*The percent change from 1990 to 2000 is shown for the population age 16 and over, the labor force and total employed. The difference in the percentage rates from 1990 to 2000 is indicated for the unemployment rate, participation rate and female participation rate.

Source: U.S. Census Bureau, *Census of Population & Housing, 1990 and 2000*.

A major factor which contributed to this trend was the growth in Northfield's labor force participation rate, especially among females. The participation rate represents the percentage of people 16 years of age and above who are in the labor force. Increasing the participation rate in an area can be a way to expand the work force without having growth in the general population. Flexible, part-time employment opportunities, good wages and benefits, and the availability of support services such as public transportation, day-care facilities, and skills training, can all encourage more people to participate in work force. As of 2000, Northfield's participation rate stood at 74.6 percent, higher than that for Franklin County (69.1%) and the State (66.1%) overall. In addition, between 1990 and 2000, the participation rate among females age 16 and over in Northfield increased by 8.7 percent, and now to stand at 71.5 percent. This female participation rate ranks seventh in Franklin County, and is much higher than the rates for the County and the State. One factor which could be contributing to Northfield's greater female participation rates is the high level of educational attainment among Northfield residents.

The unemployment rates given in Table 2-7 and Table 2-9 describe the percentage of people in the labor force who are presently not employed, but who are actively seeking employment. In Northfield, only a few people in the labor force are not employed. According to the 2000 U.S. Census (Table 2-7), only 1.8 percent of Northfield's labor force does not have a job. This is equal to 31 people. Table 2-8 shows the labor force and unemployment figures by age group and by sex. The unemployment rates for males and females are similar overall, though vary slightly by age group. Each age category has low levels of unemployment, except for the 16-19 year olds, for which 10 percent of the labor force is unemployed. If this age group is removed from consideration, the overall unemployment falls from 1.8 percent to 1.3 percent, indicating that almost all adults in Northfield who are in the labor force are employed.

Table 2-8: Labor Force and Unemployment by Sex and Age Group, 2000

Age Group	Males		Females		Total		
	Labor Force	Un-employed	Labor Force	Un-employed	Labor Force	Un-employed	Un-employed %
Ages 16-19	44	0	52	10	96	10	10.4%
Ages 20-29	101	0	119	0	220	0	0.0%
Ages 30-44	311	3	324	0	635	3	0.5%
Ages 45-59	304	11	313	4	617	15	2.4%
Ages 60 & Over	65	0	60	3	125	3	2.4%
Total	825	14	868	17	1,693	31	1.8%

Source: U.S. Census Bureau, *Census of Population & Housing, 1990 and 2000*.

Unemployment rates are often used as a gauge of economic prosperity or distress. Rates of unemployment may be influenced by an abundance or drastic decline in the number of employment opportunities in an area. In some cases, unemployment rates may decrease, not because of increases in employment options, but because the job market is so poor, it leads unemployed people to leave the local work force, and either move out of the area, or stop trying to find a job. Also, unemployment rates do not include people who may be underemployed and working only part-time, or who people may have gotten laid off and taken a new job at a much lower wage level.

Labor force and unemployment data are released by the Massachusetts Division of Employment and Training (DET) on an annual basis, providing a source of current employment information. The DET figures are derived from Federal data from the U.S. Bureau of Labor Statistics. Because different methodologies are used for the DET and decennial U.S. Census figures, they are not directly comparable. However, both sets of data are included here to give a fuller overview of employment trends.

In 2001, according to DET's data, Northfield's unemployment rate stood at 2.4 percent, with a total of 40 members of the work force unemployed. This unemployment rate was lower than that for Franklin County (3.2%) and for the State (3.7%).

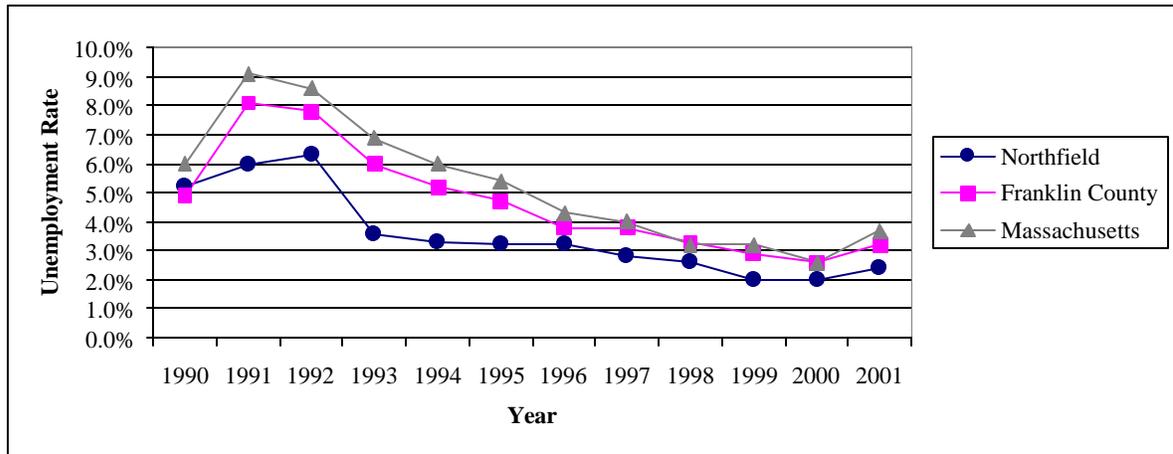
Table 2-9: Labor Force and Unemployment Data, 2001

Area	Labor Force	Employment	Unemployment	Unemployment Rate
Northfield	1,668	1,628	40	2.4%
Franklin County	37,376	36,189	1,187	3.2%
Massachusetts	3,283,700	3,163,100	120,600	3.7%

Source: Massachusetts Division of Employment & Training, *ES-202 Data, 2001*.

From 1990 to 2001, Northfield consistently has a lower unemployment rate than the County and Massachusetts overall. This lower rate suggests that Northfield has not been as severely impacted as other areas by the economic recessions and recoveries experienced over the past decade. However, it is evident that Northfield's labor force is still influenced by the greater economy, as demonstrated by the changes in the Town's employment patterns shown in Figure 2-1 and Figure 2-2.

