ENFIELD 1995 MASTER PLAN

Enfield Planning Board
Enfield, NH

with assistance from

Lobdell Associates, Inc.

ADOPTION OF MASTER PLAN
TOWN OF ENFIELD, NH

The Planning Board of the Town of Enfield, New Hampshire, in accordance with the provisions of RSA Chapter 675:6 does hereby adopt the Enfield Master Plan of 1995, including the findings, recommendations, goals and policies contained in this Plan to aid the Planning Board, Selectmen, and other Boards and Commissions in the performance of their respective duties for the purpose of guiding and accomplishing the coordinated and harmonious development of the Town of Enfield, New Hampshire.

PUBLIC HEARING:

ADOPTED:

CERTIFIED COPY TO TOWN CLERK:

SIGNATURES OF MAJORITY OF PLANNING BOARD:

PREFACE

This 1995 Enfield Master Plan is an update of the 1986 plan. The Planning Board, responsible for completing and updating the Town's Master Plan, updated the plan in 2 phases with a phase completed in -1994 and 1995. Lobdell Associates of Landaff was retained by the Planning Board to assist in this task.

This report represents the completed 2 phases of the plan, including final goals and objectives which were combined from the 2 phases to form Chapter XIV.

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I INTRODUCTION

1.1 What is a Master Plan

It has been stated that one of the most vital factors for orderly community growth, whether it be a rural county, suburban town, urban city, metropolitan or regional area, is master planning, [1].

The development of a Master Plan is the process whereby a community seeks to understand where it is today -- its assets and its problems, and where it is going -- the extent of its future needs. It then develops a program which is sufficiently comprehensive to seek solutions and to provide for future needs through the utilization of all its assets: human, natural and material.

There are certain things that must be understood about a Master Plan in order to make it fit properly into the municipal scheme of things. First, perhaps, we should list what a Master Plan is NOT -

> A Master Plan is not a legally binding document like a regulation (although it may suggest certain regulations be adopted as a means of carrying out the Plan).
>
> A Master Plan is not a straightjacket that prescribes a rigid and specific formula for achieving municipal reforms.
>
> A Master Plan is not a zoning ordinance or a zoning map -- zoning is merely one of the tools or methods by which certain aspects of the Master Plan can be implemented (such as land use or population density).
>
> A Master Plan, most of all, is not a panacea for all municipal problems -- it is only a guide or tool which has been designed to be used by municipal officials in attacking these problems. If the Plan is not understood by the community, or if it is not properly used, it is worthless.

Since we have considered what the Master Plan is NOT, we should now consider what it IS -

> The Master Plan is a collection of plans, maps, studies and reports which, together, attempt to visualize the long-range growth of a community. It will consider past trends

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[1] The terms comprehensive plan, master plan and town plan mean basically the same thing, and we often use them interchangeably.

and future potentials, major problems which seek solution, and directions or objectives that can be developed as guides to new growth.

The Master Plan, therefore, is a framework or guide for the community as a whole to use in shaping its future course over a period of many years. As such, it must be sufficiently general to permit the filling in of such details as may arise in future years.

To serve over an extended period of time, the Master Plan must be flexible. It must permit modification and adjustment to all of its parts without unduly damaging its basic structure.

The Master Plan must be, as its name implies, far-reaching. It must deal with all aspects of the community's growth, not just one small area. The guiding principle for the Plan's decisions should be -- "What is in the best interests of the community as a whole, not just one property owner or one interest group?"

1.2 Putting Together a Comprehensive Plan

The comprehensive plan for a small town shapes the community of the future. Faced with inevitability of growth, a town creates a comprehensive plan so that when growth does occur, it happens in places most able to absorb it. This plan helps a town to determine the timing of growth, its management, and the costs of and locations for growth.

The plan is a blend of all the information that has been gathered and studied by the town. There are three key elements of the town that are examined and form the basis of the community plan:

1. Development policies and goals. These policies are established for each part of the planning program (land use, housing, community facilities, etc.). Once these policies are defined and documented, realistic long-range and short-range goals can be devised to implement the policies.

2. Anticipated population growth. Population projections based on past trends and present conditions can be plotted to see how population growth will affect the service functions of the community.

3. Constraints and limitations imposed on growth by natural resources and physical characteristics of the town.

Suggested Contents for a Comprehensive Plan

Besides the data collection, inventory and analysis a good Master Plan needs to consider some of the following:

1. Goals for the Community--a description of what you desire the community to be 5 to 20 years (or so) from now, given the things you cannot alter (natural resources, outside pressures, development now in place):

   a. The hoped-for "character" of the community
   b. Desirable population size, age distribution, income distribution
   c. Desirable housing types and locations
   d. Desirable kind, amount, and location of retail commercial activity, and its service area (local, regional, and statewide)
   e. Desirable kind, amount, and location of open and recreational land
   f. Desirable kind, amount, and location of lands devoted to agriculture or forestry
   g. Desirable extent of public services such as schools, sewers, water supply, fire and police stations, and their need for land
   h. Desirable traffic circulation plan for the anticipated population (can lead to an "official map")
   i. Future land use map and analysis

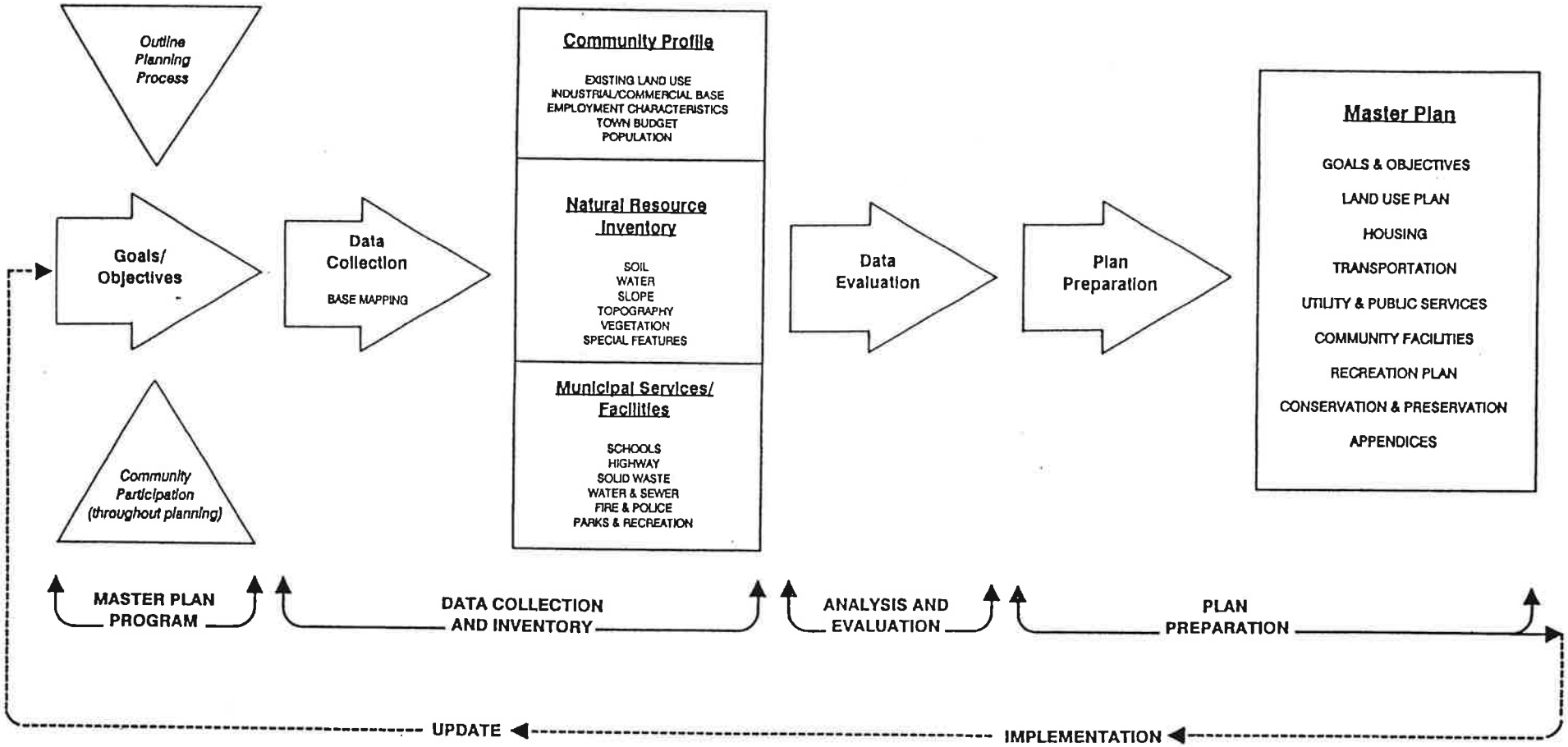
2. Limitations and Opportunities of the Natural Environment:

   a. Topography--elevation and slope
   b. Soil conditions and their suitability for: building, septic tanks, or agriculture
   c. Important natural areas--wetlands, groundwater potential, or vegetation
   d. Overall capability of land to support development

3. Outside Influences:

   a. Projected rate of growth for region
   b. The community's "fair share" of this growth, other things (like soils) being equal
   c. The likelihood of intermunicipal tie-ins or shut-offs for things like water supply or education

Master Planning Process



d. The state road network, proposed improvements that would add to (or reduce) local traffic
e. Other transportation facilities, if any
f. Other state or federal installations or activities (such as a post office)

1.3 Public Participation

In order to be effective and useful, a master plan should reflect not only the views of the planning board but also of Enfield's citizens. The Enfield Planning Board has made great efforts to involve local citizens in the planning process over the 18 months required to develop the master plan update. Here are a few of the steps taken:

- In October, 1994 surveyed over 100 Enfield businesses for their opinions on Enfield's economic future and on planning issues. See Appendix A-1 for example.

- Surveyed over 30 individuals and groups involved in recreation in Enfield in September of 1991, both private and public. See Appendix A-2 for example.

- Sent questionnaires to all Enfield town departments, boards and commissions requesting information concerning their activities and concerns for the future. See Appendix A-3 for an example of the questions asked of each department.

- Sponsored the "Enfield Community Renaissance Program". Over 20 Enfield citizens met in Whiting Hall on several occasions to discuss economic and business issues. Under the direction of the Office of Economic Initiatives at UNH, citizens assessed the strengths and weaknesses of Enfield's economic climate and develop a strategy to meet their goals. The committee has met several times since the first meeting in June, 1994. The ideas generated have been incorporated into the master plan. See Appendix A-4 for more information.

- Co-sponsored the Enfield "Community Profile Project". Over 450 citizens of Enfield were invited to a 2 day workshop with the purpose of discussing Enfield - where the community is today and where it wants to be several years from now. Over 40 citizens attended the two day event held at the Elementary School on October 21 and 22, 1994. Appendix A-5 contains some of the results of that workshop.

- A public hearing on the master plan was held on October 25, 1995, to discuss the draft master plan and receive input from Enfield's residents. All of the completed questionnaires, surveys, reports, minutes of meeting and information on workshops are on file at the Enfield Planning Office for review.

1.4 Not an End but a Process

The planning does not stop with the writing of a comprehensive plan. In fact, one of the most important functions of the program is to create a process. The planning program is not an end product but the beginning of a means for dealing with the day-to-day decisions that face any small town and a guideline for anticipating how development and growth will affect the town's services and financial structure. The planning board should consult the plan regularly and see that it is frequently updated so that it remains relevant to the needs and desires of the town.

The result of the hard work and cooperation of the townspeople is a quality master plan that reflects how the town sees its future. No board or commission should make a major decision concerning the town without first consulting the town's comprehensive plan. The town has created a road map for its future; now it must follow its own directions to reach its destination--a well-ordered town that shows the results of planning and managed growth.

I SETTING

The Town of Enfield is located in the southwestern corner of Grafton County, New Hampshire, a part of the Upper Valley Region of the state, only 11 miles from the Connecticut River and the State of Vermont.

The Town is bordered to the west by Lebanon, the regional commercial and population center. The Sullivan County towns of Plainfield, Grantham and Springfield lie to the south, while Canaan and Hanover are to the north and Grafton to the east.

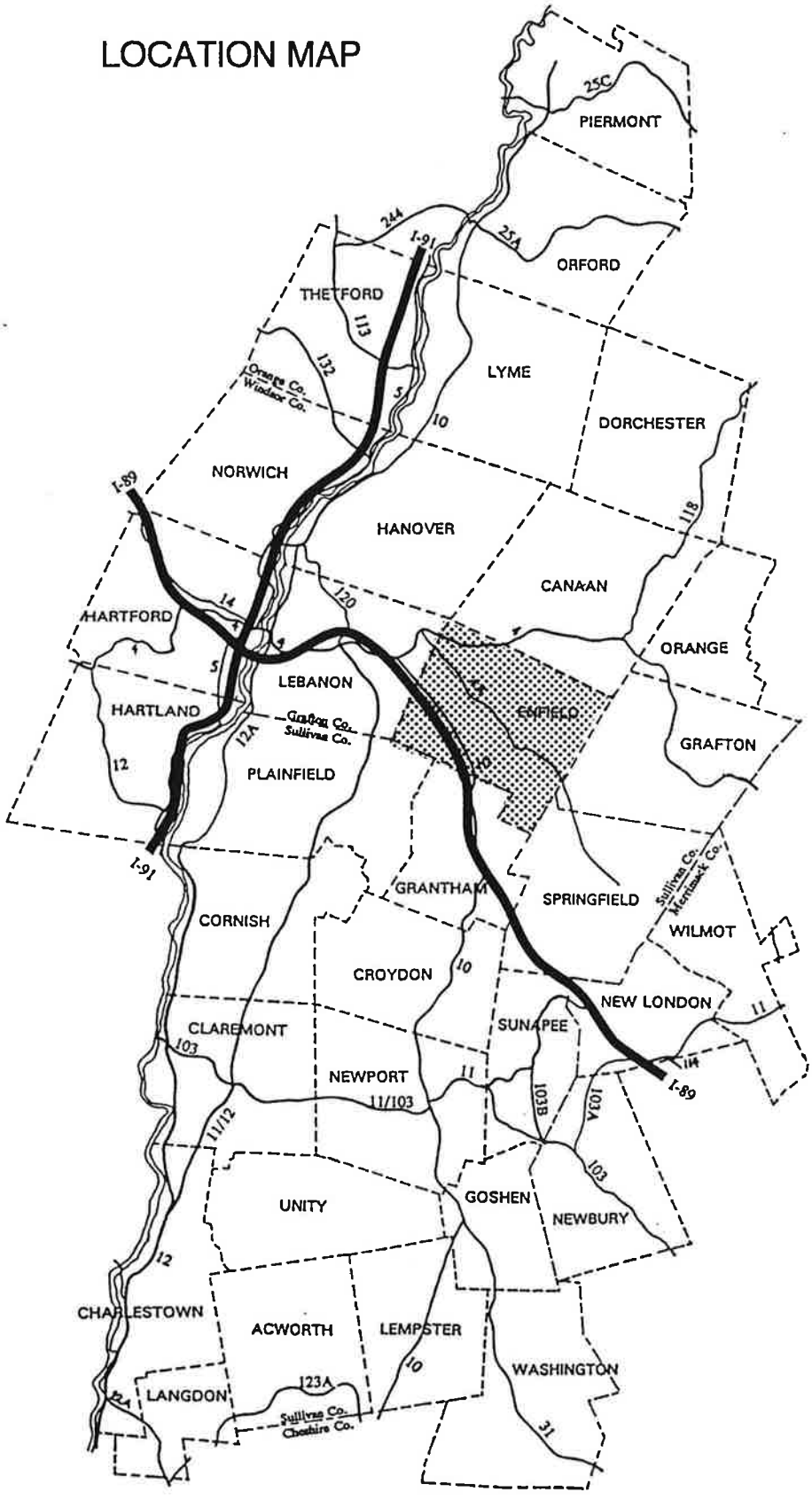
Interstate 89 travels through the relatively undeveloped southwestern portion of town and State Highways' 4 and 4A form the major arteries for the various villages that make up Enfield.

Enfield is located just north of the Eastern Megalopolis. Approximate distances from Enfield to selected urban areas are:

Concord, New Hampshire	55 miles
Manchester, New Hampshire	75
Boston, Massachusetts	125
Hartford, Connecticut	160
Burlington, Vermont	90
Montreal, Canada	180

Over 60 million people live within a days drive of the Upper Valley. The area is a growing, dynamic mix of residential, commercial, recreational and industrial activities.

LOCATION MAP



II HISTORIC RESOURCES

2.1 Introduction

A plan for the future without a look to the past is incomplete. Historic structures and sites which survive from earlier periods are the visual manifestation of the story of a community's people, places and activity. The preservation of these resources is fundamental to the retention of a sense of place and identity in any given community. An index to the past, surviving fragments of history contribute to the character and individuality of each town, and lend a sense of continuity. Historic structures and sites are but one part of our total environmental resources and like many others, are nonrenewable.

The purpose of this chapter is to discuss significant historic sites and resources in Enfield and to make recommendations for their continued preservation. Existing legislation pertaining to historic preservation and preservation tools for private citizens and at local, state and national levels are included.

This chapter was prepared in recognition of the fact that Enfield's historic resources and historic quality play an important role in the overall quality of life in the community. It does not attempt to be a complete and comprehensive inventory of all local resources, but is intended as a departure point for the future. The present state is but a chapter in an ongoing story.

2.2 Historical Setting

The following eight paragraphs are the historical account by Nellie Pierce which has been excerpted from a publication called, "Enfield Bicentennial 1761-1961":

"Although Enfield was first chartered July 4, 1761, by Proprietors, most of whom were from Windham County, Conn., they did not succeed in carrying out the conditions of its granting (i.e. 'to plant and cultivate two thousand acres the first five years') and in 1766 this charter was forfeited and a second one granted under the name of 'Relham' to about 90 new Proprietors, most of whom resided in or near Portsmouth, N.H. Then began the 'War of the Charters' with both parties claiming and attempting to occupy the same lands. Finally, mainly through the efforts of Jesse Johnson, Esq., the claims of the Relham contenders were disposed of either by exchange, purchase or compromise. After a matter of ten years this settled the dispute but the State Legislature did not actually grant a permanent charter for Enfield until June 18, 1802."

"The settlement was begun by Jonathan Paddlefore, Nathaniel Bicknell and Elias Bingham. The Jesse Johnsons, father and son, were early in town and during their lifetime discharged practically every important office as well as owning fully one quarter of the land. There are many

descendants of early settlers such as Stevens, Pettingill, Kidder, Currier, Clough, Colby, etc., still living in town."

"Those people establishing their homes around the outlet of Crystal Lake (then East Pond) built saw and gristmills, opened a store and called their hamlet Johnson's Mills (later Mill Village, then East Village and finally Lockehaven in honor of Edwin Locke, composer and author who then owned the Johnson 'White House.') The first schoolhouse was probably built in 1794 and the first church in 1798. No trace of either now remains, nor of a second church built in Lockehaven in 1828. The Enfield Center Church, built in 1837 as a joint effort of three denominations, Congregational, Methodist and Universalist, is still in use. Enfield Village has four churches, Universalist (now Community) built in 1853, Methodist in 1858, Congregationalist in 1878 and St. Helena's Catholic Church in 1899."

"For over 35 years Johnson's Mills was the business center but with the opening of the Fourth New Hampshire Turnpike in 1804 the center of activities became Enfield Center and the adjoining hamlets of Fishmarket and 'North End.' As regular freight and passenger schedules were set up on the Turnpike, taverns such as the Colby, Currier and Clough 'Stands' were built, and many industries sprang up along the Knox River. With the coming of the railroad in 1847 the business center again moved to Enfield Village (then North Enfield)."

"From almost the beginning of the town, the Shakers played a most important part in its history and development. Coming to Shaker Hill in Enfield in 1782, within 10 years they needed room to expand and through exchange or purchase came into possession of large tracts of land on the west side of Mascoma Lake. Three families were organized, Church Family in 1793, South in 1800 and North in 1812. With an inexhaustible water supply to furnish power and the Turnpike furnishing easy access to down country markets these quiet, industrious people made rapid and steady progress, raising seeds, and other agricultural products, making brooms, and baskets and establishing a wide reputation for honesty and integrity in all of their dealings."

"The peak of their prosperity came in the 1840's and at one time they paid as their share one eighth of the total town taxes. With the coming of the railroad and their need for better communication with Enfield Village came the building of the famous Shaker bridge which was used until destroyed by the hurricane of 1938 and then replaced by the present steel bridge. For various reasons, probably the most important being their failure to obtain enough new Believers to offset those who died or left them, their financial situation deteriorated and their numbers dwindled until in 1927 the property, including 1100 acres of land, was sold to the Roman Catholic Brotherhood of LaSalette of Canada. The latter have beautified the grounds and carried on an educational seminary and religious shrine to which thousands of visitors come annually."

"During the first fifty years after the coming of the railroad, Enfield Village experienced two building booms, one after the Civil War and one in the 1890's after the building of the Baltic Mills by Benjamin Greenback (later the American Woolen Company and later operated by the

2.3 Preservation Action to Date

Individuals and groups have taken responsibility for many of the local preservation and historical activities in recent years, including the propagation and collection of valuable information and artifacts relating to local history.

The Enfield Historical Society was organized in 1976 and has maintained an enthusiastic membership since that time. In addition to five business meetings a year, the society sponsors numerous programs, special events and field trips. Incorporated under the laws of the State of New Hampshire, the Society also owns two properties, the Lockehaven Schoolhouse Museum and the Enfield Center Schoolhouse. The Lockehaven Schoolhouse (1864), a gift to the Society in 1978 is open to the public free of charge on summer Sunday afternoons.

In 1983, the Historical Society received the Enfield Center School (1851) as a gift from the Earnest Workers. The school has been renamed the Enfield Historical Society Museum and has many historical artifacts and papers from Enfield. The Museum is open to the public from June to October.

In 1982 the Historical Society erected a millstone with bronze plaque in Enfield Center to commemorate the village's early mills and history. The Society's collections are stored in a vault located in the library.

In celebration of the Town's Bicentennial, the Enfield Bicentennial Committee published a historical booklet "Enfield Bicentennial 1761-1961". The Enfield Public Library also maintains an historic document collection for use by the public. Enfield also has an official Town Historian.

The LaSalette/Shaker Community and the Union Church have been listed on the National Register of Historic Places in 1979 and 1985 respectively with the Hewitt House currently seeking the same distinction. Six Shaker structures have been documented by the Historic American Buildings Survey with drawings and photographs.

Whitney Hall was restored in 1993 and houses the Town Library and Town Offices.

2.4 Local Historic Resource's Regulations

There is no specific reference to historic sites or buildings in the various town ordinances, regulations or codes. Neither the zoning ordinance, subdivision regulations, nor building permit process, addresses historically valuable properties or architecturally significant elements of a structure. Basically, the effect of this is to permit the use of structures and properties as the landowners desire within the many allowed uses and a general building code. Through the subdivision review process, the Planning Board currently has no regulations requiring the preservation of historical, architectural, or archaeological sites within a proposed subdivision. Preservation or sensitive treatment of buildings or sites is done now only through landowner interest.

The concerns about this lack of recognition of historical resources in town regulations are several. First of all, buildings or sites of historic value may be destroyed or demolished. They may also be changed in character to the extent that the resource is effectively lost. Just as often, a new use may be inappropriate to the site or to the context of historic use. Also, abutting properties or the neighborhood may change in ways that threaten the property of site through changed property values and economic factors, or physical factors (such as aesthetics, noise, drainage, streets, signs, etc.)

It is premature at this point to restrict particular uses from historic sites or structures; this may never be appropriate. The priorities of public regulations should include exterior building preservation, protective buffer space around certain properties to protect special qualities or the enjoyment of site (for example, churches and cemeteries), and the compatible site development of abutting properties.

Often, building codes, with their appropriate concern for safety, have the effect of forcing the destruction of historical features of a building. The State Division of Historic Resources can be a source for guidance in the application of building regulations to historic buildings, as well as local uses of the U.S. Department of Interior's Historic Preservation Standards.

Many historic properties are unable to be used as they were originally, either because of technical or economic factors. How a site or structure is re-used today will also have a different effect on the immediate neighborhood than it did 50 or 100 years ago. The re-use of structures, in appropriate ways may require innovative zoning and site plan review to permit economically viable uses compatible with other public goals.

2.5 Areas of Historic/Architectural Interest

A windshield survey of Enfield was performed in 1985 as part of the master plan and the following areas were identified as being of particular historic and/or architectural interest.

Lockehaven: This little mill village at the head of Crystal Lake is one of Enfield's oldest settlements. A lovely cemetery, the Lockehaven Schoolhouse, the dam on Crystal Lake Brook and several old homes from the Federal and Greek Revival periods of American architecture make this a charming spot with a distinctive identity.

Enfield Center: This village sprang to life after the Fourth New Hampshire Turnpike opened in 1804. Its architecture is influenced by both the Federal and Greek Revival styles. It has a remarkable sense of visual unity; modern intrusions into this historic village area have been minimized.

Shaker Village: Placed on the National Register of Historic Places in 1979, Enfield's Shaker Village on Route 4A was an active Shaker community from 1793 to 1923 and carries national significance. At various times in the community's history, more than 50 buildings in three contiguous groupings or "families" were distributed along four miles of the highway. Fifteen Shaker buildings survive, interspersed with 15 structures built by the Missionaries of Our Lady of LaSalette.

The Shaker Visitors Center on the LaSalette grounds includes a museum, slide-tape presentation, and tours of the original Shaker Colony.

Further north of the Shaker Community is the site of the "Shaker Bridge", built by the Shakers in the 1800's to provide better access to Enfield Village. The old bridge was destroyed by the hurricane of 1938 and was subsequently replaced with the present structure.

Enfield Village: This village area developed later than any of those previously described. Most of the structures in the village were built in the second half of the 19th century, and thus reflect the Greek Revival, Italianate, Queen Anne and Shingle styles of architecture. The growth of this village was spurred by the arrival of the Northern Railroad in 1847; the availability of speedy and reliable transportation in turn fostered the development and expansion of mills along the banks of the Mascoma River. The railroad stations from this era still exist on Main and Depot Streets.

Methodist Hill: Located in the remote southwest corner of Enfield, this area is of interest for its scenic vistas and stone walls. Several new homes have been built in this area.

2.6 National Register of Historic Places

The National Register of Historic Places is the official list of the Nation's cultural resources worthy of preservation. Established by the National Historic Preservation Act of 1966 and administered by the National Park Service within the Department of the Interior. The Register lists properties of local, state and/or national significance in the areas of American history, architecture, archeology, engineering and culture. Resources may be nominated individually, or in groups, as districts, as a multiple resource area of by category as a thematic group.

In New Hampshire, any individual may prepare a nomination application. National Register forms, maps and photographs are submitted to the N.H. State Historic Preservation Office for review by the State Review Board. Following approval at the State level, it is sent to Washington, D.C. for final review, approval and listing.

A. Benefits of National Register Listing

1. Recognition of local, state or national significance often stimulating appreciation of local resources and encouraging pride in ownership.

2. Provides for review of effects which any Federally funded, licensed or assisted project might have on the property.

3. Eligibility for certain federal tax benefits for the rehabilitation of income-producing buildings and the charitable deduction for donations of easements.

4. Qualification for federal preservation grants when funding is available.

To be eligible for listing in the National Register, properties or districts must meet the evaluation criteria in the Federal Regulations summarized below:

The quality of significance in American history, architecture, archeology, engineering, and culture in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feelings, and association, and

a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

b) that are associated with the lives of persons significant in our past; or

c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) that have yielded, or may be likely to yield information important in prehistory or history.

Each individual building within a National Register District may not be an outstanding landmark on its own, but the group of structures taken as a whole must convey a strong sense of history and integrity. Structures which have been greatly altered, are less than fifty years old, or which do not contribute to the character of the district are noted "non-contributing". Once nominated, a National Register District must have the approval of a majority of property owners, with each owner having a single vote regardless of the number of eligible properties he may own and regardless of whether the property contributes to the district's significance. For a single privately owned property, the property will not be listed if the owner objects. Listing in the Register does not interfere with a property owner's right to alter, manage, dispose of or even demolish his property unless, for some reason, Federal funds are involved. Nor does National Register listing require that an owner open his property to the public.

National Register listing can be an important tool for identifying and planning the future of significant resources. Listing can act as a catalyst to change public perception and improve an area's image, but cannot in itself prevent major detrimental alterations or even demolition. It remains an important psychological first step towards historic awareness, respect and protection.

There are 3 sites in Enfield on the National Register:

1. LaSalette/Shaker Community

   The Enfield New Hampshire Shaker Historic District lies on the west bank of Lake Mascoma along New Hampshire Route 4A. As a Shaker community from 1793 to 1923, it consisted at various times of more than fifty buildings stretched in three contiguous groupings or "families" along four miles of the state highway. As the community changed over the years, the buildings were often moved, combined, altered, or demolished, and when the site was sold to its previous owners, the Missionaries of Our Lady of LaSalette, in 1928, its remaining facilities consisted of 42 structures on approximately 1200 acres. Fifteen Shaker buildings survive, interspersed with fifteen twentieth-century LaSalette structures. In 1985, the property was bought by a group of private investors. In 1986, the non-profit Museum at Lower Shaker Village (MLSV) was formed and has purchased several buildings and over 18 acres of land. In 1993, the State of New Hampshire purchased 1,100 acres, protecting it from development and insuring public access.

2. The Union Church

The Enfield Center Village Meeting House (or Union Church) is one of the last religious buildings in New Hampshire to retain the form and much of the detailing of a type of meeting house popular in New England in the early 1800's. The Meeting House in Enfield Center is a rectangular gable-roofed structure, built in 1836 with clapboarded walls, a fieldstone and concrete block foundation. The building measures about 45' wide by 56' long. The west gable end of the building faces the adjacent road (N.H. Route 4A), and is treated as the facade of the church. The center of the facade is articulated by a gable-roofed pavilion.

3. The Hewitt House

Built in 1871, the John W. Dodge House (Hewitt House) in the center of Enfield Village, New Hampshire, is a handsome, wood frame residence in the Italianate style which still retains integrity of design, setting, materials and workmanship. Its architectural significance lies, not in its uniqueness, but rather in its excellence as an exceptionally well preserved typical example of vernacular building during the last quarter of the 19th century in rural New Hampshire. The particular late Italianate interpretation utilized in the John W. Dodge House is unique in the housing stock of Enfield. Historically, the building is associated with the post Civil War prosperity and consequential building boom which brought its builder, J.W. Dodge, to Enfield to run the woollen mills for the Shakers. Enfield Village gained its present character during this period and the J.W. Dodge House survives as an important contribution.

2.7 Main Street Revitalization

Properly treated and maintained, the historic structures of Enfield Village contain tremendous potential for economic benefit. Many of the buildings retain significant features including elaborate brickwork, decorative glass and metalwork, intact parapets and other decorative details absent from buildings constructed today. The rehabilitation of older buildings is frequently less expensive than new construction. Often taken for granted by those who have grown accustomed to its appearance, the area presents a strong, attractive historical image to tourists and others passing through town, Here, as across New England and the country, the quaint Main Street image can become a proven formula for attracting tourists, seasonal residents and shoppers from nearby communities.

Careful building renovation will erase the signs of deterioration that can eventually undermine the health of a downtown. Building rehabilitation or renovation does not necessarily mean major changes or expenses, nor should it be confused with restoration, in which the appearance of a building is returned to the condition in which it existed at a particular point in time. Not every

building needs major work. Minor repairs, repainting and the removal of coverings that detract from a building can make a big difference. The best renovations are contemporary solutions but which respect the architectural features which enhance a building. The scale, proportions, materials, textures and details of a building should be examined carefully before starting any renovation. Old photos can be very helpful in assessing a building's potential, uncovering changes which it has seen through time and making decisions about changes to undertake.

A well executed renovation project frequently will act as a catalyst for similar work along a street, enhancing the overall image of the downtown. However, it should be remembered that structures which are remodelled in a manner not compatible with their surroundings and departing from the character of the downtown can cause serious visual harm to the entire streetscape.

2.8 Archeological Areas

Areas with proximity to water logically hold great potential for prehistoric and historic archeological areas. Mascoma Lake represents a unique historic as well as recreational resource. Explorations by geologists indicate that at some time the water covered a much larger area than at present. A variety of archeological resources undoubtedly survive in town including mill sites, cellar holes and prehistoric sites. The record of these ancient times is fragile and no doubt much has already been lost through vandalism, builders, farmers, highway construction and the inherent acidic nature of the lakefront soil.

One pre-colonial (Native American) archeological site has been identified on the shores of Mascoma Lake.

2.9 Other Important Historical Resources

In the summer of 1993, the planning board surveyed the Enfield Historical Society concerning important buildings, properties, sites, etc. in Enfield that need protection. Their response, excluding those already mentioned, was as follows (no priority implied):

- LaSalette Shrine Area (Select Buildings on National Historic Register)
- Railroad Stations
- Stone Railroad Underpasses
- Shaker Mt. Quarry
- Shaker Dams, Corrals and Reservoirs on Shaker Mountain
- Route 4A Bridge over Knox River (Enfield Center)
- Mill Sites along Knox and Mascoma Rivers
- 3 existing Museums
- Cemeteries

Additionally, the Historical Society has the following thoughts about protecting Enfield Heritage:

- Create an atmosphere where people take pride in the appearance of their property.
- Try to create new villages with remaining areas left in current use (try to preserve some of the traditional landscape).
- Try to reduce the incidence of grossly intrusive infill structures.
- Try to preserve some of the traditional landscape as well as some of the economic and social structure of the 18th and 19th centuries.

III NATURAL RESOURCES

3.1 Introduction

Among the most fundamental elements of a comprehensive plan for a community is a description of the town's natural resources. By examining these resources we are better able to understand current social and economic conditions and patterns of development.

It has become increasingly evident that some areas are better suited for a particular use than others. Too often in the past this fact has been ignored. The results of careless, unplanned growth and development can be seen every day in both rural and urban communities. If we are to protect our natural resources and provide a high quality of life for the citizens in Enfield, we must develop a town plan based on the capabilities of the land.

This section provides an overview of Enfield's natural features. Included are descriptions of the town's general topography, climatic conditions, geologic features, soil characteristics, water resources, vegetation, wetlands, floodplains and fish and wildlife resources. By using this information along with the natural features maps referenced in the section, town residents may develop a practical knowledge of Enfield's physical makeup and make better use of their land.

3.2 Topography/Elevations

Topography is a term used to refer to the landform of an area. Areas are described as being rough or hilly or flat depending on the character of the land. An inventory of slopes and elevations (two of the most important aspects of landform) is necessary to protect the environment and prevent expensive mistakes in planning future land uses.

Elevation reflects the height of landforms above sea level and relative height to surrounding landforms. In general, the higher the elevation the more it costs to provide roads, snow removal and other municipal services.

Elevations in Enfield are shown on Map 1. Table 3.1 lists some of the town's major topographic features.

Compared to other areas of Grafton County, Enfield does not have much land at higher elevations. Only a small area near Halfmile Pond is above 2000 feet in elevation. Only about 7% of the entire town is above 1700 feet in elevation and this area is mostly land in the Enfield Wildlife Management Area.

MAP 1

ELEVATIONS (msl)

UNDER 900 FEET

OVER 1700 FEET

The Mascoma River Valley and its accompanying lakes and ponds define the town's lowest elevations and the area of most development and human impact. Mascona Lake, Enfield's lowest elevation is at 751 feet with Enfield Village ranging in elevation from about 890 feet to 770 feet.

Most of Enfield's population and development can be found from 770 to 990 feet above sea level.

TABLE 3.1
ENFIELD'S MAJOR TOPOGRAPHIC FEATURES

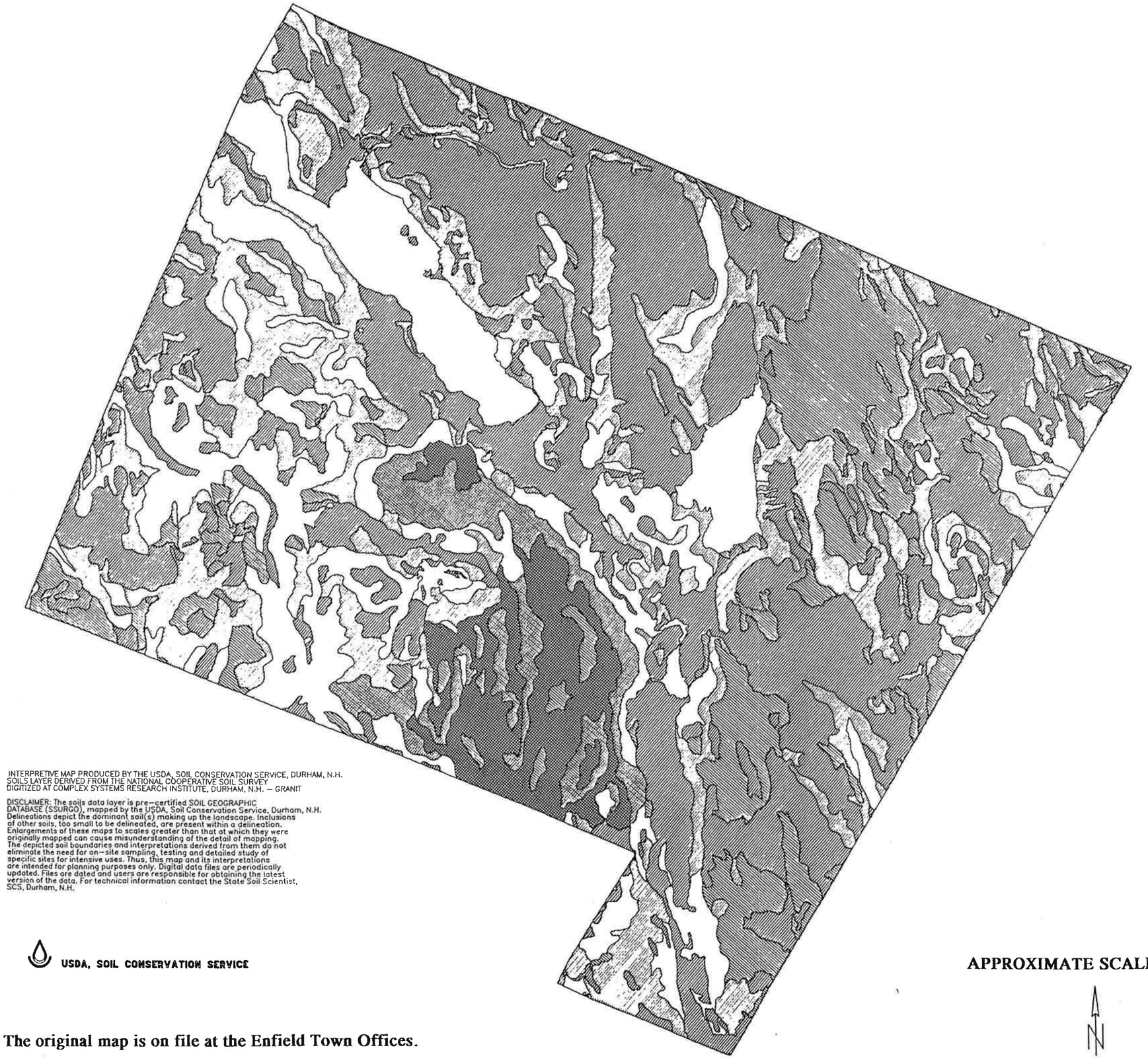
Feature	Elevation (ft-msl)	Location
George Hill	1349	South-East
East Hill	1366	North-East
Oak Hill	1386	North-East
Prospect Hill	2100	South-Central
Methodist Hill	1820	South-West
Shaker Mt.	1700	North-West
Jones Hill	1420	North-Central
Mascoma Lake	751	North-West
Enfield Village	775	North-West
Enfield Center	851	Central

3.3 Slope

Slope is the amount of rise or fall in feet for a given horizontal distance. It is expressed in percent. An 8 percent slope means that for a 100 foot horizontal distance, the rise or fall in height is 8 feet.

Slope is one significant aspect of landform which presents limitations for development. As slopes become steeper, the expense of building becomes greater. In addition, increased slope means there is a greater chance of erosion, structural problems, and water pollution problems. In general, slopes greater than 25 percent are considered too steep to provide adequate sites for roads, homes, septic systems, and the like. Suitable uses for these steep areas are forest practices, wildlife, recreation, and low density grazing.

MAP 2
SLOPE MAP



PERCENT SLOPE

ORDER 2
- 0 – 15%
- 15 – 25%
- 25 – 35%

ORDER 3
- 0 – 15%
- 0 – 35%
- 15 – 35%
- > 35%
- WATER

*Order 2 Soil Mapping is more detailed than Order 3.
For Details, Contact The Soil Conservation Service.

INTERPRETIVE MAP PRODUCED BY THE USDA, SOIL CONSERVATION SERVICE, DURHAM, N.H.
SOILS LAYER DERIVED FROM THE NATIONAL COOPERATIVE SOIL SURVEY
DIGITIZED AT COMPLEX SYSTEMS RESEARCH INSTITUTE, DURHAM, N.H. – GRANIT

DISCLAIMER: The soils data layer is pre–certified SOIL GEOGRAPHIC DATABASE (SSURGO), mapped by the USDA, Soil Conservation Service, Durham, N.H. Delineations depict the dominant soil(s) making up the landscape. Inclusions of other soils, too small to be delineated, are present within a delineation. Enlargements of these maps to scales greater than that at which they were originally mapped can cause misunderstanding of the detail of mapping. The depicted soil boundaries and interpretations derived from them do not eliminate the need for on–site sampling, testing and detailed study of specific sites for intensive uses. Thus, this map and its interpretations are intended for planning purposes only. Digital data files are periodically updated. Files are dated and users are responsible for obtaining the latest version of the data. For technical information contact the State Soil Scientist, SCS, Durham, N.H.

USDA, SOIL CONSERVATION SERVICE

APPROXIMATE SCALE 1" = 4600'

NOTE: The original map is on file at the Enfield Town Offices.

LOBDELL ASSOCIATES 1994

Slopes in Enfield range from 0 to 70%. As shown on Map 2, the bulk of the slopes over 25% are found in the south-western portion of town and occupy about 19% of the town's total area.

The most desirable sites for development from a slope standpoint are areas with a slope from 0 to 15%. Over 50% of Enfield's land area is in this category. However, wetlands account for about 12% of these more level areas, leaving 38% of Enfield with suitable slopes for development.

3.4 Bedrock Geology

As the name implies, bedrock geology is concerned with the underlying "hard rock" or ledge. Formed hundreds of millions of years ago, Enfield's bedrock is composed both of igneous rocks such as granite and metamorphic rock such as schist (see Map 3). The metamorphic rock to the west was formed under heat and pressure from many layers of mud, sand, and silt. It was later uplifted by the earth's internal forces. The igneous rocks, which occupy the eastern half of town forced their way upwards, while in a molten state, into the metamorphic rocks. The youngest bedrock in town was formed during the Devonian Age, some three hundred million years ago.

3.5 Surficial Geology

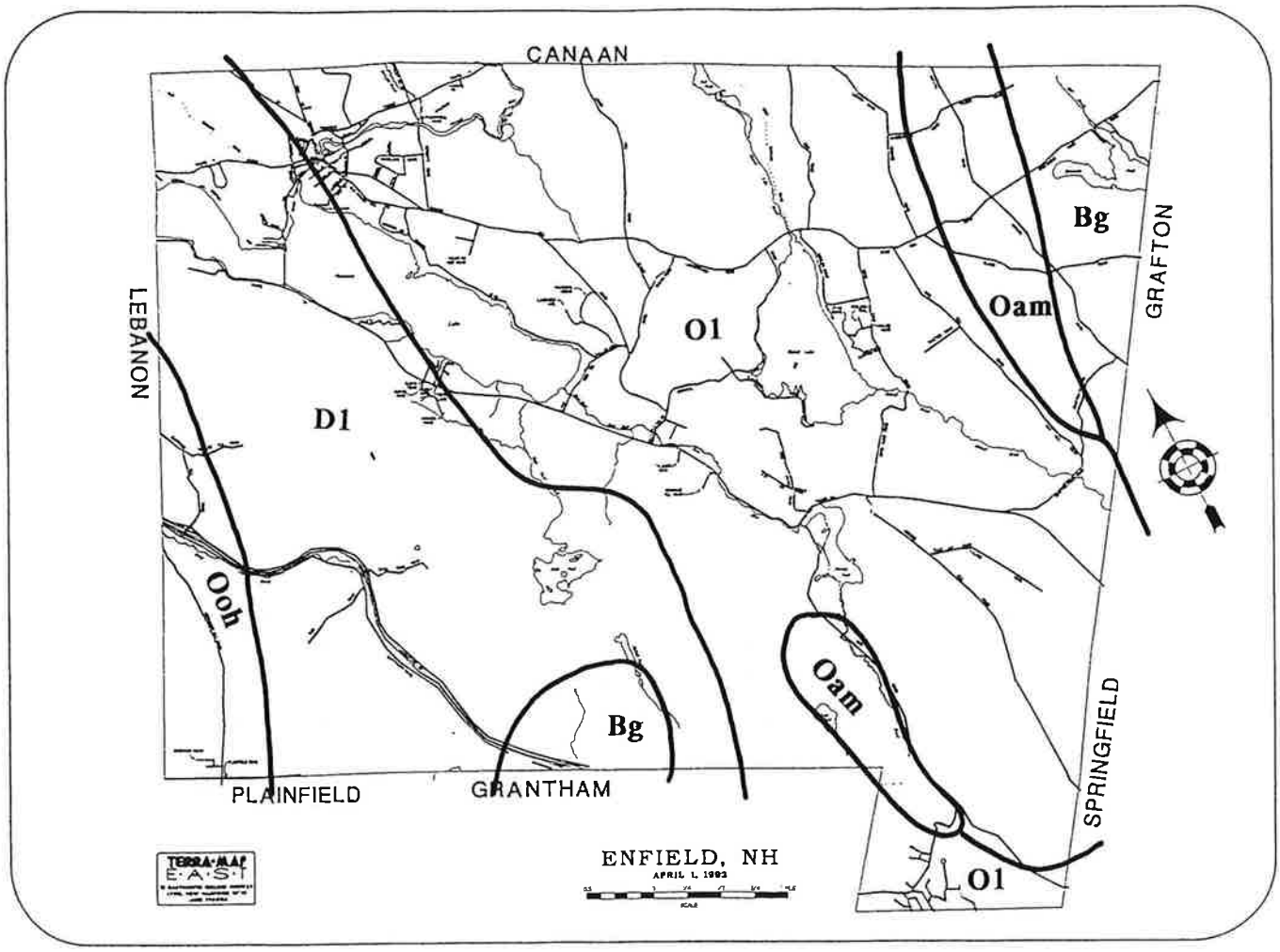
Surficial geology is concerned with those deposits above bedrock. The surface layer of weathered material, soil, is not included in the study of surficial geology. (For a discussion of soils, see the following section.) Surficial deposits are unconsolidated, loose conglomerations of rock fragments.

Surficial deposits in Enfield are the result of glaciation. There have been several periods of glaciation, with the most recent period having ended ten to twelve thousand years ago. As the glaciers advanced, the bedrock was scraped and gouged, and this material was picked up and moved along. This glacial advance, or scraping, did not drastically alter the topography of the area; the profile of the mountains appears much as it did before the Ice Age.
However, the glaciers did have a great impact on the appearance of the valleys. As the climate warmed and the ice retreated north, it deposited two major types of material, till and glacial outwash deposits.

Till is composed of a mixture of soil and rock fragments that were scoured loose by the moving ice, carried for a distance, and then deposited. It is generally highly compacted and contains many large angular stones and boulders. Till covers most of the mountainous and hilly areas of Enfield, ranging in depth from 0 (where bedrock is exposed) to about 40 feet.