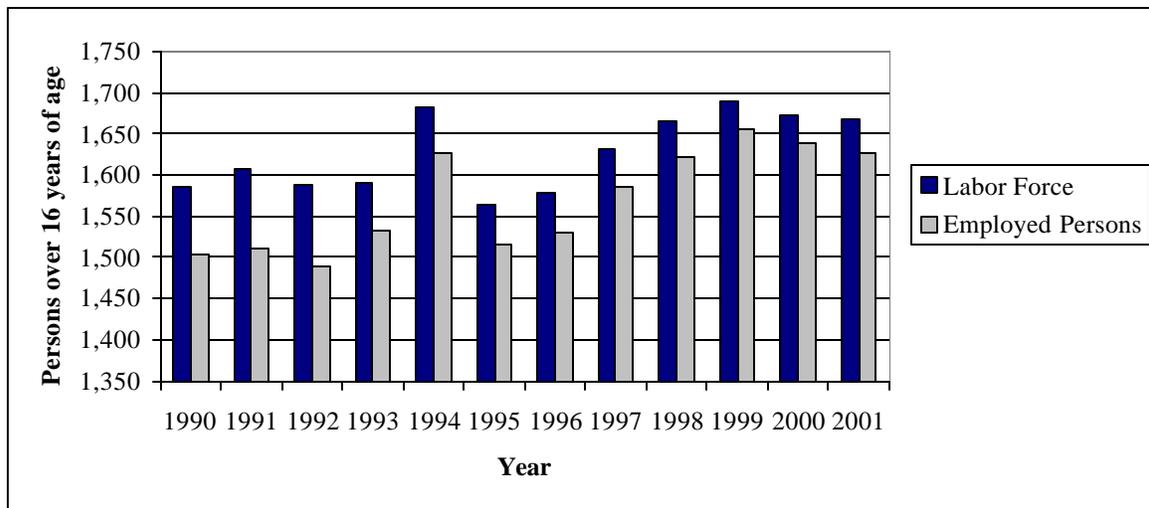
Figure 2-1: Unemployment Rates, 1990 to 2001



Source: Massachusetts Division of Employment & Training, ES-202 Data.

As Figure 2-2 demonstrates, from 1990 to 2001, Northfield experienced growth in the size of its labor force and the number of employed people within that labor force. Overall from 1990 to 2001, the labor force expanded by 5 percent and the number of employed people by 8 percent. During the 11 year period, Northfield’s work force saw some considerable increases and declines from year to year, most notably during the 1993 to 1995 period.

Figure 2-2: Labor Force and Employed Persons in Northfield, 1990 to 2001



Source: Massachusetts Division of Employment & Training, ES-202 Data.

Types of Employment

An important element in the employment profile of Town residents is understanding the ir types of employment. This section reviews local, County, and State-level employment data by class of worker and industry sector, and also discusses commuting patterns. Class of worker refers to the type of employer, for example, whether the employer is in the private or

public (government) sector. The information presented here comes from the U.S. Census Bureau. The Census Bureau has identified 13 distinct employment sectors which represent different industries, such as manufacturing and retail trade.

According to 2000 U.S. Census data, over three-quarters (76.5%) of Northfield workers are employed by a private company. Another fifteen percent work for Federal, County, or local governments. Many of these individuals are likely employed in public education, and either work for public school districts or one of the numerous institutions of higher education in the region. Nine percent of Northfield's workers are self-employed. As shown in Table 2-10, Northfield's levels of government and self-employed workers are lower than those for Franklin County as a whole, but higher than those for the State.

Table 2-10: Class of Worker, 2000

Area	Total Employed*	Private Wage and Salary Workers	Government Workers	Self-employed Workers	Unpaid Family Workers**
Northfield	1,659	76.5%	14.7%	8.8%	0.0%
Franklin County	37,577	70.5%	19.3%	9.8%	0.3%
Massachusetts	3,161,087	80.0%	13.5%	6.4%	0.2%

*Employed civilian population 16 years of age and over.

**Unpaid family workers work 15 or more hours per week without pay in a business or on a farm operated by a relative.

Source: U.S. Census Bureau, Census of Population & Housing, 2000.

Table 2-11: Employment by Sector, 2000

Employment Sector	Northfield		Franklin County (%)	Massachusetts (%)
	# of workers	% of total		
Educational, Health & Social Services	599	36.1%	30.4%	23.7%
Manufacturing	204	12.3%	15.0%	12.8%
Retail Trade	168	10.1%	11.0%	11.2%
Construction	94	5.7%	6.0%	5.5%
Transportation, Warehousing & Utilities	87	5.2%	4.2%	4.2%
Arts, Entertainment, Recreation, Accommodation & Food Services	83	5.0%	6.5%	6.8%
Wholesale Trade	71	4.3%	2.8%	3.3%
Professional, Scientific, Management, & Administrative Services	70	4.2%	6.4%	11.6%
Finance, Insurance, & Real Estate	69	4.2%	4.1%	8.2%
Agriculture, Forestry, Fishing, Hunting, & Mining	60	3.6%	1.8%	0.4%
Information Services	39	2.4%	2.6%	3.7%
Other Services (except Public Administration)	60	3.6%	4.8%	4.4%
Public Administration	55	3.3%	4.4%	4.3%
Total Employed*	1,659	100.0%	37,577	3,161,087

*Employed civilian population 16 years of age and over.

Source: U.S. Census Bureau, Census of Population & Housing, 2000.

The largest employment sector for Northfield residents is educational, health, and social services, with more than one-third (36%) of Northfield workers employed in this sector (*Table 2-11*). This percentage is higher than for Franklin County (30%) and the State (24%). This high percentage is related to Northfield Mount Hermon School and the high number of other regional employers in this sector.

The next largest employment sectors in Northfield are manufacturing (12% of workers) and retail trade (10%). The percentage share of these sectors, and of the professional, scientific, management, and administrative services (4% of workers) in Northfield are lower than in the County and the State overall. In contrast, the relative size of the Town's wholesale trade and agriculture, forestry, fishing, hunting, and mining sectors, are larger than for the County and the State.

Given the existing job opportunities in Northfield, it is likely that for many of the employment sectors in the table above, Town residents are commuting to employers outside of Northfield. For example, most manufacturing workers probably commute to industrial employment centers such as Deerfield, Turners Falls, and the Orange-Athol area. There are only two manufacturing employers in Northfield, Sisson Engineering Corporation, which DET reports as having between 20 and 50 employees, and Tri-State Precision, Inc., which has two employees.

Commute-to-work data from the 2000 U.S. Census show that 28 percent of employed Northfield residents work in Northfield, with 4 percent of employed residents working at home. Forty-six percent of employed residents work outside of Northfield elsewhere in Franklin County, and 14 percent work outside of Franklin County elsewhere in Massachusetts. The remaining 12 percent commute to work in other states, primarily New Hampshire and Vermont.

Local Employers and Economic Base

This section discusses the Town of Northfield's economic base and employment patterns, and major local employers. It is important to understand which sectors and businesses provide employment within a community, in order to plan for future economic development. Most of the information presented in this section comes from the Massachusetts Division of Employment and Training (DET).

DET releases community-level data describing the number of employees in eight industry sectors on an annual basis. This data, presented in *Table 2-12*, show that the number of total employees working in Northfield increased fairly steadily over the 1990-2001 period, growing by 26 percent (247 workers). The employee counts in *Table 2-12* include both full-time and part-time workers. Over the 1990-2001 period, the average annual wage for workers in Town also increased significantly, growing from \$18,121 to \$28,170, a 55 percent change. The data also indicate that the total number of businesses in Northfield declined over the eleven years, decreasing from 62 (1990) to 49 (2001).

As shown in *Table 2-12*, the dominant industry sector in Northfield is the services sector, which accounts for more than half the jobs in Town and includes the Town's largest

employer, Northfield Mount Hermon School. DET attributes all the jobs at Northfield Mount Hermon to the Town of Northfield, even though the school's Mount Hermon Campus is in the Town of Gill. The services sector includes a wide variety of establishments, such as private educational services, restaurants, bed-and-breakfasts, automotive shops, and health practitioners. Between 1990 and 2001, the services sector in Northfield grew by 50 jobs, to have 642 employes in 2001.

The second largest employment sector in Northfield is the government sector. The government sector includes public education and local, State, and Federal agencies. The main employers in Northfield for this sector are the Pioneer Valley Regional School District, and the Town government. As of 2001, the services sector and government sector combined account for 81 percent of jobs in Northfield.

According to DET, between 1990 and 2001, Northfield saw a tremendous expansion of jobs in the government sector, with the number of employees increasing from 169 to 323. Most of this growth was due to school expansion projects. It is believed that some of the recorded growth could be also be a result of changes in how the Pioneer Valley Regional School District records employees on DET forms. Technically, only school district employees working within the Town of Northfield should count towards Northfield's employment totals, and employees working at the elementary schools in Warwick, Bernardston, and Leyden should be counted in the employment figures for those towns. However, it appears that in recent years, all the district's employees may have been attributed to Northfield. As of 2003, the district has a total of 243 employees, 152 of whom work in Northfield at the elementary school, the regional middle school, or the regional high school.

Table 2-12: Industry Sector Employment in Northfield

Year	Total Establishments	Avg Annual Wage	Total Employment	Percentage of Total Employment in Each Sector							
				Services	Government	Trade	TCPU*	Construction	Agriculture Forestry Fishing	Manufacturing	FIRE**
1990	62	\$18,121	939	63.0%	18.0%	8.2%	conf	4.2%	1.1%	conf	conf
1991	60	\$20,206	953	61.1%	16.1%	8.4%	7.5%	2.8%	1.4%	conf	conf
1992	51	\$21,247	1,005	57.2%	21.1%	8.4%	7.4%	1.8%	1.6%	conf	conf
1993	56	\$21,128	1,023	58.0%	21.2%	8.6%	6.7%	1.6%	1.6%	conf	conf
1994	55	\$21,877	1,040	58.9%	21.7%	8.3%	conf	1.8%	conf	conf	conf
1995	62	\$23,117	1,058	59.0%	22.1%	7.8%	conf	2.0%	2.3%	conf	conf
1996	57	\$25,027	1,043	56.8%	23.3%	8.1%	conf	2.8%	1.7%	conf	conf
1997	49	\$25,503	1,043	conf	23.7%	8.4%	3.5%	2.1%	2.2%	conf	conf
1998	49	\$26,448	1,063	56.3%	24.6%	8.0%	3.4%	2.0%	2.3%	conf	conf
1999	52	\$26,717	1,143	55.1%	26.6%	8.2%	3.4%	1.6%	1.7%	conf	conf
2000	51	\$26,748	1,173	54.5%	26.4%	9.0%	conf	1.6%	1.6%	conf	conf
2001	49	\$28,170	1,186	54.1%	27.2%	conf	3.6%	1.5%	1.7%	conf	conf

"conf" means that information has not been released due to confidentiality requirements. Information typically remains confidential where there is only one major employer in the sector, or only a small number of employees.

*TCPU is an acronym for the Transportation, Communication and Public Utilities sector.

**FIRE is an acronym for the Finance, Insurance and Real Estate sector.

Source: Massachusetts Division of Employment and Training; ES-202 series data.

The next largest employment sector is the trade sector. The trade sector includes both retail and wholesale establishments. In 2000, a total of 106 jobs in Town were in the trade sector. There is limited local-level information about the other employment sectors in Northfield due to confidentiality restrictions. For example, no data is available for the manufacturing sector or the FIRE (Finance, Insurance, and Real Estate) sector.

Table 2-13 lists the major employers in Northfield. The largest employer by far is Northfield Mount Hermon School (NMH) with 530-600 employees (varies seasonally). It is estimated that the NMH employment is split roughly evenly between the Northfield campus and the Mount Hermon campus in Gill. Also, many NMH employees work on both campuses. The next largest employer is the Pioneer Valley Regional School District, with 243 employees district-wide and 152 employees based in Northfield. The Town of Northfield has 17 full-time employees, and approximately 50-75 people in total on its payroll, including volunteer fire fighters and board members (Select Board, Board of Health) who receive stipends. Northfield has three other employers with 20 or more workers. They are Sisson Engineering Corporation, Linden Hill School, and Northeast Utilities.

As of 2001, Northfield has a total of 49 employers and 1,186 jobs (*Table 2-12*). Since only eleven employers in Town have at 10 workers or more, the majority of Northfield's businesses are small enterprises with just a few workers.

Table 2-13: Northfield Employers with 10 or more Employees

Employer	Industry Sector	Total Employees (Full-time & Part time)
Northfield Mount Hermon School (NMH)	Services	530-600 ¹
Pioneer Valley Regional School District	Government	152 ²
Town of Northfield	Government	17 ³
Linden Hill School	Services	20-49
Sisson Engineering Corporation	Manufacturing	20-49
Northeast Utilities	TCPU	20-49
Systems, Software, and Support, Inc.	Information	18
Northfield Food Mart	Retail Trade	10-19
Whitney Trucking Inc	TCPU	10-19
Five Acre Farm Greenhouses	Wholesale Trade	10-19

¹Includes the Mount Hermon campus in Gill. It is estimated that the NMH employment is roughly even between the Northfield campus and the Mount Hermon campus. Also, many NMH employees work on both campuses.

²Includes employees in Northfield at the elementary school, middle school, and high school.

³Full-time employees only. The Town of Northfield's payroll includes 50-75 people in total, including volunteer firefighters and board members (e.g. Select Board, Board of Health) who receive stipends.

Sources: Northfield Mount Hermon School: Northfield Mount Hermon School, 2003; Pioneer Valley Regional School District; FRCOG phone survey, 2003; Town of Northfield: Town records, 2003; Systems, Software and Support, Inc: FRCOG phone survey, 2003; all other employers: Massachusetts Division of Employment and Training, List of Major Employers, 1997.

Two main community goals for economic development, discussed earlier, are to diversify the types of businesses in Northfield, and to encourage local businesses. For the Town to attract larger businesses and to promote a more diverse economic base, it is important for Northfield to provide an environment in which businesses can succeed and expand. Such an

environment includes adequate infrastructure, including sewer, water, transportation, and telecommunications. Such an environment also includes local zoning which enables appropriate business growth. The Town's current business infrastructure and zoning are discussed in the following sections.

In addition to business diversification and support, another main community goal for economic development in Northfield is that it be balanced with the preservation of the Town's natural, historic, and scenic assets and the community character. Recommendations to promote economic development in Northfield should reflect this balance.