ENFIELD MASTER PLAN

MAP 3



BEDROCK GEOLOGY

Ooh	**Metamorphic-quartzite**
D1	**Metamorphic-mica schist**
Oam	**Metamorphic-chorite schist**
O1	**Igneous-granite**
Bg	**Igneous-gneiss**

Source: Billings, 1990

Group 7 - Deep Loose Till Soils

This group consists of well drained sand or loamy soils that have formed in glacial till and occupies about 10% of the town. The water table is commonly more than four feet below the ground and bedrock is more than 5 feet below the surface. The soils contain many angular stones of varying sizes.

Soils will be referred to again when land capability is discussed in Section 3.12.2.

3.7 Water Resources

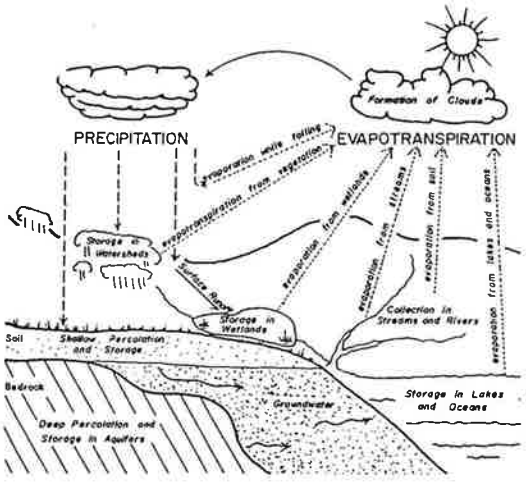
The future of every New Hampshire community depends on an adequate supply of water. Water has historically been one of Enfield's most important resources and still plays a vital role. Both currently used and untapped supplies are threatened by misuse and contamination unless actions are taken now to protect them. However, with proper management, plentiful clean water will always be available for domestic, commercial, industrial and recreational uses.

Communities have in the past taken a reactive approach to protecting water resources: nothing is done until a threat is identified and contamination is imminent or has already occurred.

The goal of the water resources part of the master plan is to assure that local land use decisions are based on the most comprehensive and reliable scientific and technical information available. Because water touches virtually all aspects of master planning, it will be found in various chapters throughout the document.

3.7.1 The Water Cycle

To understand the water resources of Enfield, we have to first understand the water cycle. Water moves continuously in an inter-dependent fashion known as the water cycle. All water is involved in a cyclical movement which continues indefinitely. Water vapor in the atmosphere condenses and falls to the earth as precipitation. This precipitation proceeds in one of three fashions: 1) flows over the surface (runoff), 2) percolates through the soil and flows underground (ground water), 3) collects in depressional areas in the topography to form lakes and ponds (surface storage). At any of these locations, heat generated by the sun can evaporate water and return it to the atmosphere to begin the cycle once again. Plants also play an important role by intercepting precipitation as it falls, absorbing water from the soil, and losing water from their leaves in the form of water vapor (called transpiration). The combined loss of water by evaporation from lakes, ponds, streams, soil and plants is called evaportranspiration.



3.7.2 Surface Water

Surface water is precipitation that does not soak into the ground but runs off into streams, ponds, lakes and rivers. On the average, 1/3 of the annual precipitation is "runoff". Enfield has an abundance of surface water which provides great recreational and economic benefits to the town.

Watersheds are the catch basins for all precipitation falling from the sky. Rain or snow falling within the confines of a watershed's interconnected ridge crests or high points eventually becomes surface and groundwater.

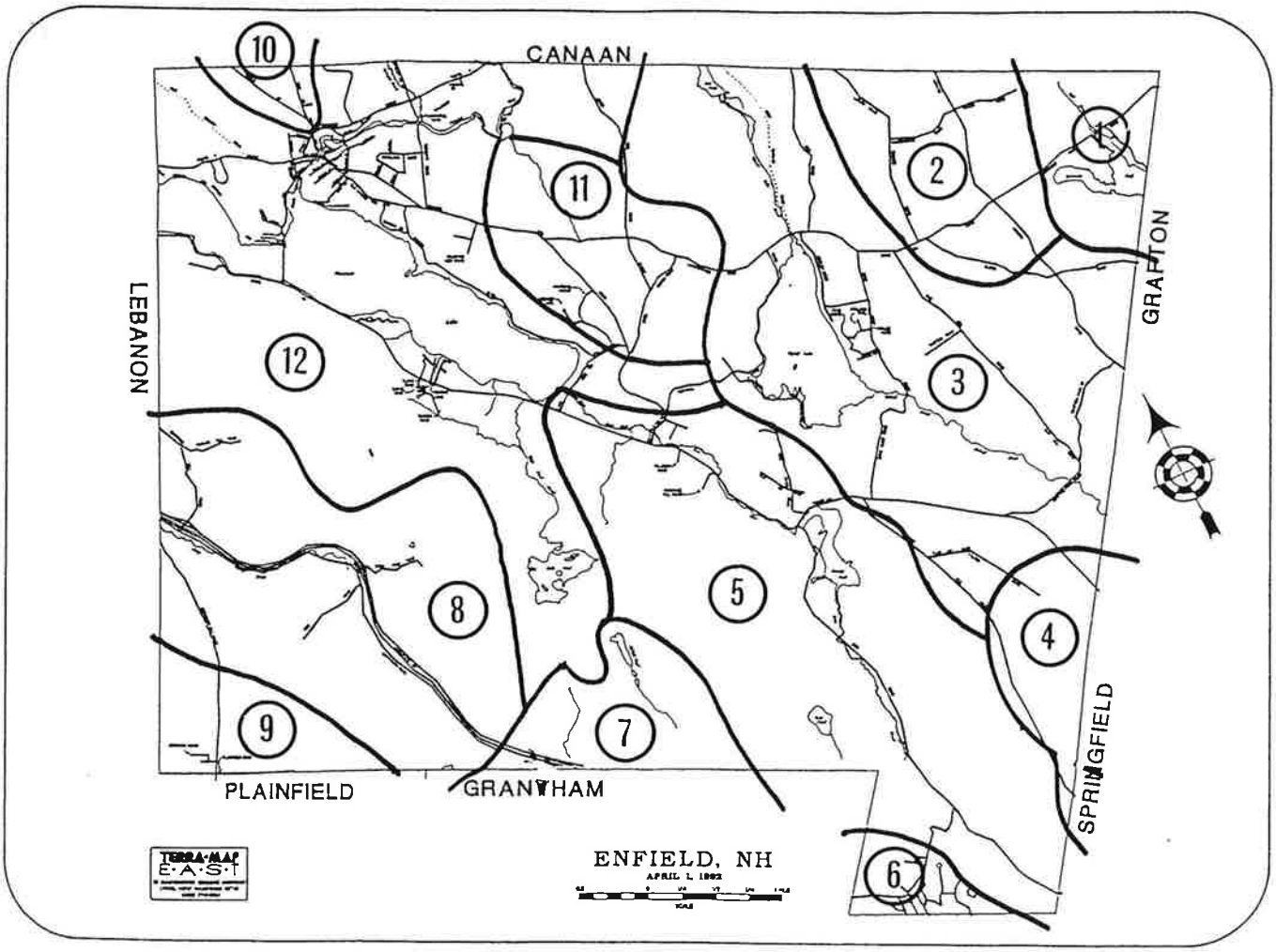
A watershed is usually associated with a particular river or stream it feeds. For example, the Mascoma River drains a watershed starting on top of Mt. Cardigan. Each tributary to the Mascoma, such as the Indian River, has a subwatershed of its own. While groundwater flows may follow the same watershed boundaries, it is not assured and determining accurate groundwaters flow is an expensive and difficult task.

Watershed location is very important for a community to consider in its planning efforts. Quite often a particular watershed lies entirely within a single community, while larger watersheds almost never do. The larger the watershed the greater the possibility that some part of it will lie in one or more neighboring communities. Water resources management in a community up-watershed may have a substantial impact on the water resources of a neighboring community down-watershed. The watershed approach to water resources planning is important because watersheds are the main units of surface and groundwater recharge. The size and physical character of the watershed has a large influence on the amount of water that ultimately will end up as surface water and groundwater. In addition, the land use located within a watershed may be an important factor in water quality. Therefore, it is very important for communities to work together in order to plan effectively for protection of water resources.

ENFIELD MASTER PLAN

MAP 4

MAJOR WATERSHEDS



NUMBER	NAME/AREA	% ENFIELD
1	GULF BROOK	3
2	MOOSE BROOK	5
3	CRYSTAL BROOK BROOK	20
4	UNNAMED	3
5	LITTLE/KNOX BROOK	19
6	EASTMAN POND	1
7	BUTTERNUT BROOK	4
8	STONY BROOK	13
9	GREAT BROOK	3
10	RESERVOIR BROOK	1
11	UNNAMED BROOK	5
12	MASCOMA RIVER	23

All of Enfield drains eventually into the Connecticut River except for two small portions of town located in the south-central and southeastern sectons which drain into the Sugar River Basin.

Map 4 delineates the major watersheds in Enfield. Of course, watersheds do not follow town boundaries and drainage for some watersheds includes several towns.

The Mascoma River is the major river in Enfield with a total drainage area of 134 square miles. It flows in a western direction through the northwest corner of town where it enters Mascoma Lake. The lake adds an additional 19 square miles of drainage area to the river at its dam at the end of the lake in Lebanon. The river flows about 10 miles from the lake to its confluence with the Connecticut River. It has a mean discharge (flow) of 217 cfs but has ranged from a high of 5,890 cfs (1936) to a low of 2.0 cfs!

Other drainages include Stony Brook, Knox River, Bicknell Brook, Crystal Lake Brook and Lovejoy Brook.

3.7.3 Lakes and Ponds

Enfield has all or a portion of eight significant lakes or ponds occupying over 2000 acres. These important natural resources provide recreational opportunities, fish and wildlife habitat and economic benefits.

Table 3.2 lists Enfield's lakes and ponds. Mascoma Lake, shared by both Enfield and Lebanon is by far the largest and deepest. The lake has a drainage area of over 95,000 acres, since it is actually part of the Mascoma River. The second largest waterbody, Crystal Lake, is also within the Mascoma Lake watershed draining to the river via Crystal Lake Brook. The lake's watershed is about 6400 acres and it has a maximum depth of 54 feet. It is also heavily developed, particularly on its western shore. Spectacle Pond, shared by Grafton and Enfield is a shallow pond also within the Mascoma River watershed. The shoreland around the Enfield portion of the pond is also heavily developed. George Pond, a small shallow waterbody surrounded primarily by wetlands, drains to Mascoma Lake.

The 3 ponds in the southwestern portion of town - Smith, Cole and Halfmile - are undeveloped. Only a small portion of Eastman Pond is in Enfield and the pond drains south to the Sugar River.

Enfield's lakes and ponds are important to the community for a variety of reasons and will be discussed in other sections of this plan including water quality, wildlife, recreation, land use and economics.

TABLE 3.2
LAKES AND PONDS

Name	Size (Acres)	Maximum Depth (feet)
Mascoma Lake*	1115	68
Crystal Lake	369	54
Spectacle Pond*	108	16
George Pond	30	10
Cole Pond	17	54
Smith Pond	68	35
Half-mile Pond	7	-
Eastman Pond*	335	40
Mud Pond	9	8

* Only a portion in Enfield

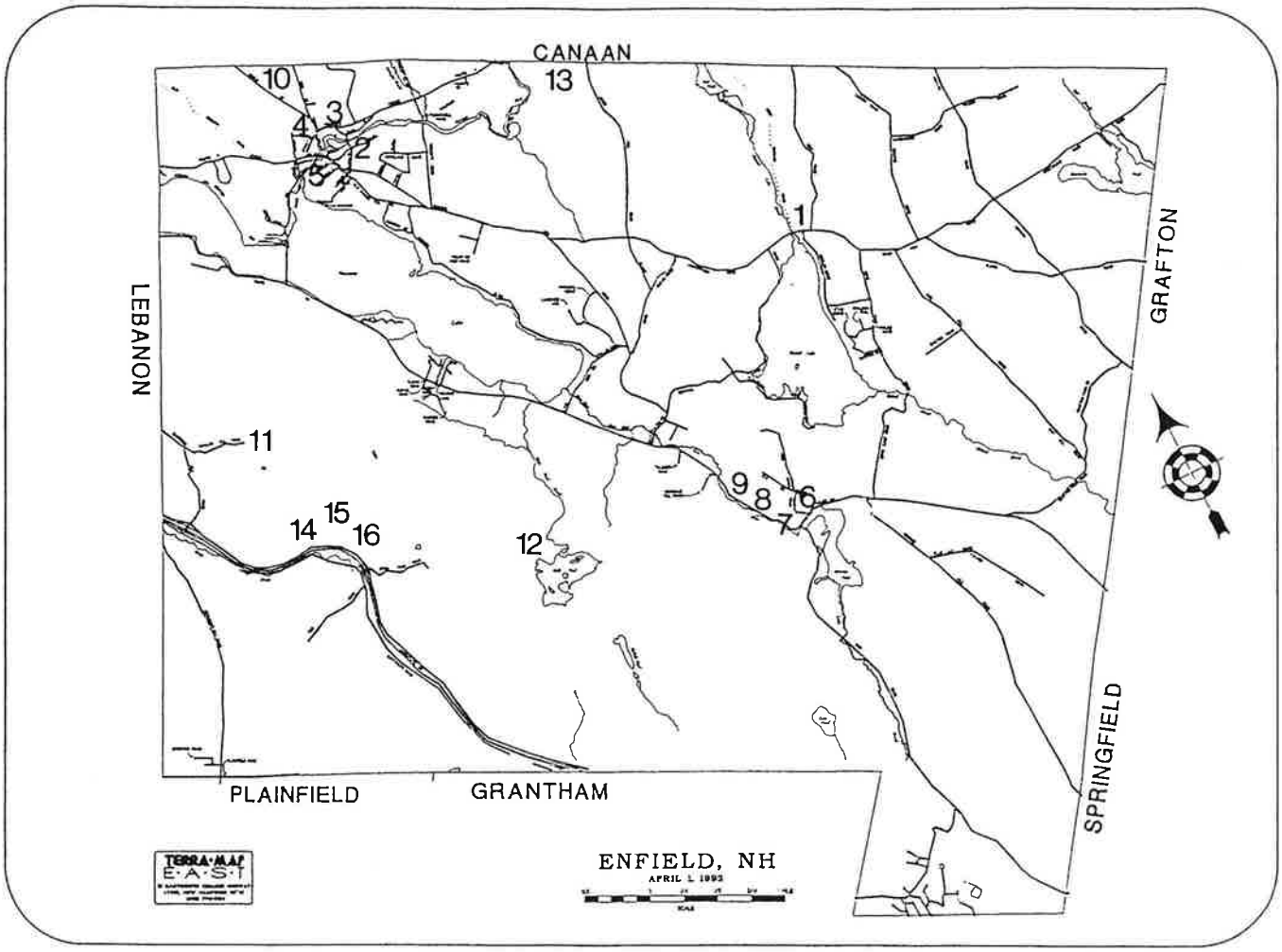
3.7.4 Impoundments

Map 5 and Table 3.3 show the location of impoundments or dams in Enfield. Sixteen dams are registered with the NH Water Resources Division. Only the dam on George Pond is owned by the Town. It is a 9.5 foot high earthen structure. The dam on Crystal Lake is owned by the State and is a 22 foot concrete structure. Ownership of the dam on Smith Pond is uncertain, according to the Water Resources Board.

Four of the dams are on the Mascoma River, one of which (Baltic Mills) produces electricity. Most of the other dams were built for recreational purposes.

ENFIELD MASTER PLAN

MAP 5



IMPOUNDMENTS

10 **Dam Number**

Source: DES, 1994

TABLE 3.3
DAMS IN THE TOWN OF ENFIELD

DAM#	NAME OF DAM	OWNER	WATERBODY
1	Crystal Lake Dam	NH Water Resources Division	Crystal Lake Brook
2	Baltic Mills Dam	Energetic Enterprises Incorporated	Mascoma River
3	Mascoma River II	Energetic Enterprises Incorporated	Mascoma River
4	Mascoma River III	Abe Caplan	Mascoma River
5	Mascoma River IV	Ms Edwin Lewiston Estate	Mascoma River
6	George Pond	Town of Enfield	Knox River
7	Knox River I	Bessie Arnold	Knox River
8	Knox River II	F R Morse	Knox River
9	Knox River	---	Knox River
10	Farm Pond	Linda Jones	Natural Swale
11	Wildlife Pond	Edward C Lathem	Natural Swale
12	Smith Pond	---	TR Mascoma Lake
13	Fire Pond	Leo Wilson	Natural Swale
14	AMCA Dam	United Dominion Industries	Unnamed Stream
15	AMCA International Dam	AMCA International Corp	---
16	Reed Farm Pond	Jeffrey Reed	---

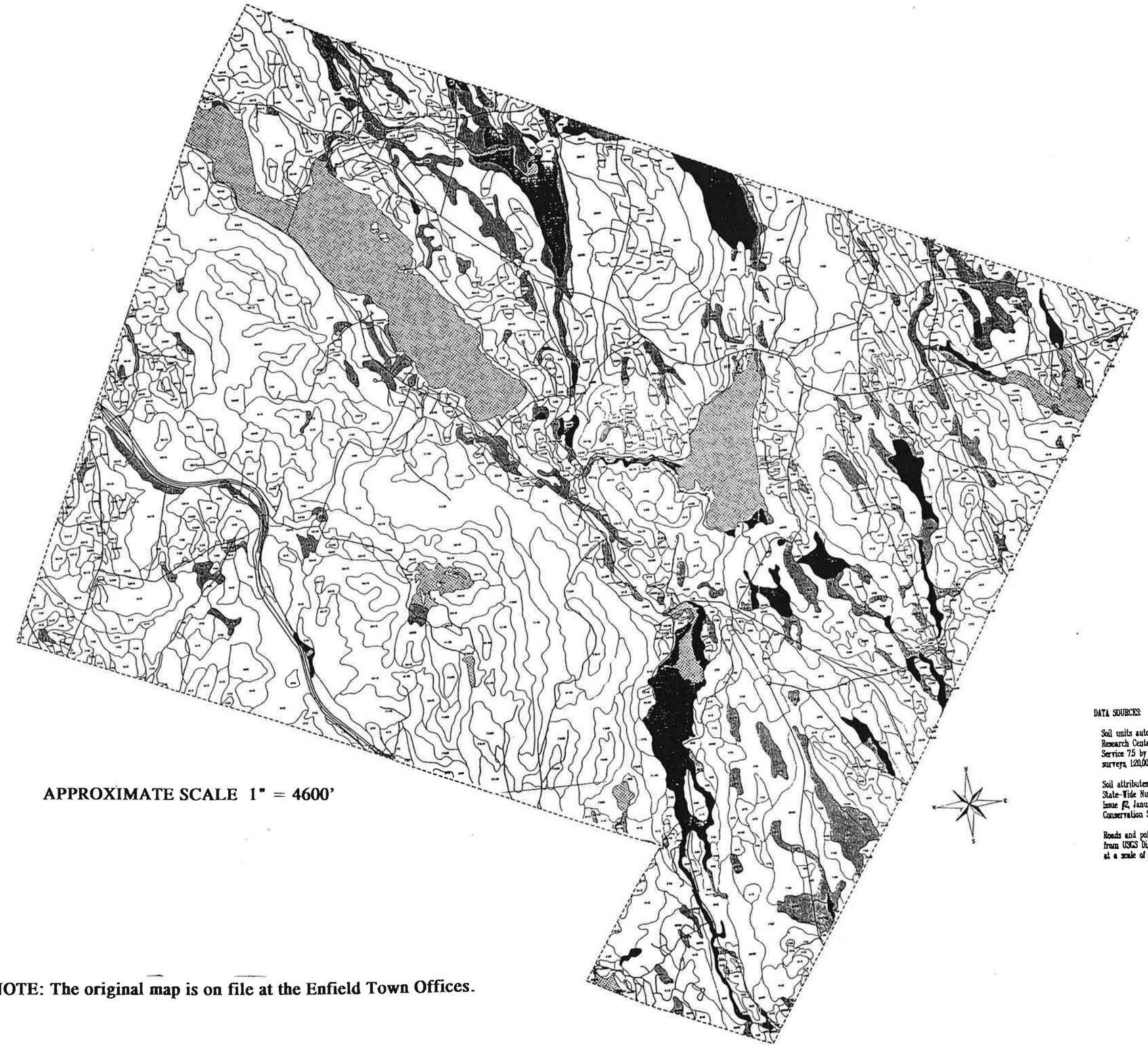
--- Data Unavailable

Source: DES, 1994

3.7.5 Wetlands

Wetlands are called many different things---marshes, bogs, swamps, lowlands, etc. Generally, they are areas of low topography and poor drainage. However, exactly where wetlands begin and dry land end is not easily delineated because changes in the water cycle cause tremendous variations in local water level. The best available delineation of wetlands can be taken from the soils map which defines poorly and very poorly drained areas. Enfield's wetlands, as shown on Map 6. Wetlands are one of the most important resources in Enfield for a variety of reasons:

MAP 6
WETLAND SOILS



APPROXIMATE SCALE 1" = 4600'

- Very poorly drained soils
- Poorly drained soils
- Water bodies
- Political boundaries
- Roads

DATA SOURCES:

Soil units automated at Complex Systems Research Center from USDA Soil Conservation Service 7.5 by 2.5 minute mylar soil surveys, 1:20,000.

Soil attributes taken from "New Hampshire State-Wide Numerical Soils Legend", Issue #2, January, 1991, USDA Soil Conservation Service.

Roads and political boundaries are from USGS Digital Line Graph series at a scale of 1:24,000.

NOTE: The original map is on file at the Enfield Town Offices.

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Flood Control - Wetlands act as sponges during times of flooding and during spring runoff. Wetlands can absorb great quantities of water, thus reducing flood levels downstream. This stored water is later slowly released which helps to maintain a stable streamflow during the dry months. This is true particularly along the Mascoma River.

Wildlife Habitat - Wetlands provide water, food, nesting areas, breeding grounds and cover for a variety of wildlife. Waterfowl, shorebirds and songbirds feed and nest in these areas. Numerous furbearers and species of fish inhabit wetlands. Because of this wildlife, wetlands are important recreational and scenic areas.

Pollution Filtration - Wetlands are efficient cleansers of pollution, both natural and man made. Water containing pollutants, such as bacteria and organic matter from septic systems, is filtered by vegetation and microscopic animals as it passes through a wetland. These natural capacities can be overloaded, however.

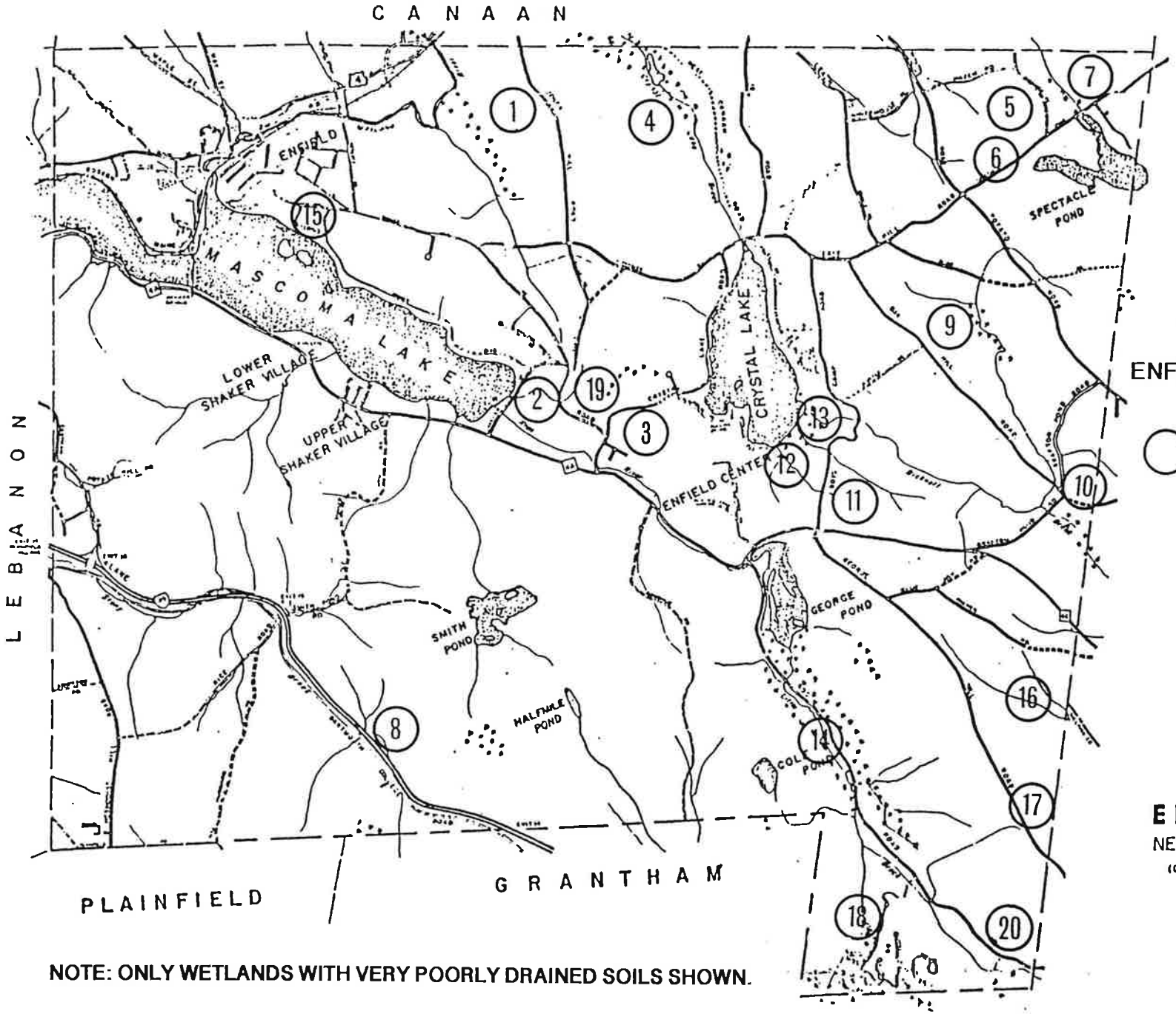
Groundwater - The recharging of groundwater supplies is especially important in wetlands which occurs in areas of permeable sands and gravel. The indiscriminate development of these wetlands and their surrounding sand and gravel deposits could substantially lessen the amount and quality of water entering the ground.

Wetlands perform all of these functions with no charge. Dams, sewage treatment plants, water purification plants and other expensive man-made controls all try to do what wetlands do naturally. Enfield's wetlands are not wastelands, but a valuable and sensitive natural resource.

Wetlands, for the purpose of the report, are defined as poorly or very poorly drained soils. Poorly drained soils have a seasonally high water table that comes within one foot of the surface during part of the growing season. They are predominately wooded swamps in Enfield. Very poorly drained soils are wetter and have water at or near the surface for several months of the year. Very poorly drained soils are what most people normally think of when they think wetlands.

Map 6 delineates the wetlands in Enfield. Twelve percent of the Town is wetland which is about average for Grafton County. Approximately 1300 acres are very poorly drained soils with 1600 acres poorly drained.

While all wetlands are important, they vary in importance relative to their functional values. One wetland may be more important for flood control while another may be more important for wildlife, for example. In 1992, the Enfield Conservation Commission prepared a report on Enfield's wetlands which rated 20 wetlands containing very poorly and poorly drained soils. Map 7 and Table 3.4 show the location and relative values of wetlands evaluated. (See "Wetlands Evaluation, Enfield, NH"; October, 1992, for further information). At town meeting in 1993 the 5 wetlands with the highest functional values - wetlands # 14, 1, 4, 10 and 9 - were designated prime wetlands as provided under RSA 483-A.



MAP 7

INDEX MAP

ENFIELD WETLANDS

○ WETLAND NUMBER

TOWN OF
ENFIELD
NEW HAMPSHIRE
(GRAFTON COUNTY)

NOTE: ONLY WETLANDS WITH VERY POORLY DRAINED SOILS SHOWN.

Table 3.4

SUMMARY OF WETLAND EVALUATIONS

Functional Value	Wetland # 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Ecological Integrity	302	10	8	211	114	70	21	7	128	132	62	2	15	285	4	35	80	5	25	6
2. Wildlife Habitiat	269	5	14	192	72	50	17	8	106	117	41	2	12	334	2	20	50	3	16	5
3. Finfish Habitat- Streams	20	.05	.1	13	0	34	.5	.2	1	3	.07	0	.1	5	0	0	0	.06	.06	.7
Lakes	0	0	10	10	0	73	23	0	0	0	0	2	15	46	0	0	0	0	0	0
4. Education Potential	52	.4	.3	77	1	9	15	4	12	.6	.5	1	7	43	2	.2	.3	.6	2	1
5. Aesthetic Quality	77	.44	.3	50	1	17	9	5	14	11	.5	2	12	119	2	.5	.5	1	3	1
6. Water Based Recreation	266	4	4	181	0	42	18	4	12	112	21	0	11	342	0	0	0	2	10	0
7. Flood Control Pot.	364	11	5	211	90	62	23	13	133	124	52	.2	2	380	5	28	17	6	32	3
8. Groundwater Potential	364	11	7	175	52	32	9	3	53	108	26	1	8	380	0	14	0	3	0	7
9. Sediment Trap	346	6	6	156	75	44	19	7	100	86	39	1	9	369	2	15	35	5	18	5
10. Nutrients	277	4	5	118	49	32	13	2	69	68	29	1	7	289	0	12	29	3	21	4
11. Shoreline Erosion	6	.14	.6	2	0	2	1	.4	2	7	.4	.1	.4	6	0	0	0	.2	.4	.4
12. Urban Qual-Wildlife	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Education																				
Visual																				
Recreation																				
13. Historic Potential	364	0	0	0	0	80	0	0	133	138	0	0	0	380	0	0	0	0	0	0
14. Noteworthiness	364	0	0	211	0	0	0	0	0	0	0	0	15	380	0	0	87	0	0	7

Bold-Highest Score Underlined-2nd Highest Score

3.7.6 Flooding

Floods are a natural and normal occurrence in an area of high rainfall. During normal streamflow, water is carried in a river channel. But in times of high runoff, water rises over the banks and flows onto the floodplain. Floods only become a problem when man competes with nature for use of the land.

Floods occur in Enfield periodically depending on storm patterns, snow melt and ice jams. In the last 100 years, 4 major floods have occurred in Enfield: 1936, 1938, 1953 and 1973. There is a U.S. Geological Survey gauging station located on the Mascoma River just south of Mascoma Lake outlet in Lebanon. Records for this 153 square mile drainage area have been maintained since August 1936, with the maximum discharge recorded in March, 1936 of 5,840 cubic feet per second, greater than a calculated 100 year flow.

March 1936 was also when the worst flood damage occurred along the river. The flood was caused by two major storms combined with snow melt and ice jamming.

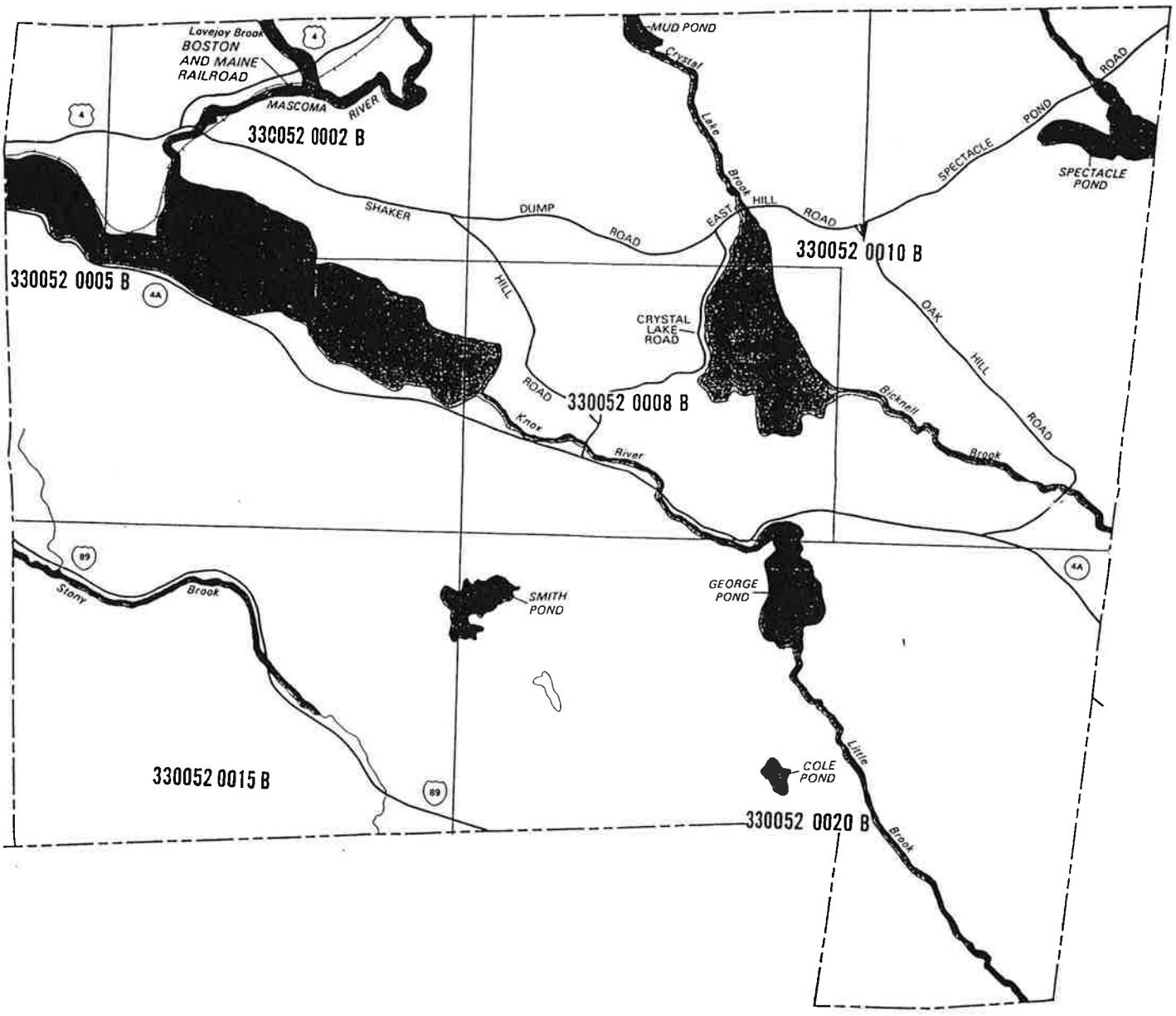
In 1988, an extensive hydrologic study was done by the U.S.D.A. Soil Conservation Service of the Mascoma River, Mascoma Lake and Lovejoy Brook with actual flood elevations determined. From this study, flood insurance rate maps (FIRM) were published by the Federal Emergency Management Agency. These maps identify those areas of Enfield that have a 1% chance of flooding in any given year. The owners of structures in the flood hazard areas are eligible for low cost flood insurance. Map 8 is on index to the FIRM maps for Enfield which are on file at the Town Offices.

While much of the flood hazard area in Enfield is in wetlands along the Mascoma River, some flooding does occur in built up areas including about 1200 feet of Route 4 near Lovejoy Brook.

Flood hazard areas present major problems for any land use which requires the building of permanent structures. The town must enforce its floodplain building regulations or risk being ineligible for the flood insurance program and other disaster related federal funds.

MAP 8

INDEX MAP TO ENFIELD'S FLOOD HAZARD MAPS



3.7.7 Groundwater Resources

Potential Groundwater Supplies

The stratified drift aquifers represent the greatest potential groundwater source for the town of Enfield. These areas aquifers represent potential usable water sources for municipal purposes and should be protected to insure their future quality and availability.

Currently, the USGS is completing a comprehensive mapping of Enfield's aquifers. Unfortunately, it will not be completed until late 1995. Map 9 shows potential aquifers mapped by USGS in 1976.

Bedrock and Till Aquifers

No studies or mapping of bedrock or till aquifers have been completed. However, wells in these areas are generally much lower yielding than in stratified material. Additionally, depth and yield of these wells can vary greatly. Table 3.5 summarizes the data from 236 drilled bedrock wells drilled in Enfield since 1984. Yields range from 0 gpm to 150 gpm and well depths range from 80 feet to over 700 feet. The yield from these bedrock wells are sufficient for residential and commercial uses but are generally insufficient to support more high intensity high water uses. Map 9 shows well locations in Enfield.

TABLE 3.5
DRILLED WELL LOGS, ENFIELD, NEW HAMPSHIRE
1984 - 1992

Number of Bedrock Wells -	236
Average Depth -	291 feet
Maximum Depth -	710 feet
Minimum Depth -	80 feet
Average Yield (gpm) -	10
Maximum Yield (gpm) -	150
Minimum Yield (gpm) -	0.25
Average Depth to Bedrock -	35 feet
Maximum Depth to Bedrock -	155 feet
Minimum Depth to Bedrock -	0.5 feet

Source N.H.D.E.S. - W.R.D. 1993, Lobdell Associates

3.7.8 Water Quality

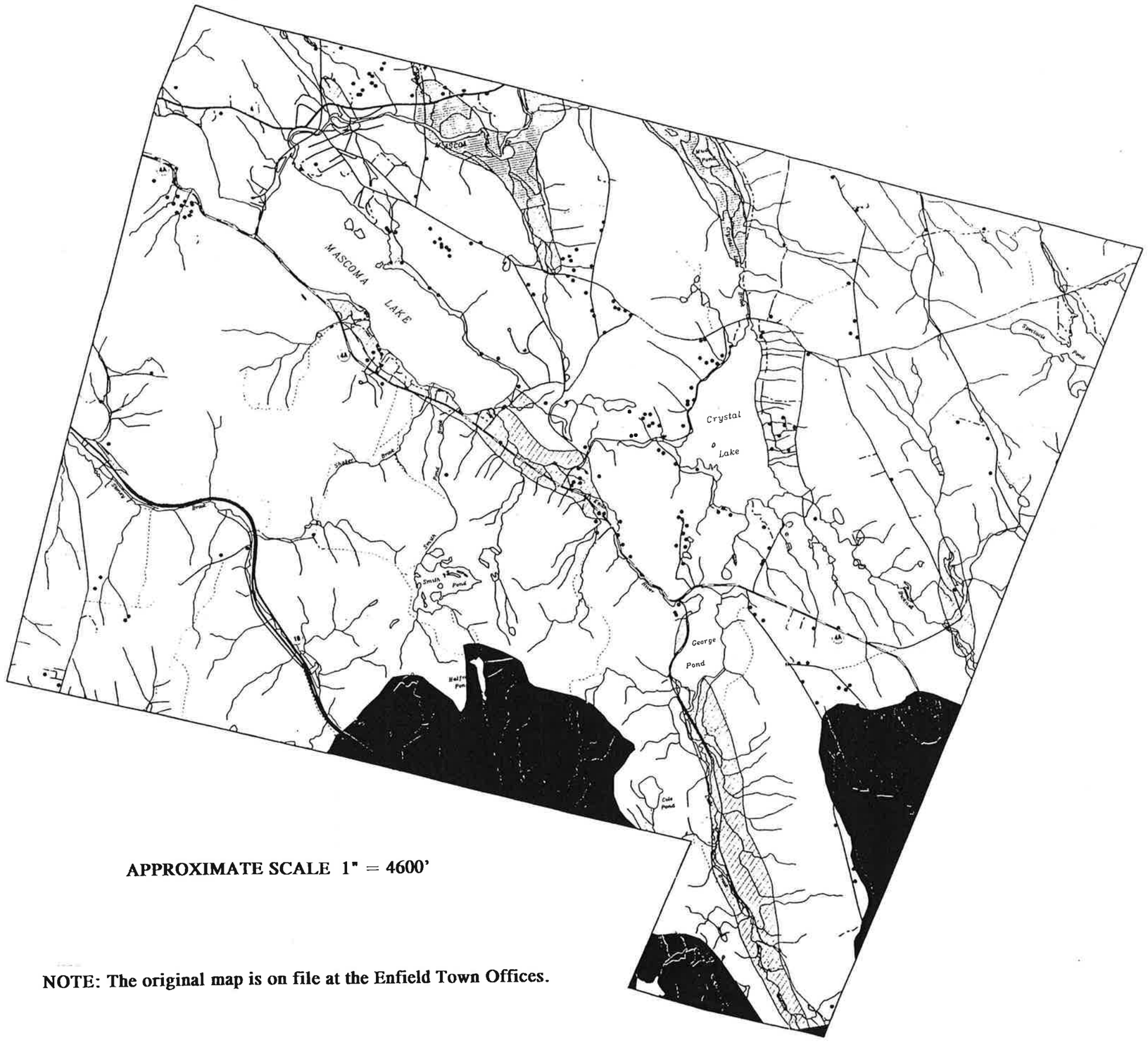
Water quality may be evaluated by many individual characteristics. Different quality characteristics can affect the use or value of a particular body of water. For example, bacteria concentrations that exceed safe bathing levels can be tolerated by fishlife. Conversely, a low dissolved oxygen concentration has little effect on the swimming potential but can severely limit types and populations of fishlife. The New Hampshire Water Supply and Pollution Control Division classifies surface water as either A, B or C, with A the highest quality. Prior to 1991, sections of the Mascoma River, in Enfield and lower Lebanon, were classified as C. However, today all surface waters are classified as either A or B with only those watersheds serving as town water supplies classed as A waters. In Enfield, Class A watersheds are the Lasalette Reservoir Watershed and the Glendon Poland Reservoir. Both are located in the southwestern portion of town.

Table 3.6 shows the most recent water quality results from the Mascoma River. Water quality in the river actually improves as it flows from Canaan through Enfield to Lebanon. Water quality in the river meets Class B standards.

TABLE 3.6
SURFACE WATER QUALITY
MASCOMA RIVER

Location:	Rte 4 Brid - Canaan	Rte 4 Brid - Lebanon
W.Q. Station:	16 - M_sC	12 - M_sC
Date:	7/23/92	7/23/92
W.Q. Parameter		
Temp (°C)	17	18
E. Coli Bacteria (cts/100 ml)	60	<10
Oxygen (mg/l)	6.9	9.5
Saturation (%)	73%	100%
pH	7.2	7.6
Spec. Conductivity (uMHO$_s$)	60	65
Lead (mg/l)	<.003	<.003

Source: N.H. - W.S.P.C.D., 1992



MAP 9

Groundwater Availability and Well Locations

- Middle Connecticut Basin
- Lower Connecticut Basin
- Low Ground Water Potential
- Medium Ground Water Potential
- WELL LOCATIONS

APPROXIMATE SCALE 1" = 4600'

NOTE: The original map is on file at the Enfield Town Offices.

The GRANIT System is a collaborative effort between the Complex Systems Research Center at the Institute for the Study of Earth, Oceans, and Space and the New Hampshire Office of State Planning. Housed at the University of New Hampshire, the GRANIT System is acquiring, developing, archiving, and applying geographically referenced data to support resource decision-making at the regional and statewide level.

Produced for:
Lobdell Associates, Inc.
Landaff, New Hampshire

Map by:
Complex Systems Research Center
Institute for the Study of Earth, Oceans, and Space
University of New Hampshire
May, 1994

Data Sources:

All data sets extracted from the NH GRANIT database.

Groundwater availability and basin boundaries from US Geological Survey, "Availability of Groundwater" map series, 1:125,000, 1975.

Well data from NH Water Resources Division, Department of Environmental Services, 1:24,000, updated April, 1994.

Town boundaries from US Geological Survey Digital Line Graphs, 1:24,000.

Transportation and hydrographic features were reclassified from US Geological Survey Digital Line Graphs, 1:24,000.

Lake Water Quality

Enfield's lakes are an important recreational and economic asset so it is important to maintain their water quality. Unlike rivers and streams, lakes undergo a natural aging process whereby a lake becomes enriched and gradually fills in. The process can be greatly accelerated by the activities of man.

Table 3.7 provides a breakdown of water quality and condition in Enfield's major lakes and ponds. Generally, the waterbodies are in good shape and recent testing in Mascoma and Crystal Lake show conditions improving.

The Biology Bureau of the N.H. Water Supply and Pollution Control Division has sampled water quality in Enfield's major lakes and ponds and placed the lakes into one of 3 water condition categories:

- Oligotrophic - These lakes are usually nutrient poor and as a result do not support nuisance algae blooms and massive weed infestations. Aesthetically, these lakes are the best of the three ratings.

- Mesotrophic - This condition is intermediate between an oligotrophic and eutrophic waterbody. Algal production is moderate. Phosphorus input and water clarity are also intermediate compared to the other two lake ratings. If the lake is abused it eventually may move into the eutrophic category.

- Eutrophic - Eutrophic lakes are characterized by high production of algae and aquatic weeds, which indicates that the system is receiving excessive amounts of phosphorus or nitrogen. Water clarity is reduced dramatically during algae blooms.

Enfield has lakes in all three categories but only George Pond is considered eutrophic. This is primarily the result of its shallow depth (mean 4.9 feet).

TABLE 3.7
LAKE AND POND WATER QUALITY

Parameter	MASCOMA	CRYSTAL	SPECTACLE	SMITH	GEORGE
pH	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Alkalinity (mg/l)	Highly sensitive	Highly Sensitive	Highly Sensitive	Near Critical	Sensitive
Color (units)	Clear	Clear	Clear	Clear	Highly Colored
Total Phosphorus	Average	Average	Average	Low	Average
Aquatic Plants	Scattered	Scattered	Scattered	Abundant	Abundant
Chlorophyll-a	More than desirable	Good	Good	-	More than desirable
Water Clarity	Good	Good	Good	Exceptional	Poor
Trophic Status	Mesotrophic	Oligotrophic	Oligotrophic	Mesotrophic	Eutrophic
Legislative Class	B	B	B	A	B

Source: NH D.E.S.

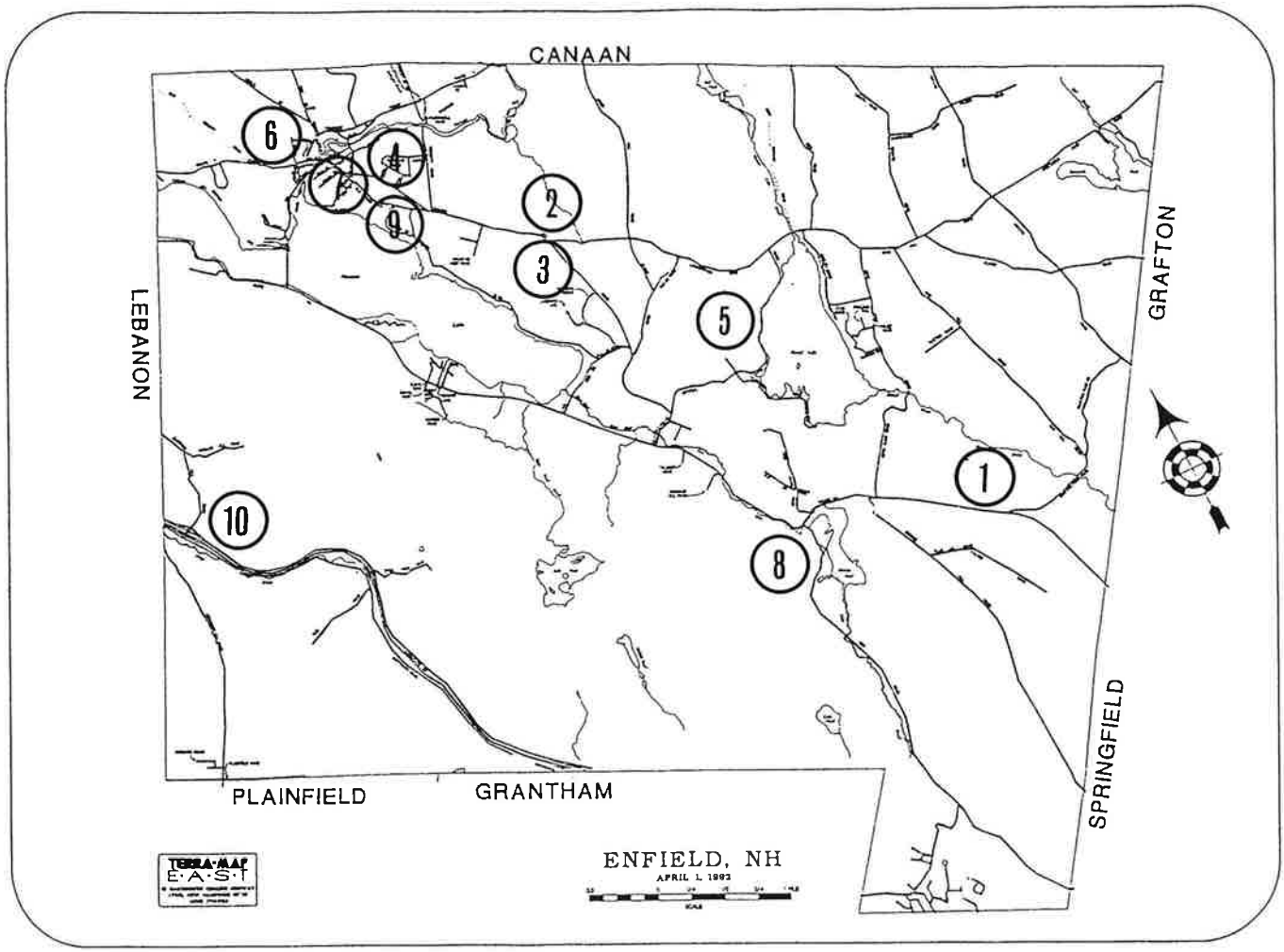
Non-point Pollution Sources

The NHWSPD has identified potential non-point pollution sources throughout Enfield. These are shown on Map 10 and include:

1. Auto Salvage Yard
2. Abandoned dumps
3. Abandoned dumps
4. Salt Storage
5. Concentrations of septic systems.
6. Urban runoff
7. Snow dumping
8. Stump dump
9. Town Garage
10. State Garage

ENFIELD MASTER PLAN

MAP 10



POTENTIAL NONPOINT POLLUTION SOURCES

◯ **Number**

Source: DES

Additionally, within the town of Enfield there are 24 underground storage tanks having capacities of 1,100 gallons or greater, according to the New Hampshire Department of Environmental Services. Table 3.8 lists the locations, tank capacity, age and product stored for each tank.