Inventory and Assessment of Infrastructure for Economic Development

This section summarizes and assesses Northfield's current infrastructure to support economic development, including water, sewer, transportation, and telecommunications. Adequate infrastructure is necessary to encourage the expansion and diversification of the Town's economic base. This analysis indicates that Northfield has the infrastructure available for economic expansion, particularly the development of small commercial businesses. However, the analysis also suggests that the potential for future large commercial or light industrial development may be limited, in part because of infrastructure constraints. Another potential limitation is the small amount of suitable land for large commercial and/or light industrial uses.

Water Infrastructure

The two water districts in Town of Northfield provide drinking water to residents and businesses in Northfield Center and near the Northfield campus of Northfield Mount Hermon School. Other areas in Northfield are primarily served by private wells. The Town's public water supplies currently exceed demand, and likely have capacity to accommodate future projected growth for the coming decades.

Public water systems

Northfield has a total of four public water systems (*shown on the Water Resources Map in Chapter 1*). By definition, a public water system has 15 or more service connections, or regularly provides water to at least 25 people daily for at least 60 days per year. There are two main types of public water systems: community systems and non-community systems. Community water systems are typically publicly-owned, and serve community residents year-round. An example of a community water system is a municipal water district. Non-community systems are privately-owned and include workplaces that provide water to their employees, such as community centers, restaurants, and other businesses. Two of Northfield's four water systems, at Linden Hill School and Northfield Mountain, are non-community systems serving those facilities exclusively. The Town's other two public water systems are community water systems serving Town businesses and residents. They are the Northfield Water District and the East Northfield Water Company.

The Northfield Water District, serves the Northfield Center area, and draws its water supply from Strowbridge Well off of Strowbridge Road. The district includes water lines along Main Street, East Street, Maple Street, St. Mary's Street, Warwick Road, and Strowbridge Road (*shown on the Development Suitability Maps*). According to the FRCOG's Franklin County Regional Drinking Water Supply Study¹, in 2001, Strowbridge Well supplied water to approximately 900 people, and had a total annual usage of 19.2 million gallons. This yearly consumption equals an average daily usage of 52,500 gallons. The well is approved by the State Department of Environmental Protection (DEP) to have an average daily withdrawal of 144,000 gallons. This approved volume measures the capacity of the well and its recharge area to provide water without diminishing returns under drought conditions. Because the average daily withdrawal volume for the Strowbridge Well is less than half the approved withdrawal, the Northfield Water District appears to have the capacity to support additional water demand, and accommodate future growth.

The East Northfield Water Company, affiliated with Northfield Mount Hermon School, serves the school's Northfield campus and nearby neighborhoods. The water company draws its water from the Grandin Reservoir, located off of Louisiana Road, which has a total storage capacity of 30 million gallons. According to the FRCOG Regional Water Supply Study, this water system serves approximately 1,450 people year-round, including 765 residents and 685 students, and had a total yearly usage of 35.2 million gallons in 2001. This annual consumption equals approximately 96,400 gallons per day. The DEP allows the water system to have an average daily withdrawal of 200,000 gallons. Unlike the Strowbridge Well, the allowed rate of water consumption for water supply is based on historic use records, and does not necessarily reflect the capacity of the reservoir to provide water sustainably over a long period of time. Nonetheless, the difference between the system's current usage and allowed withdrawal rate suggest that the East Northfield Water Company probably has the capacity to support additional water demand, and accommodate future growth.

In the 1960s, the Town established a West Northfield Water District. However, the district existed only on paper because residents could not reach consensus on constructing a distribution system. The only physical properties of the district were test wells.

Projected future demand

The FRCOG Water Supply Study developed estimates of future water demand in 2010 and 2020 for the Northfield Water District and East Northfield Water Company water systems. These estimates are based on future population projections using historic trends over the past thirty years. The Water Supply Study included estimates for future water demand with and without conservation measures. Even without conservation measures, it appears that Northfield's two community water systems will probably have ample supply for projected residential growth far into the 21st Century (*Table 2-14*). Further, it is estimated that with some conservation measures, water consumption for the community water systems could reducing by a total of more than 20,000 gallons per day, by 2020, equivalent to 13 percent of

¹ The FRCOG's Regional Water Supply study is currently in draft form and has not yet been finalized. The results of the study's analysis in its final version may differ from the draft numbers shown here.

2001 daily usage for the two water systems combined. Such conservation measures would increase the system’s remaining capacity.

Table 2-14: Northfield’s Community Water System Demand, 2010 and 2020

Community Water System	2001 Average Daily Demand (Gallons)	2010 Average Daily Demand (Gallons)	2020 Average Daily Demand (Gallons)	Current Daily Capacity/ Approved Volume (Gallons)	Daily Approved Volume/ Capacity Less 2010 Demand (Gallons)	Daily Approved Volume/ Capacity Less 2020 Demand (Gallons)
Northfield Water District	52,500	54,700	56,900	144,000	89,300	87,100
East Northfield Water Company	96,400	99,500	102,700	200,000*	100,500*	97,300

Note: These figures are based on continuing the same per capita daily water consumption for 2010 and 2020, and adopting no new conservation measures.

**The East Northfield Water Company’s current water withdrawal volume approved by DEP is based on historic consumption trends, and does not reflect the long-term sustainable withdrawal volume for the water source.*

Source: FRCOG, Franklin County Regional Drinking Water Supply Study, 2003.

Future development constraints

The potential for large-scale development in areas without public water service is limited, since these areas rely on private wells. It is possible that some areas in or near Northfield Center currently without public water service could be given water access in the future through water line extensions. The Small Commercial and Residential Development Suitability Map and Light Industry and Large Commercial Development Suitability Map show the half-mile buffer zone around current water and sewer lines. Areas within this zone are most suitable for water extensions, since the costs of expanding the water lines beyond a half-mile could be very expensive. However, even some areas within a half-mile of current water infrastructure may be unsuitable for water lines due to other factors, including environmental constraints, land slopes, current land uses, and other infrastructure, including roads.

Long extensions of the current public water lines beyond Northfield Center would generally not be feasible due to the costs involved. One possibility for providing areas outside of Northfield Center with water is the development of a new public water supply source. The total cost of developing a new supply can vary considerably and can be as much as \$2-3 million or more. The cost is impacted by factors such as the depth of drilling, distance to existing infrastructure, and the need to address potential site contamination.

The analysis above indicated that Northfield’s two community water systems will probably have ample supply far into the 21st Century given the current population projections. However, there are two potential issues that could affect the sustainability of the current water supply. The first issue is that current measures used to evaluate the long-term capacity of a water system are inconclusive. The DEP approved volume for the Northfield Water District measures the capacity only of the well’s Zone II recharge area. For the East Northfield Water Company’s system, the approved withdrawal rate is based entirely on historic use, not on the system’s long-term capacity. These current measures also fail to

consider the water needs of surrounding ecosystems and the impact of withdrawals on area wetlands and habitats. There is a need for additional research on the aquifers to determine a more true, sustained yield measure, which considers the impacts of well withdrawals on the surrounding ecosystems.