These 24 tanks plus the hundreds of smaller tanks located throughout Enfield represent a potential pollution threat.

Since the 1980's, DES has required the closing of old or leaking underground storage tanks. Thirty three such tanks have been closed in Enfield. Most have been removed with several being filled in-place with sand. The remaining tanks store either gasoline, diesel fuel or heating oil.

The Department of Environmental Services also maintains a list of potential or existing groundwater hazards by town Table 3.9 shows the known potential groundwater hazard sites in Enfield. They include underground tanks, underground injection systems (including floor drains) and the old town dump on East Hill Road.

TABLE 3.9
POTENTIAL OR EXISTING GROUNDWATER HAZARD INVENTORY LIST

Facility	Location	Type
Baltic Mills	Baltic St	underground tank
Cathi & Don's Country Store	Prospect St, Rte 4	underground tank
Enfield Ctr/Proctor Store	Rt 4A/Enfield Ctr	underground tank
Enfield Closed Landfill	East Hill Rd	unlined landfill
Enfield Town Garage	Shedd St	underground tank
Evans Fuel	Exit 16, I-89	underground tank
Gibbs Hair Salon	Woodland Dr	underground injection
Goodwin Farm	Spectacle Pond Rd	underground tank
Karpy's	East Hill Rd	underground injection
Lakeview Condo's	Rt 4A	community septic system
Mascoma Marina	Rt 4A	underground tank
Putnam Property	Rt 4	underground tank
Shakee Sheers	157 Shaker Hill Rd	underground injection
Shaker Valley Auto	Rt 4	underground injection
Tinkham's Store	Rt 4	underground tank
Whaleback Ski Area	Whaleback Mountain Rd	underground tank

Source: DES, 1994

Point Sources

Public files maintained by the New Hampshire Department of Environmental Services were reviewed in May of 1994. Only one permit has been issued under the National Pollutant Discharge Elimination System (NPDES) for surface water discharge in Enfield. The permit is for stormwater runoff.

3.8 Vegetation

Enfield is primarily wooded. Climate and soil are the primary factors which determine what types of vegetation will grow in an area. Typical tree species that grow in this northern location are white pine, balsam fir, white birch, yellow birch, red maple, sugar maple, beech, and poplar. Depending on specific site factors such as soil and topography these trees will grow in associations known as forest cover types. For example the combination of yellow birch, sugar maple, and beech, known as a northern hardwood group, will grow on well-drained upland sites. White birch and red maple are not nearly as site specific, being found with both the northern hardwood and spruce-fir cover types. White birch and poplar are early successional species and will be the first trees to grow on disturbed sites created by fire or timber harvesting.

Map 11 shows the area of softwood and hardwood growth in Enfield. Over 2/3rds of the woodland is in softwoods. As with trees, smaller vegetation is also site specific. The underbrush in the open forest consists chiefly of shadbush, striped maple, mountain maple, hornbeam, barberry, highbush and lowbush blueberry, ferns and bracken. This underbrush thins in the coniferous forest at higher elevations. In places especially where hardwoods and conifers are intermingled, the forest floor is covered with groundpine, moss, wintergreen and creeping snowberry.

Fields contain much spirea, sumac and aspen sprouts. Along the fence rows, around cleared areas, pin cherry, chokecherry, panicled dogwood and alternate-leaved dogwood abound. Raspberries, blackberries and dewberries are common in old clearings along hedge-rows and in old trails. Creeping bent, red maple, elder, reeds, rushes and sedges cover the low wet areas. The more common weeds in pastures are devil's paintbrush, wild carrot, buttercup, sorrel, wild mustard, wild strawberry, goldenrod and quackgrass.

The great diversity of species in Enfield make it impossible to list all plants that are found. It is noteworthy, however, that the N.H. Natural Heritage Inventory lists only one rare or endangered plant species known to occur in Enfield. The plant is the Bold Spike Rush (Eleocharis Erythropoda), last observed in 1932 near Enfield Village.

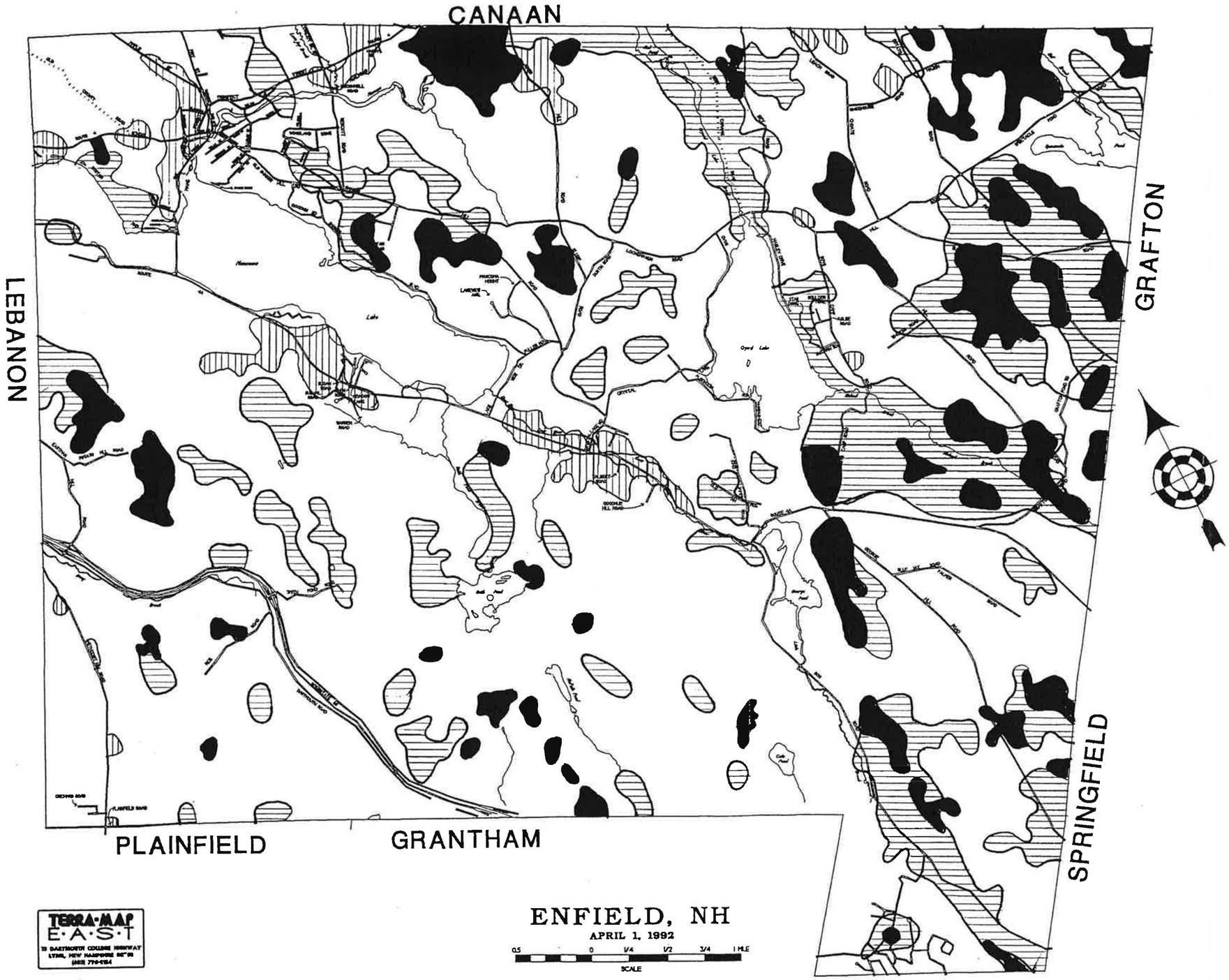
Also, a wetland plant (Rose Pogonia), a "Species of Special Concern", is found near Mud Pond, according to the Enfield Conservation Commission. While not endangered or threatened at the present time, it may become so in the future.

While not yet present in the lakes and ponds of Enfield, exotic weeds are a threat to wildlife and recreational uses of New Hampshire's waterbodies. Exotic weeds, such as milfoil, are present in the state and can be spread by boats traveling from one waterbody to another. Control of such weeds involves education of lake users and removal of weeds by hand when first introduced.

ENFIELD MASTER PLAN

MAP 11

VEGETATIVE COVER TYPES



NOTE: Based on information from "Landsat" Cover Types map for Enfield. Original map on file at the town offices.

prepared by Lobdell Associates
1994

3.9 Fish and Wildlife

According to the State Fish and Game Department, most of the 420 species of animals and birds found in the state can be seen within the town of Enfield. The more common species which are residents of Enfield include: moose, white tailed deer, black bear, snowshoe hare, ruffed grouse, woodcock, coyote, beaver, muskrats, raccoons, otter, mink, fisher and bobcat. Occasionally such endangered species as the bald eagle and the peregrine falcon and threatened species such as osprey, northern harrier and night hawk are seen in Enfield.

Though no survey of wildlife in Enfield exists, a measure of wildlife viability within the entire town can be obtained from wildlife kill records. Tables 3.10 and 3.11 present both the deer and bear kills recorded by the N.H. Fish and Game Department for 1992 in Enfield, and the furbearing animal kill summary for 1993. Important hunting areas in Enfield include Shaker Mountain and George Pond. Crystal Lake, Mascoma and Bicknell streams for duck hunting.

Recently in New Hampshire the moose population has become substantial with the numbers in the state now estimated to be in the thousands. "Moose watching" has become a pastime for residents and tourists alike. Additionally, the state has begun a limited moose hunting season with 75 permits being given out each year.

TABLE 3.10
1992 DEER AND BEAR KILL SUMMARY - ENFIELD

	Deer		Bear	
Year	Enfield	Grafton	Enfield	Grafton
1992	60	1067	3	106

Source: N.H. Fish and Game Department

Also wild turkey, recently introduced to the state are beginning to make their presence shown in Grafton County. A turkey season now exists and while no turkeys have been taken in Enfield, they have been hunted sucessfully in nearby Lebanon.

Snowshoe hare, ruffed grouse and woodcock comprise the primary small game resources. Furbearers such as mink and otter are associated with riverine ecosystems while beaver and muskrat may be found in both pond and slow flowing stream environments. Fisher, raccoon, red fox, skunk, weasel and an occasional gray fox and bobcat provide additional furbearing resources. Other common species include woodchuck, chipmunk, squirrel and porcupine.

TABLE 3.11
FURBEARING ANIMAL KILL
SUMMARY
GRAFTON COUNTY, 1993

Species	Grafton
Beaver	187
Muskrat	120
Fisher	41
Raccoon	60
Mink	48
Otter	20
Red Fox	22
Grey Fox	12
Skunk	5
Weasel	1
Bobcat	0
Coyote	46

Source: N.H. Fish and Game Department

With Enfield's abundance of lakes, ponds and rivers, fish populations are substantial and supplemented by the N.H. Fish and Game stocking program Enfield's lakes and ponds contain both warm and cold water species. Mascoma and Crystal Lakes historically contain yellow perch, bullhead, pickeral, black bass and smelt. Salmon and trout species have been introduced over the years and both lakes are managed by the N.H. Fish and Game Department under a two-tier cold and warm species program. Spectacle, Smith and George Pond are managed for warm water species only while Cole Pond is managed for trout and heavily stocked by helicopter each year.

Table 3.12 lists the lakes, ponds and streams that are stocked with trout by the Fish and Game Department and the number and type of fish stocked. However, all Enfield waters are important in providing habitat, food and cover for a variety of fish species.

TABLE 3.12
FISH STOCKING

1993 Stocked Waters	Brook Trout	Rainbow	Brown Trout
Mascoma Lake	--	3,000	3,250
Halfmile Pond*	800	--	--
Crystal Lake	--	200	--
Cole Pond*	3,800	--	--
Bicknell Brook	600	--	--
Knox River	200	--	--
Mascoma River	500	300	--
Strong Brook	240	--	--
Little Brook	160	--	--
Lovejoy Brook	320	--	--
Stony Brook	240	--	--

Source: N.H. Fish and Game, 1994

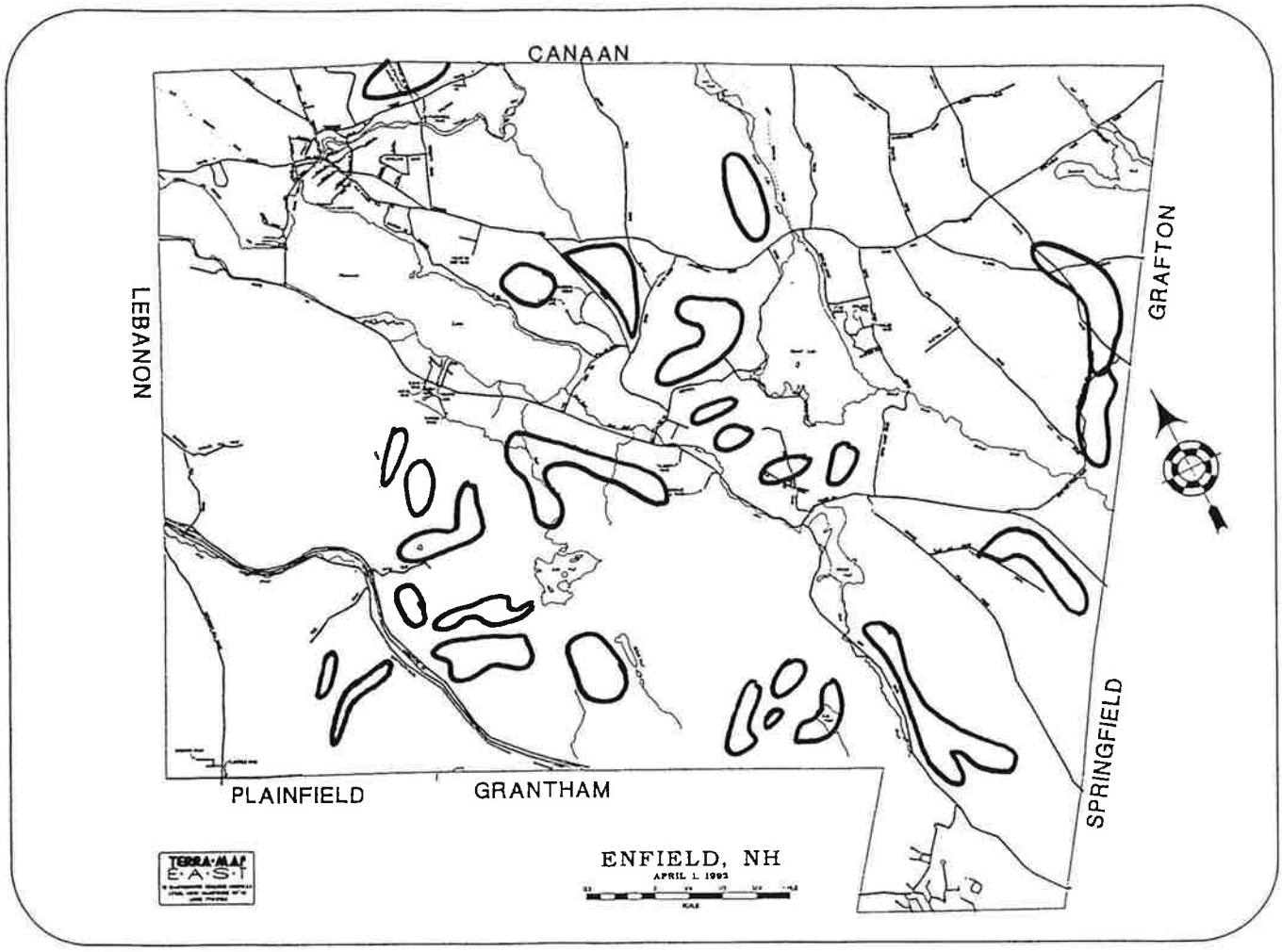
Black ducks, mallards and wood ducks are the three resident water fowl species utilizing the available wetland habitat. Several species of water birds also use these areas. Although some migratory water fowl use is made of these isolated wetlands, distance from the Connecticut River flyway and their small size precludes heavy usage.

Deer yards are areas where deer herd together during the long winter months for mutual food gathering protection. Survival for the deer population in the North Country is dependent upon the amount of wintering deer yard habitat available. Presently, there are at least 11 potential deer yards, accounting for over 1400 acres, in Enfield as seen on Map 12. Human encroachment on these areas has intensified including logging and development.

The New Hampshire Fish and Game Department also maintains a list of Endangered or Threatened Animal species in New Hampshire, which is shown in Table 3.13. No information is available relative to their occurrence in Enfield, however. The ring-necked duck (Aythya collaris), a rare species, was seen on George Pond in 1981, according to the NH Natural Heritage Inventory.

ENFIELD MASTER PLAN

MAP 12



POTENTIAL DEERYARDS

YARD

Source: NH F&G

3.10 Important Scenic and Natural Resources

Enfield's location in the Upper Valley of the Connecticut River provides its residents with a truly scenic area in which to live. In recent years one of the most often heard reasons for growth in New Hampshire is people's desire to live in a rural, aesthetically pleasing area such as Enfield.

As part of the master plan update, the Planning Board surveyed the Conservation Commission, to determine what specific natural and scenic sites and areas give Enfield its scenic qualities. Table 3.14 lists their responses.

TABLE 3.14
INPUT FROM CONSERVATION COMMISSION
TO THE
ENFIELD MASTER PLAN

IMPORTANT TYPES OF NATURAL RESOURCES (IN ORDER OF IMPORTANCE).

* Water resources/wetlands (see Map 6)
* Forest recreation lands (see Maps 16, 19)
* Wildlife/wildlife habitat (see Maps 10, 11)
* Agriculture/forest areas (see Map 11, 16)

SCENIC AREAS THAT NEED PROTECTION

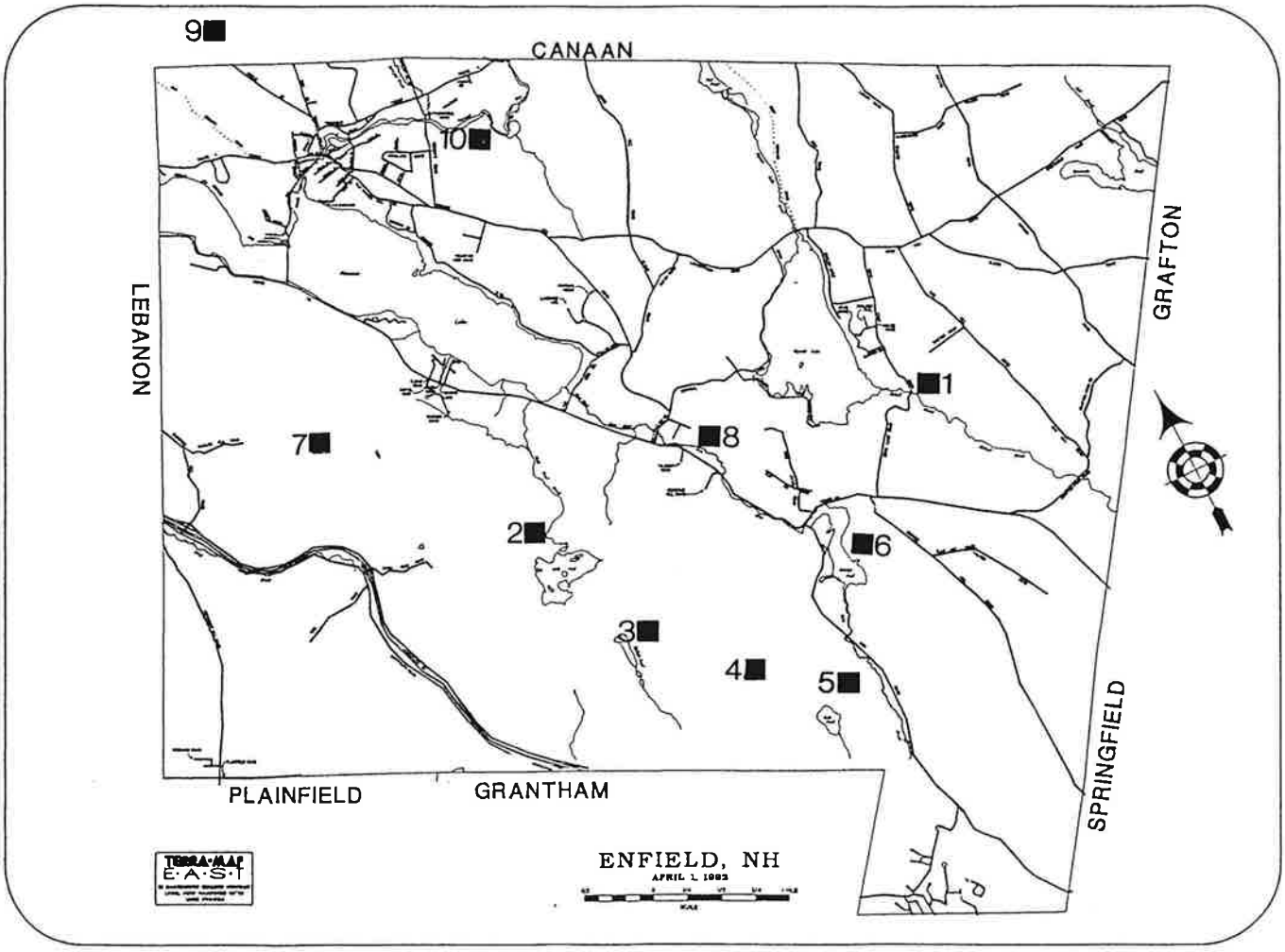
1. Falls on Bicknell Brook
2. Smith Pond and Smith Brook Falls
3. Half-mile Pond
4. Prospect Hill vista
5. Cliffs above the Bog Road
6. George Pond area
7. Shaker Mountain
8. Knox River
9. Enfield Reservoir
10. Mascoma River corridor
11. All Class 6 roads
12. Moose Mt. Rock (access through Enfield)
13. Grafton Pond (access through Enfield)
14. Butternut Pond (access through Enfield)
15. Numerous scenic vistas from public roadways

Map 13 shows the location of important scenic and natural areas, 1-10.

MAP 13

ENFIELD MASTER PLAN

IMPORTANT NATURAL AND SCENIC AREAS



1	FALLS ON BICKNELL BROOK	2	SMITH POND AND FALLS
3	HALF-MILE POND	4	PROSPECT HILL VISTA
5	CLIFFS ABOVE BOG ROAD	6	GEORGE POND
7	SHAKER MOUNTAIN	8	KNOX RIVER
9	ENFIELD RESERVOIR	10	MASCOMA RIVER

3.11 Open Space/Conservation Areas

The two most significant open space/conservation areas in Enfield are owned by the N.H. Fish and Game Department and occupy more than 4,400 acres. The 3,200 acre Enfield Wildlife Management Area is located in the south central portion of town and is accessed from Bog Road. The 1,100 acre Lower Shaker Village Wildlife Management Area lies to the north and was purchased only a few years ago as part of the state land trust program. It is accessed from Route 4A.

All Fish and Game lands are open to the public for fishing, hunting and passive recreational use.

Other lands with open space easements include 3 sites which are a combination of agricultural and forest land: The ± 172 acre Latham Properties (2 lots) on Potato Hill for which the town holds the easement; the Furlow property, a 122 acre parcel which adjoins the Latham site and whose easement is held by the Upper Valley Land Trust; and the +/- 300 acre Paine Property on Palmer Road for which the town holds the easement.

The conservation easements on these properties restricts development and whoever holds the easement is responsible for monitoring to insure the current owners comply with the deeded restrictions.

Other properties the Conservation Commission would like to see protected by easements include the Bicknell Falls area, the AMCA lands and additional lands along Mascoma Lake.

Map 14 shows the locations of the permanently protected open space in Enfield.

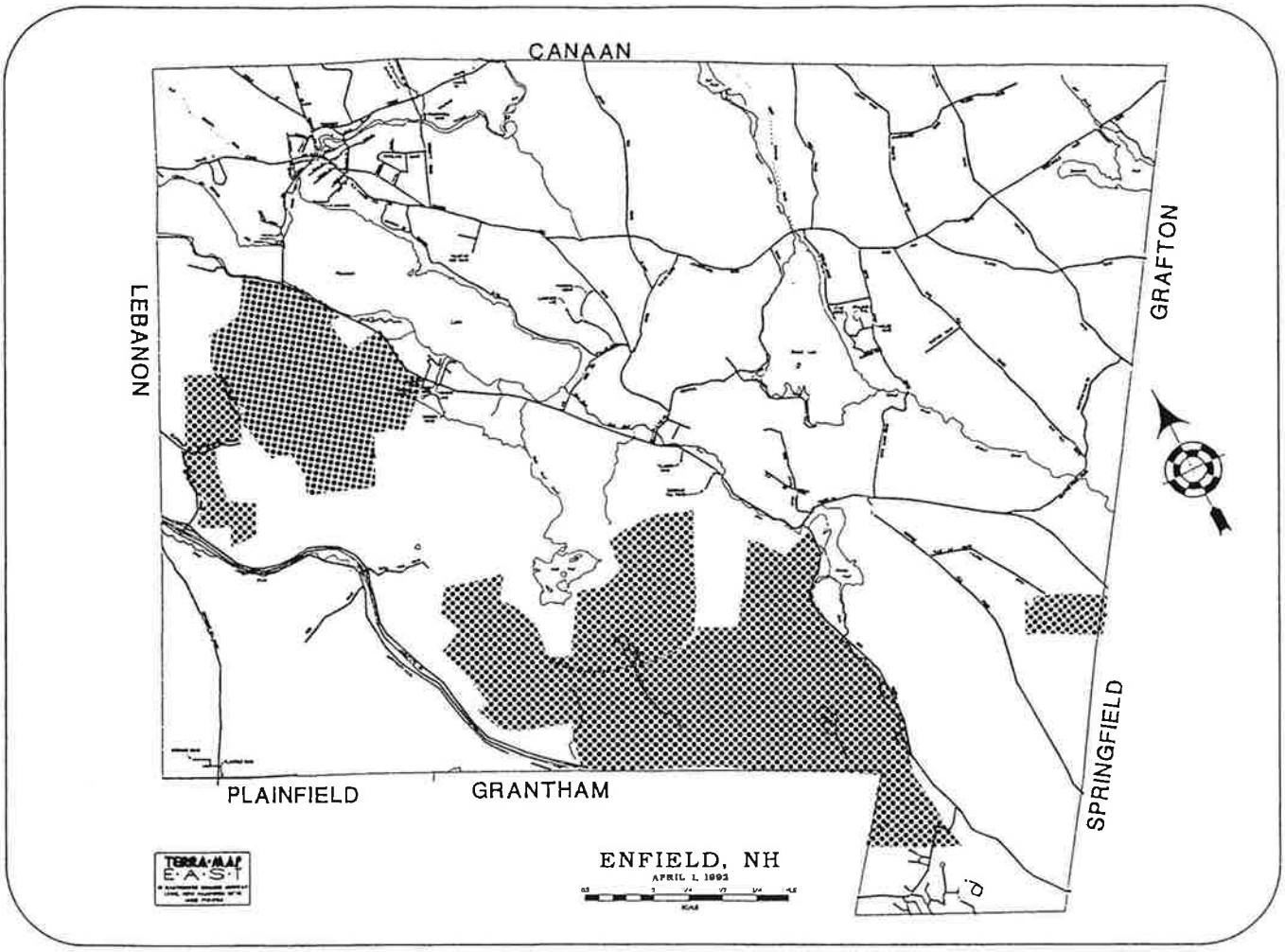
3.12 Land Capability

Some land is better suited for particular use than other land. Many factors influence the land's ability to accept various uses. Unfortunately, there is only so much land that is easily developed for high intensity uses such as industry, commerce or residential use. Because there is so little suitable land, there is generally competition as to how to use it.

In this section, Enfield's land is evaluated to determine what areas of town have limitations for different uses. The soils map, which was explained in Section 3.6 is the primary source of this information, since each of the soil types in Enfield varies in its capacity to accept development of specific land uses.

ENFIELD MASTER PLAN

MAP 14



PROTECTED OPEN SPACE

3.12.1 Development Capability

Land capability assesses the ability of land to be developed. While some land, as we discussed under Natural Resources, is not suited to development (such as wetlands) other lands have varying degrees of development suitability. While not as critical in evaluating areas served by municipal sewer and water, land capacity is very important for rural areas that rely on on-site sewage disposal and drilled wells.

In New Hampshire, most towns rely on soils information to determine land capability. Soil characteristics such as depth, permeability, wetness, and slope can be used to evaluate a site to determine development suitability and dwelling unit densities. Soils maps can also be used as a determinant of what constitutes an environmentally sound building lot.

Table 3.15 and Map 15 summarize land capability for development in Enfield. This information is based on a report entitled, "Soil Potential Ratings for Development - Grafton County" by the Grafton County Conservation District. All of the soil mapping units in Enfield are rated for their overall development potential for a home site, septic system and road (See Appendix 1). Five ratings are possible - Very High, High, Medium, Low and Very Low. The rating takes into account not only the soils natural limitations but also the potential of altering the soil in an economically feasible fashion to improve it for the intended use.

TABLE 3.15
SOIL POTENTIAL FOR DEVELOPMENT

Rating	Acres	% of Enfield	Rec. Lot Sizes (ft^2)
Very High	11	< 1	40,000
High	1603	6	40 - 50,000
Medium	8390	33	40 - 100,000
Low	4186	16	60 - 120,000
Very Low	11643	45	Not Recommended

Enfield has 45% of its land area in the very lowest category not unusual for New Hampshire towns. Soils in this group include wetlands, slopes over 25%, and floodplain soils. Less than 7% of the town has a development potential that is either High or Very High.

In order to translate land capability into land use regulations, many communities in New Hampshire have based lot sizes on soil types instead of a fixed, rigid lot size. A flexible system has been developed so that lot sizes vary according to the capability of the land to support the development. The more limitations a particular soil has, the larger the lot size. In some instances, 50 acres is not enough area to insure an environmentally sound lot, while on the best soils less than an acre is adequate.

Appendix 1 lists all of the soils types in Enfield and the recommended lot size for each soil. The lot sizes are based on the model soil lot size regulation of the Grafton County Conservation District, a modified system originally developed as part of a United States Environmental Protection Agency, non-point pollution management program developed for Rockingham County, New Hampshire. It is used by towns throughout the State. Lot sizes range from 40,000 square feet on the best soils to 120,000 square feet for soils with limitations. A lot size of 120,000 square feet, less than 3 acres, is the largest lot size required by the model regulation. However, many soils are not suitable for inclusion in the minimum lot size because they possess limitations that are too severe to overcome. These soils are usually wetland or floodplain soils or soils on steep slopes. These are indicated as "NA". Appendix 1 contains all soils in Enfield, their extent and the recommended lot sizes.

3.12.2 Enfield Rural Area Built-out

Having calculated the amount of each soil present in Enfield and utilizing a median lot size for each capability group, it is possible to predict the maximum number of lots that could safely be developed using a soil based lot size ordinance. In other words, a theoretical build-out of Enfield.

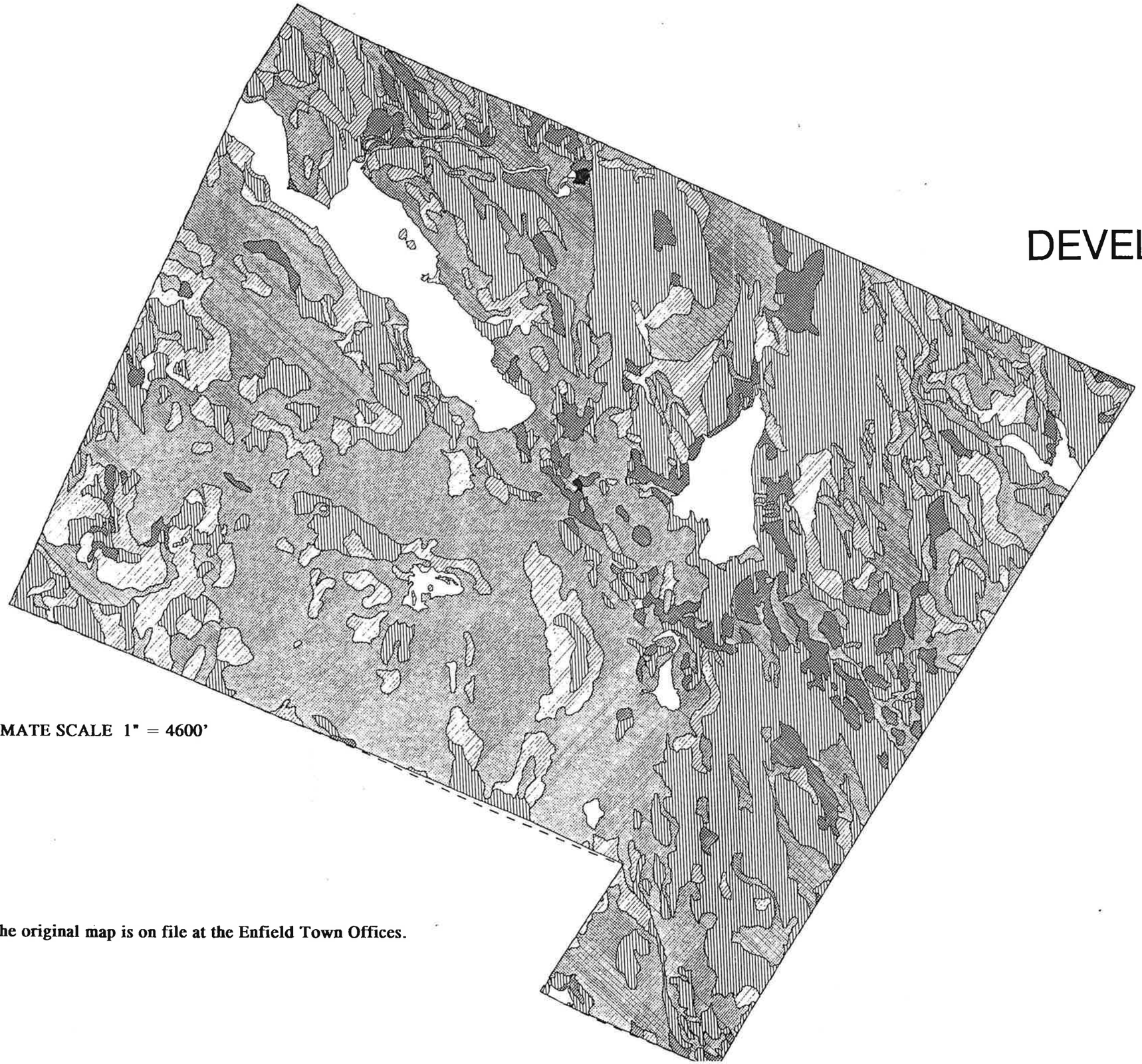
Table 3.16 indicates that if the soil based lot size system were applied to the non-public, non-sewered land areas of Enfield, the land would be capable of supporting about 6540 lots without exceeding recommended nutrient loading. This assumes every acre would be developed to its fullest and that each lot would have on site sewage and water. It is also assumed that 20% of the land area would be used for non-residential purposes such as roads, utilities, open space, etc. This would yield an average lot size of about 4.5 acres. This compares to an existing 2315 lots or an average existing lot size of 11.0 acres.

TABLE 3.16
LOT SIZE BY SOIL TYPE
A BUILD OUT OF ENFIELD

	Extent	Units
Total Area (non-serviced area)	25590	ac.
Total Lots by Soil Capability [1/]	8850	lots
Minus semi-public, public lands (3532 acres / 4 acres)	-883	lots
Minus 20% roads, open space (7134 lots x 20%)	-1427	lots
Estimated Lots by Soil Type	6540	lots
Average Lot Size	3.9	ac.
Number of Existing Lots (non-municipal sewer/water)	2315	lots

[1/] See Table 3.15

While this is only an exercise and many other factors come into play with regard to development densities (land ownership patterns, lot and road layouts, availability, access, etc.) it points out two important facts: 1) Enfield has a substantial area of land that could be developed and 2) Enfield's land has a varied capability to accept development and no one development standard should be applied to the entire rural area.



MAP 15
DEVELOPMENT POTENTIAL

SOIL POTENTIAL
RATINGS FOR
COMPOSITE DEVELOPMENT

- VERY HIGH
- HIGH
- MEDIUM
- LOW
- VERY LOW
- WATER
- TOWN LINE

INTERPRETIVE MAP PRODUCED BY THE USDA, SOIL CONSERVATION SERVICE, DURHAM, N.H.
SOILS LAYER DERIVED FROM THE NATIONAL COOPERATIVE SOIL SURVEY
DIGITIZED AT COMPLEX SYSTEMS RESEARCH INSTITUTE, DURHAM, N.H. – GRANIT

DISCLAIMER: The soils data layer is pre–certified SOIL GEOGRAPHIC DATABASE (SSURGO), mapped by the USDA, Soil Conservation Service, Durham, N.H. Delineations depict the dominant soil(s) making up the landscape. Inclusions of other soils, too small to be delineated, are present within a delineation. Enlargements of these maps to scales greater than that at which they were originally mapped can cause misunderstanding of the detail of mapping. The depicted soil boundaries and interpretations derived from them do not eliminate the need for on–site sampling, testing and detailed study of specific sites for intensive uses. Thus, this map and its interpretations are intended for planning purposes only. Digital data files are periodically updated. Files are dated and users are responsible for obtaining the latest version of the data. For technical information contact the State Soil Scientist, SCS, Durham, N.H.

USDA, SOIL CONSERVATION SERVICE

APPROXIMATE SCALE 1" = 4600'

NOTE: The original map is on file at the Enfield Town Offices.

LOBDELL ASSOCIATES 1994

IV POPULATION

4.1 Introduction

The population of a community is the result of past and present conditions and is the key to plans for the future. In retrospect, it is not difficult to discern the relationship between past numbers and types of residents, settlement patterns, housing, land use, growth or decline of employment opportunities and adequacy of public facilities. When looking into the future, however, these relationships become less apparent. Which factors will stimulate or suppress future growth? Will the trend toward lower birth rates and declining household size continue? How will Enfield be affected by the growth trends of the Upper Valley region and the state? Planning for Enfield's future needs must take all of these questions into account.

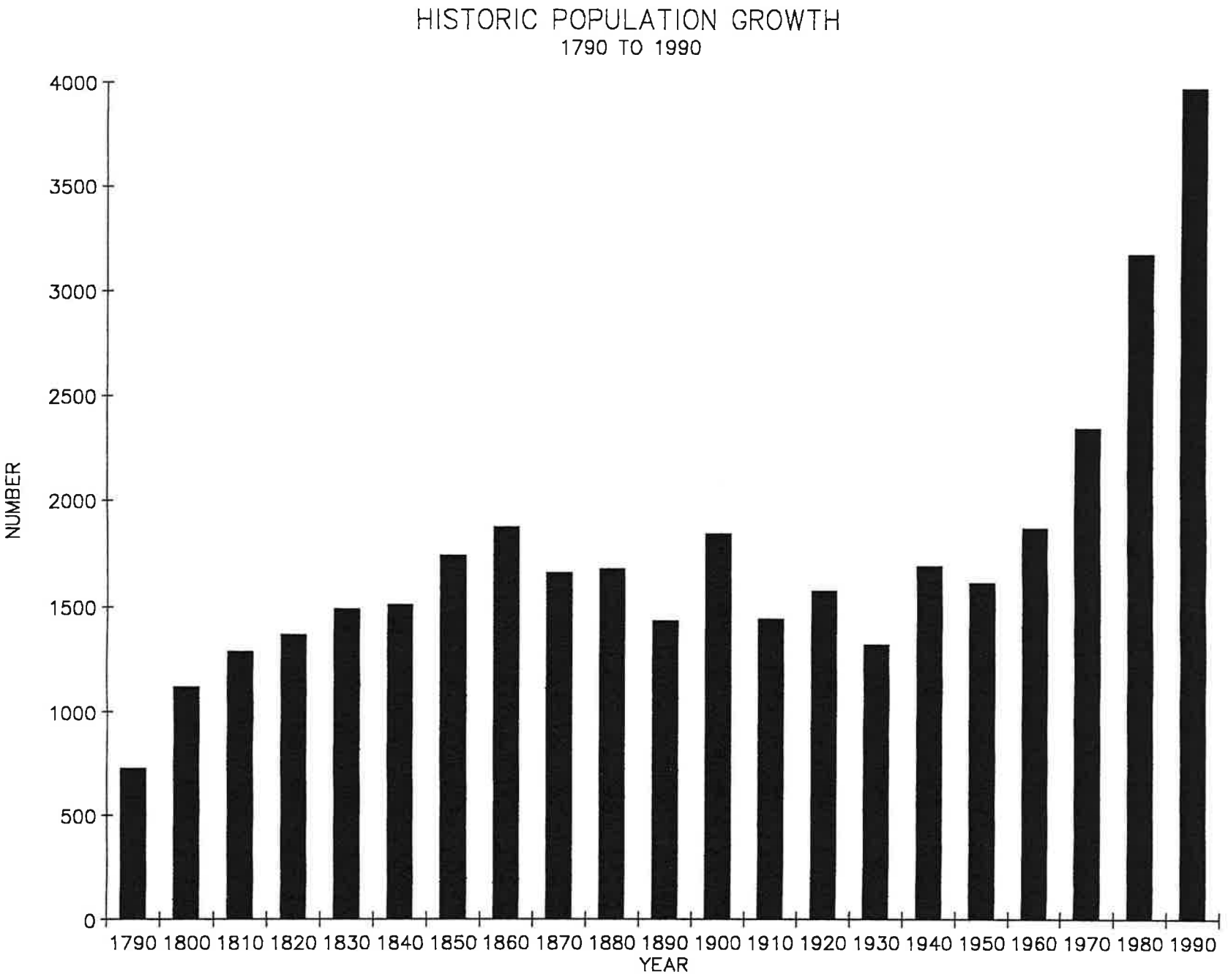
Because many important decisions rely on an understanding of population trends, this chapter provides a foundation for much of the analysis and needs projection found elsewhere in this Master Plan. To the extent that Enfield's decision-makers understand population trends, they can take steps to meet future demands for housing, transportation, recreation opportunities and community facilities in the most efficient and equitable manner possible.

4.2 Historic Trends

The early years of Enfield were those of an agricultural era with a subsequent increase in population as a result of industrialization. As shown in Figure 4-1, Enfield's population level began to climb in the early 1800's. In 1860 with a population of 1,876 and again in 1900 (pop. 1845), Enfield's population attained peak levels almost equal to that of 1960. The town's growth during the 19th Century was a direct result of the advent of the railroad and the influx of industries which moved to Enfield because of its abundant water resources, used for power generation and treatment purposes.

A change took place throughout New England after the mid-19th Century which led to the concentration of manufacturing industries nearer Boston. It was not until the second wave of industrialization came to Enfield at the turn of the century that the gradual ebb of Enfield's population was halted briefly. After 1900, the town's population resumed its decline until the 1930's. For nearly 100 years, from 1860 to 1960, the Town experienced alternating decades of gain/and loss (with no steady pattern), though the numbers were relatively modest.

Except for a small loss of population between 1940 and 1950, Enfield's population has exhibited a dramatic growth rate since 1930. While some of the growth in the earlier decades of this trend may be attributed to the presence and expansion of local industry, Enfield has been greatly affected by regional development trends since the 1960's. The prosperity of the Upper Valley


HISTORIC POPULATION GROWTH
1790 TO 1990
NUMBER
4000
3500
3000
2500
2000
1500
1000
500
0
1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990
YEAR

region and the presence of stable employers such as Dartmouth College, Mary Hitchcock Hospital and the Cold Regions Research Laboratory have created a role for Enfield as a bedroom community for nearby employment centers. The construction of the Lebanon Airport and Interstate Routes 89 and 91 greatly improved access to the Upper Valley region from the major urban centers of the northeast.

4.3 Existing Population

The 1990 census for Enfield found 3979 persons. This represents an increase of 804 persons or 25% since 1980. While significant, this growth rate is less than the previous two decades. Between 1960 and 1970 the population grew 26% and between 1970 and 1980, a remarkable 35%. Since the 1960's the population has grown 126% or about 3.7% per year.

As shown in Table 4-1, Enfield's growth rate of 26% for the past decade is above the average for Grafton County or the State.

TABLE 4-1
POPULATION GROWTH

	1980	1990	% Change
Enfield	3175	3979	26%
Grafton County	65,806	74,929	14%
New Hampshire	920,475	1,109,117	20%

Source: U.S. Census

Of the 31 towns in the two-state area of the UVLS Region, Enfield is the seventh largest community, behind Claremont, Lebanon, Hartford, VT, Hanover, Newport, and Charlestown. Its annual growth rate over the past 30 years has exceeded both the Region's and the State's average annual growth rates. Though several communities had greater percentage increases, Enfield was among the top five towns in actual numbers of new residents from 1970 to 1990.

New Hampshire in the 1990's has stopped its dramatic growth. Estimates of Enfield's population for 1992 shows an increase of only 26 persons to 4005, according to the Office of State Planning.

4.4 Net Migration

Population grows because births in a community exceed deaths and because more people move into a town than move out.

TABLE 4-2
NET MIGRATION FORMULA

Births 1980 - 1990	651
Deaths 1980 - 1990	285
Net Difference	+366
1980 Population	3175
1990 Population	3979
Net Difference	+804
Net Migration (804-366)	438
1980 - 1990 Net Migration	In Migration 438

An analyses of birth and death statistics for Enfield indicate that from 1980 to 1990 births exceeded deaths by 366 persons as shown in Table 4-2. This represents about 45% of the total amount of growth. The remaining 50% was the result of in-migration. This method may be used in the future by town officials to keep abreast of the general sources of population growth (or loss).

Compared to past decades, the 1980-90's showed a higher percentage of population change from the natural increase portion (births over deaths). From 1960 to 1980, net migration represented almost three-fourths of the population change.

4.5 Seasonal Population

While Census figures reflect only resident populations, seasonal populations in many New England towns can be important since their impact on town services can be dramatic.

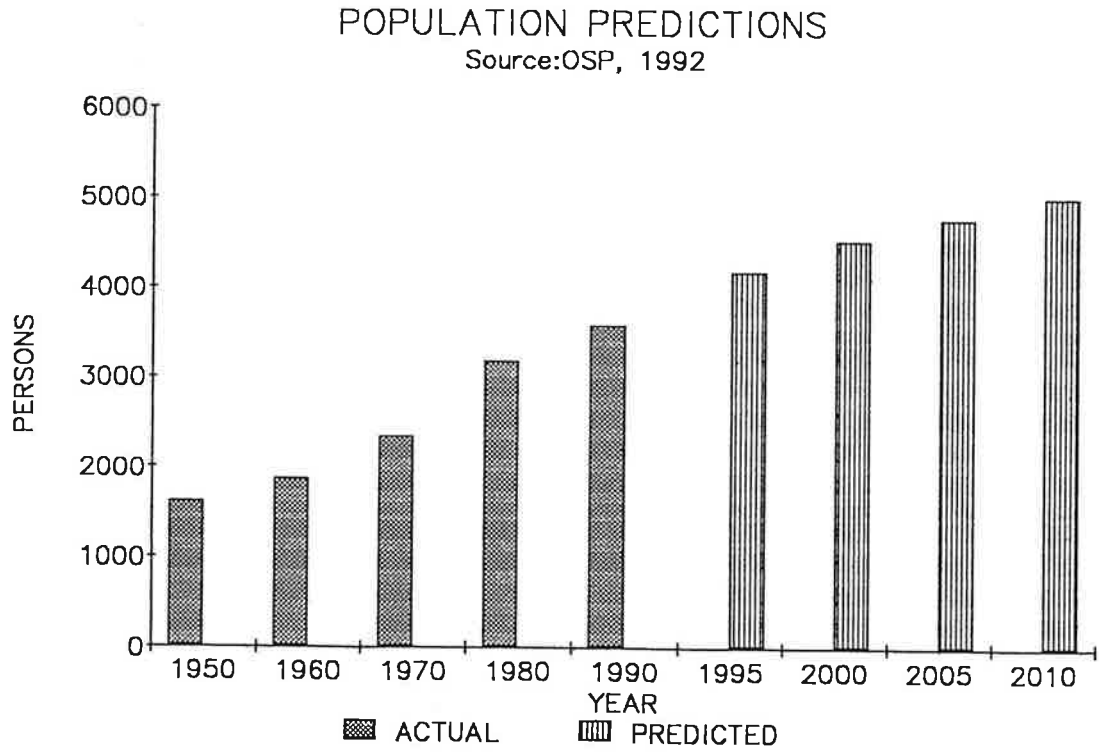
Enfield's peak seasonal population is estimated at 5645 or about a 41% increase from the residential population, as Table 4-3 shows. This figure is based on the residential population plus persons staying at overnight facilities including summer residences, campgrounds and tourist accommodations. Enfield's peak seasonal population occurs in the summer with few seasonal residents or visitors during the remainder of the year.

Table 4-5 provides three population projections for the future. The first is the latest by the Office of State Planning done in 1993 and represents a 1.4% annual growth rate. A 2.3% annual growth rate projection is based on the growth over the past decade in Enfield and finally, a 1% rate is used as an estimate of a slower growth rate.

TABLE 4-5
POPULATION PROJECTIONS

	1995	2000	2005
NH Office of State Planning	4175	4521	4766
2.3 % Growth Rate	4476	4973	4973
1 % Growth Rate	4178	4376	4576

While the current economic conditions would lead one to utilize a 1% annual growth rate figure, it is better to plan on the side for a slightly higher population in order to insure adequate facilities and services are available. Therefore, the 2.3% growth rate is predicted for the 1990's, yielding a population in Enfield of 4521 in the year 2000.



V HOUSING

5.1 Introduction

Not only is housing an important part of individual lives, but for a community, it represents a valuable social, economic, and physical resource. This chapter focuses on the overall supply of housing and general physical characteristics, the cost and affordability of housing, the activities of public and private housing agencies and elderly and low-income housing issues. Enfield's housing trends and needs can be put in perspective with selected comparisons with Grafton County, the UVLS Region and the State.

5.2 Housing Supply

5.2.1 General

Using census figures from 1970-1990, we can look at changes in Enfield's housing stock over the past 20 years. Table 5-1 shows that the total number of housing units in Enfield has grown 183% since 1970.

TABLE 5-1
ENFIELD HOUSING STOCK

	1970	1980	1990	1980-1990 % Change
Single Family	483	834	1325	59%
Multifamily	155	217	563	159%
Mobile Homes	122	181	270	49%
Total	760	1232	2158	70%

Source: U.S. Census

In the 1980-90 decade, total units have increased by 70%, or 7.0% per year compared to a population growth rate of 2.5% per year. Thus the number of housing units increased at over twice the rate of the population. This indicates the high growth rate of small, multi-family units and also a high vacancy rate. In terms of absolute numbers, Enfield had the third highest increase both in population and in year-round housing units in the Upper Valley/Lake Sunapee Region from 1980 to 1990.

TABLE 5-4
PERSONS BY OCCUPIED UNITS IN STRUCTURES

Type Structure	# Persons In Owner Occupied	# Persons In Renter Occupied	Total	Percent Total
Single Family	2265	285	2550	65
Duplex	62	148	210	5
3-4 units	46	363	409	10
5-9 units	4	235	239	6
10-19 units	0	37	0	0
20-49+	0	0	0	0
Mobile Homes	444	44	488	13
Other	28	18	46	1
Total	2849 (72%)	1130 (28%)	3979	100%

Source: 1990 Census

5.3 Housing Characteristics/Conditions

In 1980, 47% of Enfield's housing stock had been built prior to 1939. Today, that figure has been reduced to 32%, due to the significant construction rate over the past decade. As a result, the overall quality of the Town's housing stock has improved.

TABLE 5-5
1990 HOUSING STOCK - YEAR BUILT

Year	Percent of Total
Before 1939	32%
1940 - 1959	9
1960 - 1979	28
1980 - 1990	32

Source: U.S. Census

Based on cross-tabulation of Census data, the mean number of person per unit has been calculated by the Census. In owner-occupied homes, there are 2.6 persons per unit; in rental units, there are 2.3 persons per unit; and more specifically, 1.8 persons per unit in mobile homes in Enfield. A similar figure, persons per household, has been calculated by the UV/LS Regional Planning Commission. This information shows that Enfield's ratio of 2.5 people per household is slightly

below the Region's figure of 2.64, with the Commission projecting a continuing though slight decline in household size over the next 20 years.

Most housing units are serviced by private water sources and septic systems. However, about 36 percent of the homes are served by public or community water systems primarily in Enfield Village and the condominium developments, and 29 percent are served by public or community sewer.

Another indicator of housing quality documented by the Census relates to plumbing and kitchen facilities. In Enfield, 61 units lack complete plumbing facilities, and 42 lack complete kitchen facilities. The lack of these features makes the housing units inadequate for permanent occupancy. The percent of these units in Enfield (1.8 percent and 1.9 percent, respectively) are somewhat higher than Grafton County and more than double the State figures.

The dramatic increases in population and housing units have helped make Enfield a more mobile community. Only seven percent of the residents have lived in their home since before 1960, and 51 percent have moved into their homes since 1985! This is quite an influx of new residents, and this trend in Enfield is on par with what has occurred in the County and the State.

5.4 Cost of Housing

In 1990, the median housing value in Enfield was $111,500. Purchase of this home generally required an income of over $40,000. Clearly, there are many families in Enfield -- with a median family income of $38,645 -- who could not afford a median-priced house in 1990. Table 5-6 shows the housing values in 1990 according to the U.S. Census. Housing in Enfield was slightly less affordable than Grafton Country as a whole, but more affordable than the State overall. Enfield's median price exceeded the UVLS Region median value of $103,500, and ranked 10th out of 31 municipalities.

For the owner-occupied homes with a mortgage, the median monthly costs (including the mortgage payment and other costs) was $909. This monthly cost was about $100 more than Grafton County, and about $100 less than the State figure. Relating ownership costs to income, there are 198 units in which the owners pay 30 percent or more of their income for housing (a recommended maximum percentage). This represents 29 percent of the total owner-occupied housing units, and is slightly higher than the County (26%) and the State (28%).

TABLE 5-6
VALUE OWNER-OCCUPIED HOUSING

Cost	Units	% Enfield	% Grafton County	% NH
$0-49,999	30	4	10%	2.7
50,000-99,999	244	37	18	23.0
100,000-149,999	249	38	39	40.1
150,000-199,999	103	15	17	20.1
200,000+	43	6	16	14.1
Median Value	-	$111,500	$105,700	$127,400

Source: 1990 Census

The days of typical housing costs below the $100,000 level are long-forgotten. In 1980, Enfield's median housing value was $39,700, Grafton County's was $40,600 and the State figure was $48,000!

Renters in the 1980's faced the same skyrocketing costs as Enfield homeowners. The median rent in 1980 was $193 -- ten years later, it had jumped to $467! Table 12.7 shows rents in Grafton County to be around $418 per month. The UVLS Region had a median contract rent of $436. Enfield was 8th highest among the Region's towns. There is quite a wide range of rental costs available, with 75 percent of the units ranging from $300 to $700 per month.

TABLE 5-7
CONTRACT RENTS, 1990

Rent	Units	% Enfield	% Grafton Co.	% N.H.
$100-299	54	11	19	15
300-499	216	45	36	37
500-699	146	30	31	32
700+	67	14	14	15
Median Rent	-	$467	$418	$479

Source: 1990 Census

The figure of median contract rent does not always include utility expenses. The term "gross rent" includes an allocation for these costs. Thus, the gross rent is higher than contract rent. With this consideration, a more complete picture of rental costs can be provided with the gross rent data. In 1990, Enfield renters paid $528 in total rental costs. In 125 of the renter-occupied units, the residents were paying 30 percent or more of their income for rent. This represents about 29 percent of all rental units. Coincidentally, this is the same percent as homeowners

paying 30 percent mentioned above. Though this figure describes a real housing need in Enfield, for perspective, the County rate is 41 percent and the State is 39 percent.

Recent Housing Cost Changes

Fortunately, housing costs have declined ever so slightly since the 1990 Census, influenced by the nationwide recession. In figures gathered by the NH Housing Finance Authority, the 1993 average purchase price of a home in Grafton County has decreased by 2.1 percent. and in the State, by 2.9 percent. Gross rental costs have also dropped from 1989 to 1993 -- 6.2 percent in the County and 5.0 percent in the State.

5.5 Elderly and Handicapped Housing

Twenty-one percent of all housing in Enfield is occupied by residents over 65 years old. One hundred fourteen households are occupied by only one senior citizen.

Enfield has 24 units of privately-owned elderly housing with subsidized rents. Prospect Pines is located just off Route 4 in Enfield Village, next to the Mascoma Valley Community Care Center. It is managed by Beno Management of Bristol which also owns a similar project in Canaan. The NH Housing Finance Authority administers the subsidy program, with no one paying over 30 percent of their income to rent. The units are fully-occupied and there is a waiting list. The closest nursing home is in Lebanon.

As the population of Enfield ages, the need for adequate elderly housing will grow.

There is a private congregate residence for mentally-handicapped people, the Silvaray Inn located on Route 4, east of Enfield Village. This is a State-certified facility serving 14 individuals, with a day treatment program and access to community activities and services such as the Canaan Senior Center, Advanced Transit, and social and recreational activities in Town. The home is handicapped-accessible, and the age of the residents ranges roughly from 40 to 80 years old. Residents come from other towns as well as Enfield.

Based on the 1990 Census, about 0.6% of the adult population has mobility or self-care disabilities. Other estimates suggest a planning figure of 1.0%. Handicapped individuals live in a variety of settlings, from their own private homes to larger institutions. Through the Silvaray Inn, Enfield has made a reasonable amount of suitable housing available to handicapped individuals, but should continue to make provisions for new or renovated housing as the population grows.

5.6 Manufactured Housing

Manufactured housing, or more commonly called mobile homes, supply approximately 13% of Enfield's housing needs. About 270 mobile homes can be found. According to the U.S. Census, 488 persons live in mobile homes, or about 12% of the population. Over 90% of the homes are owner-occupied, slightly exceeding the ownership of traditional single-family units. While many mobile homes are on individual lots, about 1/3rd are located in 3 mobile home parks. The larger is Daniels Mobile Home Park on Route 4, with about 50 units. The other concentrations are 22 units at the Wilson Park on Route 4A and about 10 off Orchard Road near the Plainfield town line.

In the past, many towns severely limited mobile homes in their communities. In 1980, N.H. passed a law prohibiting towns from excluding mobile homes. Towns were given two options: allow manufactured housing on individual lots or allow manufactured house parks and subdivisions in residential districts. Enfield's zoning meets the state's requirements, as shown in Table 5-8. Percentage-wise Enfield, at 13%, also has more mobile homes than the county (9%) or the State (7%).

5.7 Condominiums

Condominiums began appearing in New Hampshire in the 1970's. Although often thought of as a type of structure, the term actually refers only to ownership. Condominiums are usually attached housing units (although they can be detached individual units) located in a development that has commonly-owned and maintained land, facilities and services.

According to the 1990 census, Enfield has 132 condominium units, 29% of which are owner-occupied. They are located along Mascoma Lake, Crystal Lake and in the southern corner bordering Grantham.

While condominiums and other forms of second home developments can be beneficial to a community because they offer high property values with few needed services, (often no school children), the collapse of the market has also shown the other side of the coin: developments with uncompleted roads, utilities and recreational facilities, letters of credit which are inadequate, unpaid property taxes, the rental or sale of units to year round residents who do require services. The importance of specific, up to date and enforced zoning and subdivision regulations to protect communities is now very clear to New Hampshire towns.

5.8 Town Regulations

Enfield's Zoning Ordinance regulates the type of housing units allowed within the community. Table 5-8 summarizes the Zoning Ordinances's housing requirements. See Section VII for a complete discussion of Enfield's regulations.

The Zoning Ordinance appears to meet all state minimum requirements for providing housing options for a variety of housing types, particularly manufactured housing and cluster development.

Before any construction can begin in Enfield, a building permit is necessary as well as an occupancy permit prior to moving into a building. The Town adopted a building code in 1987 for electrical, plumbing and construction standards, and is currently using the 1990 BOCA Codes.

TABLE 5-8
RESIDENTIAL USES AS REGULATED
BY ENFIELD ZONING ORDINANCE

	DISTRICTS					
	Resid	Rural Resid	Rural Resid Agric	Comm Business	Comm/Ind	Conserv
Percent of Town	11%	16%	45%	1%	3%	24%
Residential Uses						
Single Family	P	P	P	P	SE	P
Duplexes	P	P	SE	P	NA	NA
Multi-Family	Pr	Pr	NA	Pr	NA	NA
Manufactured Housing on Individual Lots	P	P	P	P	SE	NA
Cluster Development	Pr	Pr	Pr		Pr	Pr
Cluster Mfg Housing	SE	SE	SE		NA	NA

P - Permitted Pr - Permitted with restrictions SE - Special Exception NA - Not Allowed

5.9 Housing Needs Assessment

According to RSA 674:2, a Master Plan shall have a housing section which "... analyses existing housing resources and addresses current and future housing needs of residents of all levels of income of the municipality and the region in which it is located as identified in the regional housing needs assessment performed by the regional planning commission..." The Upper Valley Lake Sunapee Regional Planning Commission, the regional planning commission for Enfield, published its first housing needs assessment study in 1989. This assessment utilized a complicated formula to determine whether each town had its "fair share" of low and moderate income housing. The assessment was prompted by several recent court cases which concluded that towns have to provide reasonable opportunities for the existence of low and moderate income housing.

Table 5-9 summarizes the results of the 1989 Regional Fair Share Housing Needs Assessment Enfield. The formula took into account existing housing conditions, employment data, amount of developed land, relative wealth of the community, population, etc. and comes up with the number of low and moderate income housing units each town needs to have its "fair share" of the Region's housing needs. A refinement of this process was done by UVLS RPC using "commuter watersheds".

TABLE 5-9
ENFIELD'S FAIR SHARE HOUSING NEEDS ASSESSMENT 1989

Indigenous Housing need in Enfield	100
Adjusted Fair Share	123
Credits	77
Total Fair Share	46

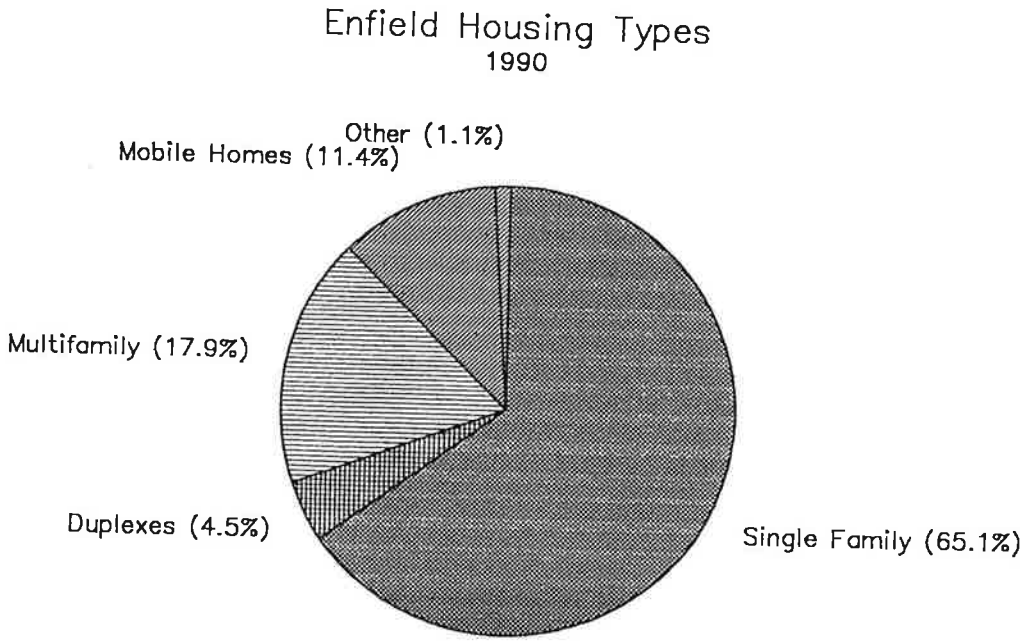
Source UVLS RPC, 1989

For Enfield, a housing need of 100 units was calculated from the 1980 Census based on median incomes and housing conditions. This number was adjusted based on a wide variety of regional land use and economic factors to come up with a need of 120, which means Enfield is average or medium for the region and little adjustment was necessary. The Town was credited with having provided 77 additional low to moderate income units constructed between 1980 and 1986 (based on mobile home permits and subsidized housing efforts).

The housing need assessment shows Enfield with a need of 46 units, indicating that Enfield needs to provide 2.6% of the Region's affordable housing.

UVLSRPC's fair share housing report needs to be updated with the 1990 Census and other more recent data. In lieu of this update, it appears that Enfield is probably providing its "fair share"

based on the large increases in multi-family housing and mobile homes in the 1980's, as well as Enfield's participation in rental assisted housing programs.



VI ECONOMY

Agriculture and lumbering were the early mainstays of the local economy, but resource depletion, western competition and improved transportation caused the decline of these economic activities in the latter half of the 19th century. Manufacturing developed along rivers and streams and benefitted from the coming of the railroads to the Upper Valley and the development of the state and federal highway system. But, in Enfield, like most New Hampshire towns, mill operations suffered from competition, new technologies, etc. But as individual towns lost their economic activities, they became more a part of an economic region. Today, Enfield's economic base is inseparably linked to the economic prosperity of the Upper Valley region as a whole. Most local residents who seek stable year-round employment must commute to neighboring job centers. Lebanon and Hanover serve as the primary employment centers in the Upper Valley region, although some Enfield residents also commute to Hartford and Norwich, Vt., Newport, N.H., and other towns.

6.1 Overview

Enfield is located in one of New Hampshire's most stable and diversified economies and is very much impacted by what occurs in Lebanon and Hanover. Major employers such as Dartmouth College, the region's medical facilities, and government have provided a stable economic base, while the area's location on the Vermont - New Hampshire border at the junction of I-91 and 89 has offered opportunities for a diverse mix of employers. Despite the recent national and New Hampshire recession, the number of persons employed has continued to grow in the area and the unemployment rate has been and continues to be among the lowest in the state. With such a competitive job market, wages have increased and the persons below the poverty level has decreased.

Enfield, like the towns around it, has enjoyed economic prosperity over the past decade. Yet, the Town is basically a bedroom community which provides employment opportunities for only 15% of its labor force. Businesses include services and shopping for local residents plus the influx of summer residents.

In this chapter, a variety of data will be presented which will describe both general and specific economic characteristics of Enfield, and its role and comparative position in the county and state economy. By examining data on current businesses, employment levels, occupations and wages of residents and looking at such factors under town control (such as land use regulations), and transportation, the strengths and weaknesses of a local economy can be identified.

VII LAND USE

7.1 Introduction

Enfield is large in size and complex in its makeup. At 43.1 square miles (27,584 acres), it is a large town by New Hampshire standards. There are several hundred specific land uses in Enfield, but fortunately these may be grouped into a manageable number of categories. The following pages, tables, and maps contain a generalized description of existing land use. The purpose of this description is to paint in broad strokes a picture of the present land use patterns and to identify trends which may affect future planning decisions.

7.2 Factors Influencing Land Use

Existing land use patterns in Enfield are the result of a variety of factors including history, location, topography, transportation, religion, and economics.

Early settlement occurred near Crystal Lake in Lockehaven, but the builders of the turnpike in 1804 shifted activities to Enfield Center. Transportation again shifted activities to Enfield Village in the 1840s with the construction of the railroad and later by the construction of I-89, commercial activity, to some extent, shifted again.

The coming of the Shakers played a major role in land use along Route 4A, continued later by the Roman Catholic Brotherhood.

Enfield's rugged topography has been an important factor in determining its development patterns. The river bottom and gently sloping areas were developed and populated while dominant steep mountainous areas have remained forested and undeveloped, particularly in the southwestern portion of town.

More recently, changes in land use have been influenced by people's desire to live in rural areas and to enjoy leisure and recreational activities. The shores of Enfield's lakes and ponds are heavily developed. New development has tended to be in the rural areas on large lots as people relocate from urban and "in-town" environments.

7.3 Existing Land Use

Map 16 and Table 7.1 both display information concerning Enfield's existing land use. Land uses have been broken down into several categories.

CANAAN

LEBANON

GRAFTON

PLAINFIELD

GRANTHAM

SPRINGFIELD

MAP 16

LAND USE MAP FOR

ENFIELD, NH

LEGEND

AGRICULTURAL.....

WOODLAND.....

RESIDENTIAL.....

COMMERCIAL.....

INDUSTRIAL.....

MAJOR PUBLIC PARCELS...

0.5 0 1/4 1/2 3/4 1 MILE

SCALE

TERRA-MAP E·A·S·T
13 DARTMOUTH COLLEGE HIGHWAY
LYME, NEW HAMPSHIRE 03768
(603) 795-2124

6.2 Employment

In 1990 Enfield had 2476 residents employed, or 62% of its population. This was up from 1970 and from 1980. Clearly, Enfield's growth in population is reflected in its dramatic increase in employed persons.

A few facts about the Town's labor force:

- Fifty-three percent of the employed persons are male, and forty-seven percent of the employed persons are female.
- More than 90 percent of Enfield's workers drive less than 35 minutes to work. The average worker drives alone 20.2 minutes to his place of work, compared to the N.H. average of 21.9 minutes.
- Six percent of the work force is self-employed, compared to 8% for the state as a whole.

Of the 286 women with school-age children, 90 percent are in the labor force (higher than the County and State rates of about 84%). The rate of labor force participation by women with younger children is also higher than the County and the State.

Tables 6-1 and 6-2 break down Enfield's employed persons by the type of industry in which they work and by occupation.

TABLE 6-1
DISTRIBUTION OF EMPLOYMENT BY INDUSTRY
ENFIELD

	1980	1990	Change
Professional services	546	835	+
Wholesale, retail trade	249	536	+
Mfg., durables	245	258	+
Construction, mining	102	193	+
Finance, insurance, real estate	49	104	+
Business, repair services	70	90	+
Public administration	51	84	+
Personal services, entertainment	54	67	+
Transportation, communications	61	64	+
Mfg., nondurables	130	38	-
Agriculture, forestry	22	27	+

Source: U.S. Census 1980, 1990

In terms of number, almost every category of employment increased since 1980. Greatest increases were seen in professional services, construction, wholesale/retail trade. The only sector experiencing a decrease was in the manufacture of non-durable goods; the durable-goods manufacture category held fairly even in numbers.

TABLE 6-2
PERCENTAGE DISTRIBUTION OF TOTAL EMPLOYMENT BY OCCUPATION
ENFIELD, GRAFTON COUNTY

			Grafton County
Occupation	1980	1990	1990
Craftsman, Technicians	23%	19%	11%
Clerical	17	19	14
Service Workers	18	15	16
Professional	9	13	16
Sales	8	10	15
Managers	4	9	11
Laborers	7	8	7
Operatives	13	5	7
Farmers, Forestry	1	2	3
	100%	100%	100%

Source: 1980, 1990 U.S. Census

While the total number of employed persons changed significantly from 1980 to 1990, the distribution of the types of jobs did not. No one occupation group dominates the town economy which is a sign of a well developed, balanced economy. When compared to Grafton County as a whole, Enfield workers include fewer professionals and sales workers and more clerical and craftsman/technician types. However, the number of professionals and managers is on the rise.

In terms of employment class, 82% of those employed are employed by the private sector with 12% government employees, comparable to the state figures of 79% and 13% respectively.

The N.H. Office of Employment Security maintains a variety of information on employment but a town by town basis, it is very limited. Table 6-5 shows the labor force, employment and unemployment figures for what is called the Lebanon-Hanover Employment Area, which includes 8 towns in Grafton and Plainfield in Sullivan County. Table 6-5 also shows employment/unemployment figures for the area for the last several years. Despite the nationwide recession, the number of persons employed in the area has steadily increased since 1988 with about 4,000 new jobs created in the past 5 years.

While the unemployed rate increased from 1989 - 1992, it has recently returned to pre-recession levels. Table 6-4 compares the unemployment rates in Enfield with regional and state averages. While Enfield has had a somewhat higher unemployment rate than the Lebanon-Hanover Area as a whole, the rates are still significantly less than the state average.

TABLE 6-4
COMPARISON OF UNEMPLOYMENT RATES
1988 - 1992

Year	Enfield	Grafton Co.	SLMA	N.H.
1988	1.8%	2.5%	2.3%	2.4%
1989	2.2	2.8	1.8	3.5
1990	3.9	4.6	2.9	5.6
1991	5.7	6.3	4.7	7.2
1992	5.9	5.8	4.2	7.5

Source: NH DES, 1993

TABLE 6-5
EMPLOYMENT DATA
LEBANON-HANOVER EMPLOYMENT AREA
1988 - 1993

Year	Labor Force	Employed	Unemployed	% Unemployed
1988	19007	18371	436	2.3
1989	19562	19214	348	1.8
1990	21464	20818	616	2.9
1991	22028	21120	908	4.1
1992	22415	21479	936	4.2
1993 (Dec)	23067	22539	528	2.2

Source: N.H. Employment Office, Lebanon-Hanover

6.3 Income

Income is an indication of economic conditions in the community. Table 6-6 displays median family and per capita income for Enfield, Grafton County and New Hampshire as a whole. Table 6-7 shows Enfield's median income to be 8% less than the state median income but 9% greater than that of all Grafton County residents. Enfield's median family income ranks 10th highest out of 31 towns and 119th out of 234 of towns in the state (with 1 being the lowest and 234 the highest income). The Town's median household income is $38,645, ranking 12th in the UVLS Region.

TABLE 6-6
INCOME COMPARISONS

	Median Family Income	Per Capita Income	% Persons below poverty level
Enfield	$38,645	$14,349	6.2%
Grafton County	35,489	13,611	9.6
State	41,628	15,959	6.4

Source: 1990 Census

Per capita income, another way to calculate... is considered to be a poverty indicator. It is an average income figure for every person (adults and children) in town, except those in institutions. The per capita figure of $14,349 places the Town 16th in the Region, and this is actually an increase in rank since 1979. However, in context, Grafton County as a whole is one of the "poorer" counties, ranking 10th of the State's 12 counties.

TABLE 6-7
MEDIAN FAMILY INCOME
AREA COMMUNITIES, GRAFTON COUNTY AND THE STATE

Canaan	$34,336
Claremont	30,060
ENFIELD	38,645
Grafton	29,821
Grantham	44,934
Hanover	65,488
Lebanon	40,745
Lyme	50,563
New London	55,869
Newport	32,304
Plainfield	42,556
Springfield	35,000
Grafton County	35,489
New Hampshire	41,628

The percentage of persons below the poverty line decreased in the past 10 years. In 1979, about 7.3% of the population was below the poverty level; by 1989, that figure had decreased to 6.2% -- just below the State average, lower than the Region (7.6%), and much lower than the County figure of 9.6%. However, because the entire population had increased, interestingly enough, the actual number of people living below the poverty level is higher today, 249 persons compared to 218 in 1979.

Table 6-8 compares poverty levels in surrounding towns for the past decade, showing that the poverty rate in each of these towns has decreased. Enfield has the fourth lowest poverty level of these towns.

TABLE 6-8
PERCENT BELOW POVERTY LEVEL
AREA COMMUNITIES, GRAFTON COUNTY AND NEW HAMPSHIRE, 1979, 1989

Town/City	Number	Percent 1979	Percent 1989
Canaan	322	13.3	8.8
Claremont	1,690	13.2	13.0
Enfield	**231**	**7.3**	**6.2**
Grantham	34	4.8	4.7
Hanover	537	9.5	7.9
Lebanon	693	6.3	6.1
Lyme	116	9.0	3.9
New London	53	2.3	1.2
Newport	731	11.9	10.2
Plainfield	84	4.8	2.9
Grafton County	6,711	11.1	9.6
New Hampshire	75,361	8.5	6.4

Source: U.S. Census, 1980 and 1990

Table 6-9 shows the types of income Enfield residents have by household. Eighty three percent of Enfield's households receive their income from either wages or salaries.

TABLE 6-9
% COMPARISON OF HOUSEHOLD INCOME TYPES *

	Enfield	Grafton	N.H.
Wages and Salaries	83%	80%	82%
Self Employment	13	18	16
Social Security	24	26	23
Public Assistance	4	13	14
Retirement	13	13	14

* Totals more than 100% because many households have more than one type of income.

Source: 1990 Census

Enfield's income types do not vary a great deal from county or state totals except in the number of persons whose income is from some form of public assistance. Enfield has an extremely small percentage of its population dependent on public assistance.

Wage Levels

The wage levels vary within the Region, depending upon the type of industry. In the Lebanon-Hanover area, the average weekly wage is $515, with the highest wages going to employees in the federal government ($675), the manufacture of durable goods ($610), and in finance, insurance, and real estate ($605). The average manufacturing job paid $592 per week, and non-manufacturing jobs averaged $502. The lowest paying jobs were in construction and mining ($432), State government ($324), and trade ($320).

Wages paid by Enfield employers averaged much lower, $291 per week, due in part to the small, service-oriented businesses in Town. The "Enfield" payroll, as a total, exceeds $5.2 million on an annual basis.

6.4 Local Economy

According to the NH Department of Employment Security, in 1992 there were 64 employers in Enfield, employing 362 people. The average size of a business was 5.6 employees. The small scale of local businesses and the lack of large employers is evident when this is compared to the County average of 14.5 and the state average of 12.9 employees.

The breakdown of Enfield's businesses as shown in Table 6-10 below indicates the predominance of small employers in construction and business services, and in lodging.

TABLE 6-10
ENFIELD BUSINESSES

Contractors, Builders	21
Motels, Inns, B & B's	18
Insurance, Real Estate, Finance	10
Management Services	10
Retail	8
Recreational, Entertainment	7
Antiques	6
Educational/Instructional	5
Automotive	5
Agricultural/Forestry	5
Restaurants	4
Mail Order	3
Other	5

There are five manufacturing businesses in Town, though two related businesses are actually import enterprises. Dana Robes Wood Craftsmen in Lower Shaker Village is the largest employer (approx. 20). The other manufacturers include Dawn Machines and Northmark Homes. Scansport and Pakboats are involved in importing recreational products -- wool and leather hunting clothes, packs, and backpacks, and folding canoes. None of these businesses are located in Enfield Village, the site of past industrial activity.

Small, retail and service businesses are located in Enfield Village, Enfield Center, Route 4, and at the I-89 interchanges.

6.5 TOURISM

Tourism is an important part of Enfield's economy, partly due to the scenic, cultural and historical features of the entire Upper Valley/Lake Sunapee area, and due to the unique offerings of Enfield itself. In the Dartmouth/Lake Sunapee region, 17 percent of the jobs are related directly or indirectly to tourism and travel, ranking behind only the White Mountains and the Lakes Regions. Last year, over 3.5 million people visited the D/LS Region.

The Town benefits from its proximity to Dartmouth College (with the Hopkins Center and Hood Art Museum), Lebanon, Mount Sunapee State Park (winter sports and the site of the oldest craft fair in the country), and Lake Sunapee. There are many historical sites and recreational opportunities along the Connecticut River.

Enfield itself is known for the Shaker Village, the LaSalette Shrine, and Mascoma Lake. Though there is no actual count of the number of people who visit or travel through the Town every year, estimates were obtained for two of the more popular "attractions". In 1993, the Shaker Village had paid admissions of 8,252, and 12,000 in attendance at events and workshops. Very modest growth in visitors is expected until the Village is able to restore and improve its buildings and facilities. An estimated 3500-5000 visitors come to the LaSalette Shrine each year.

Though the restaurants, lodgings, and shops in Town receive the most visitors in the summer and fall months, winter brings activity at the Nordic Ski Center, Whaleback Ski Area, and the Christmas lights display at the Shrine.

6.6 BUSINESS ATTITUDES

As part of the master planning process, a survey was mailed to 106 Enfield businesses in the fall of 1994 to obtain their opinions on Enfield's business climate. Appendix A-1 contains a copy of the survey, including results.

Of the 106 surveys mailed out 26 were returned for a 25 percent response rate, which is acceptable for this type of survey. The respondents were from a broad cross section of business types and employed 71 full-time and 61 part-time workers. The respondents were generally optimistic about the future and planning to increase the number of employees by at least 50 percent over the next five years.

Question #5 asked respondents to rate the local factors affecting the business climate in Enfield. Table 6-11 and 6-12 list the strengths and weaknesses of Enfield's business climate. According to the respondents, strengths include low housing costs and utilities. Weaknesses include a lack of capital, communications and educational/training availability. However, for almost every factor, the majority of respondents did not view them as having any effect, rating them as "neutral."

TABLE 6-11
TOP FIVE LOCAL FACTORS THAT STRENGTHEN THE BUSINESS CLIMATE IN ENFIELD
RANKED FROM HIGHEST TO LOWEST

Factor	Percent
Housing Costs	23
Utilities	23
Distance to Markets	19
Transportation	11
Size of Work Force	11

TABLE 6-12
LOCAL FACTORS THAT WEAKEN THE BUSINESS CLIMATE IN ENFIELD
RANKED FROM HIGHEST TO LOWEST

Factor	Percent
Capital	38
Communications	35
Education/Training	35
Housing Cost	27
Distance to Markets	27

With regard to town government's effect on business, over 50 percent of the respondents felt it was restrictive or prohibitive, as Table 6-13 shows. About 46 percent felt regulations were too permissive or had no effect.

TABLE 6-13
QUESTION #6
EFFECT OF TOWN REGULATIONS ON BUSINESS EXPANSION PLANS

No Effect	31%
Permissive	15%
Restrictive	35%
Prohibitive	23%

For those that felt the regulations were too restrictive or prohibitive, permitted uses in the zoning ordinance and the review and approval process were ranked as the most problematic, as shown in Table 6-14. Few respondents had specific recommendations or comments. Excessive setback requirements were mentioned as well as making the application process more "user friendly."

TABLE 6-14
QUESTION #7
ASPECTS OF ENFIELD REGULATIONS THAT MAY LIMIT USE OF PROPERTY FOR BUSINESS PLANS

Aspect	Percent
Types and Kinds of Permitted Uses	50
Review and Approval Process	42
Signage	38
Site Plan Review Regulations	27
Location/Size of Zoning Districts	23
Setbacks	19
Subdivision Regulations	15
Other	15
Administration and Enforcement	12
Construction/Development Standards	12
Lot Sizes	12
Parking	8

Only about 50 percent responded to the question relative to the amount of commercially or industrially zoned land. Of those that did, about 6 percent felt there was a need for more area than not. Areas mentioned included along Interstate 89 and the entire length of Route 4.

TABLE 6-15
QUESTION #9
DO YOU THINK EXISTING COMMERCIAL AND INDUSTRIAL ZONES ARE ADEQUATE IN SIZE AND LOCATION?

Yes -- 23% No -- 31%

6.7 LOCAL EDUCATIONAL LEVELS

The educational levels and skills of a community can be a factor in attracting businesses and industries. The Census data reveals a situation regarding education in Enfield that should not necessarily be regarded as a negative factor, but as a call for support for the continued improvement in the quality of and access to high school, colleges, vocational and adult-retraining programs.

Of the people in Enfield over 25 years old, 22 percent have less than a full high school eduction, compared to 19 percent in the UV/LS Region, 18.6% in the County, and 17.8% in the State. The percent of high school graduates is slightly higher in Enfield -- 35 percent -- than the others. Enfield residents with an associate or bachelor degree or additional college account for 27.6 percent of the adult population, compared to 31 percent in the Region, 33 percent in the County, and 32 percent in the State.

There is a link between educational programs and the ability of a town to retain local youth and adults, and thus, to Enfield's ability to build a strong economy and community.

6.8 CONCLUSIONS

The economic component of a Master Plan can highlight the characteristics of a town's economy and the surrounding region, and indicate problems to be addressed and future directions to pursue. A more comprehensive economic development plan may take one or two years to prepare, and 10 to 20 years to implement. As Enfield considers specific actions in a Master Plan, it is essential to maintain this long-term time frame.

A few summary points as an overview of Enfield's economic picture:

- Enfield is well-situated in a regional transportation network with three interchanges on I-89, Routes 4 and 4A, and rail, air and highway facilities connections with the rest of New England and beyond.

- Enfield's small town characteristics (quiet, safe, local community organizations, family activities and schools) are attractive features for continued growth, and yet will be endangered and lost if the growth and changes are inappropriate.

- The Town has a very high quality natural environment. The water, forest, and wildlife resources and the historical buildings and sites provide abundant recreational and cultural opportunities which can be developed into a larger part of the local economy.

- Enfield should look to develop a unique niche in what it can offer prospective businesses and residents. The Town cannot compete with Lebanon, Hanover or Claremont.

- Enfield is not a wealthy community, and it is important to balance the desire for jobs and tax revenues with the residents' fiscal ability to support economic development initiatives.

TABLE 7.1
EXISTING LAND USE (ACRES)

Land Use	1995	1985	% Change*
Forested:	23,960	21,870	+10
Public	4,300	2,660	+62
Private	19,660	19,210	+ 2
Agricultural	700	1,850	-62
Residential	2,200	934	+135
Commercial	315	100	+215
Roads	1,100	1,000	+10
Railroads	9	9	0
Industrial	0	0	0
Town Land	350	?	--
TOTAL	27,584	27,584	--

* From 1985 Master Plan. Differences in methodologies used in 1985 and 1995 affect, to some extent, percent change categories.

7.3.1 Forest Land

Forest land is by far Enfield's dominant land use. Over 85 percent of Enfield is wooded, including both public and private woodland areas. The forests are defined relative to forest type (see Section III), age, and quality. Much of the land that has remained wooded has done so because it is too remote or unsuitable for development. Some land is managed as woodland to produce forest products, while other woodlands provide owners with buffers and open space.

Approximately 20 percent of Enfield's woods is in public or semi-public ownership.

Much of the forest land in Enfield is used for commercial purposes. Table 7.2 shows the number of lots cut and acres harvested in Enfield during a three-year period. An average of 21 lots were harvested with an average of 381 acres cut each year, representing only about 2 percent of the total forested area in town.

TABLE 7.2
FOREST LAND HARVESTED

Year	No. Of Cuts	Acres Harvested
1991	26	372
1992	14	272
1993	24	501
Average:	21	381

Source: Yield Tax Reports

7.3.2 Agricultural Land

In 1880, 64 percent of New Hampshire land was in farm use. Today, less than 15 percent remains farmland statewide. Enfield has lost most of its agricultural economy as well, with no active dairy farms left in the town and only a few in surrounding towns. Of the estimated 2900 acres of agricultural land in Enfield in the 1950s, only about 700 acres remain today--a loss of 76 percent. Some has been lost to development but much has simply reverted to forest land.

Existing agricultural land consists primarily of hayland and pasture. Hayland is used by nearby farmers with pasture being used for horses, young cattle or other small groups of animals. An increasing amount of agricultural land is simply cut or brush hogged just to keep it open for aesthetic reasons.

Open fields and pastures add much to Enfield's rural New England atmosphere, and its loss has been of concern for many years.

7.3.3 Residential Land

It is estimated that 2,200 acres of land in Enfield is in residential use. This figure was arrived at by assuming one-half acre for old single family homes, mobile homes and multi-family structures, and two acres for new single family homes. Residential land use has been on the incline over the past decade.

Historically, residential land uses have been concentrated primarily in Enfield Village. However, as Map 16 shows, the desire to live in rural areas and around the lakes has meant increased residential land use along existing roads and streets and the construction of new road systems in major developments.

Most multi-family homes exist in Enfield Village, while mobile homes are concentrated in three mobile home parks/subdivisions and are also scattered on individual lots throughout the town.

7.3.4 Commercial/Industrial Land Uses

The largest commercial use of land is the Whaleback Ski Area. Most of the other uses are small commercial establishments concentrated in Enfield Village and along Route 4 east of town. Recently commercial development has expanded on both sides of I-89 near Exit 16.

Sand and gravel excavations are also included in this category and account for approximately 50 acres of the total commercial land use.

No active industrial uses exist in Enfield. The old Baltic Mill site, which has industrial potential and currently produces electric power, is the only industrial site in Enfield.

7.3.5 Public/Semi-Public

State and local public lands account for approximately 17 percent of the land in Enfield. Table 7.3 lists some of the larger parcels. The New Hampshire Fish and Game is the largest public owner, while the town accounts for only about 10 percent of the total land area.

TABLE 7.3
SELECTED PUBLIC LANDS

Tax Map	Ownership	Size (Acres)	Comment
8-65	Fish & Game Department	2755	Wildlife Area
10-4	Fish & Game Department	±1100	LCIP
8-6	Fish & Game Department	97	Wildlife Area
8-17	Fish & Game Department	45	Austin/Gane Lot
7-10	Fish & Game Department	103	Wildlife Area
17-15-9a	Town	16	Vacant
15-44	Town	25	Vacant
11-20-4	Town	27	Vacant
9-46	Town	106	Vacant
9-45	Town	65	Vacant

7.3.6 Streets and Highways

Numerous state and town road systems are located in Enfield and occupy over 1,100 acres, including the right of way. See Section 10 for a discussion of roads and highways.

7.3.7 Railroads

While Enfield has no active railroad, the right of way which follows the Mascoma River, remains. See Section 10.9.

7.3.8 Utilities

No major utility transmission lines exist in Enfield.

7.4 Recent Land Use Trends

While the numbers presented in Table 7.4 should be viewed as only estimates since different methodologies and definitions were used, trends started in the 1950s in Enfield appear to have continued to the present time. Agricultural land has continued to decrease while forest land and developed land continue to increase. This only reinforces what has already been shown by population and housing figures--that Enfield has and continues to grow and develop while agriculture declines. Future trends will see the amount of forest land decline as development spreads into wooded areas and there is little agricultural land left to convert to woodland.

TABLE 7.3
PERCENT LAND USE CHANGES[1/]

Land Use	1955-1970	1970-1985	1985-1995
Agricultural/Idle	- 5%	-38%	-62%
Forest	+1.4%	+ 3%	+10%
Developed	+24.5%	+68%	+72%

[1/] Sources: 1955-1970 -- University of New Hampshire
1985 -- Enfield Master Plan
1995 -- Lobdell Associates

7.5 Land Ownership

There are 27,584 acres of land in Enfield divided into 2,753 parcels for an average lot size of 10.01 acres. The state of New Hampshire is the single largest landowner with no other single individual or group owning significantly large portions of the town.

7.6 Current Use

NH RSA 79A allows landowners to place land in a tax abatement program based on current land use. Table 7.5 shows that 10,362 acres or 40 percent of the private land in Enfield is in current use with 353 participants in the program. This shows an increase in production of over 25 percent since 1984. Having about 40 percent of the land in current use is about average for Grafton County but lower than the state average of 47 percent.

It is interesting to note that most of Enfield's agricultural land is in current use. However, land can be taken out of current use with payment of a 10 percent land value penalty. This current use, while providing taxpayers relief, is not a long-term land protection tool.

State law allows towns to vote to use funds collected from payment of current use penalties for conservation purposes. It is estimated that over 50 towns currently take advantage of this law. It was voted down in Enfield in 1992 and again in 1995.

TABLE 7.5
LAND IN CURRENT USE (ACRES)

Category	1978	1990
Farmland	0	731
Forestland	3,700	9,616
Wild Land	0	16
Wetlands/Floodplains	0	161
TOTAL	3,700	10,524

Source: 1993 Current Use Reports

7.7 Land Use Regulation

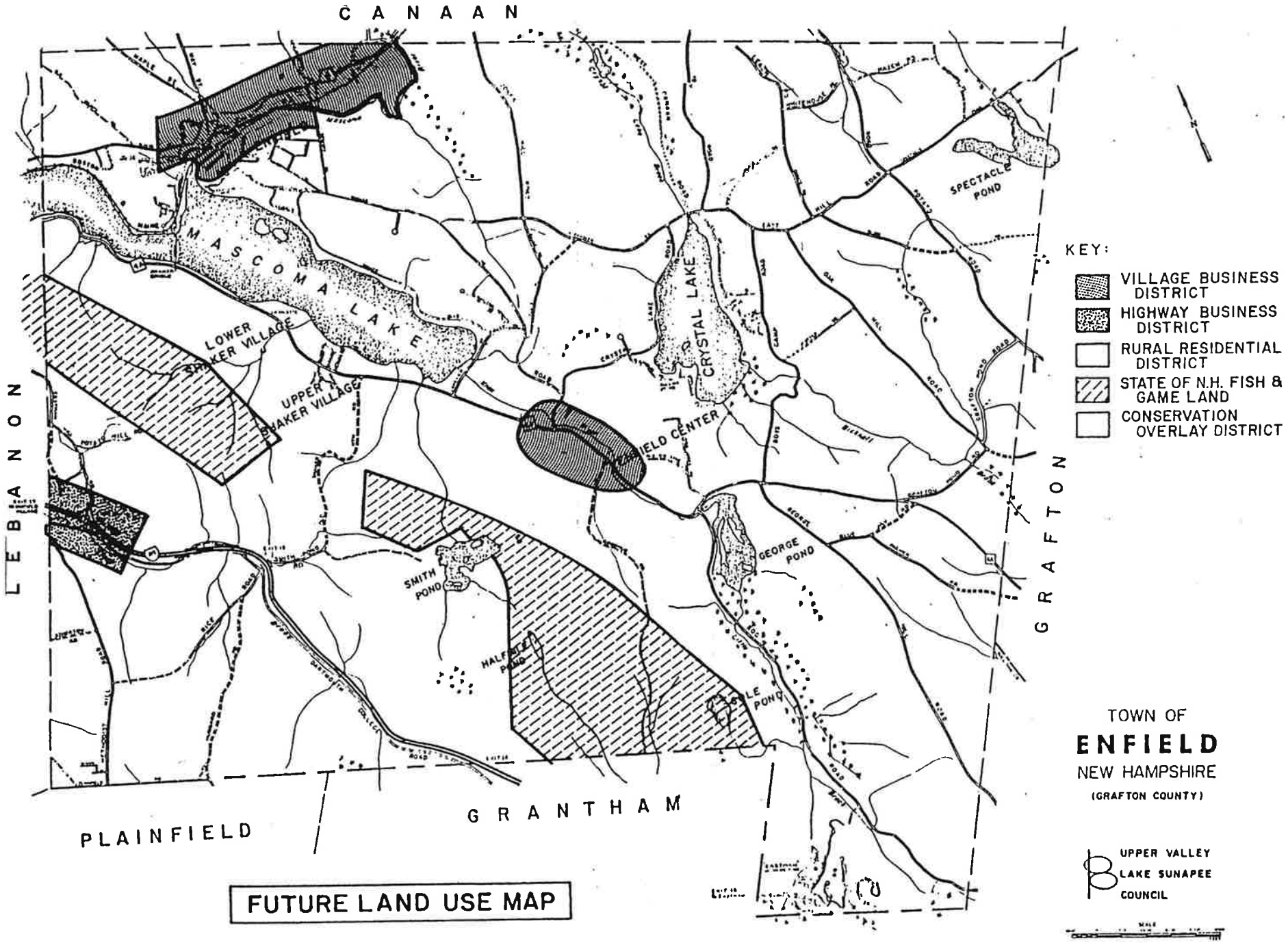
7.7.1 History

Enfield established a Planning Board in 1963 and its first master plan in 1985. Subdivision regulations were adopted by the Planning Board in 1974 and site plan regulations in 1975. A modern, expanded zoning ordinance was passed in 1990 after being rejected at town meeting in 1989. A limited building code was first adopted in 1975 with the BDCA code being approved by voters in 1991.