The second potential issue is groundwater contamination from developed land uses. Both of Northfield's water systems have completed Source Water Assessment Program (SWAP) reports that assess the level of susceptibility to contamination for above ground land uses. The SWAP report (2002) for the Northfield Water District indicated that the Zone II recharge area is highly susceptible to contamination, and have a high threat of pollution due to pesticide use and/or storage in the Zone II area. The SWAP report (2002) for the East Northfield water system indicated that its recharge area was moderately susceptible to contamination. It is important to restrict land uses and development in the recharge areas for the water systems to protect and preserve drinking water quality. Northfield currently has an Overlay Water Supply Protection District to protect the quality of its water supply. The bylaw for this district prohibits uses which could potentially pollute the water supply and requires site review for many developed other uses. The Town may wish to evaluate how well the current district and regulations are protecting Town's current and potential water supplies, and see if there are changes that may be appropriate to make to the Water Supply's Protection District's boundaries or bylaws to strengthen them.

Sewer Infrastructure

The center of Northfield and the Northfield Mount Hermon campus in East Northfield are served by the municipal sewer system and treatment plant. The wastewater collection is situated along primary roadways and railroad lines in Northfield Center; it also runs through some residential yards. According to the 1990 U.S. Census, approximately 30 percent of Northfield homes (400 homes) are hooked into the municipal sewer system,² and there is municipal interest in extending the system to additional areas.

Originally Northfield's sewer system was designed to meet projected demand through the year 2000, based on population projections for the system's service area. However, currently, more than half of the system's capacity typically goes unused, and it is likely that the current plant will be sufficient for at least the next few decades.

Wastewater treatment facility and demand

The Town of Northfield's sewage treatment plant was constructed in 1972, after the passage of the Federal Water Pollution Control Act. Prior to 1972, Northfield's community sewer systems consisted of four sewer lines leading to the Connecticut River. In 1972, the Town built the treatment plant and constructed inceptor lines to the existing community sewers. The Town has sewer lines near Northfield Mount Hermon School's Northfield campus and in the downtown Northfield. Over the past thirty years, there have been a number of sewer line extensions, the largest of them along East Street. Extensions have also occurred along

²The 2000 U.S. Census did not collect data on household sewage disposal systems.

School Street, Glen Road, and Mill Street. There is currently interest in new extensions along Dickinson Street to the Town library, along Main Street from the Post Office south towards Northfield Elementary School, and along Main Street south to the intersection with Route 10 to Bernardston. (*The current sewer lines are shown on the Development Suitability Maps*).

Northfield's sewage treatment plant has a capacity of 275,000 gallons per day, and a current average daily usage of 120,000 gallons per day. In the past, there have been serious stresses on the treatment plant due to problems of infiltration and inflow. Infiltration involves groundwater entering the collection system via breaks within the system piping, open joint pipes, or cracks within manholes. Inflow involves the water that enters the system through direct connections such as catch basins, roof gutter leaders, and leaking manhole covers. By the early 1990s, inflow and infiltration had increased the average wastewater flow to 400,000 gallons per day, significantly above the plant's capacity. Due to upgrades and repairs, the average usage has now dropped dramatically, to 120,000 gallons per day. Moreover, it is expected that additional planned upgrades and repairs on lines on Northfield Mount Hermon's Northfield campus could drop the average usage even further.

Potential development constraints

The geographic boundaries of the current sewer system pose a constraint on future development, especially large-scale uses. In the absence of sewer service, developed land uses must rely on septic systems for their wastewater treatment needs. The 1977 Master Plan indicates that the reliance on septic systems could pose a problem in the most developed areas of Northfield, such as East Northfield and Northfield Center. A review of soil maps for these areas as part of the Master Plan showed that the soils are incapable of absorbing large quantities of waste. Since then, the Sewer Commission and the Board of Health have both agreed that it is in the Town's best interest to expand the sewer system to serve already developed areas, as much as is financially and geographically possible. There is some potential to expand the sewer system in Northfield Center and in East Northfield near the Northfield Mount Hermon campus, and as mentioned above, some of these expansions are already in the works.

The potential for Northfield to accommodate large-scale commercial or light industrial land uses may be restricted by the Town's limited sewer infrastructure. Many commercial and light industrial uses require sewer and water infrastructure to comply with environmental regulations and provide adequate protection for natural resources. Access to sewer infrastructure can be particularly critical with respect to industrial uses to prevent hazardous materials from entering the groundwater. The DEP usually requires industrial firms to obtain an industrial wastewater discharge permit and to hook up to a wastewater treatment facility.

Extending sewer lines outside of the currently developed areas, to proposed locations for commercial or light development may not be feasible due to the high costs involved. When the Town of Orange extended sewer service three-quarters of a mile to the Randall Pond Industrial Park, the extension itself cost \$330,000, and there were then additional expenditures in excess of \$200,000 for laying down the sewer lines within the industrial park.

Orange was fortunately able to receive funding through the Federal Economic Development Administration (EDA) to help subsidize the development of its industrial park, including the sewer lines extensions. Northfield similarly may be able to tap into EDA or other Federal or State funding sources to help subsidize this type of project.

In addition, some types of large-scale commercial and light industrial uses may be feasible without municipal sewer access. The wastewater options in unsewered areas include regular septic systems or an on-site sewage package treatment facility. Of the six industrial parks located in Franklin County, two do not have sewer access and rely on septic systems. One is the new Whately Industrial Park, which contains 42 acres. The park, which is still being developed, currently contains three businesses: a trucking company, a food distributor, and a company with produces urethane (plastic) films. Additional sites in the industrial park have been purchased for a regional library distribution center and a woods products manufacturer, though construction for these uses has not yet begun.

Transportation Infrastructure

There are two important perspectives when assessing a community's transportation infrastructure: the level of ease and safety of moving people and goods *to and from the community* and the level of ease and safety of moving people and goods *within the community*. In terms of the transport of people and goods to and from the community, the most significant transportation features in Northfield are Route 63 (Main Street/Millers Falls Road) which links Northfield to Route 2, and Route 10 which links Northfield to Interstate 91. Northfield also has two active rails and good proximity to regional airports.

Road network

Throughout New England, trucking is the predominant means of transporting freight. The fact that two significant New England highways, Route 2 and Interstate 91, bypass the Town of Northfield has likely had some impact on Northfield's economic growth. However, this impact is not that great. Northfield is less than ten miles from both Route 2 and Interstate 91, and the Town's two primary transportation routes, Route 10 and Route 63, provide good access from Northfield to these important transportation corridors. Route 10 and Route 63 themselves also provide links to nearby urban centers, such as Millers Falls, Turners Falls, Greenfield, Amherst, etc. According to FRCOG traffic counts conducted in 2001, near and in Northfield Center, both Route 10 and Route 63/10 have average traffic volumes of at least 9,000 cars per day. Another major roadway in Northfield is Route 142 (Mount Hermon Station Road) which connects to Brattleboro.

In the past there has been concern expressed about the high traffic levels on Route 63/10, both from a traffic congestion standpoint, and in terms of the impact that the traffic may have on the character of the scenic byway and downtown Northfield. Route 63 through Northfield is officially designated as a Scenic Byway as part of the larger Connecticut River Scenic Farm Byway. In addition, Route 63 includes the Main Street National Historic District, which is listed on the National Register of Historic Places. Prior to the reconstruction of Route 10, there was discussion of developing a north-south roadway for commercial traffic

west of Route 63/10 (Main Street) which would parallel it and the railroad tracks and then connect back to Route 63/10 in the vicinity of the Northfield Mount Hermon campus. These plans were never pursued.

In terms of the transport of people and goods within Northfield, as with many rural communities, the local road network is limited. Most residents find it adequate for their purposes. The character of the local road network, however, including steep slopes in the eastern half of Northfield and narrow road widths, limits the network's for commercial transport, and directs commercial traffic towards the Town's major roads: Route 10, Route 63, and Route 142 (Mount Hermon Station Road).

Rail lines

There are two active rail lines in Northfield, one of each side of the Connecticut River. Access to rail could help attract large-scale commercial or light industrial uses to Northfield. Franklin County has approximately 93 route miles of railroad in total. There are two main north-south routes in Franklin County: the Guilford Rail System (GRS) Connecticut River Main Line and the New England Central (NECR) Palmer Sub-line. There is also the east-west Freight Main route of Guilford Rail System, and an east-west, north-south connector in Deerfield owned by GRS.

In Massachusetts, the amount of freight transported by rail is small compared to the amount transported by truck. However, there is interest in diverting some of the freight traffic from the highways to rail because of road congestion and air pollution issues. Rail can also be a more economical means of transport. One concern with rail is the potential for hazardous materials spills.

Airports

In terms of aviation, there are three international airports located approximately within a two hour drive from Northfield. They are Albany International Airport in Albany, New York; Logan International Airport in Boston, Massachusetts; and Bradley International Airport in Windsor Locks, Connecticut. In addition, there are the regional airports of T.F. Green Airport in Warwick, Rhode Island; Manchester Airport in Manchester, New Hampshire; and Worcester Regional Airport in Worcester, Massachusetts, that also provide passenger and freight service. Locally, the transportation network includes the municipal airports of Orange Municipal Airport and Turners Falls Municipal Airport.

Transit

The only regular bus service to Northfield is provided for Northfield Mount Hermon School students. The Franklin Regional Transit Authority (FRTA) operates a total of six route-trips runs per week between Northfield and Greenfield: two on Wednesdays, one on Fridays, and three on Saturdays. This route operates only when school is in session. The lack of regular transit service could make it difficult for workers living outside of Northfield who don't own

a car, or with only one car per household, to access potential future employment opportunities within the Town.

The FRTA also provides weekday demand response transit service for seniors aged 60 and over, and the disabled. This service provides door-to-door transportation anywhere within the FRTA service area for a small fee.

Telecommunications Infrastructure

Northfield is fortunate to have some telecommunications infrastructure and services available throughout the community. Telecommunications services are critical for attracting and cultivating new employers as well as helping existing businesses stay competitive. Services such as satellite technology, cable internet, digital subscriber lines (DSL) and higher T-1 class broadband allow for “always on,” high speed access to the Internet and private networks. As more business to business transactions occur electronically, telecommunications capabilities are becoming more essential for effective and efficient business communications. Basic cable modem broadband service for Northfield is currently offered by Comcast, formerly AT&T Broadband. Northfield Mount Hermon School has high speed access and microwave telecommunications. A few places in town have T-1 access, including Systems, Software, and Support, Inc., a Northfield-based company which offers services to plan, design, install, and support computer and telecommunications networks for private and public clients.

A regional project underway to improve telecommunications services and access is Franklin-Hampshire Connect. Franklin-Hampshire Connect, which is being coordinated by the FRCOG, involves business and community leaders from Franklin and Hampshire Counties working together to advocate for better services and to implement strategies to create a competitive telecommunications marketplace in the region.

Another project which could improve telecommunications services in Northfield over the long-term is a federally-funded project currently underway to install fiber-optic conduit for high-speed telecommunications along the Interstate 91 corridor. This project does not include the establishing of networking links from I-91 to other areas. A link to Northfield would need to be installed for Town businesses to be able to access this high-speed connection.

Current Zoning for Commercial and Industrial Uses

The Town of Northfield currently has two principal zoning districts: Residential-Agricultural (RA), and Residential-Agricultural-Forested (RAF). The Town also has two overlay districts: the Flood Plain District and the Water Supply Protection District which restrict uses in the overlay areas to protect these important resources.

The uses allowed in the RA and RAF districts by right and by special permit are identical. The primary difference between the two districts is the minimum allowed lot size and frontage, with the RAF district being more restrictive.

The RA district runs north-south along the Connecticut River (*see the Current Zoning Map*). It includes Northfield Center, Route 63, Route 142, and everything in-between. The RAF includes the sections of Town away from the Connecticut River that have greater slopes and less development.

Both the RA and RAF districts allow the following uses by right: single-family dwellings, two-family dwellings, day care facilities for six or less children or adults, agriculture, forestry, religious uses, education uses, and home businesses with no more than one full-time employee.

Most other commercial and industrial uses are allowed in both the RA and RAF districts by special permit. The uses allowed by special permit include both small commercial uses, such as a gift shop or professional office, and large industrial uses, such as manufacturing or a transportation facility. To be granted a special permit, a proposed use must be shown to meet the following criteria: (quoted from the Northfield's Zoning Bylaws)

1. It will not be injurious or dangerous to public health, or hazardous because of traffic congestion, danger of fire, or constitute or create a public or common nuisance;
2. It will not have a material adverse effect on the value of the land and buildings in the neighborhood;
3. It will not produce noise, vibration, smoke, dust, odors, heat, or glare observable at the lot line in amounts clearly detrimental to the normal use of adjacent property;
4. It will impose no excess demand on public services;
5. It will create no detrimental sewage disposal problems;
6. It will have adequate off-street parking facilities; and
7. It will not create a threat of surface or groundwater pollution, surface drainage detrimental to abutting properties, or deleterious effects to the natural environment in the area where the use is located.

The Town's requirement that all proposed commercial and business uses in Northfield obtain a special permit governs economic development and growth in Town, including the creation of new small local businesses and retail establishments. These have been instances where the Town has granted special permits for large-scale developments, which have been challenged by local residents and environmental groups. Some of these challenges have resulted in lawsuits against the Town. This situation points to the need to review and revise the current zoning bylaws and special permit process. A section later in the chapter makes recommendations for proposed zoning revisions to support Northfield's economic development goals and objectives.

Potentially Suitable Locations for Future Commercial or Light Industrial Development

One of the main factors affecting Northfield's economic development has been the lack of identified areas in Town that could be appropriate for future business growth. A main focus of Northfield's Community Development Planning process has been to determine if there are any potentially suitable locations within Northfield for future large-scale commercial or light industrial development, based on environmental and infrastructure constraints. This section discusses the methodology used in that determination and the potentially suitable sites that were identified through this analysis.

This section also discusses a similar methodology used to assess which areas of Northfield might potentially be the most suitable for future smaller-scale commercial development, such as offices and small-scale retail establishments.