7.7.2 Master Plan

Enfield's first master plan was adopted in 1985 and included a community-wide survey done in 1982. The plan had 11 chapters on a wide variety of subjects including population, land use, housing, community facilities, etc. The plan had over one hundred recommendations and a future land use plan. The overall land use goals were stated as follows:

FIGURE 7.1
1985 ENFIELD MASTER PLAN
FUTURE LAND USE MAP



- Protect established and future residential neighborhoods in terms of health, safety, property values and quality of life. Commercial and industrial intrusions, including associated traffic and air, water, noise and visual pollution should be avoided.
- Use the capability of the land to support development as a major factor controlling development in rural areas. This includes adequacy for on-site septic systems, water systems and access.
- Encourage a residential land use pattern which has the higher density housing concentrated in and around the Village area and lower density housing in the outer-lying areas of town.
- Provide adequate areas for commercial and industrial expansion which will not have an adverse effect on residential areas or critical natural resources.
- Encourage the rehabilitation and reuse of the former Baltic Mill, preferably for future industrial use.
- Encourage well-planned developments using cluster and planned unit development (PUD) concepts to preserve open space and reduce costs.
- Prevent the spread of strip commercial development especially along Route 4 and Route 4A which are critical commuting and tourism corridors in the region and require adequate setbacks and safe access points in existing and new commercial areas. The number of access points should be minimized to provide for quicker, safer commuting on the Route 4 and Route 4A corridors.
- Encourage energy efficiency in subdivisions, site plan and building design.
- Encourage efforts to preserve and enhance significant architectural and historical resources in the town.
- Improve and strengthen the existing commercial areas in the Enfield Village and Enfield Center Village areas, which are the preferred locations for future commercial growth.
- Prevent high-density and other inappropriate development along the shorelines of Mascoma Lake, Crystal Lake, Mascoma River and other water bodies in Enfield and maintain the railroad right-of-way as a buffer zone along Mascoma Lake.
- Establish a greenbelt along both sides of the Mascoma River.
- Adopt ordinances to regulate stripping of topsoil and removal of gravel, sand, rock and related materials.
- Conserve and protect additional undeveloped land along water bodies and rivers for public open space and recreation.
- Provide and reserve adequate areas for current and future recreational needs in the community.
- Discourage premature subdivisions in outer-lying areas and developments which will cause a substantial burden on the community to provide municipal facilities and services.
- Plan for well-planned, moderate growth and prevent haphazard, rapid and premature growth.

- Protect the town's natural, environmental, and cultural assets and small town atmosphere which are cherished by all who live, work or vacation in the town of Enfield.

7.7.3 Zoning Ordinance

The current zoning ordinance divides the town into six districts and three overlay districts. The districts are shown on Figure 7.2. Table 7.6 breaks down each district relative to area, minimum lot size, frontage requirements and major permitted uses.

About 56 percent of the town is in one of the two rural residential districts (R5 and R3) with the uses similar for both but minimum lot size being 5 acres in R5 and 3 acres in R3. The other residential district, R1, surrounds Mascoma Lake, and the higher density residential areas in Enfield Village and Enfield Center. Minimum lot size is on one-half acre if municipal sewerage and water are available.

TABLE 7.6
SUMMARY OF ENFIELD'S ZONING ORDINANCE

Residential (R1)
% of Town: 11%
Minimum Lot Size: 1 acre/0.5 acre w/w+5 Frontage: 50' R.O.W. Clustering: Yes
Manufactured Housing: Yes
Excavations: No
Multi-Family: Yes
Major Permitted Uses: One, two and multi-family dwellings, individual manufactured housing, churches, cemeteries, home occupations, farm stands, forestry (no clear cutting), non-commercial recreation.
Major Permitted Uses by Special Exception: Cluster manufactured housing, professional offices, agriculture, bed/breakfasts, schools, public facilities.

Residential (R3)
% of Town: 16%
Minimum Lot Size: 3 acres Frontage: 100' Clustering: Yes
Manufactured Housing: Yes
Excavations: Yes
Multi-Family: Yes
Major Permitted Uses: One, two and multi-family dwellings, individual manufactured housing, churches, cemeteries, home occupations, farm stands, forestry (no clean cutting), non-commercial recreation.
Major Permitted Uses by Special Exception: Cluster manufactured housing, sand/gravel pits, offices, offices, bed/breakfasts, schools, public facilities.

Rural Agriculture Residential (R5)
% of Town: 45%
Minimum Lot Size: 5 Frontage: 250'/50' R.O.W. Clustering: Yes
Manufactured Housing: Yes
Excavations: Yes
Multi-Family: No
Major Permitted Uses: One family dwellings, individual manufactured housing, churches, cemeteries, home occupations, agriculture, forestry (no clear cutting), non-commercial recreation.
Major Permitted Uses by Special Exception: Cluster manufactured housing, offices, duplexes, sand/gravel pits, day-care centers, sawmills, campgrounds, kennels, bed/breakfasts.

Conservation (C)
% of Town: 24%
Minimum Lot Size: 10 acres
Frontage: -- Clustering: Yes Manufactured Housing: No
Excavations: No
Multi-Family: No
Major Permitted Uses: Forestry (not clear cutting), agriculture, single family dwellings, cluster, non-commercial recreation.
Major Permitted uses by Special Exception:

Commercial/Business (CB)
% of Town: 1%
Minimum Lot Size: 1 acre/0.5 w/w+5
Frontage: -- Clustering: Yes Manufactured Housing: Yes
Excavations: Yes
Multi-Family: Duplex only
Major Permitted Uses: One, two and multi-family dwellings, individual manufactured housing, cemeteries, churches, home occupations, farming, professional offices, non-commercial recreation, retail stores, shopping centers, restaurants, banks, service stations, motels, public buildins, forestry (no clear cutting).
Major Uses by Special Exception: Wholesale business, commercial recreation, day care.

Commercial/Industrial (C/I)
% of Town: 3%
Minimum Lot Size: 2 acres
Frontage: Clustering: No Manufactured Housing: Yes
Excavations: Yes
Multi-Family: No
Major Permitted Uses: Professional offices, retail stores, shopping centers, banks, service stations, commercial recreation, offices, laboratories, storage businesses, restaurants, public services, cluster development.
Major Permitted Uses by Special Exception: Single family dwellings including manufactured housing, warehousing, service stations, night clubs, manufacturing plants, sand/gravel pits, motels.

Wetlands Overlay
% of Town: 12%
Minimum Lot Size: --
Frontage: -- Clustering: No Manufactured Housing: No
Excavations: No
Multi-Family: No
Major Permitted Uses: Forestry, crops, open space.
Major Permitted Uses by Special Exception: Roads, ponds.

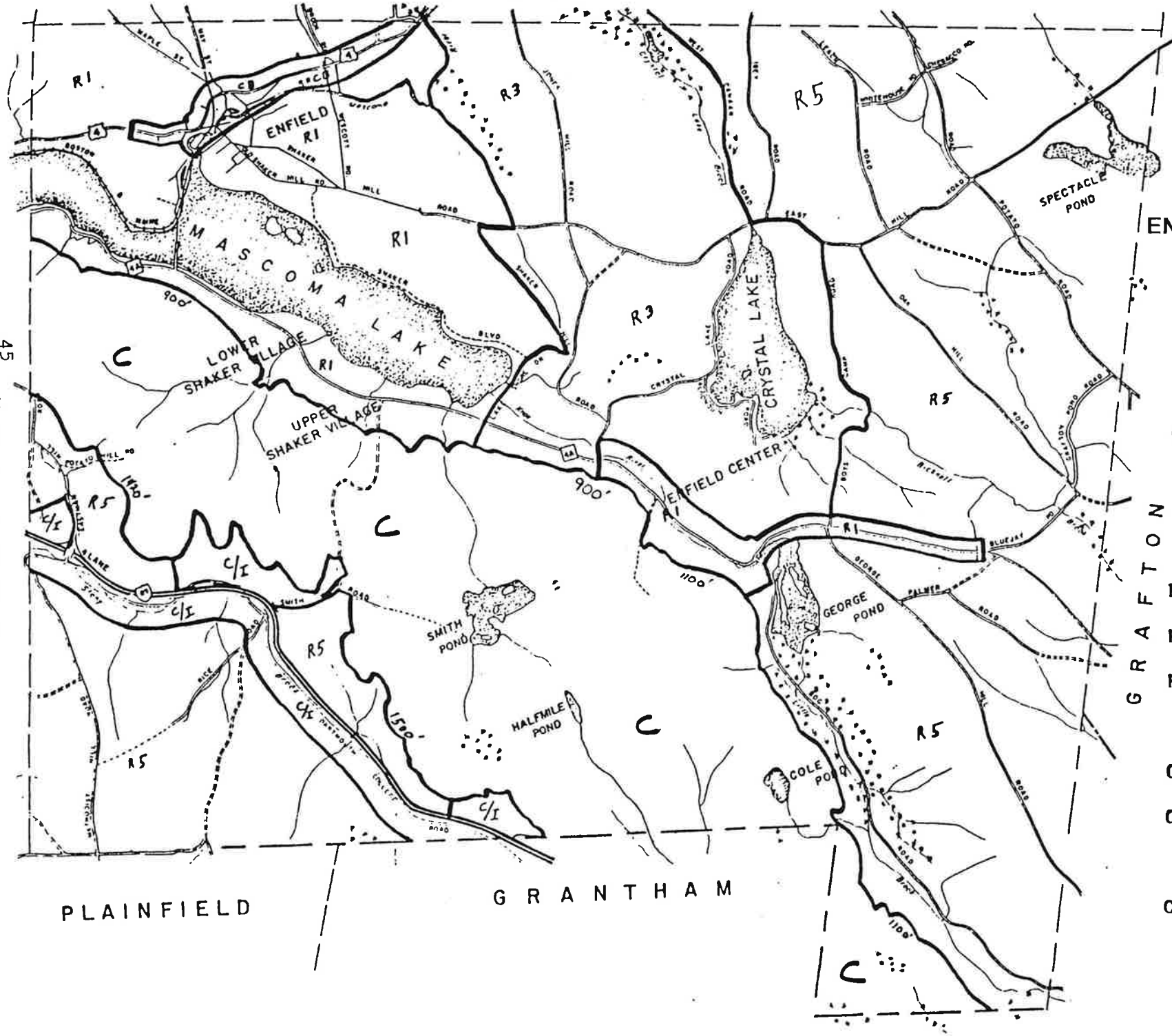


FIGURE 7.2
ENFIELD ZONING MAP

TOWN
OF
ENFIELD
NEW HAMPSHIRE
GRAFTON COUNTY

OFFICIAL ZONING MAP

DISTRICTS

R1 RESIDENTIAL

R3 RURAL RESIDENTIAL

R5 RURAL RESIDENTIAL-
AGRICULTURAL

CB COMMUNITY BUSINESS

C/I COMMERCIAL-
INDUSTRIAL

C CONSERVATION

Steep Slopes Overlay % of Town: 19% Minimum Lot Size: – Frontage: – Clustering: No Manufactured Housing: No Excavations: No Multi-Family: No Major Permitted Uses: Forestry, wildlife, open space, ski trails. Major Permitted Uses by Special Exception:
Flood Hazard Areas Minimum Lot Size: -- Frontage: – Clustering: -- Manufactured Housing: Flood proofer Excavations: – Multi-Family: -- Major Permitted Uses: As in other districts provided flood damage prevention standards are met. Major Permitted Uses by Special Exception: –

There are two commercial zones occupying 4 percent of the town's total area. The CB district occupies existing commercial areas along Route 4 and in Enfield Village. The CI is the new commercial area developing along I-89, overlooking Exit 16.

About one-fourth of the town is in the so-called Conservation District where minimum lot sizes are 10 acres. This occupies the mountainous areas between Route 4A and I-89.

Three overlaying districts provide additional protection to sensitive natural resource areas and include wetland, steep slopes, and flood hazard areas.

Mobile homes (manufactured housing) are allowed on single lots in all three residential districts plus the CB district--nearly three-fourths of the town. They are also allowed as cluster development by special exception in all three residential districts.

Multi-family dwellings (3 or more units) are allowed in the R1 and R3 districts as well as the CB district. No limit exists on the number of units per building.

Cluster housing, defined as one family detached or attached dwellings on a tract not less than 10 acres on which at least 50 percent of the land area is retained as open space, is permitted in all residential districts. The number of units cannot exceed the number allowed under the conventional district requirements.

7.7.4 Building Permit Activity

procedures for receiving subdivision approval and contain requirements for approval including lot layout, roads, traffic, drainage, open space, flood hazard, etc. These regulations have been amended seven times, most recently in 1995.

Adopted in 1975 were site plan regulations pertaining to non-residential and multi-family development even if no subdivision is involved. The regulations deal with issues such as lighting, buffers, parking, landscaping, and traffic conditions.

National building code standards (building, plumbing, mechanical, fire, electrical, and life safety codes) were adopted in 1991.

7.7.6 Subdivision/Site Plan Review Activity

Subdivision activity in Enfield was very heavy in the 1980s but has slowed in the 1990s with the recession and the slowdown in the housing market as Table 7.8 shows. An average of 13 subdivisions were reviewed each year since 1986 with a total of 421 new lots being created, or on average of 46 lots per year. However, in the last three years only 39 lots have been added.

Table 7.8
SUBDIVISION ACTIVITY

Year	Subdivisions	Lots	Site Plans
1986	20	47	7
1987	12	53	5
1988	16	128	7
1989	18	76	5
1990	19	46	8
1991	13	32	8
1992	12	32	4
1993	5	2	10
1994	2	5	5
TOTAL	117	421	59

Source: Town Office Records and Planning Board Records

7.7.7 Growth Control Regulations

The building boom of the 1970s and 1980s caused communities across the state to become concerned about the effects of rapid growth. As a result, the New Hampshire legislature passed laws enabling towns to adopt regulations that help control the rate of growth, including limits on the number of building permits per year or limitations on the number of lots which may be approved.

Enfield has no growth control regulations.

7.7.9 Other Regulations

Driveway permit -- A driveway permit (based on safe location, drainage and grade) is required for any new driveway. This permit is obtained through the Planning Board.

Flood Plain Development Ordinance -- Adopted under the zoning statute, the regulation sets up standards for development in the floodplain and is a requirement for town participation in the National Flood Insurance Program.

Parking Ordinance -- Regulates parking on public streets and right of ways.

Excavation Regulation -- As provided under RSA 155E, regulates sand and gravel pits. A review of the town files shows no permitted excavations.

Sewer and Water Ordinance -- Regulates and sets fees for the municipal water and sewer system.

Liquified Gas Ordinance -- Regulates the installation of propane and other tanks.

Class VI Roads Policy -- Regulates issuance of building permits on Class VI roads.

7.8 Land Use Regulations in Surrounding Towns

Table 7.9 and Figure 7.3 summarize the zoning regulations for the seven towns surrounding Enfield.

Six of the seven towns either have no zoning or have the lands abutting Enfield zoned for conservation or rural residential growth. Hanover, which only abuts Enfield at the northeast corner, has a forestland zone with a 10-acre minimum lot size. Plainfield has a 25-acre minimum in its conservation zone.

Lebanon, the seventh town, has four different zones abutting on the eastern side of Enfield. The sewered areas are zoned for high density development with lot sizes as small as 10,000 square feet. The land abutting Route 4A is zoned "neighborhood commercial" (NC) and permits retail stores, mobile home parks and cluster development. It abuts Enfield's R1 zone. Route 4 is zoned Rural Lands 1 (RL1) which is designed to provide a transition area from rural development to high density urban development. Mobile home parks, planned unit developments, cluster subdivisions are among the permitted uses. It also abuts Enfield's R1 district.

FIGURE 7.3
SURROUNDING TOWN'S ZONING DISTRICTS

ENFIELD MASTER PLAN

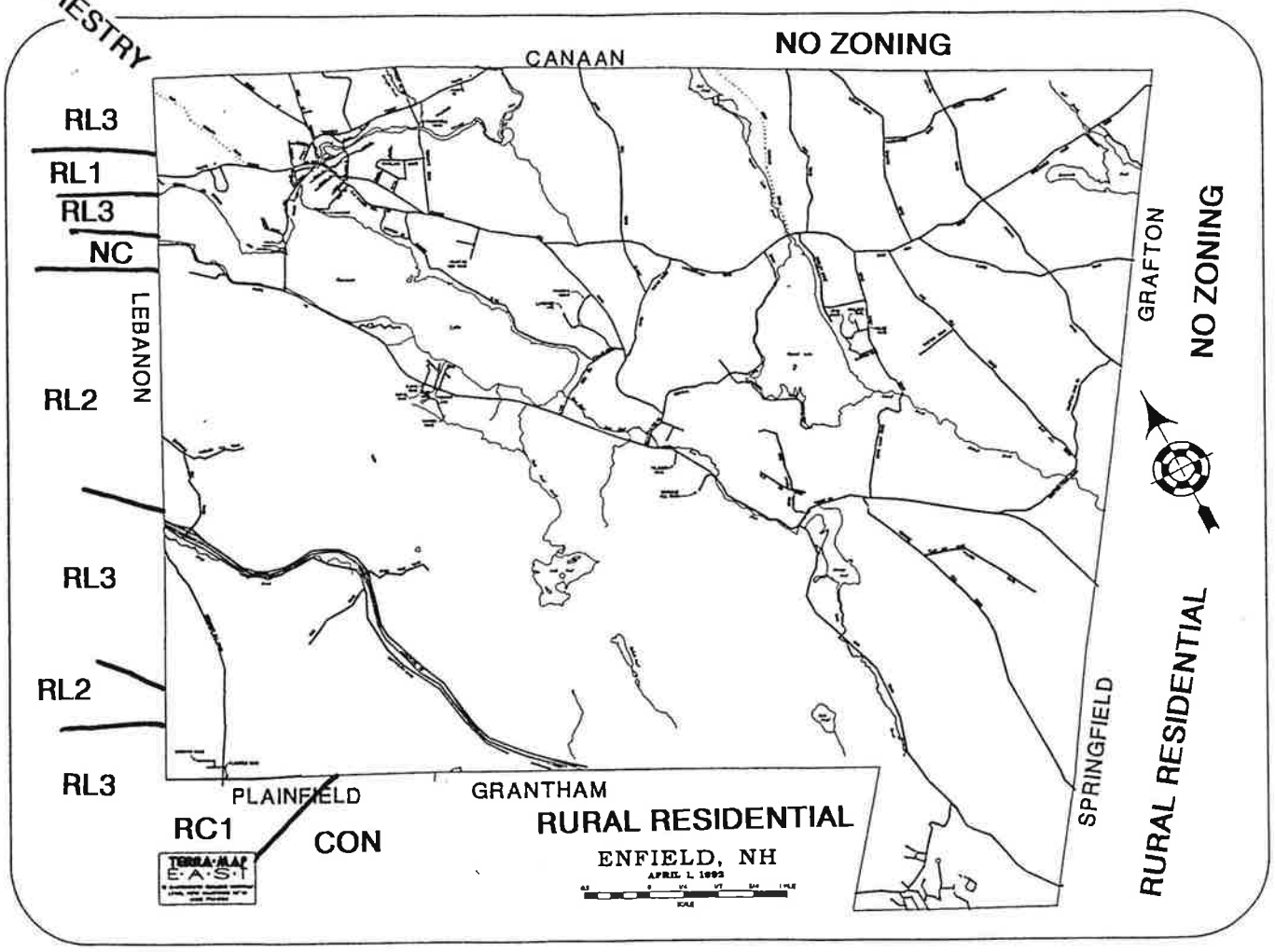


TABLE 7.9
ZONING DISTRICTS ABUTTING ENFIELD

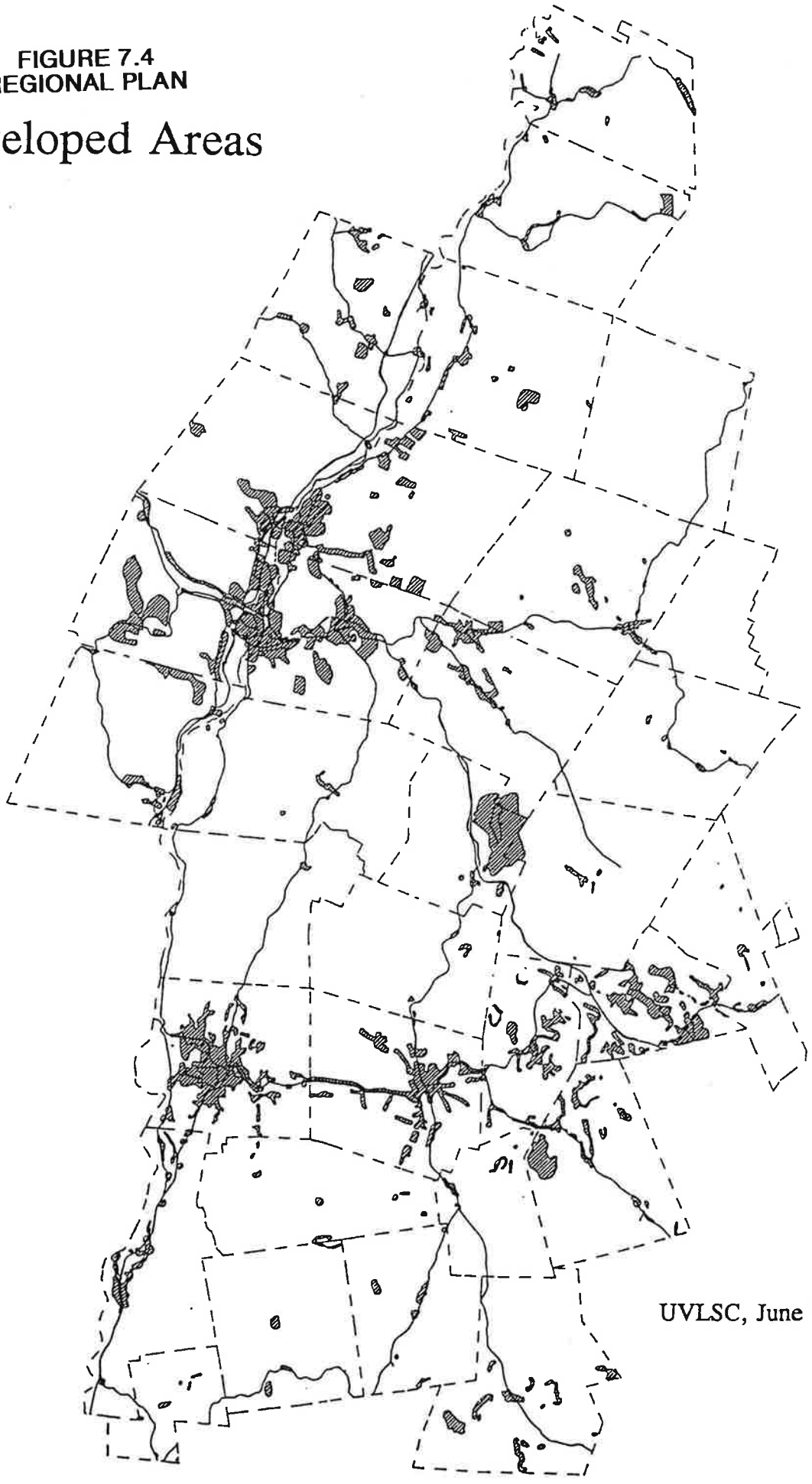
Town	District	Frontage	Lot Size
Lebanon	Rural Lands 3	25'	10.0
	Rural Lands 2	100'-250'	0.5-3
	Rural Lands 1	100'-200'	0.5-1.5 acres
	Neighborhood Commercial	20-25'	10,000-40,000 sq. ft.
Hanover	Forestry	400'	10.0 acres
Springfield	Rural Residential	200'	1.5 acres
Grantham	Rural Residential	200'	1.0 acres
Plainfield	Rural Conservation	300'	7 acres
	Conservation	400'	25 acres
Grafton	None		
Canaan	None		

7.9 Regional Land Use

In 1992, the Upper Valley Lake Sunapee Regional Planning Commission developed a regional plan which included a brief section on regional land use. The plan identified existing developed areas in the region, shown in Figure 7.4. It also indicated the Commission's policy was to encourage growth in existing growth areas as shown in Figure 7.5. Enfield was identified as having two local growth centers--Enfield Village and Enfield Center.

FIGURE 7.4
REGIONAL PLAN

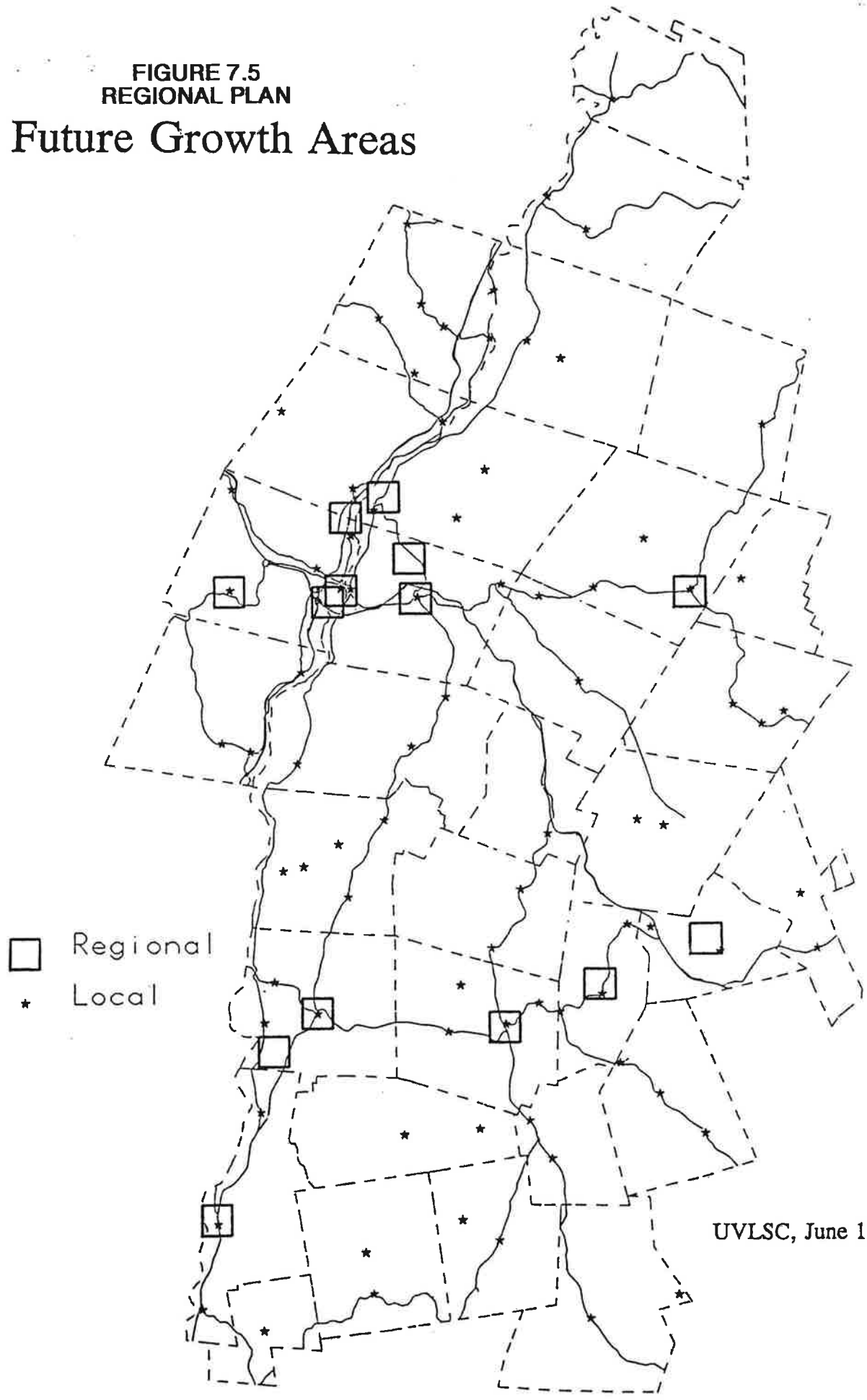
Developed Areas



UVLSC, June 1990

FIGURE 7.5
REGIONAL PLAN

Future Growth Areas



UVLSC, June 1990

VIII CONSTRUCTION MATERIALS

8.1 Introduction

Sand and gravel deposits are important natural resources within any community. Selectmen and road agents require it for building and maintaining town roads, contractors use it for building homes and driveways, and it is a major component of concrete and concrete blocks.

In New Hampshire, however, there is competition for utilizing land with sand and gravel. Many villages and commercial areas are built over sand and gravel deposits. Additionally, many towns derive groundwater from sand and gravel aquifers. Because of the importance of this natural resource, the state amended the requirements for town master plans to require a section on sand, gravel and excavations in order to insure long-range planning of their use.

8.2 Sand and Gravel in Enfield

Sand and gravel deposits in Enfield are the result of glaciation. There have been several periods of glaciation, with the most recent period having ended ten to twelve thousand years ago. As the glaciers advanced, the bedrock was scraped and gouged, and the loose material was picked up and moved along. This glacial advance, or scraping, did not drastically alter the topography of the area. The profile of the mountains appears much as it did before the Ice Age. However, the glaciers did have a great impact on the appearance of the valleys.

As the climate warmed and the ice retreated north, it deposited two major types of material--till and glacial outwash deposits. Till is composed of a mixture of soil and rock fragments that were scoured loose by the moving ice, carried for a distance, and then deposited. It is generally highly compacted and found in the mountainous and hill areas of Enfield. It ranges in depth from 0 (where bedrock is exposed) to about 40 feet. Till is generally not a source of sand or gravel.

Outwash deposits were caused by glacial melt waters. They are the stratified sand and gravel deposits which are found along the river valleys. Ground up rock was repeatedly washed by water, and silt and clay particles were removed. The constant movement of stones against one another rounded their edges and formed smooth, rounded surfaces. Faster moving waters such as those in stream beds deposited gravel. Glacial shoreline areas and slower moving streams tended to deposit sands. Often stratification or layering of different size sand and gravel particles resulted from changes in the water's velocity.

Map 17 shows the extent of sand and gravel deposits in Enfield. The source of these boundaries is the USDA-SCS soils maps for Enfield.

As can be seen from the map, there is not a substantial area of Enfield that has sand and gravel deposits. Approximately 607 acres of Enfield's land consists of glacial outwash materials. This represents only about 22 percent of the total.

Of the 607 acres, approximately 20 percent is mapped as soils having sand and gravel deposits and 80 percent is mapped as sands only. However, due to the complex geology of the area, the predication of where sand occurs versus where gravel occurs is extremely difficult. On-site evaluations are necessary to access quality and quantity.

Most of the sand and gravel deposits occur near or adjacent to Little Brook. Additional deposits occur in about a dozen areas scattered throughout the town.

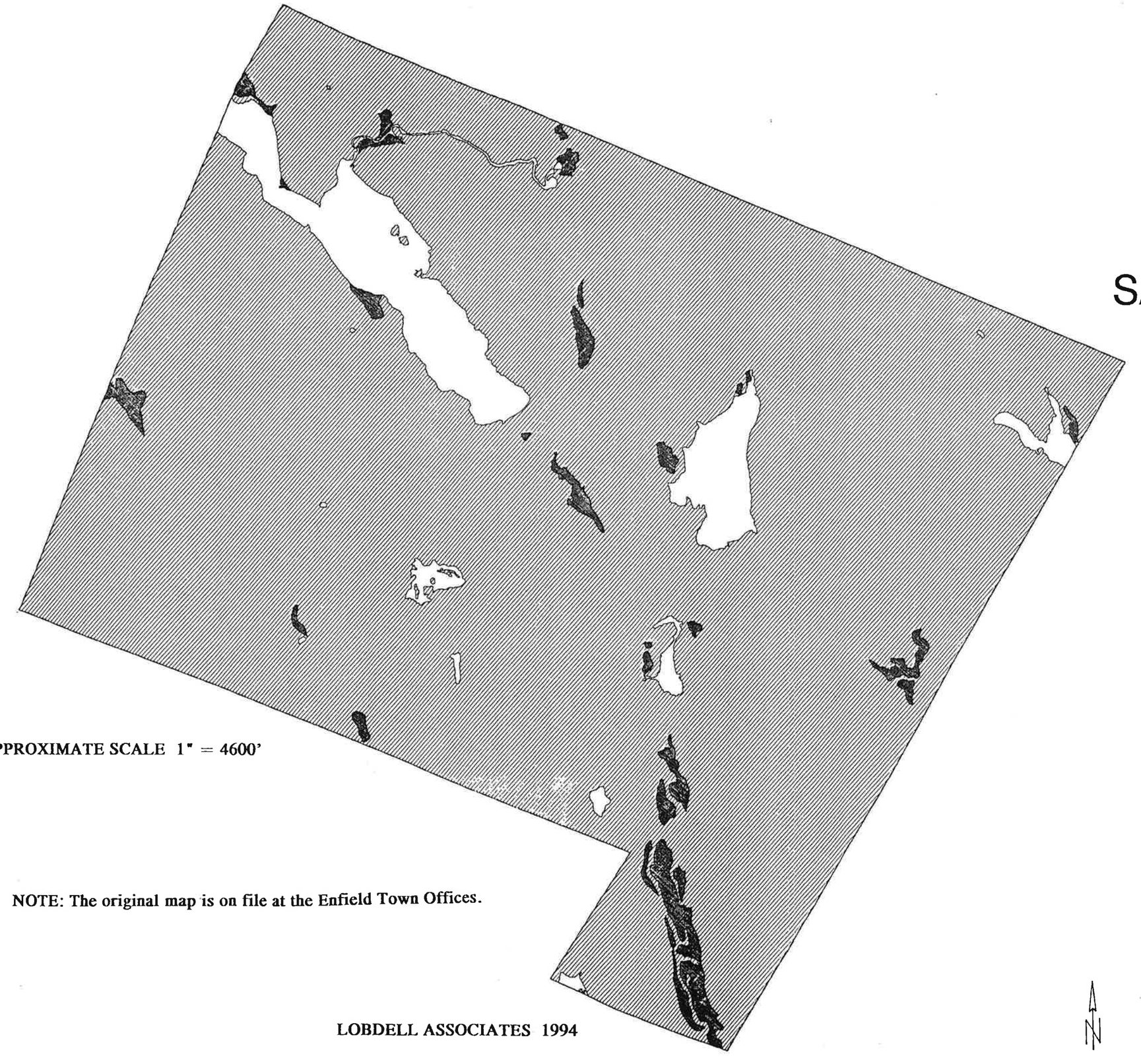
8.3 Aquifers, Sand and Gravel

Water that is not exposed to the air is known as groundwater. The term "aquifer" describes water saturated earth materials from which a water supply can be obtained. There are three types of groundwater aquifers: stratified drift (sand and gravel), till, and bedrock. The basic difference is that stratified drift and till aquifers are composed of unconsolidated glacial deposits (loose earth materials), while bedrock aquifers are solid rock. In stratified drift aquifers, the materials are sorted sand and gravel. In till aquifers, the materials are a gravel, sand, silt and clay mixture. In bedrock aquifers, the rock is fractured.

Stratified drift materials are porous. Highly porous materials like sand and gravel have more and larger spaces between individual particles. These aquifer deposits are capable of storing, transmitting and yielding larger volumes of water. Conversely, materials (like till) with fewer and smaller individual particles are not capable of storing, transmitting and yielding nearly as much groundwater. Data obtained thus far indicates that the stratified drift aquifer area in Enfield is extremely limited.

The space between the earth material and in the bedrock fractures is where groundwater is stored. Being hydrogeologically interconnected, groundwater is able to flow from one aquifer type to another. However, even though groundwater flow within a particular aquifer may be substantial, often the rate of a groundwater flow between aquifer types is limited. Therefore, each aquifer type is often treated as an individual supply source.

All aquifers have a three-dimensional shape. As glacial deposits and rock formations often cover large areas, there may be considerable acreages involved. For example, underlying entire valley floors may be stratified drift aquifer deposits, much of the surrounding higher elevations may be till deposits, and bedrock may lay under both of these unconsolidated deposits. Depending on material type, an aquifer may be shallow to extremely deep. Glacial deposits may be less than 10 to well over 100 feet deep, and aquifers located in these materials may be generally described as deeper in the middle and more shallow towards the edges.



MAP 17

SAND AND GRAVEL MAP

OUTWASH SANDS AND GRAVEL

SANDS AND GRAVEL
OTHER SOILS
WATER
— — TOWN LINE

APPROXIMATE SCALE 1" = 4600'

NOTE: The original map is on file at the Enfield Town Offices.

LOBDELL ASSOCIATES 1994

INTERPRETIVE MAP PRODUCED BY THE USDA, SOIL CONSERVATION SERVICE, DURHAM, N.H.
SOILS LAYER DERIVED FROM THE NATIONAL COOPERATIVE SOIL SURVEY
DIGITIZED AT COMPLEX SYSTEMS RESEARCH INSTITUTE, DURHAM, N.H. – GRANIT

DISCLAIMER: The soils data layer is pre–certified SOIL GEOGRAPHIC DATABASE (SSURGO), mapped by the USDA, Soil Conservation Service, Durham, N.H. Delineations depict the dominant soil(s) making up the landscape. Inclusions of other soils, too small to be delineated, are present within a delineation. Enlargements of these maps to scales greater than that at which they were originally mapped can cause misunderstanding of the detail of mapping. The depicted soil boundaries and interpretations derived from them do not eliminate the need for on–site sampling, testing and detailed study of specific sites for intensive uses. Thus, this map and its interpretations are intended for planning purposes only. Digital data files are periodically updated. Files are dated and users are responsible for obtaining the latest version of the data. For technical information contact the State Soil Scientist, SCS, Durham, N.H.

USDA, SOIL CONSERVATION SERVICE

Bedrock may vary in depth depending on formation types, but the usable portion may be well over a thousand feet deep. However, the deeper one drills, the fewer and smaller the fractures to store and transmit groundwater.

Due to factors like aquifer material type, porosity and depth of saturation, an aquifer can only yield finite amounts of groundwater. Considering this type of information, an assessment of an aquifer's capability and importance as a water supply can be made. The higher the porosity of an aquifer, the more likely it will supply larger volumes of groundwater for longer periods.

Wells used by communities or private individuals draw groundwater from aquifers. Water users like a community of commercial-industrial operation typically require large volumes of water. To supply this amount of water on a continual basis, the well must have a large yield capacity. Only certain aquifers with the right hydrogeological characteristics may yield this amount. On the other hand, the small volume domestic well will usually suffice and can be located most anywhere. However, when considering an aquifer's ability to supply water, the combined effect of very many or very high concentrations of individual wells pumping from the same aquifer may ultimately equal a large groundwater withdrawal and, therefore, be beyond the aquifer's yield capacity. In addition, two large volume wells may have localized negative impact on an aquifer unless well locations and pumping rates are regulated.

All water being pumped from existing or future wells comes from somewhere. The source is the precipitation falling from the sky and landing in the watershed. This water is commonly referred to as groundwater or aquifer recharge. Aquifer recharge may be differentiated into what is called direct and indirect recharge. Direct recharge is the water falling directly over an aquifer's surficial extent, which is not lost to plants, soil moisture, or evaporation and which makes its way down into the aquifer. The direct recharge areas for stratified drift is the glacial deposit's surface area. Indirect recharge involves water that is direct recharge to till or bedrock aquifers, but moves through these aquifer areas and into stratified drift aquifers.

Stratified drift or glacial outwash aquifers are by far the most productive. Map 9 shows the locations of potential aquifers in Enfield based on a very preliminary aquifer potential map prepared by the U.S. Geological Survey in 1976 (a far more detailed study is now underway). The mapping shows potential aquifers along Bog Road, Route 4A near Shaker Village, Crystal Lake Brook, and along a portion of the Mascoma River.

The recently approved available wells for the Enfield water system were drilled in the latter aquifer area and yield over 110 gallons per minute, enough to more than satisfy Enfield's existing water requirements. See Section 11.8 concerning Enfield's water system.

8.4 Inventory of Excavations in Enfield

Sand and gravel has been mined in Enfield since the early days of settlement. No in-depth inventory of gravel excavations has been undertaken. However, based on available information from USGS maps, soils maps and aerial photographs, there are approximately eleven sand and gravel excavation sites, both active and inactive. These locations are shown on Map 18. The total acreage involved is small, approximately 0.2 percent of the entire town. Several excavations are along Bog Road. A rock quarry also exists southeast of Route I-89.

While Enfield's total area that has potential sand and gravel excavation sites is approximately 2 percent of the town, only about 10 percent of that area has actually been excavaued--a small percentage. However, because the removal of sand and gravel is often in conflict with other land uses, the sighting of future excavations could be controversial.

8.5 Sand and Gravel Regulations

Towns in New Hampshire are required to regulate excavations under RSA 155E, the Excavation law. The law requires excavations receive permits from the town, and sets up operational and pit restoration standards. The law also allows towns to adopt their own specific regulations to implement this law. About 65 percent of the towns in the state have adopted such regulations.

Enfield has a specific excavation ordinance as enabled by the state. Also, Section 411 of the zoning ordinance--Removal of Natural Material--permits excavation or quarrying by special exception in Zoning Districts C/I, R3 and R5 (see Section VII).

8.6 Town Pits

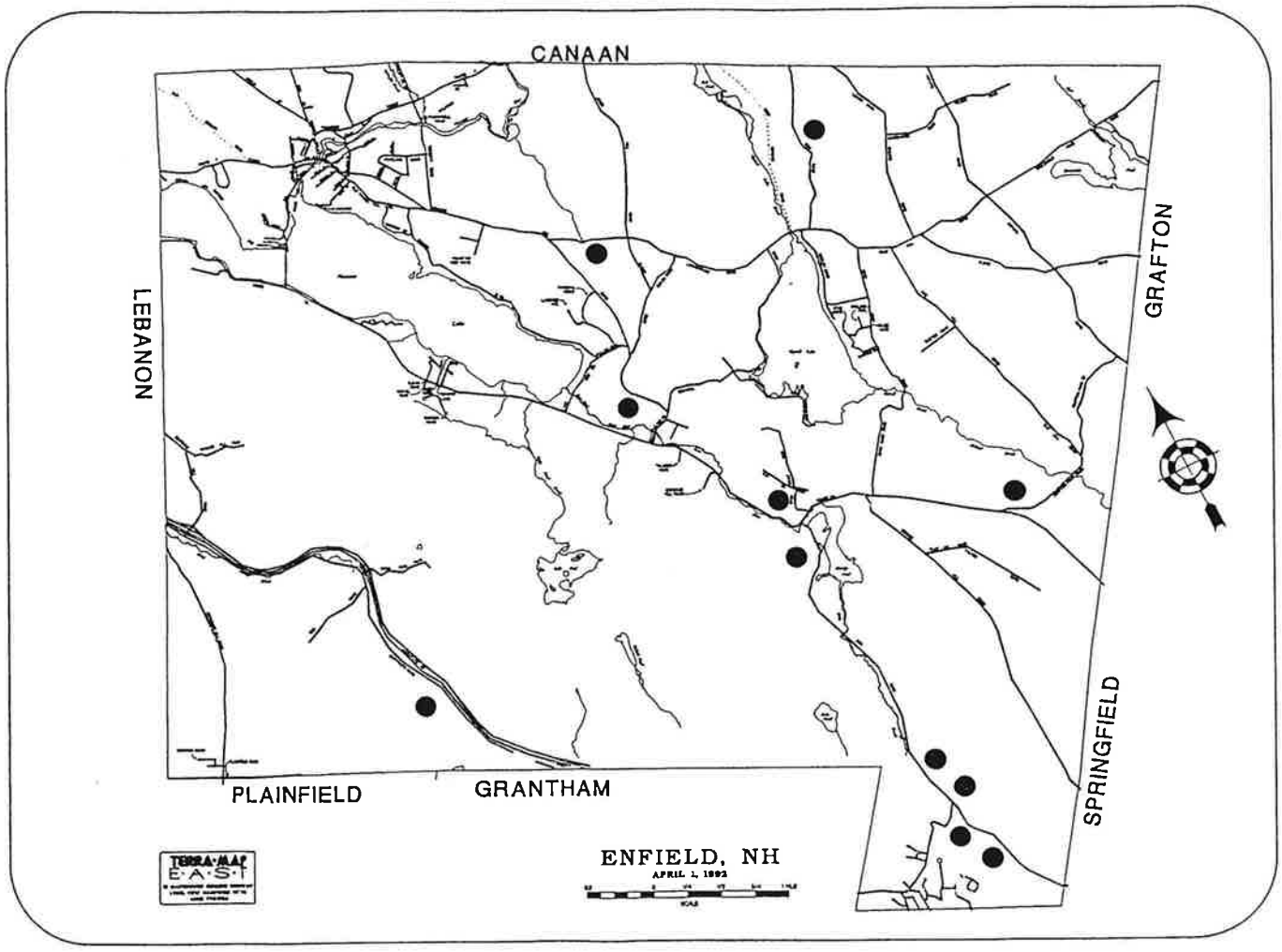
The town Public Works Department uses sand and gravel to repair and rebuild roads as well as for winter sanding purposes. The town does not own a pit but purchases all of its sand and gravel. The sand and gravel needs are met by the local common gravel operations through a bidding process and rock is obtained through Lebanon Sand and Gravel.

The "fill" pit located on Grafton Pond Road was recently closed because the supply had been exhausted. According to the highway supervisor, the town owns a parcel on Lockehaven Road that once had a pit, and it could be reopened. The quality and quantity of material available is unknown.

MAP 18

EXCAVATION/PIT LOCATIONS

ENFIELD MASTER PLAN



● SITES

SOURCE: USDA SOILS MAPS, USGS TOPOGRAPHIC SHEETS, AERIAL PHOTOGRAPHS, TOWN RECORDS

IX RECREATION

9.1 Introduction

For those who live in the Upper Valley, recreation is an essential ingredient of the quality of life. With abundant mountains, streams and open spaces, the surrounding area offers a wide variety of outdoor recreational opportunities.

- But recreation is not just hiking or fishing nor is it only ball games and skating. Recreation is something all of us do nearly everyday--making use of our leisure time. It affects every age group:

- Tots - gives them the opportunity to meet and play with other children before entering school in order to develop social skills.

- Children - they need weekend and summer activities including craft programs, nature walks, fishing derbies, etc.

- Teens - they need a place to "hang out," to be with their friends, to follow their own schedules and often make their own entertainment.

- Elderly Folks - they are often shut off from the world. They need a chance to exercise, a place to gather, to feel a part of the community.