Both methodologies started with the potentially developable land areas identified through the initial screening conducted as part of the Open Space and Resource Protection chapter of the Community Development Plan (Chapter 1), and shown on the Land Use Suitability Map. The areas that were removed from the potentially developable land coverage for the Land Use Suitability Map are areas with absolute constraints which prohibit future development, such as areas with slopes in excess of 25 percent, and land that is permanently-protected as open space.

For the Economic Development section of the Community Development Plan, additional screening criteria were used to identify the potentially most suitable locations for large-scale business development, and for smaller development. It is worth noting that current zoning restrictions were not incorporated into these screening processes. Zoning considerations were excluded from the analysis with the thought that once the potentially most suitable locations for development were identified, changes to the current zoning, including changes to district boundaries and/or allowed land uses could be considered by Town Meeting, to facilitate development in the identified potentially most suitable areas.

Potentially most suitable areas for light industrial development or large commercial development

Light industrial or large commercial land uses could include an office park, a retail business larger than 5,000 square feet, or a facility conducting materials testing, scientific research, or assembly work. The potentially suitable land areas for new light industrial or large commercial development have slopes of 15 percent or less, and are located near transportation infrastructure. They are also not situated near residential or recreational land uses, nor near historic, scenic, or environmental or open space resources, as they may not be compatible. Specifically, the potentially suitable areas meet the following criteria:

1. They are included in the potentially developable area shown on the Land Use Suitability Map.
2. They have slopes of 15 percent or less.

3. They are not located within 500 feet of the Main Street Historic District designated by the National Register of Historic Places, or the Route 63 Scenic Byway. The Route 63 Scenic Byway has been designated as an official Scenic Byway for Massachusetts. The Main Street National Historic District runs along Route 63 from Route 10 north to Pauchaug Brook. Having light industrial or large commercial uses close to the Scenic Byway or National Historic District could diminish the scenic and historically intact character of these important community assets.
4. They are not situated within 500 feet of existing residential or outdoor recreational land uses. Current residential and recreational land uses were determined from the 1999 MacConnell land use data. As discussed earlier, residential land uses have the following MacConnell land use codes: 10, 11, 12, and 13. Recreational land uses are coded as 7 (Participation Recreation), 8 (Spectator Recreation), and 9 (Water-Based Recreation). Locating light industrial or large commercial uses closer than 500 feet to residential or recreational land could be detrimental to the quality of residential neighborhoods, or recreational areas.
5. They are situated within a quarter-mile of an existing rail line, or within half a mile of a major roadway. Northfield has a few active rail lines in the eastern and northern sections of Town near the Connecticut River. Major roadways in Northfield have been defined for this analysis as those roadways with an Average Annual Daily Traffic (AADT) count of 1,000 cars or more. Roads in Northfield with this level of traffic are the following: Gill Center Road, Route 10, Route 142 (Mount Hermon Station Road), and Route 63 (Millers Falls Road and Main Street). Traffic volume data on major Northfield roadways was been collected by FRCOG transportation staff.

Areas that meet all five of the above criteria are shown on the Light Industry and Large Commercial Development Suitability Map as being potentially suitable for light industrial and large commercial development.

Once this part of the screening was completed, some additional criteria were used to select the potentially most suitable areas for this type of development. These criteria were the following:

1. Each of the most suitable areas consists of at least approximately 50 contiguous acres;
2. They consist primarily of land with less than 8 percent slopes;
3. They are not located on prime farmland; and
4. They are not located within the 500-year floodplain or with aquifer boundaries.

After this additional screening, only two sites for large-scale commercial or light development remained. These sites are shown on the Light Industry and Large Commercial Development Suitability Map as being the potentially most suitable locations for light industrial and large commercial development. One of the sites is located at the current gravel mining operation on Mount Hermon Station Road owned by Lane Construction. This site has been identified as a potential location for an industrial park. The other site is located east

of Route 63 between South Mountain Road and Captain Beers Plain Road. This site currently contains a large number of abandoned cars and other junk materials. This site has been identified as a potential location for an office park.

One issue that both the proposed sites have in common is their current lack of water and sewer infrastructure. Many light industrial and large commercial uses require water and sewer infrastructure to comply with environmental regulations and to provide adequate protection for natural resources. In addition, some uses, particularly industrial processing uses, have the need for high capacity water and/or sewer access for these processes.

However, if the proposed uses have minimal water and sewer needs, and small environmental impacts, they can sometimes be developed in the absence of municipal water and sewer infrastructure. For water, an on-site well is likely the most feasible option for the two identified sites. The first site is located in West Northfield where there is currently no public water supply. However, a water district with test wells only was created in West Northfield in the 1960s, and there could be potential for a new water supply there. The second site, located off Route 63, is over one mile from the existing public water lines and extending water service to the site could be costly and technically challenging.

For wastewater, the options in unsewered areas include extending the public sewer lines or installing an on-site sewage package treatment facility. Another potential issue that both sites share is possible contamination from their current land uses. If there is any contamination, these sites would likely need to undergo environmental clean-ups before they could be reused. Sewer lines extensions can also be expensive. As mentioned earlier, however, public funding may be available to help the Town of Northfield pay for water and sewer line extensions to suitable economic development sites.

It is essential that both the proposed sites for large scale economic development be investigated further, and that an engineering feasibility study be conducted for each site to fully evaluate the site's development potential and its options for sewer and water provision, and to examine the issue of possible contamination and environmental constraints. One potential constraint for the proposed office park site is its proximity to wetland areas and local brooks.

Potentially most suitable areas for new small commercial development

For this discussion, small commercial development is considered any commercial use with a footprint of 5,000 feet or less. Such uses might include a small office building or a retail store.

The process to determine the potentially most suitable land for small commercial development started with the potentially developable area shown on the Land Use Suitability Map. From there, the potentially developable land was screened to eliminate all areas not within a half-mile of a major road. This screening was used because small commercial uses general benefit from good access to transportation infrastructure, and because this is where businesses would have the least impact on residential neighborhoods. As discussed earlier, major roads in Northfield are defined as those roadways with an Average Annual Daily

Traffic (AADT) count of 1,000 cars or more. Roads with this level of traffic are the following: Gill Center Road, Route 10, Route 142 (Mount Hermon Station Road), and Route 63 (Millers Falls Road and Main Street).

The area that remained after the road screening is considered potentially suitable for small commercial development. Most of this area lies within the Residential-Agricultural zoning district.

When the potentially suitable area for small commercial development was first identified and mapped, there was concern that focusing future commercial growth along major roads could encourage a pattern of sprawling development along these corridors. To address this issue, the Community Development Plan Committee decided to try a different approach and to support the concept of developing village centers with mixed residential and commercial uses, over promoting development along roadways. New small commercial growth in Northfield will be encouraged to focus in these village centers, and these village areas could possibly allow some low-impact businesses, such as professional offices or small stores, by right, instead of special permit. Four potential locations for village centers are identified on the Residential and Small Commercial Development Suitability Map.