Planning and implementing recreation facilities and programs can be one of the most rewarding activities a community can involve itself in. Not only is it "fun," but it also can be a source of pride for the community, something to point to when a business is considering a move into town or a family is looking to relocate.

It is, therefore, an important component of any master plan. The 1980s saw a dramatic shift in recreation and leisure activities due to more available time and an increased health awareness. In the 1990s these trends are continuing.

9.2 Regional Recreational Opportunities

The Upper Valley offers a wide variety of indoor and outdoor recreation activities, both public and private. The rivers and streams offer fishing and canoeing while the areas many lakes, including Sunapee and Mascoma, offer swimming, fishing, sailing, and boating. The areas woodlands and mountains offer hiking, cross-country skiing, and camping opportunities.

More structured activities include downhill skiing at five nearby ski areas, golf at three 18-hole and 9-hole golf courses. Nearby, Dartmouth College offers a wide variety of recreational and cultural opportunities including theater, music, and indoor recreational facilities as does the city of Lebanon.

Recreational opportunities, particularly outdoors, add to the "quality of life" in the Upper Valley and are the reasons many people choose to live in the area.

9.3 Paths and Trails

Map 19 shows the location of Enfield's paths and trails. With the expansion of outdoor recreation and fitness activities, there is an increasing demand for paths and trails by an increasing variety of trail users including: snowmobiles, hikers, mountain bikes, road bikes, motorized dirt bikes, all terrain vehicles, horses, cross-country skiers, snowshoeing, and educational.

The logical, most organized trail system in Enfield is the snowmobile trail network. A major state trail, Trail #5, travels north and south connecting to all parts of Vermont and New Hampshire. Enfield is also the home of the area's only designated bike path, located along I-89. Of course, biking is also very popular along Enfield's public highways, including Route 4A.

While there are trails on the extensive Fish and Game holdings in Enfield, the Fish and Game Department does not maintain trails nor does it generally build trails. However, opportunities do exist, particularly with the recently acquired LCIP Shaker Village trail to develop a public/private partnership for multi-use trails on state trails.

One recently constructed new trail is the Bicknell Brook Loop Trail recently constructed on town land off Grafton Pond Road. The two-mile trail includes parking, signage, and an enjoyable wooded walking trail, a portion of which is along Bicknell Brook.

9.4 Recreation Facilities in Enfield

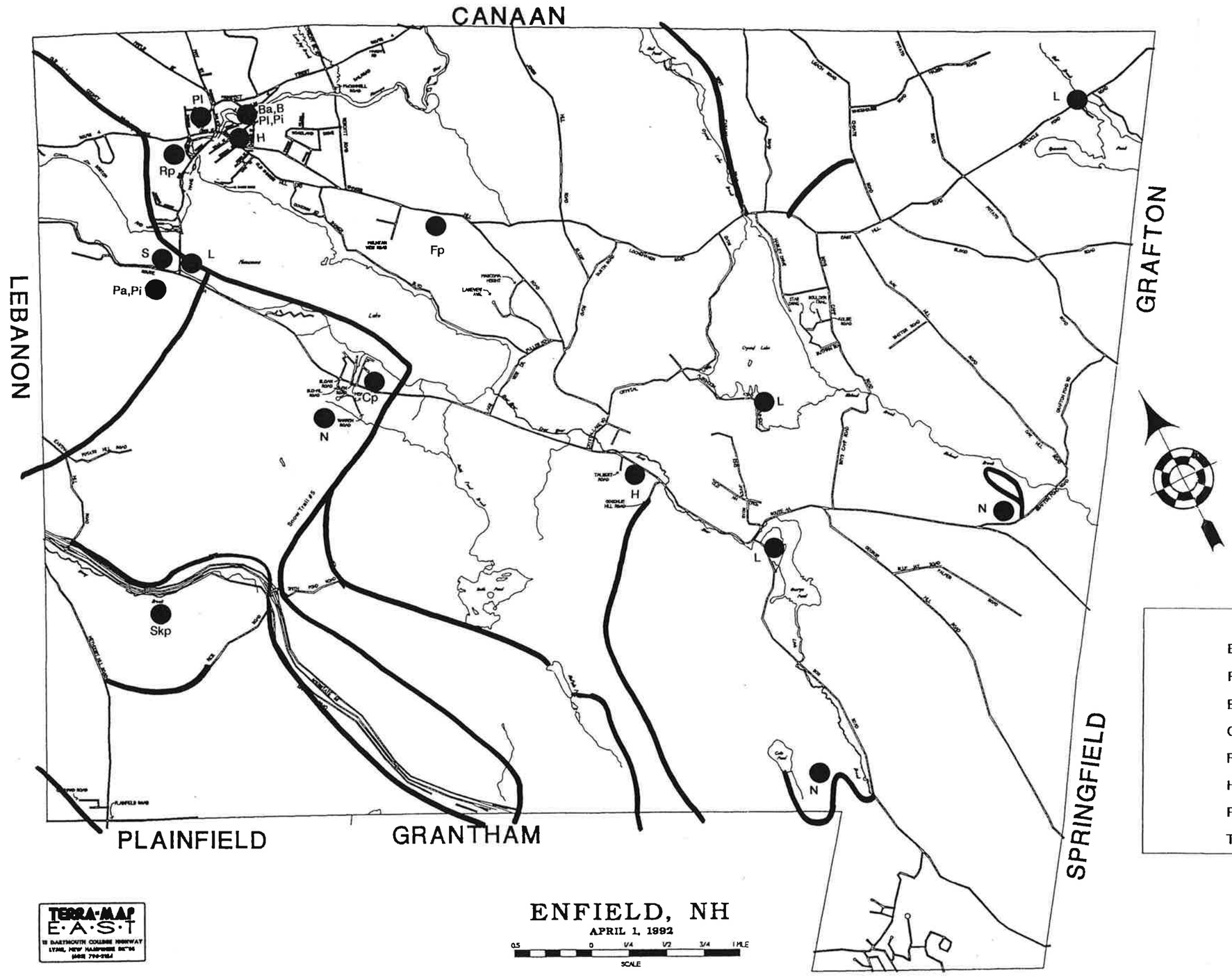
Public recreation facilities in Enfield include local and limited state facilities.

The New Hampshire Fish and Game Department owns and operates the 3,200-acre Enfield Wildlife Management Area and the 1,100-acre Lower Shaker Village Wildlife Management Area. Although all of their land is open to the public, they do not maintain trails or provide recreational facilities. The state also owns a small boat launch on George Pond.

ENFIELD MASTER PLAN

MAP 19

RECREATION FACILITIES



Ba	Basketball	Sk	Skiing
Pl	Playground	Pi	Picnic
B	Baseball	N	Nature Area
C	Cultural Area	L	Launch
F	Firing Range	S	Swimming
H	Hall	Pa	Parking
R	Skating Rink	p	Private
Trails			

TERRA-MAR EAST
10 DARTMOUTH COLLEGE HIGHWAY
LYME, NEW HAMPSHIRE 03768
(603) 795-2141

ENFIELD, NH
APRIL 1, 1992
0.5 0 1/4 1/2 3/4 1 MILE
SCALE

prepared by Lobdell Associates
1994

The town of Enfield owns and operates several public recreational facilities shown on Map 19.

Several facilities provide access to Enfield's lakes and ponds. Town-maintained boat launches are found on Mascoma and Crystal Lake. Shakoma Beach on Mascoma Lake offers swimming with a picnic and park area adjacent to the beach just across Route 4A.

Huse Park is the recreational focus of the town, providing a sheltered picnic area, playground, outdoor basketball, and a baseball field. The basketball area was designed with a lip so it could be flooded in the winter for ice skating, but it was not successful. Plans have been prepared recently to upgrade Huse Park including regrading the playground, parking lot improvements, a modular playground unit, basketball court improvements and seeding. Funding was approved at the 1995 town meeting. The elementary school also offers a large playground area.

While not in Enfield, Mascoma Valley High School offers indoor volleyball and basketball plus baseball, softball, two soccer fields, and a field hockey field.

Indoor facilities include the gymnasium at the elementary school, Whitney Hall, and the Center Hall. Many Enfield seniors meet at the Mascoma Area Senior Center in Canaan or at the Upper Valley Senior Center in Lebanon for walks, exercise, entertainment, etc.

From a cultural standpoint, Whitney Hall offers a stage and meeting room, and Center Hall offers similar meeting facilities.

There are also plans to create a new five-acre recreational field on town land at Shaker Village. The plan is to create two fields and parking for baseball, T-ball, and soccer. Approximately $45,000 is the estimated cost. At town meeting in 1995, $20,000 was approved for the project.

Private recreational facilities include an indoor roller-skating rink on Route 4, the Dartmouth Sailing Club on Mascoma Lake which offers sailing and sailboat racing. The Whaleback Ski Area, off Exit 16 of I-89, offers downhill skiing and snowboarding on 18 trails with two lifts. It offers partial snow making and night skiing.

A major cultural and recreational facility now exists at the Museum at Lower Shaker Village. The museum offers a variety of workshops, exhibits, talks, etc. Although only eighteen acres in size, it abuts the 1,100-acre state Shaker Village parcel, and joint recreational/cultural events are possible.

9.5 Recreation Department

Enfield has no recreation department or director. However, it does have an elected five-member Recreation Commission which advises the town on local recreation issues and provides a summer recreation program, including youth swimming lessons. The Commission is not very active.

Table 9.1 breaks down the recreational budget for the town. Besides summer personnel for the swim program, the town provides funds for Old Home Day, Little League, Halloween, and an Easter Egg Hunt.

TABLE 9.1
TOWN RECREATION BUDGET

Part-time Personnel	$5,757
Utilities	609
Supplies/Repairs	540
Programs	2,660
Sports Equipment	109
TOTAL	$9,675

Source: Town Report, 1993

There are additional recreational expenditures that are incurred by the cemetery maintenance personnel and the Highway Department, For example, cemetery staff does the mowing at Huse Park and Highway Department personnel maintain the parking area at the beach.

Table 9.2 compares Enfield's recreational expenditures with related towns and cities nearby. Enfield spends significantly less per capita than surrounding towns or the state as a whole.

TABLE 9.2
SELECTED RECREATIONAL EXPENDITURES PER CAPITA
1992

Town	Per Capita Expenditures
Enfield	**4.11**
Lebanon	22.89
Hanover	15.18
Canaan	5.05
Grafton	27.32
Sunapee	16.76
State Average	17.10

Source: Office of State Planning, unpublished

9.6 Recreational Needs

Recreational needs have been assessed in two ways. The first method was through a survey sent to recreational users in Enfield asking them a series of questions about programs or facilities. The second method was to compare the existing facilities in Enfield with statewide recreational standards.

Community Recreational Requests

In the summer of 1994, the Planning Board sent a survey to 32 recreational groups and organizations, both public and private, which asked questions relative to recreation in Enfield. See Appendix for a list of groups and a sample survey.

Of the 32 surveys, 9 were completed or returned--or about 28 percent. All respondents represented groups that provided at least one recreational activity for Enfield residents. Over 6 of the 9 operated or maintained recreation facilities.

Recreational problems in Enfield listed by the respondents include the following:

- Lack of volunteers (coaches, etc.)
- Lack of town coordination
- Lack of public access to rivers and lakes
- Abuse of public/private lands by recreation users (litter, etc.)
- Lack of both indoor and outdoor facilities
- Scheduling problems for gym and field time

Recreational needs were also listed by the respondents, and they included:

- Walking trails
- Indoor meeting and recreational facilities (particularly for the elderly)
- Additional gym space and faculty
- Additional recreation fields for baseball/softball, soccer and field hockey
- Keeping public land open for hunting and fishing

Recreation Standards

Table 9.3 shows Enfield's recreation facilities as compared to state recommended standards. While Enfield meets the recommendations with regard to some facilities, it falls short in many others. Significant shortfalls exist in basketball, ice skating, tennis courts, and recreation centers. Shortages exist in baseball diamonds, picnicking, community parks and swimming beaches.

A similar assessment was completed in the 1985 Master Plan which pointed out the same insufficiencies.

Of course, these elements are only information guidelines. They help point out areas of concern but should not be relied on to make final decisions.

TABLE 9.3
RECREATION STANDARDS

Facilities	Enfield Has	Standard per 1000 Persons	Enfield Should Have
Baseball Diamond	3	1.1	4.4
Basketball/Hand Courts	1	.8	3.2
Boat/Fishing Access	8	1.8	7.2
Football Fields	0	.1	.3
Golf Courses	0	.04	.16
Gymnasiums	3	.25	1.0
Ice Hockey Rinks	0	.05	0.2
Ice Skating Area	0	.2 to 1	.8-4
Open Space/Nat. Areas (ac.)	4800	51.0	204.0
Picnic Tables	10	8.0	32.0
Parks, Community (acres)	3	6.0	24.0
Playgrounds	2	.5	2.0
Shooting Ranges	1	.08	.3
Skiing (X-country areas)	0	.1	.4
Skiing (downhill areas)	1	.09	.4
Soccer Fields	1	.16	.6
Swimming (beach--acres)	0.15	.1 to 1.5	.4-6
Swimming (outdoor pools)	0	.07 to .4	.3-1.6
Tennis Courts	0	.95	3.8
Track	0	.04	.16
Recreation Center	0	0.5	2.0

X TRANSPORTATION

Enfield's transportation system consists of local streets and services, which enable safe and efficient circulation within the town, and the town's links with the rest of the state and its markets. This infrastructure and services affect the daily life of most residents and the long-run economic viability of businesses. Some facilities are under the town's authority for planning, financing, construction and maintenance; others, serving the larger region, are controlled by the state and federal governments or private industry, and are influenced by the Town through advocacy, legislation, and cost-sharing.

10.1 Highways

Regional Highway Network

For Enfield residents and businesses, there is a high degree of accessibility to both regional and statewide locations via the regional highway network as shown on Map 20. The town is served by a variety of state and interstate highways including I-89, Routes 4 and 4A. I-89 travels about 5 miles in the southwestern corner of Enfield, with three interchanges in town. This route connects the town with the state capital, Concord and southern New Hampshire and Boston, and with Burlington, Vt and Montreal to the northeast. In addition, I-91 runs north/south along the Connecticut River in Vermont, less than 15 miles west of Enfield. This is another important link with the rest of New England, and to Canada and the Northeast.

Route 4 is the major east/west traffic corridor connecting southern Grafton County with the major job centers of Lebanon/Hanover, as well as southeasterly with Franklin and Concord. Route 4A carries local traffic to Route 4 and the Lebanon area and connects Enfield with Merrimack County, including Andover, Franklin, and Concord.

The other roads in town are municipally-owned, private, or formerly public roads discontinued. Several town roads carry local traffic and also connect Enfield with neighboring towns including, for example Jones Hill Road, Maple Street, LockeHaven/East Hill, Grafton Pond, Bog Road, Old Route 10, and George Hill Road. Other roads carry primarily local residential traffic such as Crystal Lake, Boys Camp, Methodist Hill, Eastman Hill, Oak Hill, and Shaker Hill Roads. The town roads, as well as the state highways, also carry the traffic of second-home owners, visitors to Enfield attractions, and tourists traveling through the region.

Table 10.1 is a breakdown by class of the miles of roads in town, according to the New Hampshire Department of Transportation.

ENFIELD MASTER PLAN

MAP 20

TRANSPORTATION

CANAAN

LEBANON

GRAFTON

SPRINGFIELD

PLAINFIELD

GRANTHAM

STATE HIGHWAYS

PAVED LOCAL ROADS

GRAVEL LOCAL ROADS

RAILROAD

ENFIELD, NH

APRIL 1, 1992

0.5 0 1/4 1/2 3/4 1 MILE

SCALE

TERRA-MAP EAST

prepared by Lobdell Associates
1994

TABLE 10.1

ENFIELD'S ROAD SYSTEM

Class	Mileage	Type
Class I	9.18	Primary State Highways--Rts. I-89 and 4)
Class II	13.78	Secondary State Highways--Rt. 4A
Class V	51.68	Rural Highways--Town Responsibility
Class VI	8.01	Un-maintained Highways
TOTAL	82.65 Miles	

10.2 Current Traffic and Projections

Both NHDOT and the UVLSRPC have conducted continuous and non-continuous traffic counts in the region and on some highways in Enfield. The following is a sampling of some of the counts to provide a picture of the relative volumes of traffic and trends. Interstate-89 carries about 16,000 vehicles (average daily traffic) through town, and this reaches nearly 30,000 at the Vermont/New Hampshire State line. Traffic has increased 14 percent over the past six years.

Traffic flows on state highways are shown in Table 10.2. Route 4 carries about 7000 cars per day in Enfield, growing to 10,000 just east of I-89, and to 15,000 in West Lebanon. Traffic counts for Routes 4 and 4A have been up and down over the past several years. Route 4A traffic also shows increases as Route 4 and Lebanon are approached: the count in Springfield is 720; just west of Enfield Center, it rises to over 2300; and at the Lebanon town line is over 3700 cars.

For perspective, excluding the Interstate, the traffic on Routes 4 and 4A in Enfield is certainly not as much as the busier highway stretches in Lebanon, Hanover, Claremont and Newport, but the volumes do exceed most of the other roads in other communities. In the region, roads with more traffic include Route 4 in Lebanon and Hartford, Routes 10 and 120 in Hanover and Lebanon, Routes 11, 12, 103, and Main Street in Claremont, Route 10A in Norwich, and Route 11 in Newport.

In the UVLSRPC's Regional Transportation Plan, traffic projections were developed for the region's roads. They were developed based on regional population growth, since the traffic counts over the past several years have shown a great degree of variability. Included below are figures for Routes 4 and 4A; figures are are also available for I-89. The numbers are best used to evaluate the physical capability of the highway to handle current and projected traffic and to estimate the impact of proposed significant traffic generators, such as subdivisions, shopping centers, etc. Traffic on all state highways is projected to increase substantially over the next twenty years.

TABLE 10.2
TRAFFIC PROJECTIONS

	Average Daily Traffic Actual Projections		
	1992	2002	2012
Route 4 Canaan Line	7133	7912	8776
Route 4 Lebanon Line	8934	9910	10,992
Route 4A West of Enfield Ctr.	2344	2600	2844
Route 4A at Lebanon Line	3713	4119	4568

The state's tally of total accidents in Enfield has shown a growth from 58 accidents in 1983 to 108 in 1990. For the past several years, the number of accidents has been near or over 100 a year.

10.3 Road and Bridge Conditions

There is no thorough inventory of the road conditions in Enfield, particularly on the town roads. This year, however, the UVLSRPC and UNH will be working with the town on a program called the Pavement Management System that will provide much information on the quality and extent of the town's road system.

Some information is available, however. NHDOT has evaluated certain sections of highways throughout the state as part of their Pavement Management System. The details of the methodology are best explained by the state or in the UVLSRPC Regional Transportation Plan. Simply, a road segment is rated from the lowest score 0 for the worst conditions up through 5 for good or perfect conditions. The Ride Comfort Index (RCI) evaluates road cracking and indicates how the public views the road. Ride quality or roughness is evaluated through measurement of an axle's vertical acceleration averaged between the two rear tires. The Surface Distress Index (SDI) is a visual inventory of road surface cracking. The Rut Rate Index (RRI) measures the frequency distribution of rut depths. For both the RCI and SDI, a rating of 2.5 or greater indicates that the road condition is adequate; a road segment with a rating of less than 2.5 is a candidate for resurfacing or reconstruction. In terms of the RRI, a rating of 3.5 or greater indicates no serious problem; between 2.5 and 3.5, the segment ought to be visually inspected; and less than 2.5 rating indicates that a visual inspection should be made and corrective actions considered. The interpretation of this information is also affected by the volumes of traffic and the classification of highway.

The following is a list of road segments of Routes 4 and 4A and their ratings (from 1992 State survey data:)

	Ride Comfort	Surface Distress	Rut Rate
Route 4A			
Enfield Center to Lebanon (5.2 miles)	1.95	1.56	2.32
Enfield Center/Springfield (9.1 miles)	1.93	2.34	2.40
Route 4 (.98 miles)	2.52	3.05	4.55

In terms of pavement condition, the state rates Route 4A as needing minimum work, and Route 4 as needing no work at present.

The state has over the past several years undertaken many improvement projects on Routes 4 and 4A in Enfield and neighboring towns, including resurfacing and most recently with bridge reconstruction and road work on Route 4 in Canaan near the Enfield town line, and road work on 4A near the Springfield line. There are safety concerns with Route 4 in Enfield Village due to the curves, hills, driveways and traffic volumes, poor sight distance and narrow shoulders. There are also some concerns along 4A, particularly winter travel conditions. The state rates Route 4 in town and most of 4A (except the most northerly and southerly stretches) as having safety problems.

The state combines the three indices discussed above, traffic volumes and highway significance and rates the level of work needed on the state roads. Three broad categories--no work, minor, and major--are developing for a very general type of evaluation. The section of Route 4A from Enfield Center north is considered in need of major work and Route 4 and the other segments of 4A are only in need of minor work. At present, there are no State-funded road improvement projects planned for either route in Enfield. Both roads are eligible for federal funding under the Surface Transportation Program (they are not currently part of the National Highway System).

There are no present or anticipated congested intersections within Enfield, according to the UVLSRPC Regional Transportation Plan. There are serious and worsening problems at several intersections in Lebanon, Hanover, Claremont and Newport. In Enfield, the Level of Service (the amount of traffic that can pass through an area in a certain amount of time) is rated as free-flowing (LOS A and B) on Route 4A, and as stable, with some restricted flow in Canaan and Enfield (LOS C and D). Of course, Route 4 in Lebanon has the poorest flow of traffic (LOS E and F). To the extent that Enfield residents and businesses are negatively affected by traffic delays, intersection problems, and other safety concerns, the improvements to roads in the Lebanon/Hanover area are important to Enfield.

In terms of state-owned bridges, there are two in town that are considered either functionally obsolete or structurally deficient: the South Street Bridge over the Mascoma River, and the South

Main Street Bridge over Mascoma Lake. The state also gives a sufficiency rating to these structures, ranging from 0%--the worst--to 100% or best. The South Street Bridge was rated at 4%, and the South Main Street Bridge was rated at 17.4%. Currently, the state has the South Street Bridge in its Off-System Bridge Replacement Ten Year Plan, scheduled for design in FY99. The schedule for this bridge has been moved back in recent years, and its actual construction may be in doubt without local support.

Table 10.3 and Figure 10.1 show town bridges. The state inspects these every two years. Sufficiency ratings are also available for these bridges. The following bridges are considered functionally obsolete or structurally deficient and are listed from lowest sufficiency rating up:

1. Oak Hill Road (Brook) 19.6%
2. Pillsbury St. (Mascoma River) 19.7%
3. Grafton Pond Rd. (Bicknell Bridge) 21.4%
4. Lakeview Drive (Knox River) 30.1%
5. Old Route 10 (Dry Bridge) 33.1%

The Pillsbury Street/Baltic Mill Bridge will be replaced this summer. The town plans to work on the Grafton Pond Bridge in 1997.

10.4 Scenic Roads

The Scenic Road designation permitted under state law protects trees and stone walls situated on the public right-of-way of a particular road. This tool can help in the preservation of the rural, scenic and historical landscape in a town. Enfield has three roads which have received town meeting designation as "scenic": the Ibey Road, from its East Hill Road intersection to the Enfield/Canaan Line; the Kluge Road, from its Shaker Hill Road intersection to its intersection with Locke Haven Road; and Eastman Hill Road, from the Enfield/Lebanon Town Line to its intersection with Methodist Hill Road.

The procedure under RSA 231:157-8 allows 10 or more persons who are voters of the town or whose lands abut the proposed designated road to petition for a vote to be held at Town Meeting to consider the proposal. Class I and II highways are excluded from this law. After Town Meeting designation, any repair, maintenance, reconstruction or paving work shall not involve or include the cutting or removal of trees, or the tearing down or destruction of stone walls, except with the prior written consent of the planning board or other designated municipal body and following a public hearing. Limited removal of natural and man-made obstructions are allowed if safe travel is affected.

The Scenic Road classification does not affect the town's eligibility to receive state aid for road construction, nor does it affect the rights of abutting landowners to work on their own property.

TABLE 10.3

ENFIELD MUNICIPAL BRIDGES

BRIDGE NUMBER	TYPE	NO. SPANS	ROAD INV.NO.	ROAD NAME	OVER	LENGTH(O-T-O)	RECOMMENDED POSTING
088/156*	IB-W	1		B&M RAILROAD	PILLSBURY STREET	23'-0"	NARROW UNDERPASS; VERT. CLEAR. 9'-7"
088/158	IB-C	3	205	PILLSBURY STREET	MASCOMA RIVER	137'-7"	BRIDGE CLOSED
120/115	IB-W	1	67	LAKE ROAD	KNOX RIVER	19'-6"	WT. LIMIT 10 TONS
156/093	CRF	1	71	BOG ROAD	KNOX RIVER	14'-2"	E-2
157/139	MP	2	60	LOCKEHAVEN ROAD	CRYSTAL LAKE OUTLET	45'-0"	E-2
161/074	MP	2	71	BOG ROAD	LITTLE BROOK	10'-0"	E-2
172/112	DPG	1	65	BOYS CAMP ROAD	BICKNELL BROOK	26'-0"	E-2; 1 LANE BRIDGE
198/103	IB-W	1	68	GRAFTON POND ROAD	BROOK	18'-5"	WT. LIMIT 6 TONS; 1 LANE BRIDGE

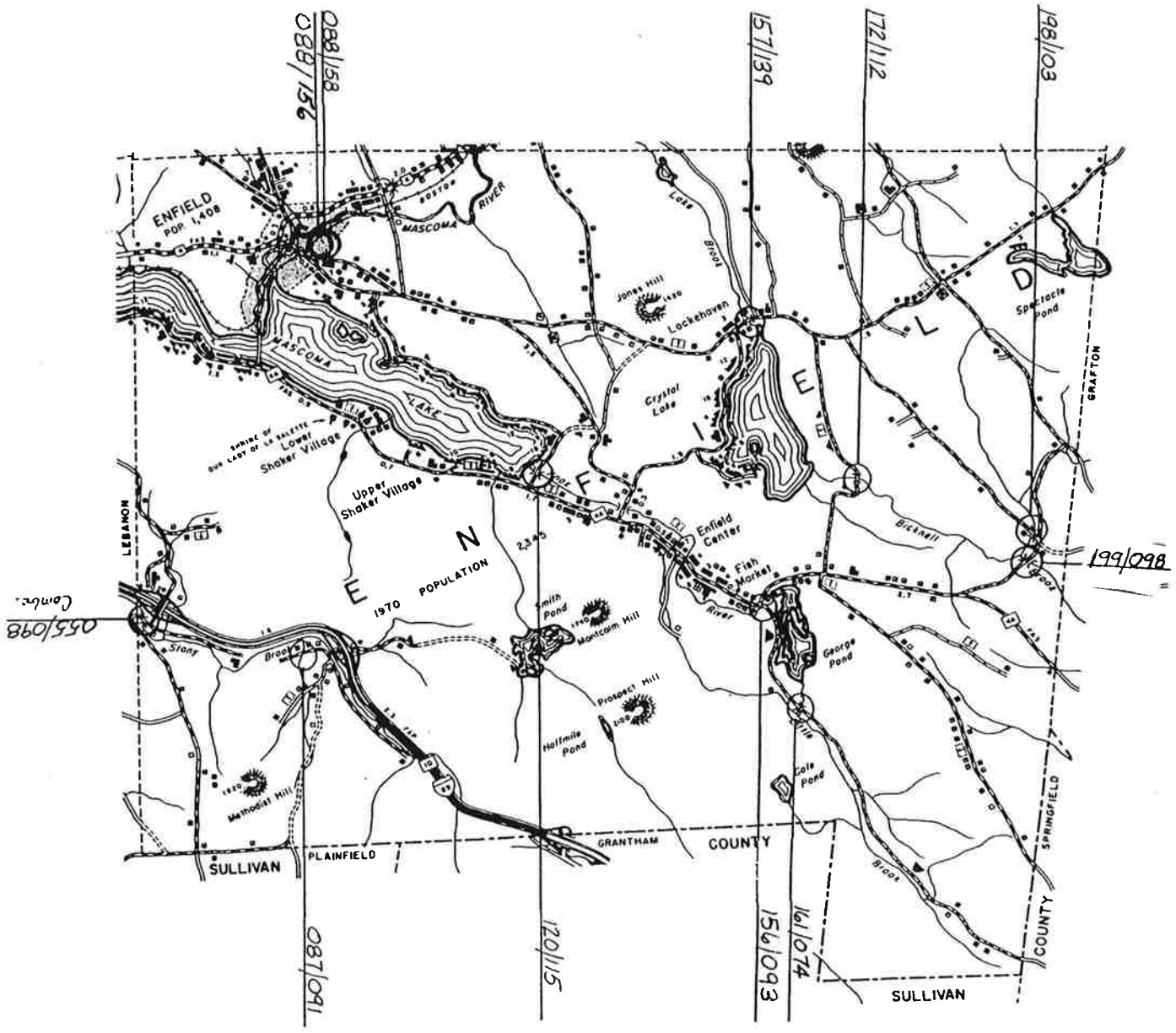
* ADDED TO INVENTORY 8/6/84

REMARKS:
- 055/098 NOW INVENTORIED UNDER LEBANON
- 087/091 DELETED FROM INVENTORY - REPLACED WITH 30" MP
- 096/166 REPLACED BY TWO - 2'-6" CONCRETE PIPES
- 098/159 BRIDGE REMOVED

REVISED/REVIEWED: 6/30/82, 9/14/84, 10/14/86, 3/7/89, 1/9/91, 5/5/93

FIGURE 10.1

LOCATION OF BRIDGES



10.5 Class VI Roads

In 1990, the town conducted an inventory of all Class VI roads, discontinued roads, and other questionable segments. This valuable information provided a clarification of the status of these roads and segments and served as a basis for the development of a Class VI Road Policy by the Selectmen. The actual status of road segments as Class V, VI, discontinued, or private is important to the town and its residents for two reasons--budgetary, in terms of who funds maintenance and repair, and future land development, since building may be permitted or denied on Class VI roads.

Class VI roads are "all other existing public ways and highways discontinued as open highways and made subject to gates and bars, and all highways which have been not maintained and repaired by the town . . . for five successive years or more." This status preserves the public way. If a road is discontinued and not subject to gates and bars, the town gives up all interests, the road reverts to abutting landowners, and there is no responsibility by landowners to maintain public rights.

Figure 10.2 shows 17 roads which have been determined to be partly or wholly Class VI, and parts or all of 13 roads which have been "discontinued". The inventory lists are included in Appendix C.

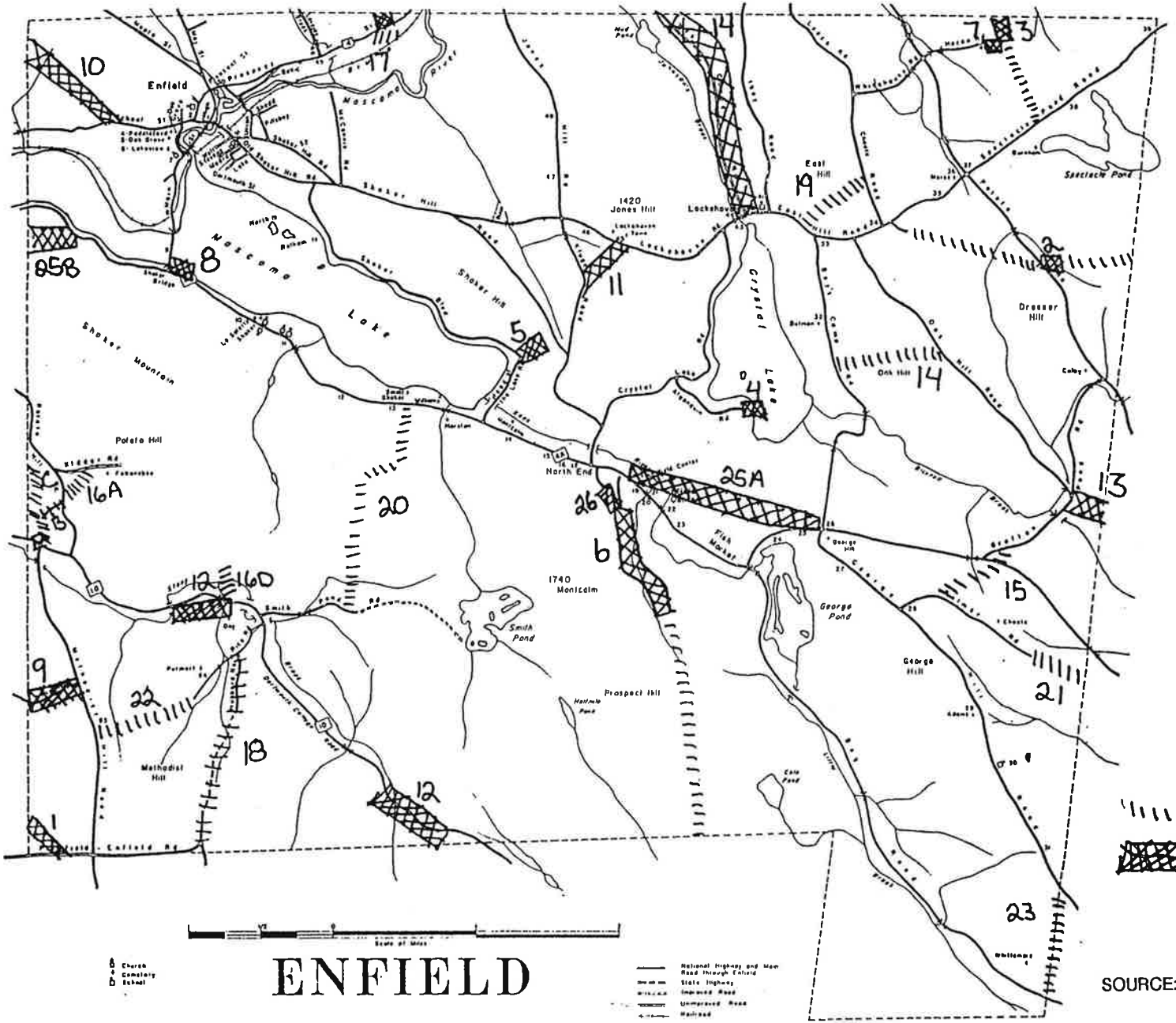
Class VI roads are often considered attractive (dirt or gravel travel way, lined with trees or stonewalls), with few, if any homes, and little traffic. Property is usually more affordable off these roads than on main local and state roads. Many people are interested in building in a private and scenic area of town. However, after homes are built, issues arise of access of school and emergency vehicles, maintenance and repair responsibility, and the efficiency of the town road network. In 1991, the Enfield Selectmen adopted a Class VI Roads Policy which establishes a review process and specific criteria for the issuance of a building permit on any Class VI road. The policy attempts to combine the interest in preventing scattered and premature development and the excessive expenditure of public funds, with allowing building of homes which recognizes the private responsibility of the owner to upgrade and maintain the road and limits Town responsibility and liability.

10.6 Projects and Plans

The town currently has responsibility for maintenance of about 52 miles of streets and roads. Recent road improvement projects have included Crystal Lake Road, Bog Road, Old Route 10, and parts of George Hill Road, East Hill, and Eastman Hill Roads. Besides the expected replacement this year of the Pillsbury Street/Baltic Mill Bridge, the Town Public Works and Highway Department has identified two town bridges over Bucknell Brook that need replacement: Grafton Pond Road and Boys Camp Road Bridges.

FIGURE 10.2

DISCONTINUED AND CLASS VI ROADS



SOURCE: SELECTMEN'S OFFICE

XI COMMUNITY FACILITIES & SERVICES

Community facilities and services are provided to meet the health, safety, and welfare of the community. The need for community facilities is determined largely by existing and future population growth, land use patterns (e.g. whether concentrated or dispersed), and the need for replacing outdated facilities.

Since both the quality and the cost of a community's facilities are greatly affected by the town's future development policies, they are an integral part of the town's planning program.

Map 21 indicates the location of town buildings, properties and services.

Much of the information in this section was gathered through responses to a questionnaire sent to department heads in 1994. Questionnaires are on file at the Planning Office.

11.1 Town Building

Whitney Hall

Whitney Hall was erected in the late 1800s and is located on Main Street in Enfield Village. Its original purpose was to house the Town Library. Since then, it has assumed several additional functions and now houses the town offices (lower level) and the Library (second level). Whitney Hall was remodeled in 1976 to provide more convenient office and conference space in the basement and again in 1993 when over $188,000 was spent to make the Library and the second floor handicapped accessible. The third level of Whitney Hall has an auditorium with a seating capacity for about 100 persons and is used for public meetings; the stage and facilities are now being used by the Shoestring Players for its rehearsals and performances. Other groups of all ages also use this facility. It is available for rent to Enfield residents for private functions such as receptions. According to the selectmen, because of Whitney Hall's age and character, an attempt should be made to place it on the National Historic Register.

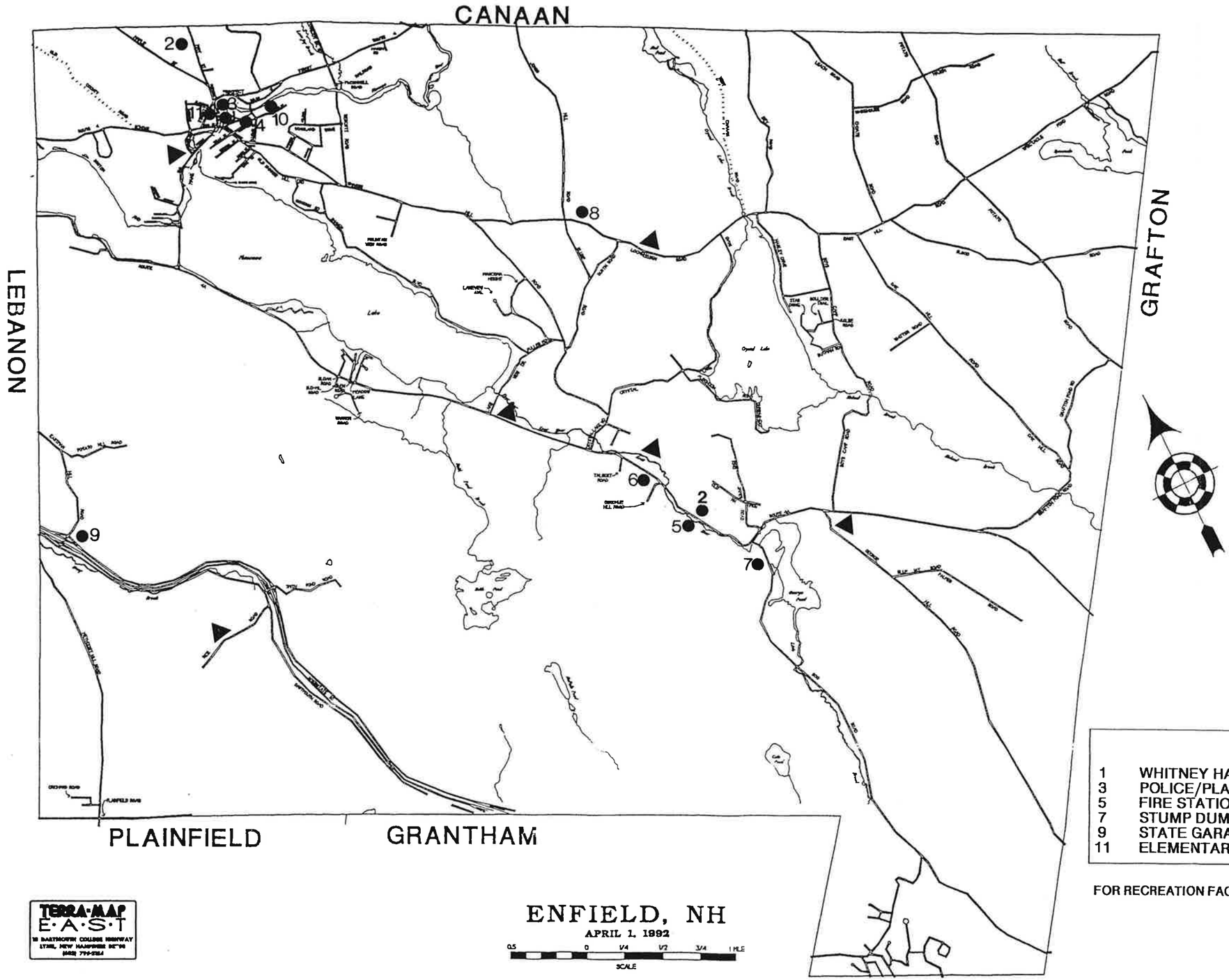
Additionally, a committee has been working to repair and replace the town clock in the Whitney Hall clock tower. Approximately $25,000 of the estimated $80,000 total cost has been received.

Whitney Hall is owned by the Library which has notified the town that they will be expanding to the lower level. Therefore, the town offices have to be located elsewhere by 1999. Planning is just beginning to find another location. One option mentioned is to relocate to the elementary school if the school district decides to relocate the elementary grades. However, this is purely speculation at this time.

ENFIELD MASTER PLAN

MAP 21

COMMUNITY FACILITIES



1	WHITNEY HALL	2	POST OFFICE
3	POLICE/PLANNING/W&S	4	FIRE STATION/FAST
5	FIRE STATION	6	CENTER HALL
7	STUMP DUMP	8	TRANSFER CENTER
9	STATE GARAGE	10	TOWN GARAGE
11	ELEMENTARY SCHOOL	▲	CEMETERIES

FOR RECREATION FACILITIES, SEE MAP 19

TERRA-MAP E·A·S·T

ENFIELD, NH

APRIL 1, 1992

0.5 0 1/4 1/2 3/4 1 MILE

SCALE

prepared by Lobdell Associat
1994

Center Hall

This structure, located in Enfield Center on Route 4A, is believed to have been the original Town Hall in Enfield. It is rented for Grange meetings and events and is occasionally used for other private meetings or functions. However, a lack of facilities limits the structure's usefulness as a public meeting place. Maintenance efforts are being made by the town in an effort to preserve this historic structure; a new metal roof was added, and half of the Hall's stone foundation was replaced in 1981. In 1993 water and septic systems were funded, but no suitable site has been found for installing the septic system.

Police/Municipal Building

In 1991 a new Police/Municipal Building was constructed adjacent to Whitney Hall which houses the Police Department, Building Inspector, Water/Sewer Department and Planning Department. A small conference/hearing room is located on the upper level.

11.2 Fire Department

Enfield has a volunteer fire department with two fire stations. The central station is located on Union Street and houses the Fast Squad as well as the Fire Department. A second station is located in Enfield Center. Both stations have recently been expanded and renovated providing additional space, insulation and other improvements.

The Fire Department consists of a chief, assistant chief and approximately 35 volunteer fire fighters. The number of volunteers has remained fairly steady over the past few years.

The town is part of the Upper Valley Mutual Aid System and receives and gives assistance to neighboring towns. For example, the Lebanon Fire Department handles certain calls in Enfield along I-89. Dispatch is provided through Lebanon.

Major fire fighting equipment includes:

Union Street Station

1 - 1974 Engine -- 1000-gallon pump and 1000-gallon tank
1 - 1989 Engine -- 1000-gallon pump and 1000-gallon tank
1 - 1984 Forest Tanker -- 300-gallon tank
1 - 14-Foot Aluminum Rescue Boat

Enfield Center Station

1 - 1989 Engine -- 1000-gallon pump and 1000-gallon tank
1 - 1976 Tanker -- 1000-gallon tank

The 1993 budget for the Fire Department is shown in Table 11.1. There are two fire department capital reserve funds, but they contain only a total of $8,910. The town is paying down a debt on the 1989 fire truck.

TABLE 11.1
FIRE DEPARTMENT BUDGET -- 1993

Salaries	$15,069
New Equipment	15,105
Vehicles (Maintenance/Operation)	3,485
Building Maintenance	3,376
Clothing Supplies	5,049
Other	1,619

Water for fighting fires is provided by hydrants on the town water system, two dry wells and pumping from various locations in rivers, lakes and ponds. The department can transport 4,000 gallons to the fire for the initial response. According to the chief, because of improvements to the water mains and the addition of 1,800 feet of five-inch hose, the adequacy of the water supply has increased substantially in the past several years.

Future needs of the department include the reconditioning of the 1974 engine or purchase of a replacement, procurement of the "Jaws of Life" for rescue work and 3,200 feet of additional 5-inch hose for rural fire protection.

11.3 Fast Squad

The Fast Squad is a non-profit corporation which provides volunteer lifesaving and emergency medical services. The squad is located at the Union Street Fire Station and has one ambulance, a 1965 Ford.

Currently, the squad has 16 volunteers with the numbers remaining fairly constant over the past several years. Dispatch is from Lebanon Dispatch.

The 1994 budget was $17,510, over $7,000 of which is for Golden Cross Ambulance Service for providing additional ambulance service. Mutual aid assistance is available from Lebanon, Grafton, Canaan and Grantham.

The number of calls has increased every year for the past five years with 214 calls in 1993, an increase of 48 percent since 1989.

Projected needs include more space, vehicle replacement and increased training requirements. The squad would like to see $3,000 per year placed in the capital reserve fund. Currently the fund stands at $26,069. The squad is also exploring the possibilities of moving into the old privately owned depot building at a cost of $25,000, plus $10,000 for renovations.

11.4 Police

The department is located in the new police facility on Main Street. The department is staffed by five full-time and eight part-time officers. Two fully equipped police cruisers are utilized plus a surplus van. A new cruiser is purchased every one or two years. Communications is via mobile units in each vehicle plus hand-held radios.

Table 11.2 outlines the 1993 budget for the department.

TABLE 11.2
POLICE BUDGET -- 1993

Personnel	$192,679
Vehicles (repair, fuel, etc.)	10,354
Supplies, Telephone	22,563
Other	7,535
TOTAL	$233,131

Activities of the department are broken down for the past five years in Table 11.3.

TABLE 11.3
POLICE ACTIVITIES

Type	1989	1990	1991	1992	1993
Criminal Complaints	335	489	182	222	308
Motor Vehicle Accidents	150	136	102	140	121
Action	464	758	315	186	239
Criminal Arrests	142	190	101	56	66

According to the police chief, the department needs a storage shed for combustibles and a sixth full-time officer. A report by the Upper Valley Lake Sunapee Council shows Enfield to have 1.63 police officers per 1,000 persons, while the region average is 2.01.

Two areas of concern include the increase in multi-family housing which, according to the chief, creates additional police responses to handle complaints of noise, parking, etc., and additionally, the expansion of commercial activity on both exits of I-89, including Whaleback and 24-hour

convenience stores, requiring more police time, considering it is an eight-mile drive from the police station.

11.5 Highway Department

The Enfield Highway Department facility is located on Shedd Street in Enfield Village. The 2.3-acre site with access from Shedd Street and the B & M Railroad siding includes two garages and a salt shed. One garage is a 36' x 60' one-story wood frame structure with an 11' x 30' addition. It has one large door and an open interior. The addition provides office space, bathrooms and a workroom. The building is fully insulated with oil-fired hot air heat.

The other garage is a 48' x 50' one-story concrete block structure with four bays.

The salt shed is a 24' x 24' pole shed with a roof and paved floor, thus preventing salt runoff into the Mascoma River watershed.

The Highway Department facility also includes sand and gravel stockpiles. All underground fuel storage facilities have been removed, and new permanent above-ground lines will be installed in 1995.

Staffing of the department includes the road superintendent and seven full-time and one part-time employees. Employees are truck drivers, mechanics, equipment operators and laborers.

Major department equipment includes the following:

5 - 6-Wheel Trucks -- 1992, 1987, 1980, 1978, 1975
4 - 1-Ton Dump Trucks -- 1992, 1990, 1986, 1985
1 - Pickup -- 1993
1 - Backhoe -- 1988
1 - Loader -- 1982
1 - Grader -- 1986
2 - Army Surplus Vehicles -- 1977

The department's responsibilities include maintaining about 110 miles of road and including winter maintenance of some state highways; 1.7 miles of sidewalks and assisting the sewer/water department, recreation department and recycling operations.

The 1993 highway department budget is shown in Table 11.4. There exists a highway equipment capital reserve fund, but it contains less than $800.

The replacement of aging equipment is the department's most pressing problem, with trucks and other large pieces of equipment costing from $70,000-$90,000. Recently, a draft of a ten-year vehicle and equipment replacing plan was developed by the Public Works Department which

includes a detailed inventory and a year-by-year purchase schedule. It is estimated that about $110,000 will be needed each year for the next ten years to upgrade and adequately equip the department. A funding mechanism has not been determined.

See Chapter X for a discussion of roads and transportation issues.

TABLE 11.4
HIGHWAY DEPARTMENT BUDGET -- 1993

Personnel	$216,522
Stone, sand, salt	78,690
Paving material	55,344
Equipment	53,384
Supplies, gasoline	21,218
Bridges, culverts	11,406
Other	10,962

11.6 Library

The Enfield Public Library is located in Whitney Hall on Main Street in Enfield. It presently occupies three large rooms on the street-level floor of Whitney Hall. It is a well-appointed and attractive library; the presence of stained-glass windows and finely detailed woodwork lends particular warmth. A major renovation was undertaken in 1993 which included providing handicapped accessibility. There are 1,952 cardholders and a circulation of about 34,500.

The total collection size is approximately 21,000 volumes, up 23 percent since 1986. This includes a selection of juvenile literature, a reference collection and a variety of adult fiction and non-fiction. A historic documents collection is available for public use in a room to the rear of the library.

Staff presently consists of a librarian, a librarian's assistant, and a clerk--all of whom work on a part-time basis. The library is open four days per week with evening hours provided on Mondays, Tuesdays and Thursdays.

A Board of Trustees oversees library operations and policies. The library's operating budget is funded by town tax revenues, supplemented by the proceeds from a small library trust fund. Table 11.5 summarizes the library's budget.

Circulation has increased significantly over the past decade. Enfield's librarian notes that this increase in demand for library services reflects both the growth of Enfield's population and the

changing reading habits of the American public, who tend to turn to local libraries as an inexpensive, yet rewarding source of entertainment.

Future problems and needs of the library include accommodating and increasing utilization in a very limited space. According to UVLSC, Enfield's library, at an estimated 0.63 square feet of space per capita, does not meet the American Library Association's recommended 0.7 square feet per capita. More space will be required as well as more hours of operation and staff time. Additionally, a new circulation system needs to be developed. A plan is being discussed to expand the library into the existing space now occupied by town offices in the lower level of Whitney Hall. No cost estimates are available. A 1999 move is currently planned.

TABLE 11.5
LIBRARY BUDGET -- 1994

Personnel	$36,438
Books	15,200
Supplies, repairs	3,285
Other	750
TOTAL	$55,673

11.7 Cemeteries

Enfield has seven public and one active private cemetery as shown on Map 21 and in Table 11.6.

TABLE 11.6
CEMETERIES

Name	Location	Total Sites	Sites Available
Enfield Center	Route 4A	89	0
George Hill	George Hill	148	0
Montcalm	Route 4A	98	0
Purmort	Methodist Hill	78	0
Town	Jones Hill	267	0
Lockhaven	Lockhaven Road	148	72
Lakeview	Off Route 4	648	111
TOTAL		1,476	183

Oakbrook Cemetery is a private cemetery which has 200, four-body lots available plus expansion land which abuts Lakeview Cemetery.

Available public lots are sold to Enfield residents only. Lots in Lockehaven are for cremated remains only.

The public cemeteries operate on a modest budget of about $11,600 which is primarily for labor. Equipment includes a tractor/mower which is shared with the Highway Department.

No major capital expenditures are anticipated over the next five years. However, over $57,000 exists in a capital reserve fund for the acquisition of additional land.

In 1995, management of the cemeteries will shift from the selectmen to a newly elected three-man commission.

11.8 Water System

Enfield's water system has been operating since 1903 and has seen many improvements in the past ninety years, although some of the original pipes are still in place. Major improvements were done in the 1980s which produced a system that includes ground water from three bedrock wells (Prior and Marsh wells) with a capacity of 110 gallons per minute, a 500,000-gallon covered storage tank, hydrants, and a pumping and distribution system that is about 12 miles long and that provides water to 438 metered lots, broken down as follows:

Residential -- 73%
Multi-family -- 19%
Commercial -- 5%
Industrial -- 0%
Other -- 3%

Figure 11.1 shows the area served by the system. The distribution system is a mix of old and new pipes with about one-third relatively new, one-third old, and one-third original.

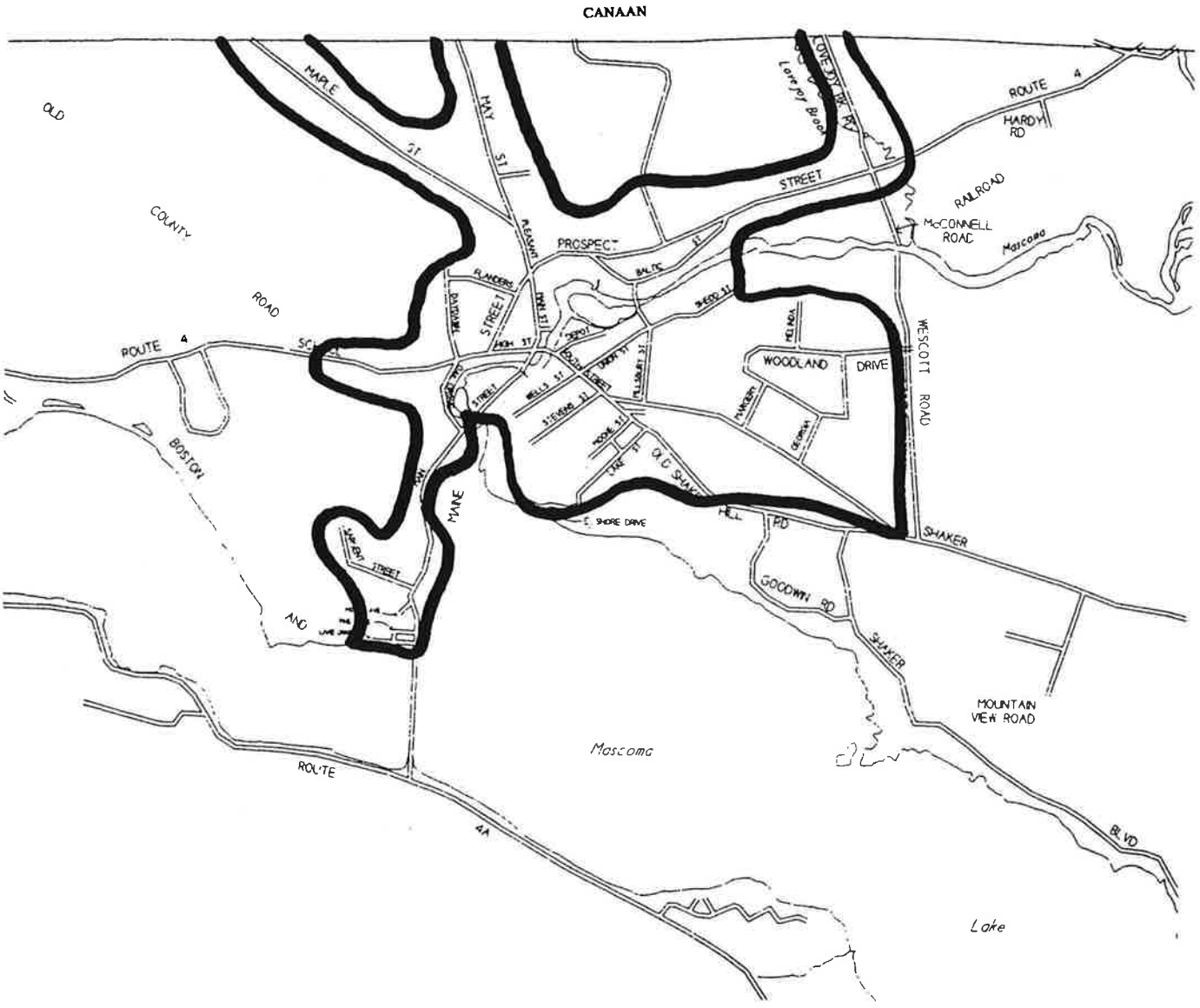
The water department staff is shared by the sewer department. The superintendent is the only full-time employee with part-time assistants. The offices are located in the Police Building.

The budget of 1993 shown in Table 11.7. Income is generated through users' fees and charges. The expenses shown do not include debt payments on the existing $250,000 bond. Average users consume 40,000-50,000 gallons per year, and water bills average $250, somewhat higher than other towns in the area.

Substantial improvements to the system are now underway, beginning with a CDBG grant for $485,000 obtained by the town in 1992. Improvements will include a new well and land, the

FIGURE 11.1

WATER SYSTEM EXTENT



Avallone well south of Route 4 which has a test yield of 110 gallons per minute. Two new mains have recently been installed at the Mascoma River crossings.

Additionally, a multi-town wellhead protection program is underway to protect land around the wells.

Besides activities underway, additional improvements are planned over the next several years including an upgrade of the pumping stations, replacing old water mains and possible expansion of the service area along Route 4 east to the Canaan town line (at a cost of $500,000).
Besides the town system, a private water system exists at Shaker Village. The system has two excellent wells capable of producing 345,000 gallons per day. Existing usage is only about 10,000 gpd. An engineering study done by the town in 1991 concluded this capacity could be tied to the town system for about $1 million should there be a need for additional water in the future or a desire to provide service along Route 4A toward Enfield Center.

TABLE 11.7
WATER BUDGET -- 1994

Operational Expenses	
Personnel	$ 29,257
Operations	21,317
Other	7,319
Income	
Water Department	$130,978

Source: Town Report

11.9 Sewer System

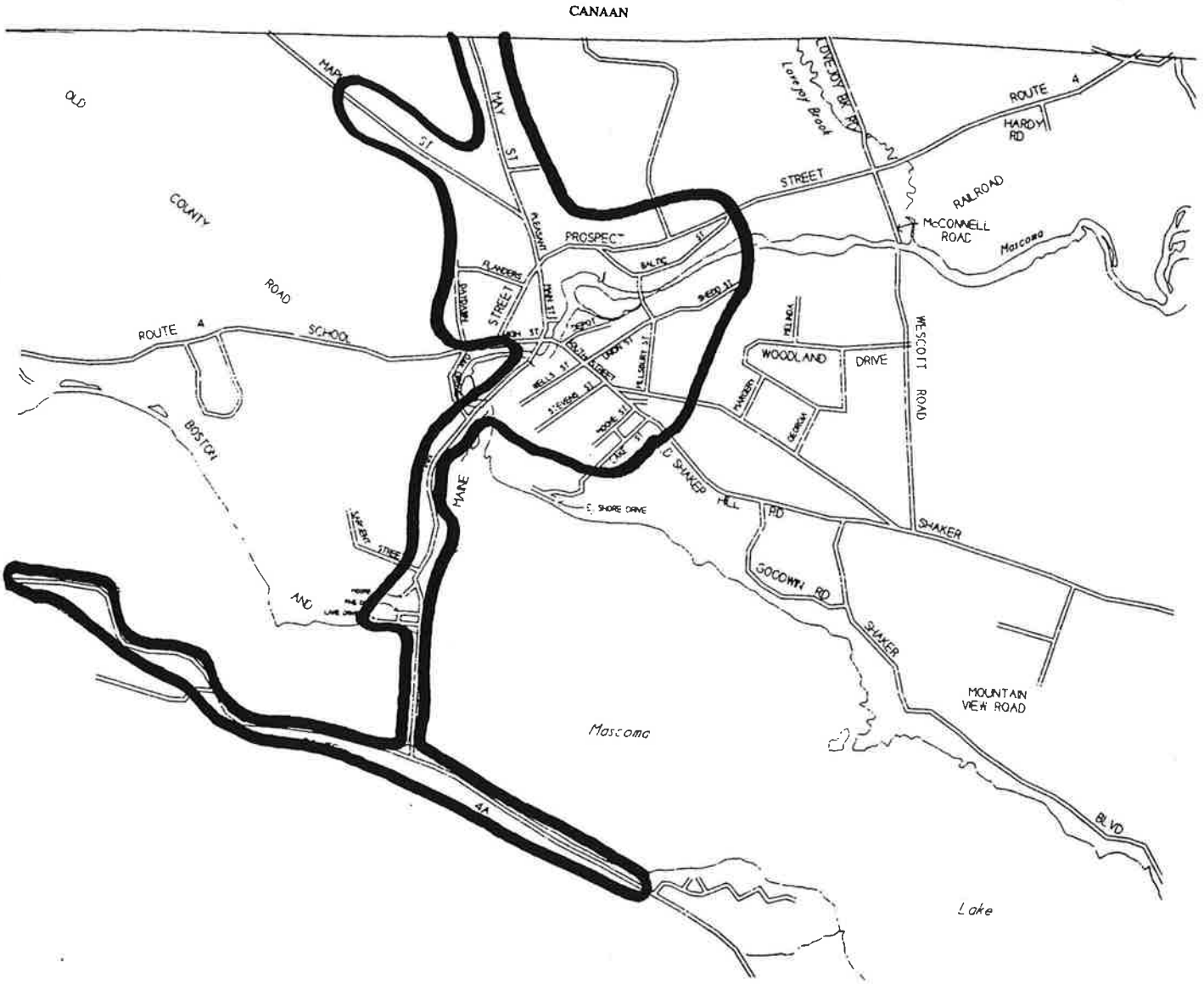
The Enfield Municipal Sewer System was completed in 1988. Prior to that, untreated sewage from Enfield's village was a major source of pollution to the Mascoma River and lake.

The existing system consists of a gravity collection system with lift stations and pump. Waste water is pumped to the city of Lebanon treatment plant.

Figure 11.2 shows the areas of Enfield served by the municipal system. About 302 lots are served or 10 percent of the lots in Enfield. Of those receiving service, about 68 percent are single family residential users, 5 percent commercial, and 23 percent multi-family residential users including apartment buildings and condominiums. There are currently no industrial users.

FIGURE 11.2

SEWER SYSTEM EXTENT



The design capacity of the Enfield system is an average daily flow of 182,000 gallons per day. Flows at the time of construction (1988) were estimated at 111,000 gallons per day. About 80 percent of the flow is generated by Enfield Village with the remainder from the Route 4A section.

When Enfield constructed the system, it was guaranteed a certain capacity from Lebanon's sewage treatment plant. About 50 percent of that capacity is now utilized.

No septage is handled in Enfield but is currently dumped at the Lebanon Wastewater Treatment Plant. Sludge disposal is also handled by Lebanon as are all water quality requirements for the sewage outflow into the Connecticut River.

Much of the original cost of the sewage system was paid for with federal and state funds. However, the town still owes about $860,000 in sewer debt, which is being paid down by users' fees.

The system is operated by the Enfield Sewer Department with one shared employee. There are seven part-time employees including an operation visitant, clerk, and meter reader. The Highway Department provides some equipment and operators as needed. The 1994 budget is shown in Table 11.8.

TABLE 11.8
SEWER BUDGET

Expenses	
Personnel	$ 31,812
Administration	3,900
Maintenance	2,400
System Operations	95,700
Income (from users)	$102,497

Funds to operate and maintain the system are generated by user fees as laid out in the town's municipal water and sewer system user charge ordinance. All users are metered and fees assessed from a fee table. Average users pay about $260 per year.

The department is in the process of finding a long-term facilities expansion plan. The early system has enough capacity to service the well inside of the Dry Bridge Area along Route 4. However, this would require a joint effort with Lebanon, and they have shown little interest. The expansion plan details proposed areas for sewer expansion which would include serving about an additional 148 lots at a cost of $1.37 million. However, no method of funding such expansion has been developed.

11.10.1 Solid Waste District

New Hampshire RSA 149M requires towns to join solid waste districts or to become a district themselves.

Enfield belongs to the Upper Valley Solid Waste District which has 16 member towns. The district is very inactive and operates no facilities. For Enfield, the district exists in name only since no regional or district program is developed to meet Enfield's specific needs. Several of the towns have become members of neighboring or overlapping districts in New Hampshire and Vermont. However, most of the towns use the Lebanon landfill.

11.11 Summary and Recommendations

While the citizens of Enfield seem satisfied with the town services provided, the cost of maintaining those services will increase in the years ahead. Possible major expenditures over the next five to ten years include:

Water Improvements
Sewer Expansion
New Town Offices
Major Highway Equipment Replacements
Highway Improvements
Ambulance
Library Renovation/Expansion
Cemetery Expansion
Fire Truck
Recreation Facilities

Some expenditures will be the result of federal and state mandates; others will be to maintain existing service levels; resident demand for more services may also play a role (such as tennis courts).

XII FINANCES

12.1 Revenue

Table 12.1 lists the sources of revenue for the operation of Enfield's government. As with most towns in New Hampshire, the principal source of revenue is the property tax. Other sources include federal funds, state funds, local fees and local non-property taxes such as the yield tax. When state and federal funds decrease, such as the loss of federal revenue sharing funds, the biggest impact is on the property tax.

TABLE 12.1
TOWN REVENUE -- 1993

Source	Amount	Percent
Property Tax (Town only)	$1,543,969	23%
Property Tax (County/School)	3,556,865	55%
Local Non-Property Tax	36,521	1%
Local Non-Taxes	1,006,539	15%
Federal/State	403,189	6%

Source: Town Report

Property taxes for the county and the school district are collected by the town and passed through (about $3.6 million in 1993). See Chapter XIII for a discussion of school finances.

As you can see, state and federal revenues are a minor component of the town's total budget, and usually they are earmarked for specific projects such as water or sewer improvements Federal and state funds will undoubtedly decrease in the years ahead.

12.2 Tax Rate

Property taxes are based on budget requirements and are levied according to the total value of taxable property within the town. Table 12.2 lists the total taxable value for 1993, broken down into several categories. Nearly 90 percent of the town's value is in residential buildings and land, while 8 percent is in commercial or industrial buildings or land. These numbers show Enfield to be a residential community with little commerce or industry.

Total gross valuation for Enfield was $249,280,944. This represented about 119 percent of the equalized valuation, meaning that the valuation numbers showed a value more than the true market value.

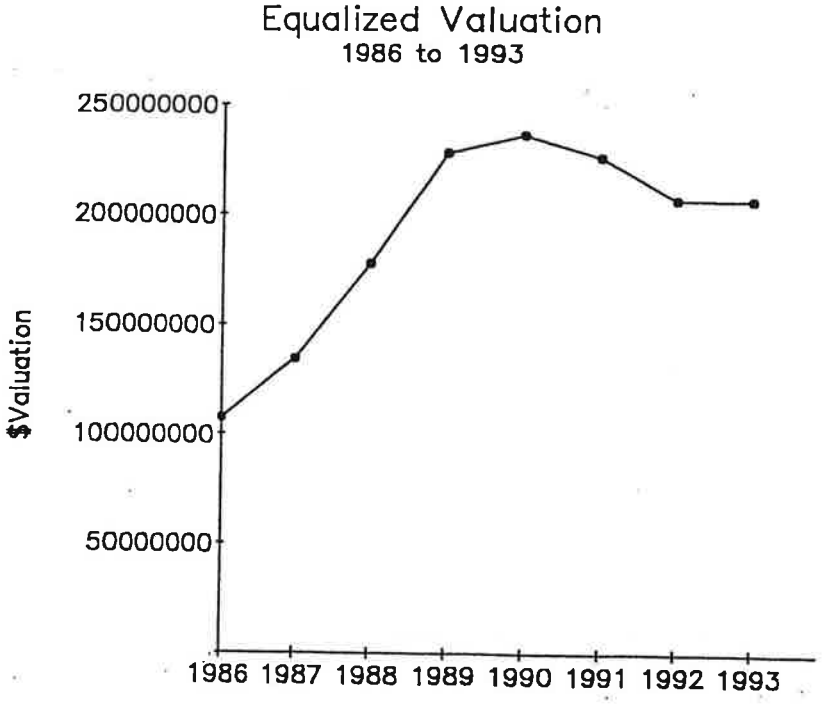
TABLE 12.2
VALUATIONS – 1993

Type	Equalized Valuation (000s)	Percent
Current Use Land	1,223	0.4
Residential Land	117,755	46.6
Commercial/Industrial Land	7,555	3.0
Residential Buildings	103,533	42.0
Manufactured Housing	5,132	2.0
Commercial/Industrial	11,566	5.0
Utilities	2,516	1.0

Source: DRA, 1994

Figure 12.1 shows Enfield's valuation over the past several years. The equalized valuation rose sharply during the 1980s. It seems to have stabilized in the early 1990s. Similar patterns were seen throughout the state.

Figure 12.1



The equalized tax rate, as shown in Figure 12.2, declined as the valuation was increasing but has been on the rise as the valuation dropped. Because of Enfield's reliance on residential property, when housing values dropped, so did the town's valuation.

Figure 12.2

A comparison of 1993 valuations and tax rates around the region is shown in Table 12.3. On a per capita basis, Enfield has an average valuation when compared to the state as a whole. However, it is lower than many towns in the area. Its tax rate is also about average for the state with a ranking of 112 out of 247 towns in New Hampshire. This is significantly improved since its 185th and its 120th ranking in 1991.

TABLE 12.3
EQUALIZED VALUATION COMPARISON -- 1993

Town	Equalized Valuation (000s)	Per Capita	Tax Rate	State Rank
Enfield	**$ 207,274**	**$ 58,818**	**$23.80**	**112**
Lebanon	638,994	52,377	29.19	188
Hanover	647,002	70,022	19.97	65
Canaan	115,525	37,266	32.16	215
Grafton	51,541	69,744	24.97	132
Sunapee	405,489	158,270	16.47	45
State	$58,245,450	52,426	24.58	--

Source: OSP, DRA

Of concern in many communities is the impact of exemptions on the tax structure. Table 12.4 lists the property tax exemptions in 1993. Nearly 16 million dollars worth of property is tax exempt. The bulk of this is town and state property, religious facilities, and current use land. Table 12.5 shows the value of town property. The exemptions represent about 6 percent of Enfield's total value, not as high as many towns.

TABLE 12.4
SELECTED PROPERTY TAX EXEMPTIONS -- 1993

Property Tax Exemptions	Units	Valuation
Current Use	10,524	$9,960,014
Elderly	87	2,593,000
Blind	3	45,000
Handicapped	0	0
Exempt Property/Buildings	--	12,044,400

Source: DRA, MS-1

Current use exemptions amount to about $10 million with their current use value at $1,223,874. The current use law was enacted in 1973 to encourage the preservation of open space. It allows landowners the opportunity to keep land open rather than sell it because of high property taxes. The impact of this has been to somewhat shift the tax burden from the land to residences and buildings. In Enfield's case only 39 percent of the taxable land is in the program (see

Chapter VII), compared to over 50 percent statewide. Enfield can expect additional land to go into current use in the future, particularly since there no longer exists a 10-acre minimum lot size requirement in some categories.

Current use has had an impact on the overall tax base, but it also offers a degree of protection for Enfield's large landowners. There is no assurance, however, that land protected under current use will remain there, since land can be taken out of current use with the payment of a small tax penalty.

TABLE 12.5
TOWN PROPERTY -- 1993

Enfield Center Hall	$122,800
Whitney Hall	357,000
Fire Department	232,000
Highway Garage	258,400
Police Department	222,800
Parks, Playground	490,900
Water Supply Facilities	1,551,700
Sewer Facilities	4,051,700
Cemeteries	269,500
Other Properties	1,341,600

Source: Town Report, 1993

12.3 Expenses

Community size, population, location, history, land use patterns and many other factors affect the distribution of town's tax revenues. Table 12.6 details selected expenditures for Enfield over the last five years. Percentage-wise, sewage disposal, recreation, library, police and highway have the greatest increases while cemeteries, health and planning/zoning actually decreased.

No comparison of expenditures is complete without taking into account inflationary factors. The Consumer Price Index (CPI) provides us with an inflationary measure. Between 1989 and 1993 inflation accounted for an increase in costs of about 17 percent. As Table 12.6 shows, several expenditures exceeded the inflation rate, which is not unusual considering the growth the community has seen in the same period. Many expenditures have actually decreased when inflation and per capita costs are taken into account.

TABLE 12.6
SELECTED EXPENDITURES (000s)

	1989	1990	1991	1992	1993	% Change
Highway	359	389	407	442	465	29
Police	175	194	211	228	233	33
Fire	43	42	46	51	44	2
Library	36	38	39	46	52	44
Health	10	14	4	4	4	-60
Solid Waste	198	199	188	239	218	10
Cemeteries	21	17	14	17	9	-57
Welfare	38	77	90	58	40	5
Recreation	7	10	9	9	10	43
Debt Service	326	352	327	328	344	5
Sewage	80	114	127	87	154	93
Water	52	58	61	63	58	12
Planning/Zoning	39	22	23	19	32	-18

Consumer Price Index, 1989-1993: +17%
Estimated Population Growth - Enfield: 12%

Source: Town Reports, DRA-MS-7

12.4 Capital Expenditures

Of particular concern is the expenditure of public funds for capital improvement projects. These are expenditures that are above and beyond annual operating budgets for the purchase, construction or replacement of the physical facilities of a community. Building, land and equipment fall under this category.

Demands for community facilities and services increase as a community expands, as the population grows, as new jobs are created, as older facilities become outmoded and living standards rise. Service or facilities that were thought of as luxuries a few short years ago are now considered necessities. Federal and State mandates also often require improvements to be made.

Table 12.7 displays the major capital expenditures over the past five years. The expenditures are primarily for highway equipment, building construction, and a new fire truck. The smaller capital improvements were paid out of the budget while longer items were bonded.

TABLE 12.7
MAJOR CAPITAL IMPROVEMENTS
1988-1993

88	Highway Pickup	$ 16,793
	Back Hoe	48,467
89	Fire Truck	55,500
	Water Department	74,283
90	Fire Truck	108,330
	Water Department	41,399
	Reappraisal	21,572
	Dump Truck	29,868
	Other	44,026
91	Police/Municipal Facilities	157,270
	Other	68,394
92	Dump Truck	30,194
	Six-wheel Truck	59,991
	Other	15,389
93	Whitney Hall/Library	188,700
	Route 4 Sidewalk	25,000
	Center Hall Water and Sewer	20,000

Source: Town Reports

12.5 Long-Term Debt

Long-term debt is one factor analyzed in determining a town's financial stability. A town that commits too much of its future revenue to debt payment restricts future financial flexibility.

Figure 12.3 shows the long-term debt payments for Enfield since 1989, and Table 12.8 shows the outstanding debt as of 1993.

Figure 12.3

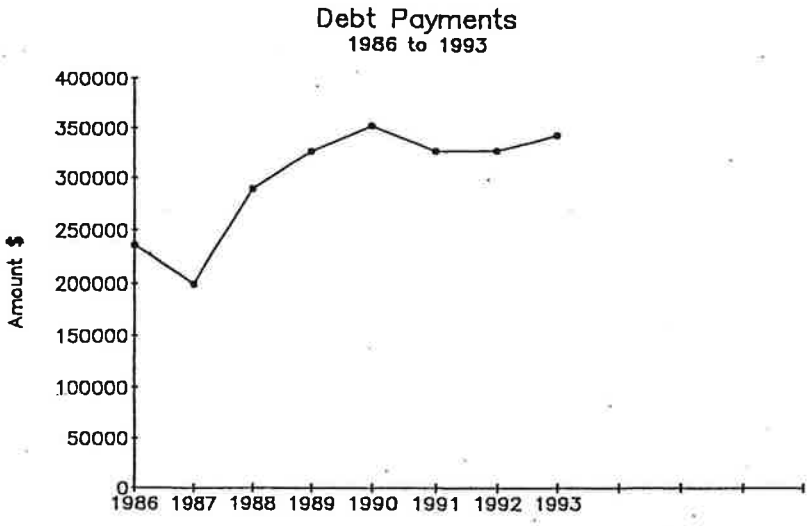


TABLE 12.8
LONG-TERM DEBT -- 1993

1985	Sewer Bond	$ 480,000
1987	Water Improvement Bond (refunded)	215,000
1988	Sewer Bond	90,000
1989	Sewer Bond	298,148
1989	Municipal Bond (Fire Truck & Reappraisal)	
1991	Municipal Bond (Police Facility)	230,000
1992	Municipal Note (6-Wheeler)	30,691
1993	Municipal Note (Whitney Hall/Library Renovation)	188,700
TOTAL BONDS OUTSTANDING		1,607,539
TOTAL LONG-TERM INDEBTEDNESS		$1,607,539

Source: Town Report

Currently, the town of Enfield owes about $1.6 million in long-term debt. About two-thirds of that debt is for sewer and water bonds taken out in the 1980s. The construction of the police building and library improvements accounts for about 25 percent of the debt load.

As Figure 12.3 shows, Enfield is paying off its debt at a rate of about $330,000 per year. The debt payment level has been fairly stable since 1990.

The town is subject to New Hampshire State Statute which limits debt to a percentage of the town's equalized valuation (RSA 33:4A). For Enfield that amounts to 1.7 percent of about $200 million or approximately $3.4 million. Thus, the current debt is substantially less than what the state allows a town to borrow.

School districts and precincts are also limited, with schools having a 10 percent limit and precinct water systems a 7 percent limit. Sewage treatment plant costs have no regulated limit.

12.6 Capital Reserve Funds

The law allows towns to appropriate money into capital reserve funds to be used for a variety of purposes. This is basically a savings account. For example, a town could put $10,000 into a highway capital reserve fund each year for five years, then take the $50,000 out to buy a new truck. This is an alternative to 1) paying for it in one year or 2) bonding.

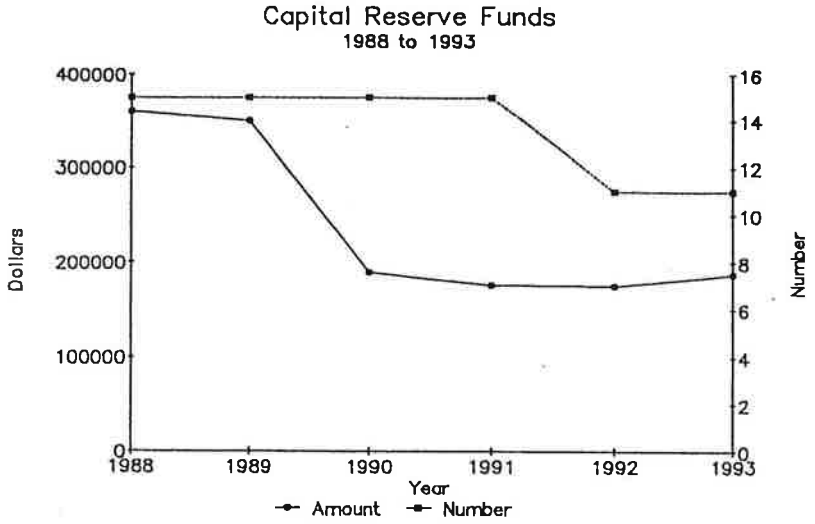
As Table 12.9 shows, Enfield has been actively creating and using capital reserve funds. Eleven funds exist with a total balance of $187,514. However, as Figure 12.4 indicates, the amount in reserve has dropped since 1988 and four funds were discontinued in 1991.

TABLE 12.9
CAPITAL RESERVE FUNDS – 1993

Type	Income Received	Amount
Highway Vehicle	$ 26.77	$ 760.15
New Cemetery Acquisition Fund	2,035.84	57,799.54
Lockhaven Cemetery	144.40	4,099.67
Town Dump	221.41	6,286.11
Municipal Buildings	882.80	30,063.59
Reappraisal	60.77	1,725.33
Ambulance	812.58	26,069.78
Water Department	1,393.19	37,388.87
Whitney Hall	507.60	14,411.14
Fire Department	7.14	202.69
Fire Truck Fund	306.70	8,707.46

Source: Town Report, 1993

Figure 12.4



12.7 Capital Improvements Program

In 1990 the Enfield Planning Board adopted a six-year Capital Improvements Program (CIP) as allowed by state law. A CIP is a management tool for towns to plan their future capital improvements, prioritize them and develop a schedule and mechanism for funding them. In the long run it should save the town money and reduce the fluctuation from year to year in the tax rate by allowing costs to be more evenly spread out.

The plan was developed by first assessing capital needs, which totaled $3.6 million excluding school, water/sewer or all fire department needs. This $3.6 million was pared down to $1.5 million in projects. The capital improvements recommendations are shown in Table 12.10. Implementing the plan would cause a projected increase in the tax rate of 11 percent over the six-year period, less than the actual 13 percent increase from 1981 to 1989.

The planning period is half over for the plan, and many of the improvements called for have been started or completed including the police facility, Whitney Hall improvements, annual purchase of a police cruiser, highway trucks and equipment, and Huse Park improvements (1995).

In projecting the impact of implementing the plan, it was assumed that Enfield's local valuation would continue to increase at a rate similar to the 1980s (see Figure 12.5) to 274 million in 1993. It actually has increased only slightly from 1990 to 1993. Thus, the town tax rate has climbed somewhat above the projected rate.

The plan needs to be reviewed and updated to reflect the current situation and to take into account all projected expenditures over the next few years, including sewer, water, fire, and schools.

Figure 12.10 December 6, 1990

RECOMMENDED CAPITAL IMPROVEMENT PROGRAM

Enfield, NH
1991-1996

Town	Capital Item Description	1991	1992	1993	1994	1995	1996	Alt. Fund Sources
Gen. Govt.	Town Office Needs Study	$10,000						GF
	Town Office Expansion ($250,000)			$27,449	$27,449	$27,449	$27,449	B
	Enfield Ctr. Town Hall Renovations***							GF
	Town Clock Restoration***							CR
	Balcony Restoration - Whitney Hall Third Floor		$20,000					GF
	Whitney Hall - Paint Exterior	$ 5,000						GF
	Land Acquisition for New Cemetery	$ 7,000	$ 7,000	$ 7,000	$ 7,000	$ 7,000		CR
Public Safety	New Fire Station - Enfield Center ($210,000)***							B
	Police Cruiser - Annual Replacement	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	GF
	Police Cruiser - (Addition to Fleet (Hold back used vehicle and replace engine)	$ 5,000						GF
	Police Facility ($288,000)		$52,685	$47,411	$45,401	$43,361	$41,321	B
Highway	Truck - 3-5 Ton Dump with Plow	$60,000		$60,000		$60,000		GF
	Loader						$65,000	GF
	Town Shed Improvements	$15,000						GF
	Moore Building Addition	$10,000						GF
	Air Compressor & Jack Hammers		$14,000					GF
	Methodist Hill Road - Regravel & Resurface ($100,000)			$50,000	$50,000			GF
	Bog Hill - Regravel, Regrade & Install Culverts		$12,000					GF
	Old Route 10 - Bridge Replacements with Culverts			$10,000				GF
	George Hill Road - Paving & Sealing				$50,000			
	East Hill Road & Spectacle Pond Road - Paving/Sealing					$65,000		GF
	Eastman Hill Road - Regravel, Pave & Seal						$55,000	GF
	Bridge Replacement Engineering Feasibility Study	$10,000						GF
	Bridge Replacement - Pillsbury Street ($530,000)***							B
	Bridge Replacement - Wescott Road ($530,000)***							B
Sanitation	Waste Management Site Specific		$50,000					GF
	Waste Management Site Development			$10,979	$10,979	$10,979	$10,979	GF
Culture & Recreation	Library Card Catalog			$ 5,000				GF
	Library Computer System		$ 6,000	$ 6,000				GF
	Library Expansion - Structural Study	$ 3,500						GF
	Library Expansion - Construction			$20,000				GF
	Library Expansion - Furnishings/Carpeting/Cabinet			$ 6,800				GF
	Beach Building - Complete	$ 9,500						GF
	Muse Park Improvements	$14,500						GF
	Boat Launch Improvements	$10,000						GF
	Little League Fields***							GF
	Mascoma River Park Development***							GF
	Community Activity Center - Study						$10,000	GF
	Community Activity Center ($250,000)***							B
TOTAL PLUS 5% ANNUAL INFLATION		$183,225	$194,795	$307,510	$250,186	$291,999	$301,185	

TOTAL SIX-YEAR CAPITAL: $1,528,901

GF = General Fund
B = Bond (Assumes 7% Interest Rate over 15-Year Term)
CR = Capital Reserve
*** Denotes needed capital project which was not high enough priority to be included in the 1991-96 time frame.

Source: Capital Improvements Plan, 1990

XIII EDUCATION

Enfield educates its student population at three public school facilities: the Enfield Elementary School, located on Route 4 in Enfield Village; the Indian River Middle School; and the Mascoma Valley Regional High School, located on Route 4 in West Canaan. Grades K-4 attend the Enfield Elementary School; 5-8, the middle school, and the remaining grades (9-12), the high school.

Only children from Enfield and Grafton in the vicinity of Route 4A attend the elementary school. Other district elementary students attend Canaan Elementary. Students from Canaan, Dorchester, Orange, Grafton, and Enfield attend the Mascoma Valley Regional High School. Enfield is a part of the fiscally autonomous Mascoma Valley Regional School District, a legally organized corporation with the power to appropriate funds as specified in RSA 194:3. Funds appropriated by the school district are raised through local property taxes.

13.1 Student Population

The total Mascoma Valley School District population in 1994 was 1,616. A breakdown by grade and school is shown on Table 13.1. Of the 1,616 students, about 40 percent are from Enfield.

As Table 13.2 shows, the number of students mirror the general population in that it has shown significant increases in the past ten years--increasing nearly 18 percent since 1985.

TABLE 13.1

1993-94 SCHOOL ENROLLMENT BY GRADE

Enfield Elementary	Canaan Elementary	Indian River	Mascoma H.S.
K - 51	K - 78	5 - 153	9 - 128
1 - 54	1 - 89	6 - 110	10 - 96
2 - 58	2 - 89	7 - 148	11 - 107
3 - 42	3 - 72	8 - 126	12 - 101
4 - 42	4 - 72	--	--
Subtotal: 247	400	537	432
Total: 1,616			

Source: SAU, 1994

TABLE 13.2
1985-1994 SCHOOL ENROLLMENT TRENDS

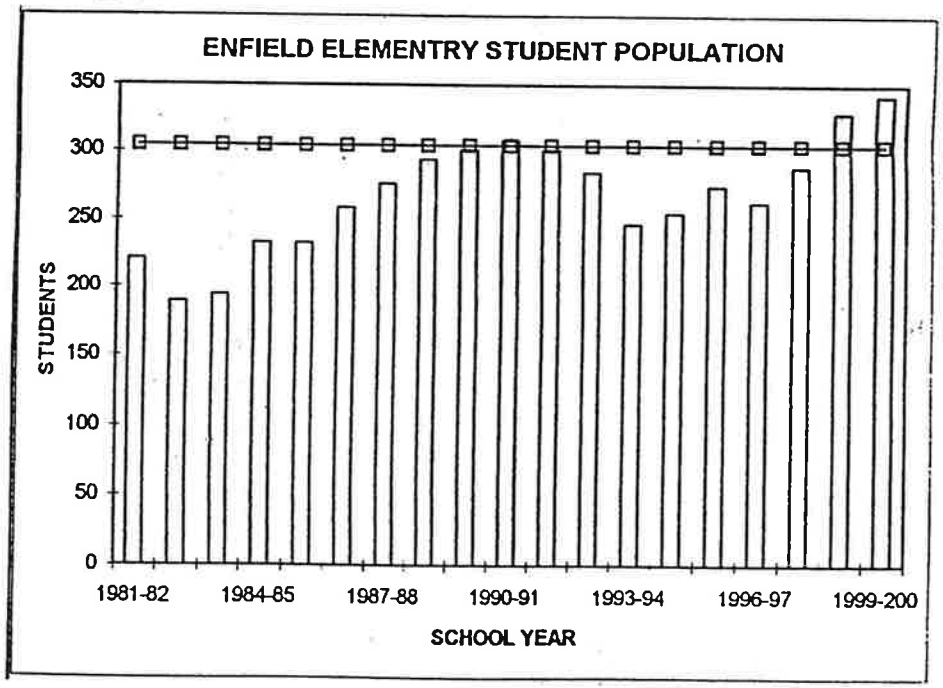
School Year	Canaan Elementary	Enfield Elementary	Middle School	High School	Total
1985-86	311	233	402	426	1,372
1986-87	333	259	401	410	1,403
1987-88	337	276	428	422	1,463
1988-89	391	298	428	414	1,527
1989-90	394	301	461	422	1,578
1990-91	394	308	482	417	1,601
1991-92	384	301	509	437	1,631
1992-93	388	284	498	433	1,603
1993-94	400	247	537	432	1,616
PROJECTIONS:					
1995-96	**392**	**275**	**524**	**448**	**1,639**
1996-97	**379**	**263**	**523**	**463**	**1,628**
1997-98	**427**	**288**	**524**	**463**	**1,702**
1998-99	**473**	**329**	**491**	**494**	**1,787**
1999-20	**526**	**342**	**493**	**483**	**1,844**

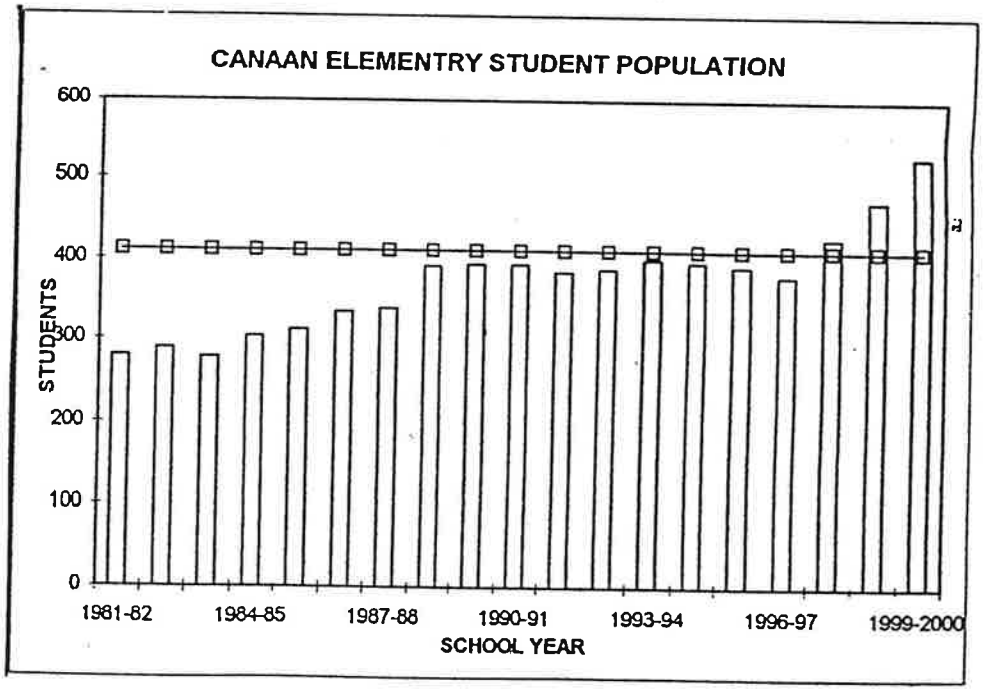
Source: SAU, 1994

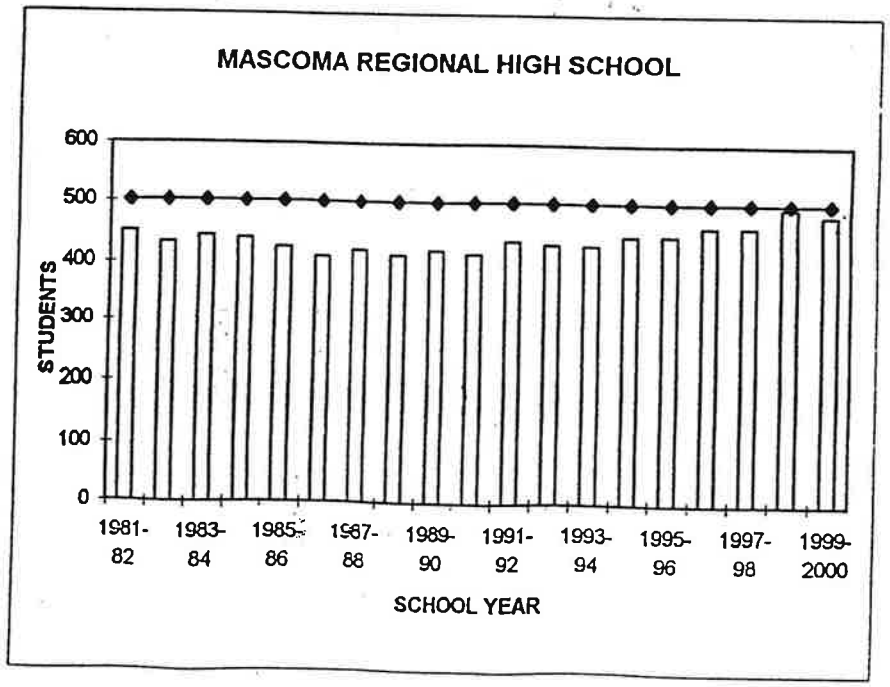
13.2 Population Projections

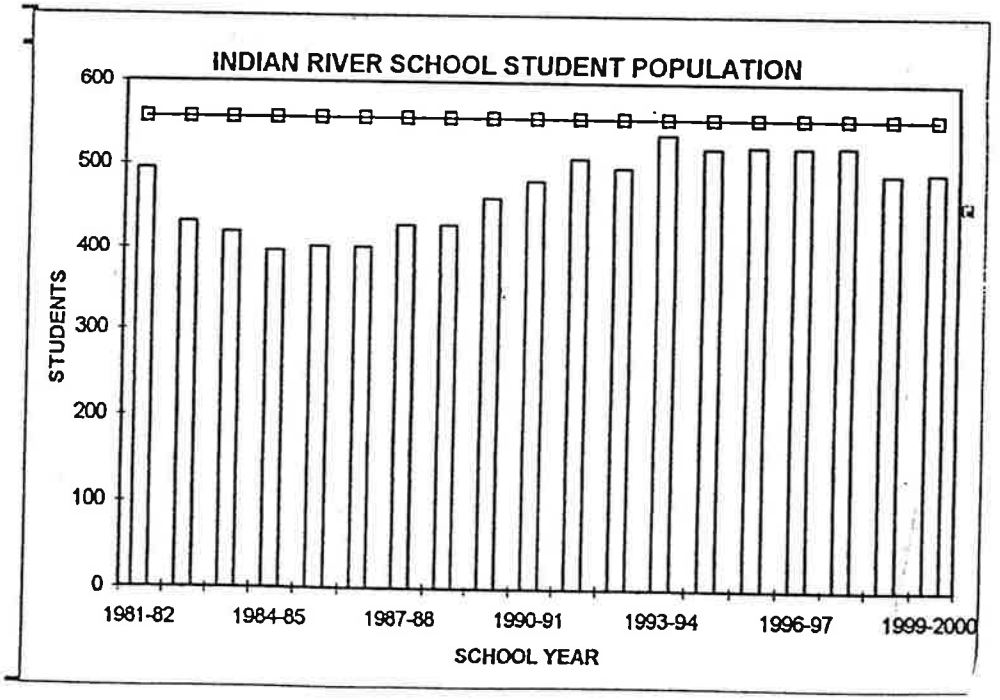
Population projections have been recently done by the Supervisory Administrative Unit. Figure 13.1 graphically displays historic and projected populations for the four schools until the year 2000. Continued growth is projected with an additional 288 students projected in five years or about 14 percent growth during that period, with growth predicted at all age levels.

FIGURE 13.1 STUDENT POPULATION TRENDS AND PROJECTIONS









SOURCE: SAU #32

13.3 School Facilities

Elementary School

The Enfield Elementary School is a 100-year old wood structure located on Route 4 in Enfield Village. The structure is now used for grades K-4 only and currently has a student population of about 247. The building has 14 classrooms, a full-size gymnasium/cafeteria and a library. Outdoor recreation facilities include a playground area.