Except for the mixed-use district proposed for Northfield Center, none of the other potential village centers would have access to the current municipal sewer or water infrastructure. Uses in these village centers would likely rely on private wells and septic systems. It is possible that in the long-term, new public water supplies might be identified and developed to serve these other village centers. Development of a coordinated septic system for each of these areas could also be considered.

Recommendations for Potential Zoning Revisions to Support Northfield's Economic Development Goals and Objectives

These recommendations for zoning revisions are proposed to support the Northfield's principal economic development goals and objectives. As discussed earlier, one main economic goal is to diversify the types of businesses in Northfield, and promote a stable tax base. A second main goal is to encourage economic development that is balanced with the preservation of natural, historic, and scenic resources, and the community's character.

After the Community Development Plan has been completed, Northfield's Zoning Bylaws will be reviewed, and proposed revisions will be developed, which reflect the Community Development Plan's findings and recommendations.

- Consider creating new a Village Center Zoning Designation that allows mixed residential and commercial uses. The zoning district could allow some small business uses by right, instead of only by special permit. Investigate the feasibility and support for rezoning each of the four identified potential village centers on the Residential and Small Commercial Development Suitability Map to a Village Center designation. Establish the Village Center District's physical boundaries based on the results of this investigation.
- Consider establishing a zoning district, or districts, for large commercial or light industrial uses. Further evaluate the feasibility of developing the two identified most potentially suitable sites for these types of uses (*shown on the Light Industry and Large Commercial Development Suitability Map*). The site on Mount Hermon Station Road is proposed for an industrial park. The site east of Route 63 is suggested for an office park. Conduct engineering studies of the sites, and determine the costs of preparing these sites for the proposed uses and for providing water and sewage treatment services to these locations.
- Develop quantitative performance standards for commercial land uses and consider using these standards as criteria to help decide which uses should be allowed in different areas. The performance standards could consider factors such as noise, traffic, lighting, and other impacts of proposed uses on the surrounding properties, and allow uses only if they meet the performance criteria.
- Consider expanding the definition of home businesses, and allowing additional home-based businesses by right. Currently, a home business is defined as a residence-based business with not more than one full-time equivalent employee. Home businesses are precluded from offering services to the general public, or from selling any goods not produced on the premises. In accordance with the concept of performance standards, consider allowing additional types of home businesses if they can meet certain standards with respect to traffic, noise, and other factors, and would have a minimal impact on nearby properties. One example of a performance standard would be to allow only home-based businesses which generate no more than an average of 15 vehicle trips per day.

- Create voluntary design guidelines for commercial development to encourage commercial construction which is consistent with Northfield's historic and scenic character. Guidelines could be developed with regards to signage, lighting, parking, landscaping, and building characteristics. Encourage developers to follow these guidelines by offering them incentives, such as density bonuses or reductions in parking requirements, to do so.
- Review which commercial uses are currently allowed by special permit in the RA and RAF zoning districts, and consider updating the zoning bylaws to limit uses in these districts to one that are compatible with rural residential areas. The RAF (Residential-Agriculture-Forested) district is comprised of the less developed areas of Town, including areas with steep slopes. In the current zoning code, the RAF district allows a number of industrial and commercial uses by special permit which may be inappropriate for the district. These uses include manufacturing, industrial laboratories, freight or transportation facilities, warehouses. The RA (Residential-Agriculture) district allows the same uses as the RAF district. Although the RA district has less steep slopes and more development than the RAF district, the uses that are currently allowed by right or special permit in the RA district should be reviewed to make sure that they are appropriate given the community's values and Northfield's vision for its future. It may be better to remove the most questionable uses from the zoning use tables for these areas rather than indicate that they are allowed by special permit. This is true particularly if the town decides to create one or more zoning districts which allow large commercial or light industrial uses by right.
- Consider establishing a Scenic Byway Overlay District to protect the scenic byway's scenic nature. The Overlay District could include use restrictions or design guidelines for new development.

Strategies for Promoting Economic Development

These strategies are proposed to promote economic development in Northfield, and to encourage the creation of new employment opportunities for residents with low, moderate, and middle incomes. Roughly half these strategies tie into recommendations for changes to Northfield's Zoning Bylaws. The other half relate to promotional activities for local businesses and strengthening the Town's partnerships with educational and economic development organizations, to encourage business development and job creation.

Zoning Revisions

- Consider revising the Town's Zoning Bylaws to allow some small commercial uses by right in some areas. These small commercial uses should be low-impact uses such as professional offices, or small shops. The most appropriate zoning district to allow such uses would be the potential Village Center district(s) suggested for Northfield Center and other areas (*shown on the Residential and Small Commercial Development Suitability Map*). Permitting some small commercial businesses by right would encourage the development of new small businesses by no longer requiring that they go through the procedure of obtaining a special permit. These small businesses could provide jobs to people of diverse incomes and skills, and create new job opportunities for low and moderate-income residents.
- Consider expanding the definition of home business to encourage more home-based enterprises. As discussed above, the Town's zoning code currently defines home business as a home-based enterprise with not more than one full-time equivalent employee, and home businesses are precluded from offering services to the general public, or from selling any products not produced on the premises. Under a proposed expanded definition, home-based businesses would still be restricted to have a minimum impact on their neighborhoods, but beyond those basic restrictions, the types of allowed uses would be increased. For example, some services to the general public, such as tax preparation, might be allowed. Expanding the definition of home businesses could encourage more home-based entrepreneurship, and create new job opportunities particularly for low and moderate residents who are currently unemployed or under-employed.
- Consider establishing a zoning district, or districts, for large-scale commercial or light industrial uses. Encouraging the establishment of a new community-appropriate large-scale commercial or light industrial employer in Northfield could create a range of new job options for residents. A 50-acre industrial park could generate as many as 200-500 jobs, depending on the specific types of companies and uses established there. Such a development could have jobs involves a wide-range of skill levels, and offer employment opportunities to residents and workers of low, middle, and moderate incomes.

Non-Zoning Activities

- Investigate the feasibility and costs of establishing water and/or sewage treatment access to the two areas which are proposed for large-scale industrial or commercial development. One site, on Mount Hermon Station Road, is proposed for an industrial park. Another location, east of Route 63, is suggested for an office park. Establishing water and/or sewage treatment services for these locations would help them become more viable for future commercial or industrial development. Such development could create new jobs for Northfield residents, as well as underemployed and unemployed residents in the greater region.
- Work with the Franklin County Community Development Corporation and other regional agencies to assist with small business growth. Provide technical support and educational opportunities for small businesses and local entrepreneurs. Consider establishing a small business support center which offers a business assistance library, fax and copy machines, computers, and meeting spaces. Such a center could be established in an existing community building space with similar resources. Small business owners, particularly of low and moderate income, and people considering establishing a business, could all be aided by a business support center.
- Launch a “Buy Northfield” campaign to encourage residents to support their local businesses by buying locally-produced goods. A “Buy Northfield” campaign could enhance the local economy by promoting local businesses and increasing the local tax base.
- Use local and regional resources to enhance school-to-work partnerships and promote further community support to the public schools, including increased participation in schools by the business community.