While the school is rated for a capacity of 304 students, the usual population is crowded due to the 100-year old school layout. The building needs to be made handicapped accessible, have aging old tanks replaced and make safety improvements. The projected increases in population over the next few years is of great concern due to the lack of space.

Indian River Middle School

Located on Route 4 in West Canaan, the middle school houses grades 5-8 with students from throughout the district. The school is a modern block building and was constructed about eight years ago. The school has 20 homerooms with about 40 teachers. Facilities include a multi-purpose room which serves as a cafeteria and gymnasium. Outdoor facilities include a playroom with students using the high school fields when necessary which causes scheduling problems at times.

No major capital improvements are planned in the near future.

Mascoma Regional High School

The high school, located in Canaan, was built in 1963 and currently has an enrollment of about 430 students with 39 professional staff members. The school has 25 classrooms, gymnasium, cafeteria, and library. Vocational education students (about 32 juniors and seniors) travel to the regional voc/tech center in Hartford, Vermont.

The school grounds include one baseball diamond, one softball diamond, two soccer fields, and one field hockey field. Faculty and student parking is adequate.

While the school is rated for 525 students, space problems usually exist. There is inadequate daytime space and no separate computer room. Also, 4-5 teachers share space. Recreation fields are heavily utilized; and additional teams, such as a girls' soccer team, could not be scheduled. This is particularly the result of the middle school not having any playing fields.

The school district has formed a Long-Range Planning Committee which is working to meet the anticipated needs of the district in the years ahead. The committee has recently decided to purchase a 47-acre parcel on Route 4 for future district needs. The purchase of this property ($75,000) will be put to the voters in March 1995. If the property is purchased, the group will then work to decide what new facilities will be constructed at this location and how existing facilities will be changed with regard to utilization and grade makeup. The committee is still in a "brainstorming" mode.

13.4 School Finances

The school district's finances for 1994 are shown in Table 13.3. About 80 percent of the district's $9.3 million budget is derived from local taxes. This is somewhat higher than the state average. As with most New Hampshire towns, education costs are borne almost exclusively by the property tax.

TABLE 13.3
SCHOOL DISTRICT BUDGET -- 1994

Expenses	(000's)	% Total
Salaries	5,532	59
Benefits	1,372	16
Building Expense	751	9
Transportation	428	5
Other	1,003	11
Revenues		
Federal	557	6
State	1,384	15
Local Taxes	7,362	79
Other	17	71

Source: Annual Report, 1994

Table 13.4 breaks down the percent of the district budget that each town pays. Both Enfield and Canaan pay about 40 percent of the budget each, while the three smaller towns combine for the remaining 20 percent.

TABLE 13.4
TAX APPORTIONMENT -- MVRSD
1994

Town	% of Total Assessment
Canaan	40.4
Dorchester	4.4
Grafton	12.9
Orange	2.7
Enfield	**39.7**

Source: District Annual Report, 1994

The district is still paying off debt on the Indian River School. Debt and interest payments in 1994 amounted to $437,763. The debt will be paid off in 1997.

Trends and Comparisons

School budgets have increased substantially over the last decade. In 1993 the average cost of educating a student at Mascoma Valley Regional was $3,904.23. How does this compare with other towns in New Hampshire? Table 13.5 compares total costs per student for several surrounding school districts and the state as a whole.

MVR spent a little more than the state average to educate its students. Five years ago, the district was spending slightly less than the state average.

TABLE 13.5
COST PER PUPIL, 1992-93

School District	Elementary	Middle School	High School	Average
Mascoma Valley Reg.	**$4,801**	--	**$5,792**	**$5,060**
Lebanon	5,756	$8,138	8,055	6,810
Hanover	6,586	--	--	6,586
Dresden	8,001	--	8,014	8,009
Claremont	4,666	5,825	6,378	5,352
Kearsarge	5,044	5,185	7,116	5,607
Newfound Area	5,093	3,626	5,637	4,673
Sunapee	4,625	6,877	7,275	5,815
State Average	**4,524**	**4,932**	**6,084**	**4,994**

Table 13.6 compares the equalized valuation per student with other towns. This is an indication of a town's relative wealth per student.

TABLE 13.6

COMPARISON OF VALUATION AND TAX RATES -- 1993*

Town	Total School Dist. Equalized Valuations (000)	Equalized Valuation per Pupil	School Equalized Tax Rate per $1,000	%Total Property Tax as School Tax
Mascoma Valley	**$415,702**	**$265,083**	**17.39**	**68**
Canaan	118,602	187,542	21.88	69
Dorchester	17,372	247,811	17.96	71
Enfield	**213,020**	**342,146**	**15.02**	**65**
Grafton	52,458	259,564	17.46	71
Orange	14,251	347,588	14.51	70
Hanover	668,345	724,179	11.09	63
Lebanon	665,820	358,546	18.71	64
Kearsarge	1,037,294	581,867	11.38	62
Claremont	433,102	204,961	19.77	59
Sunapee	409,293	838,716	7.99	49
State	60,193,226	342,977	15.6	66

*Source: New Hampshire Department of Education, 1994

Enfield has the second highest valuation per pupil in the district and is about average for the state. Its equalized tax rate is also about average for the state and area school districts. Thus Enfield would not be considered either a property "rich" or property "poor" school district.

13.5 Private Schools

According to the New Hampshire Department of Education, Enfield has no private schools. However, it does have several licensed day-care centers as shown in Table 13.7.

TABLE 13.7

ENFIELD DAY-CARE CENTER

Name	No. of Children	Age (in years)
Clark Family Day Care	6	0 - 12
Day Dawn Day Care	9	0 - 12
Enfield Head Start	16	3 - 6
Madore's Day Care	9	0 - 12
Mascoma Coop. Preschool	20	3 - 6
Nelda Davis Day Care	9	0 - 12
Tata Tots Day Care	8	0 - 10
Tee Dee's Day Care	9	3 - 11

Source: New Hampshire Department of Education, 1994

XIV GOALS AND OBJECTIVES

14.1 Introduction

A Master Plan not only describes existing conditions, assets and problems but also provides guidance for the future development of Enfield. This section, combined with the Future Land Use Plan, contains the "objectives, principles, assumptions, policies and standards upon which the constituent proposals for the physical and socio-economic development of the municipality are based" (RSA 674:2).

The goals, objectives, policies and recommendations that follow are based on ideas from discussion and comments from town official's boards and departments, input from individual citizens, and recommendations from Lobdell Associates. The rationale for these goals and objectives is based on the assets, problems, and community attutudes described in the previous chapters. They are grouped by the topics addressed in Chapters II-XIII.

14.2 Historic Resources Goals

1. Enfield should encourage the preservation of its historic past for the enjoyment and education of its citizens and visitors.

2. Enfield needs to educate and increase public awareness about historic resources and let people know it's not just protecting buildings.

3. New legislation now enables towns to form Heritage Commissions, much the same as Conservation Commissions for natural resources. Enfield should establish a Heritage Commission under RSA 674.

4. A thorough inventory of Enfield's historic resources needs to be done.

5. The Heritage Commission, once formed, should consider the formation of additional historic district(s) in Enfield, particularly in the Shaker Villages area.

6. The town should work to protect the historic resources listed in Chapter II.

7. Enfield's zoning and land development regulations should be amended to encourage the minimization of impacts of development on historic resources not only the site being developed, but also abutting sites. A reduction in setbacks, frontage requirements and other regulations that create non-traditional building patterns should be undertaken.

8. Protective buffers should be established around town-owned historic resources, including cemeteries.

9. Enfield should encourage private property owners to preserve, protect and allow public access to historic resources.

10. Designation of scenic roads should be encouraged.

11. The rehabilitation and revitalization of Enfield Village and Enfield Center should be emphasized using available federal funding and tax incentives to improve the downtown and make it more attractive for investments.

12. Rehabilitation/adaptive use of vacant historic structures such as the Baltic Mills should be encouraged, using any and all available tools including Historic Investment Tax Credits, CDBG funding, etc.

14.3 Natural Resources Goals

1. Enfield should continue to protect its critical natural resource areas: wetlands, steep slopes and floodplains.

2. Enfield should protect its groundwater resources both existing and future by utilizing the soon to be released groundwater map in order to develop groundwater protection program, including well head protection.

3. The Planning Board should build on the water resources sections of this master plan update and complete a Water Resources Management plan, as laid out in RSA 674:2, VIII.

4. Article VI of the Enfield Zoning Ordinance gives the responsibility of promoting and protecting Enfield's natural resources and watershed resources to the Conservation Commission. As recommended by the Conservation Commission itself, a town wide Conservation policy should be developed in order to aid the Commission in carrying out its responsibilities.

5. Any updates of the Enfield Capital Improvements program (CIP) should include provisions for the protection of land and important natural resource areas for open space, as identified by the Conservation Commission.

6. Enfield's major lakes and the Mascoma River are now effected by the new statewide Shoreland Protection Act. Enfield should amend its zoning ordinance to create a new shoreland zone, based on the model ordinance prepared by the Office of State Planning.

7. Land use in the unsewered areas of Enfield should continue to be based on land capability through the use of soil based lot size requirements. The Enfield subdivision regulations need to be updated in this area to reflect recent advances and state statutes, including an updated soils legend and lot sizing and the use of state certified soil scientists for soil mapping.

8. Computerized mapping has been used to some extent in this master plan update. However, to fully utilize the capabilities of GIS (Geographic Information Systems) the town needs to have a digitalized base map and digitalized tax maps in order to have the necessary accuracy for wide spread municipal use.

9. Enfield should encourage the N.H. Fish and Game Department to acquire lands between the Enfield Wildlife Management Area and the new Lower Shaker Wildlife Area, with the eventual creation of one connected area.

10. Enfield should also involve itself in any planning by the state for future land uses at both wildlife management areas. The town should encourage additional recreational development of these areas.

11. Enfield should coordinate continued efforts to clean up and protect the Mascoma River with the neighboring town of Lebanon and Canaan.

12. All homes and businesses which are within the revised area of town should be hooked into the sewer system and expansion undertaken where necessary.

13. Visual impact assessments should be an important component of future development proposals. Vegetation and topography should be used to create visual buffers to reduce conflicts between different land uses.

14.4 Population Goals

1. Enfield's population has increased steadily from the 1950's and there is no reason to believe it will not continue to increase. Enfield's plans should anticipate a moderate growth rate.

2. Enfield's planning department in conjunction with the Selectmen's Office, should verify yearly Office of State Planning population estimates through the use of local data including occupancy permits, tax data, etc.

14.5 Housing Goals

1. Maintain the diversity of residential patterns in Enfield (from rural, single-family homes to higher density village apartments and condominiums) in order to offer a wide range of housing types, sizes, and prices--thereby meeting the housing needs of the variety of Enfield families.

2. Work with private owners, the Twin Pines Housing Trust, and funding sources such as NH Housing Finance Authority, Farmers' Home Administration and Office of State Planning to rehabilitate apartments and duplexes (with the first priority in Enfield Village) to increase the supply and quality of affordable housing stock.

3. Work with similar groups to develop plans for the construction of affordable new housing, such as clustered traditional and manufactured houses for low and moderate income families.

4. Review and revise zoning and site plan regulations and develop historic architectural guidelines that could be used to encourage the renovation or construction of residential buildings that will be compatible in scale and style with existing streetscapes and neighborhoods.

5. Encourage higher density and larger housing developments to occur on or immediately adjacent to major highways and town water and sewer.

6. Work with senior citizens groups and handicapped residents to anticipate the need for additional housing and identify the level of need and timing, appropriate locations, financing sources, and necessary local permits.

7. Improve sidewalks, bike paths, parking areas, and recreational areas in and around Enfield Village and Enfield Center.

8. To improve the quality and safety of Enfield's housing stock and to insure the adequacy of town services and facilities, the town should continue to support the positions of Town Building Inspector, Planning/Zoning Administrator, and the work of other related departments (such as Water and Sewer, and Highway) in enforcing building and land use regulations and in working with property owners.

9. Revise the Zoning Ordinance to include detailed provisions regarding clustered manufactured housing, currently permitted as special exceptions in some districts.

14.6 Economic Goals

1. Prepare a detailed and realistic improvement plan for Enfield Village focusing on re-use of suitable existing residential, commercial and industrial buildings, adequate parking, sidewalks, lighting, and safe circulation patterns.

2. Work with existing businesses - commercial and industrial - to identify expansion possibilities and specific needs such as land, building space, capital, skills, marketing, communications, etc.

3. Identify new sites for industrial and commercial development, and reserve them through zoning.

4. Develop a Tourism Committee which will work with the State Division of Travel and Tourism Development, the Lebanon Chamber of Commerce and other regional associations to improve the promotion of the Town. This could include the cooperative promotion of businesses as well as attractions, and the development of seasonal calendars of events.

5. Meet with the State Office of Industrial Development, other regional development groups, real estate and management firms, bankers and other financial institutions, to develop a realistic approach to the recruitment of new businesses to Town.

6. Consider establishing a non-profit industrial (or economic) development organization which can be authorized by the Town to acquire, lease or sell land or buildings in furtherance of industrial development goals.

7. Consider flexible or innovative zoning provisions for Enfield Village which would promote the re-development of buildings and land parcels in furtherance of Village goals (e.g., zero-lot line for odd-shaped parcels, density bonuses for meeting certain goals, etc.).

8. Evaluate, as a possible implementation organization, a municipal economic development and revitalization district for Enfield Village as permitted under RSA 162-K.

9. Through revision of zoning ordinance and site plan review regulations, limit strip commercial development likely to occur on Route 4 (and other highway areas) through controlled access and shared drives, adequate setbacks, and coordinated development of adjacent parcels. Insure that developers pay their share of necessary improvements in highways, water, sewerage, etc.

10. Work with existing schools and organizations to improve education and training opportunities for high school students and adults. Help to maintain communication among students, employees, employers, schools, state vocational and educational programs, and federal job training programs to insure an effective relationship between programs and actual needs. Assist in providing information on programs and financial aid to Enfield students, residents and businesses.

14.7 Land Use Goals

1. Create a new shoreland zone around lakes, ponds and the Mascoma River based on the recently passed Shoreland Protection Act.

2. Consider mandatory clustering requirements to protect agriculture land which would require, when environmentally sound, development to occur in wooded areas surrounding agricultural land or on only a portion of the existing farmland.

3. Continue to update and revise all town regulations to comply with state regulations and take advantage of new concepts in planning.

4. Work more closely with Lebanon and Canaan to insure compatible growth along Routes 4 and 4A.

5. All boards and individuals involved in land use planning and regulations--Planning Board, Board of Adjustment, Selectmen, Building Inspector, Planning/Zoning Administrator, Administrative Assistant, Public Works, etc.--should meet every year within one month after town meeting to discuss roles, duties, problems, etc.

6. The "scattered and premature" section of the subdivision regulations should be explored to provide more specific guidance and standards for utilization.

7. Cluster housing and development should be encouraged by possibly offering bonus units for developers who use this concept.

8. Modify the existing Residential District 1 and Commercial/Business District to create new "Village Districts" in Enfield Village and Enfield Center to encourage multi-use traditional New England Village Development patterns.

9. Work toward creating a more performance based zoning ordinance and subdivision/site plan review regulations that allow more uses and more variance in set backs, and development criteria provided a set of conditions or "performance-based standards" are met. The soil-lot size regulations now in use are an example of a performance standard.

10. Development should be encouraged to meet three requirements: minimize visual import, minimize disturbance and retain the maximum amount of rural and historic character.

11. Visual imports are often the most negative aspect of development to town residents and visitors. Enfield should develop a visual assessment system and begin developing standards for visual imports.

14.8 Construction Materials Goals

The extent of sand and gravel in Enfield is limited.

Sand and gravel deposits make good building sites, are potential groundwater sites and, of course, are potential locations for sand and gravel excavations. These potentially conflicting land uses need to be carefully planned.

1. RSA 155E requires towns to provide "reasonable opportunities for excavation" within their boundaries. Enfield should continue to provide opportunity but also should re-evaluate in what areas excavation will be permitted and what conditions to continue to place upon excavations, particularly those bordering commercial and residential uses.

2. Enfield should maintain a current comprehensive inventory of its inactive and active pits. Questionnaires should be sent to all pit owners periodically in order to determine status of existing pits relative to RSA 155E.

3. When new computer generated tax maps of Enfield are done, they should be overlaid onto the aquifer map and the soils, sand and gravel map.

4. The Enfield Planning Board should continue to enforce its Sand and Gravel Regulation in order to comply with RSA 155E. Also Enfield should consider adopting Special Exceptions from RSA 155E into its Zoning Ordinance.

5. Town zoning should allow excavation as part of a forest and farm operation for on-site uses as a permitted use.

6. Additional aquifer/groundwater studies should be done to determine if Enfield has <u>any</u> groundwater source suitable for a future community supply. Land use controls may have to be considered to ensure safe water sources.

14.9 Recreation Goals

Enfield is in a recreational area and the availability of recreational opportunities is important to its residents and summer visitors. Therefore, the town should take a leading role in insuring that recreation opportunities are available and of high quality.

1. Because Enfield has such a wide variety of community, school and private recreational groups, an organization should be formed to bring them all together. Many communities have what is called a recreation council or a "Friends of Recreation." This public/private organization could bring together all the many interests to help plan and coordinate future programs, determine facility needs and develop funding sources. It could supplement the existing recreation commission.

2. Enfield should consider increasing its recreation budget to the state average and hiring a part-time recreation director to coordinate town recreational programs and work with the recreations council (if formed) in order to relieve the Selectmen of the day-to-day handling of recreation affairs.

3. The Fish and Game purchase of the Shaker Village lands adjacent to the private museum operation of Lower Shaker Village offers a unique opportunity to develop an outdoor recreation/education facility, which might include hiking, cross-country skiing, etc. The town should encourage and support this potential public/private effort.

4. Enfield should be looking at recreation from an economic standpoint and encourage additional recreational interests to locate in town.

5. The town recreation and conservation commissions should work jointly with the New Hampshire Fish and Game Department to encourage recreational use of over 4,500 acres of state lands. A meeting should be held yearly to discuss problems and goals.

6. Many of the trail systems throughout town are located on private land. The town should encourage this continued relationship. Should land with trails be subdivided, the town should ensure that the trail systems remain intact or that alternatives are explored for relocation.

7. A permanent ice skating rink should be established with an ice skating programs developed.

8. Area recreational needs should be taken into account when the school district plans use of the Cummings property, if purchased.

9. Recreation for seniors will become more and more important. Creation of a local cultural/recreational center should be started, planned and funded.

10. An additional swimming beach and picnicking area should be secured on either Mascoma or Crystal Lake.

11. Work for more cooperation between the school district and the town with regard to the utilization of school facilities by all age groups.

12. The town needs to plan for at least one tennis court, outdoor basketball court and all-purpose field.

13. Boat launches need to be improved.

14. The railroad line should be explored for future use as a trail, even if future transportation on the line is anticipated.

14.10 Transportation Goals

There are two major forces giving urgent impetus to town's transportation needs. First, the federal and state planning and funding changes initiated by the Intermodal Surface Transportation Efficiency Act 1991, and the related budget concerns at the federal and state level. The state has revised its transportation planning process and communities need to be involved with the regional planning agency's planning process in order to have their needs incorportated within the State's Plan. Just as important, local public officials should communicate with their legislative representatives to ensure better funding of state-aided highway projects, since the New Hampshire Legislature has final approval (and appropriation power) over the Statewide Transportation Plan.

Secondly, this Master Planning document and process brings together population and economic projections, assesses the capacity of the town's facilities and services, and identifies areas suitable for future development. With certain priorities established, (for example, maintain specific roadways and permit development in certain areas), what are the implications of the future land use recommendations and the "building out" of subdivisions. What can Enfield afford annually, and over the long-term in transportation expenditures? What costs are fairly the responsibility of the developers responsible for these new traffic impacts?

It is clear that Enfield should expect continued population growth, based on past experience, its proximity to healthy job centers, the adequate water and sewer services in the Village area and other desirable community and natural amenities.

The following is a series of recommendations related to the Enfield's transportation system and needs:

1. There should be increased coordination between public planning and community development activities and highway planning. Specific attention should be given to an Enfield Village Improvement Plan which should address traffic circulation, parking, sidewalks, and signs.

2. Enfield should increase its involvement in the regional efforts to plan and finance improvements to the Upper Valley's transportation system including highways, public transit, rails, and air.

3. The Public Works and Highways Department should develop a Town Road Improvement Plan covering ten years and addressing needs for construction, repair and maintenance of existing and anticipated roads, bridges, sidewalks, intersections, public transit, equipment and buildings. The Road Surface Managment System will greatly aid this effort.

4. From the Road Improvement Plan, a revised Capital Improvements Plan should be prepared that sets priorities and identifies funding sources for a 6-year time-period (along with other Town services and facilities).

5. Once an updated Town CIP and a Road Surface Management System are adopted, the Planning Board should develop an impact fee schedule for private residential, commercial, and industrial development that require new or expanded roads, bridges, sidewalks or other transportation services.

6. The Public Works and Highway Department should submit an annual road budget based on the above CIP to the Selectmen and Budget Committee for Town Meeting, and establish a capital reserve fund for future capital needs.

7. The Planning Board recommends the following roads be considered top priority for Town road work: Methodist Hill Road, Locke Haven/East Hill Road, Jones Hill Road, Old Route 10, and Boys Camp Road.

8. In order to minimize traffic congestion, delays, unsafe turning, and other consequences of excessive strip development, the Planning Board and the Public Works Department should work with UVLSRPC in developing additional zoning, site plan regulations, and driveway policies that would allow appropriate highway-oriented land uses along Route 4 and in Enfield Village, and other areas where strip development is likely. This coordinated planning effort could improve or maintain highway safety, maintain the flow of traffic for both commuters and visitors, and contribute to maintaining the Enfield's rural and scenic qualities.

9. Recreation, transportation and business interests should participate in the planning and management of the abandoned Northern Railroad line with NHDOT, DRED, and the UVLSRPC.

10. Promote the use of Advanced Transit and increased carpooling through funding, public education, planning for parking facilities, etc.

11. With parking in Enfield Village limited, the Town should work cooperativly with the business community and land owners to identify possibilities for joint development of shared parking.

12. Pedestrian needs should be evaluated in Enfield Village and along Route 4A, particularly along Mascoma Lake, with a view toward upgrading sidewalks, shoulders, and signs to ensure safe travel.

13. Public and private recreation groups should convene to develop bike paths in and through Enfield which connect scenic, natural areas, historic locations, and the villages.

14.11 Community Facilities Goals

Enfield provides a wide range of services for its citizens and visitors, from library books to fire protection. Enfield constantly seeks to provide the best services possible at the least expense to the taxpayer.

1. The Capital Improvements Plan (CIP) needs to be updated using the information in the master plan as a starting point. The selectmen, budget committee and other interested parties should be brought into the process.

2. Once updated, the CIP should be updated yearly. Perhaps one fixed evening every year (such as the first Thursday in September) could be set aside for a capital improvements meeting.

3. Once updated, a capital improvement should be listed in the CIP before receiving budget committee support.

4. All departments should have 5- and 10-year capital improvement budgets which would include a list of necessary improvements, costs, year needed and source of funding.

5. Capital improvements should be prioritized as follows:

    a) Projects that solve immediate health or environmental problems.
    b) Projects mandated by state and federal agencies.
    c) Projects that put the town at risk for liability claims.
    d) Other projects that the public will support.

6. Enfield should encourage well planned and appropriate industrial and commercial growth in order to increase the town's assessed valuation.

7. Further growth should be directed at areas readily serviced or that can be served without impact on the tax rate.

8. The town should adopt an impact fee ordinance to help minimize the impact of capital expenditures on the tax rate. The NH legislature passed enabling legislation for such an ordinance in 1991. It assesses a fee on new development to be used on future capital improvements.

9. Future development should not require the additional expenditure of public funds to expand services. Each developer should be required to submit an analysis of impacts on community facilities and services.

10. While Enfield has utilized capital reserve funds, they are too small and too few. More money should be placed into existing reserves and new funds created, particularly for repeating capital expenditures.

11. Enfield should continue to have excellent water quality without any chemical treatment. The high natural quality of Enfield's water should be maintained.

12. The town should increase recycling voluntary participation through a two-year funded education program. If desired levels of recycling are not met, then mandatory recycling should be considered.

13. The town should be involved in decisions concerning the fate of the elementary school and make its wishes known to the school district. Any decision to use the school in the future for town offices and a recreation center should be predicated by a cost and efficiency planning study.

14. Long-term goals should include a feasibility study of a future connection of the town and Shaker Village sewer and water systems.

15. All buildings and town equipment should be made energy and fuel efficient.

16. Handicapped access should be provided for all public buildings.

17. Computerized tax mapping should be developed. This would benefit all departments, improve property assessment, and make planning future services easier.

14.12 Financial Goals

Over the last few years Enfield's financial situation has stabilized since the boom of the 1980s and the recession of the early 1990s. The tax rate valuation and debt payments have been fairly constant over the past three years. However, the valuation is lower than has been predicted.

1. The Capital Improvements Plan should be updated to reflect recent changes, or it should include all individual town and school capital projects.

2. Enfield should work toward increasing its net valuation per capita at a fast rate.

3. Non-residential growth, including light industry and commercial, should be encouraged to reduce the town's dependence on residential homes and land for raising revenue.

4. Capital reserve funds should receive more funding each year.

5. The Planning Board should require a financial impact statement for all major developments.

6. The town should consider an impact fee ordinance as allowed by state law which would help pay for capital improvements.

14.13 Educational Goals

1. Planning needs to continue to provide additional space for increasing enrollments.

2. The purchase of the Cummings parcel should be completed provided it is found to be suitable for future school facilities.

3. There should be improved communication between the school board and the planning board. An exchange of pertinent minutes of meetings should be considered as a starting point.

XV. FUTURE LAND USE PLAN

15.1 Introduction

Future Land Use Plans are just that - a plan for how land use should change in Enfield in the future. It establishes land use policy. The framework of open space, the pattern of existing land uses, and the amount and type of growth anticipated or desired suggest the basic options open to the community. Within these opportunities and limitations, alternative patterns and policies for future growth are considered. The Future Land Use Plan consists of two parts - a future land use map and the future land use narrative.

The land use policies in the plan should be based on the physical conditions identified during the mapping process and on community goals and objectives. These policies should encourage development in areas designated preferred for growth; they should discourage it in areas designated preferred for conservation and open space; and they should recognize that problematic areas involve questionable conditions which require further consideration or special treatment.

The policies should include statements concerning the extent and types of land use to be encouraged, where these uses can best be developed in terms of physical conditions and capabilities, the services and facilities needed to serve them, the timing or rate of development considered desirable, and similar factors. Land use policies should also state the reasons for discouraging development in areas designated preferred for open space, and outline restrictions under which development -- if it were to take place--might be permitted in such areas. Finally, they should contain use criteria for areas designated problematic, based on accepted standards.

The process of deciding which developable areas are "preferred for growth" is the essence of the planner's art. There may be several areas that relate closely to the existing building and road pattern, and there may be several potential growth centers in rural parts of the community. A planner compares the advantages and disadvantages of each possible growth area.

The evaluation process takes into account pertinent factors including topography, soil, slope, water resources, access to the area, existing land uses, and special features.. In addition, the realistic land use needs of the community and citizen preferences must be considered.

In general, growth is preferred in those developable areas that most logically and conveniently relate to existing developed areas and community facilities and services; if possible, growth should be a direct and compatible extension of existing development. Conversely, growth in inaccessible areas is not preferred unless it can be served independently and economically.

Enfield's Planning Board has completed its work in terms of investigating existing conditions and land use patterns within Enfield. The framework of existing land use patterns, the location of community facilities and services, and the amount and type of growth anticipated or desired

suggest the basic direction of Enfield's future. Within this framework, opportunities, limitations, alternative patterns, and policies for future growth have been developed.

15.2 An Overview

The proposed future land use plan for Enfield has been developed using the following information:

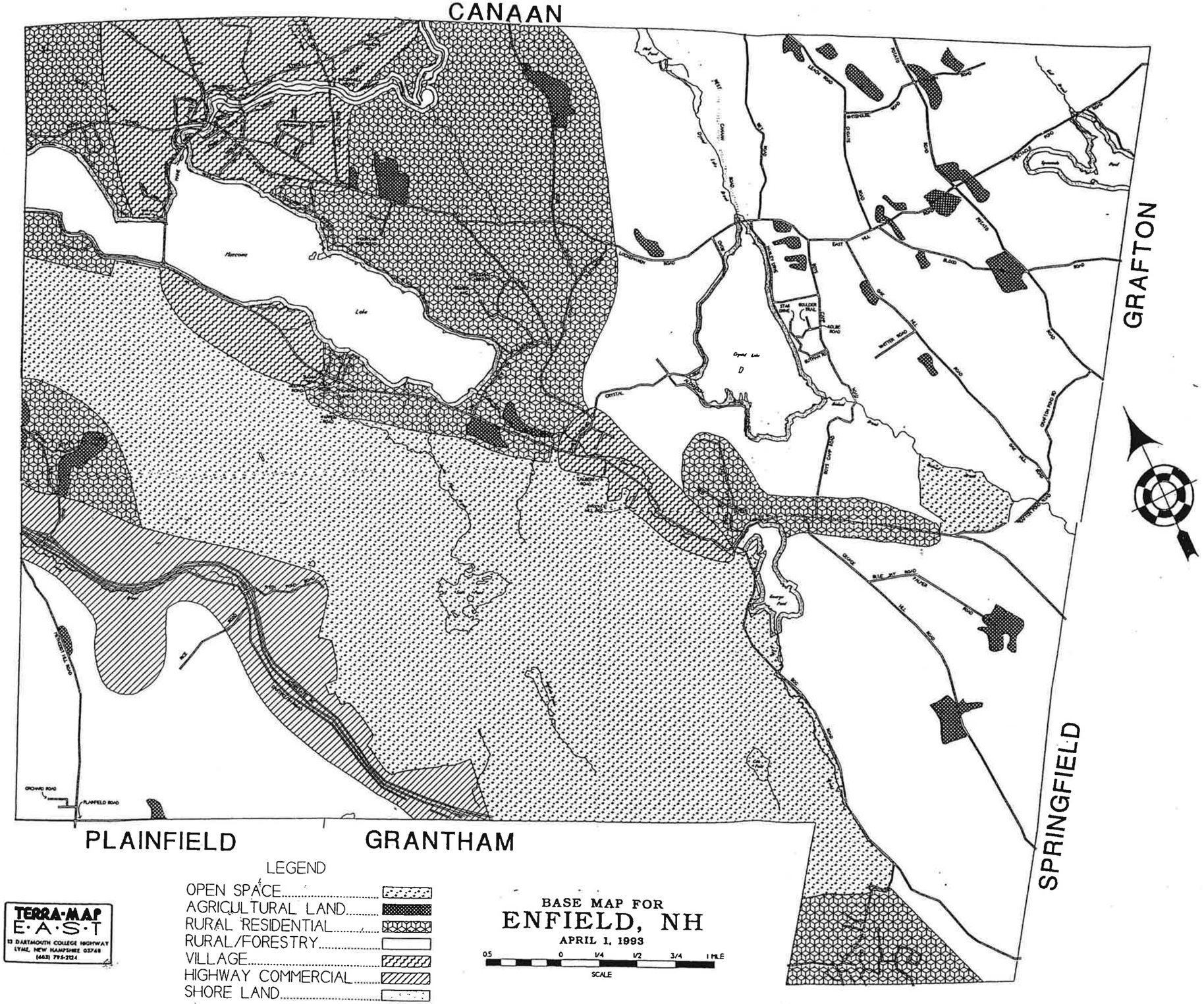
- The preliminary goals and objectives.
- The inventory information, data, and maps.
- Input to the Planning Board and consultant by town departments and community groups.
- The public in the community.

Basically, the plan will attempt to achieve the following:

- Promote the existing pattern of rural land uses.
- Protect Enfield's valuable natural resource areas by basing future growth on the land's ability to accommodate it.
- Provide adequate areas for industrial and commercial growth.
- Provide areas for the continuation of recreational activities, such as hiking, canoeing, fishing, etc.
- Protect Enfield's aesthetic and historic values to insure its continued beauty and character, which is important to its residents and non-residents alike.
- Protect Enfield's land in agricultural use and provide adequate protected areas for continued forest-based industries.
- Provide for a wide variety of housing types - mobile homes, apartments, multi-family, seasonal homes, single family homes, etc.
- Target compatible growth to the existing two village areas and encouraging mixed land uses of appropriate type, size, and character. The intent is to decrease residential sprawl, revitalize the villages, and minimize future costs for expanding public services.

MAP 22

FUTURE LAND USE



- Create a new recreational/historical area along Route 4A.
- Continue to encourage commercial and industrial growth in the I-89 corridor.
- Encourage more and better jobs for residents and to help reduce the property tax burden on residential properties.
- Manage growth so that fiscal and environmental impacts are minimized.

The following future land use plan divides the town into several major land use categories, as shown on Map 22. The categories are presented, as much as possible, from the areas of least developed land uses to the most highly developed. All of the categories are equally important and must be viewed as part of the whole. Enfield is not a stagnant group of separate land uses, but a vibrant combination of a wide variety of land use areas that make up the whole.

15.3 Critical Resource Areas

The basic premise on which land use in Enfield is built is that growth should occur in areas that are capable of supporting it, both environmentally and at the least expense to the taxpayer. As discussed in Section III, and shown on Maps 2 and 6, some lands in Enfield are unsuitable to develop. These are:

Wetlands
Steep slopes over 25%
Floodplain Soils

These areas should continue to be protected because of potential health and safety problems, and also because their development would increase the costs of providing the town services, including the development of public water and sewer to correct failing septic systems and polluted wells.

It should be remembered that Enfield's natural and historic setting is one of its major assets. It is extremely important that we place an emphasis on preserving its natural beauty and open spaces for residents and tourists alike. These steep slopes and wetlands areas are among the most naturally beautiful areas in town and also include much of the area used by citizens for hiking, snowmobiling, and canoeing.

15.4 Sensitive Natural Resources

These areas do not have the severe natural limitations of the critical resource areas. However, they do have some limitations that must be recognized if they are to be developed without safety or health related problems. These areas are shown on Maps 2 and 8 and include:

Slopes 15 to 25%
Flood Hazard Areas

Flood Hazard Areas are being protected now from development that would cause property damage or increased flooding down stream. These regulations must be maintained in order to insure Enfield's continued eligibility in the Flood Insurance Program. Slopes between 15 and 25% can be developed most generally at a lower density (see soil/lot size discussion in Section III) and with more emphasis placed on erosion and sediment control, runoff, road design, septic system installation, etc.

15.5 Open Space/Conservation Areas

Enfield is fortunate to have over 15 percent of its land area protected by state ownership and the state should be encouraged to continue to purchase lands on Shaker Mountain in order to convert the LCIP lands with the wildlife management area. However, there are other important scenic and natural areas which should be considered for protection.

The future land use map, as well as Map 13, shows areas to be considered for open space, conservation and low impact recreational facilities, such as trails and paths. Identified are those areas that are important for Enfield to preserve and protect. These lands could be purchased outright or easements obtained to insure protection. The obtaining of easements would prevent development, but maintain private ownership.

15.6 Rural/Forestry Areas

Enfield does have substantial areas of land that should only be developed at a very low density due to its remoteness and the lack of adequate town services and facilities. Scattered or premature growth in these areas, which would necessitate excessive expenditures of public funds should be discouraged. These areas should remain primarily forestland and wildlife habitat, with land management geared toward producing forest products in a manner consistent with good wildlife habitat retention and improvement.

15.7 Agricultural Land

Agricultural land is another important natural resource and an important component of Enfield's rural character. Besides its economic benefits, agricultural land preserves the rural landscape, provides open space, wildlife habitat, and recreational opportunities. Thus protecting agricultural land in Enfield is important.

Unlike many Connecticut River towns, the bulk of Enfield's 900 acres of land currently in agricultural use is not in the floodplain. Instead, it exists on land that also has development potential and cannot be protected simply for "public health and welfare."

Therefore, specific steps need to be taken to protect it. In some cases, this may mean the purchase of development rights. However, this may not be financially feasible except for those agricultural lands identified as most important. In most cases, agricultural land will need to be protected through innovative land use planning and development. Enfield's zoning offers clustering in the Rural/Agricultural and Residential Districts which gives developers the option of clustering development to reduce the impact on agricultural lands. The mandating of cluster housing on agricultural lands should be explored.

GUIDELINES FOR PROTECTING AGRICULTURAL LAND

GOALS	IMPLEMENTATION TECHNIQUES
Minimize visual impact	1. Structures should not be placed in open fields.
	2. Residences should be located adjacent to tree lines and wooded field edges.
	3. Residences should not front directly on off-site streets.
	4. Where clustering will yield open space that can remain in active agriculture, its use should be explored and possibly required.
Retain Rural Features	1. Existing farm roads should be incorporated into subdivision design where practical.
	2. Stone walls and tree lines should be preserved.
	3. Existing agricultural structures, such as barns and silos, should be preserved where feasible.
Minimize Site Disturbance	1. Roads should follow existing contours.
	2. Disturbance for the construction of roads, basins, and other improvements should be kept at a minimum.
	3. Disturbance on individual lots should be limited.

In order to protect Enfield's agricultural land, additional measures are needed. An agricultural land overlay district could be one of these measures.

Limiting development on land in agricultural use will not keep it from reverting back to woodland. Therefore, any clustering or other development proposed should address this problem.

15.8 Shorelands

The Mascoma River runs the entire width of Enfield from east to west and offers a variety of recreational activities and scenic attractions. The other important shoreland areas in town are around its lakes and ponds. Although heavily developed, there is still potential for more development and for redevelopment of existing lots to a greater level.

The NH legislature recently passed The Shoreland Protection Act which regulates activities within 250' of lakes, ponds, and what are called fourth order streams. The law enables towns to adopt zoning regulations to complement the state law, and a model ordinance has been prepared which should be considered.

GUIDELINES FOR SHORELAND PROTECTION

GOALS	POSSIBLE IMPLEMENTATION TECHNIQUES
Minimize Visual Impact	1. A minimum setback from lakes or ponds should be consistently maintained.
	2. The maximum linear disturbance per lot should be limited. Disturbances include docks, bulkheads, decks, walkways, and beach areas.
Retain Water Quality	1. A lake management plan should be prepared to control chemical pollutants,such as hydrocarbons and fertilizers.
	2. High-quality waters should be identified and monitored to maintain and enhance water quality.
	3. On-site wastewater treatment facilities should be designed to effectively protect surface and ground water.
Minimize Site Disturbance	1. Total disturbance, especially within buffer areas, should be limited.
	2. Roads should follow existing contours.
	3. Disturbance for the construction of roads, basins, and other improvements should be kept to a minimum.
	4. Disturbance on individual lots should be limited.

Source: University of Massachusetts

15.9 Rural Residential

Enfield has substantial areas of rural land that is suitable for development as the land capability analysis shows in Chapter III. These areas are close to existing villages. They should be developed only at a density that can support on-site water and sewage disposal.

Innovative land use planning, including cluster development, should be utilized whenever possible.

15.10 Villages

Each of Enfield's villages has a unique history and mix of land use. They each have their own identity and vital role to play in Enfield's future just as they have in the past. The New England village is an important part of the heritage of a town like Enfield and needs to be protected. Villages can assimilate new development and actually benefit from it, if land use controls are designed to do so.

Definitions of what a village is vary. One definition by L. Houston, in a recent article in "Small Town" is as follows:

> A village is a predominantly residential area with supporting commercial and public activities lying near its center. It does not have a clear distinction between residential and non-residential areas.
>
> A village is compact relative to its surroundings and to traditional suburban tract development, and it is easily distinguishable from the surrounding undeveloped land.
>
> The density mix and arrangement of land uses encourages pedestrian movement among local origins and destinations.

Enfield should encourage the continued existence of its villages and encourage a compatible mix of land uses including residential, commercial, and public. Each Village has its own history and flavor which should be maintained. Current zoning should be changed to allow and encourage a mix of uses in and around existing villages to provide additional areas for new village development.

The village areas shown on the future land use map allow for the villages to grow. Enfield, Enfield Center and Shaker Village all should be encouraged to maintain their character while at the same time allowing for continued growth.

Traditional zoning, with minimum frontages, setbacks, and lot sizes, tend to stifle village development. Attempts at strict zoning in these areas makes for lengthy, cumbersome ordinances.

The goal in Enfield is to basically create land use regulations that would allow the existing villages to be built if they were proposed today.

15.11 Commercial/Industrial

Based on public input, a majority of the citizens of Enfield want commercial and industrial growth of a type and scale that is compatible with its rural setting.

Commercial development is necessary in Enfield to meet the area demand for jobs, goods and services. It is also needed to provide property tax relief.

The I-89 corridor remains Enfield's most suitable area for most commercial and industrial development despite its distance from town services and variable soil suitability. However, its ease of access and limited impact on Enfield's villages and rural residential areas can be viewed as a positive factor. However, extremely large-scale commercial or industrial growth is discouraged while environmentally sound light industry, wholesale and small retail commerce is encouraged. Also Enfield should continue and expand cooperative agreements with Lebanon to service this area.

Future growth along Route 4 and 4A will require careful site plan review and layouts to minimize impacts on traffic flow, adjoining landowners, scenic and natural resources. It is desirable to have as few access points onto these routes as possible and uses should be screened to avoid the appearances associated with strip highway commercial growth.

XVI. IMPLEMENTATION

16.1 Introduction

The success of a master plan in shaping future growth patterns and in influencing public policy decisions is dependent upon the degree to which the plan is actually carried out by those responsible for its implementation.

The one overriding implementation strategy for the entire plan is that it not be put on a shelf and forgotten. It needs to be implemented and used regularly. A fixed, yearly date (such as the first Planning Board meeting in May, for example) should be set aside for a yearly review of the Master Plan. All goals should be reviewed and their status and priority discussed, as well as a discussion as to which chapter(s) should be revised in the year ahead.

The implementation plan below is simple and straightforward. Each of the goals established by this plan has been assigned to a department, board or commission for implementation. Each group should receive a set of their goals and a letter indicating that the Planning Board would like a yearly report on the status of each goal. In this way the plan belongs not just to the Planning Board but to the town as a whole.

16.2 Implementation

"Quality is never an accident. It is always the result of intelligent effort. There must be the will to produce a superior thing."

John Ruskin

Goal	Primary Responsibility
14.2 Historic Resources Goals	
1	All
2	Planning Board
3	Heritage Commission
4	Heritage Commission
5	Heritage Commission
6	Planning Board
7	Planning Board
8	Planning Board
9	Heritage Commission
10	Planning Board
11	Selectmen
12	Selectmen
14.3 Natural Resources Goals	
1	Planning Board
2	Planning Board
3	Planning Board
4	Planning Board
5	Planning Board
6	Planning Board
7	Planning Board
8	All
9	Selectmen
10	Conservation Commission
11	Conservation Commission
12	Selectmen
13	Planning Board

Goal		Primary Responsibility
14.4	Population Goals	
	1	Planning Board
	2	Selectmen
14.5	Housing Goals	
	1	Planning Board
	2	Selectmen
	3	Selectmen
	4	Planning Board
	5	Planning Board
	6	Selectmen
	7	Selectmen
	8	Selectmen
	9	Planning Board
14.6	Economic Development Goals	
	1	Selectmen
	2	Selectmen
	3	Planning Board
	4	Selectmen
	5	Selectmen
	6	Selectmen
	7	Planning Board
	8	Selectmen
	9	Planning Board
	10	Selectmen
	11	Selectmen
14.7	Land Use Goals	
	1	Planning Board
	2	Planning Board
	3	Planning Board
	4	Selectmen
	5	Selectmen
	6	Planning Board
	7	Planning Board
	8	Planning Board
	9	Planning Board

10	Planning Board
11	Planning Board

Goal	Primary Responsibility
14.8 Construction Materials Goals	
1	Planning Board
2	Planning Board
3	Planning Board
4	Planning Board
5	Planning Board
6	Planning Board
14.9 Recreation Goals	
1	Selectmen
2	Selectmen
3	Recreation Commission
4	Selectmen
5	Selectmen
6	Recreation Commission
7	Recreation Commission
8	Recreation Commission
9	Selectmen
10	Selectmen
11	Recreation Commission
12	Selectmen
13	Selectmen
14	Selectmen
14.10 Transportation Goals	
1	Selectmen
2	Selectmen
3	Selectmen
4	Planning Board
5	Planning Board
6	Selectmen
7	Planning Board
8	Planning Board

9	Selectmen
10	Selectmen
11	Planning Board
12	Planning Board
13	Recreation Commission

Goal	Primary Responsibility

14.11 Community Facilities Goals

1	Planning Board
2	Planning Board
3	Budget Committee
4	Selectmen
5	Planning Board
6	Planning Board
7	Planning Board
8	Planning Board
9	Planning Board
10	Selectmen
11	Selectmen
12	Selectmen
13	Planning Board
14	Selectmen
15	Selectmen
16	Selectmen
17	Selectmen

14.12 Financial Goals

1	Planning Board
2	All
3	All
4	Selectmen
5	Planning Board

14.13 Education Goals

1	School Board
2	School Board
3	Planning Board

16.3 Tools For Guiding Future Development in Enfield

Table 16.1 lists a number of techniques for guiding the future development of the town. Each one is a tool, better suited for some uses than others. No one technique can accomplish the goals or implement all of the policies set forth in the previous section. The brief discussion of techniques which follows, selects the tools available today which seem most appropriate for guiding development in town. As circumstances change and these techniques are improved, or new ones invented, a new set should be selected for Enfield.

Land use controls that are developed and adopted should:

- maintain the rural character
- be based on the capability of the land to support development
- be consistent with community attitudes
- consider the appropriateness of a site and effects on the neighborhood
- protect the natural environment
- protect and enhance villages
- protect Enfield's residents from adverse impacts of neighboring land uses
- accommodate population and economic growth in keeping with traditional land uses and density patterns
- be reasonable and enforceable
- be flexible, yet objective, explicit and legally defensible
- acknowledge uncertainty about the future and be designed to control unforeseeable land uses and land use changes

TABLE 16.1
TECHNIQUES FOR GUIDING GROWTH

Subdivision Regulations
Site Plan Review Regulations
Zoning Ordinance
Performance Zoning
Overlay Zones
Density/Intensity Bonus
Cluster Development
Historic District
Development Right Acquisition
Transfer of Development Rights
Conservation Restriction

Point System for Evaluating Development Proposals
Local Bylaw
Building Code
Capital Improvement Plan

Subdivision Regulations

Enfield has subdivision regulations which control the way in which land is divided into lots and building development. The goals of Enfield's regulations are to foster the development of an economically and environmentally sound and stable community and to safeguard and protect the people of the town of Enfield, the taxpayer and the public from the consequences of improper subdivision, planless growth and haphazard development by:

- Protecting and preserving the rural character of the town.
- Protecting neighboring and neighborhood land uses, interests, values and concerns through harmonious development of the town and its environs.
- Preserving land values and avoiding increased real estate tax burdens.
- Promoting and protecting the amenities of the town through provisions for parks, playgrounds and other recreation areas and the preservation of the environment, natural beauty, trees, wetlands, lakes, ponds, streams and rivers, shoreland wildlife habitat, and other natural and historic resources, values and features.
- Preventing such scattered or premature subdivisions as would involve danger or injury to health, safety, or prosperity by reason of the lack of water supply, drainage, sewage disposal, transportation, schools or other public services; or necessitate excessive expenditure of public funds for the supply of such services.
- Assuring the adequate provision of safe and convenient traffic access and circulation, both vehicular and pedestrian, through the proper design, construction, arrangement and coordination of streets and ways within a subdivision and in relation to existing or planned streets.
- Providing uniform standards and procedures for observance by both the subdivider and the Planning Board, thus encouraging the equitable handling of all subdivision plans.

Site Plan Review

Towns with a master plan, subdivision regulations and zoning may empower the Planning Board to review and approve or disapprove site plans for the development of tracts for non-residential and multi-family uses. Under site plan review, projects can be evaluated in greater detail than under zoning or subdivision. Requirements for site access, drainage, parking, pedestrian circulation, exterior handicapped features, public utilities and landscaping can be established. The following concepts should be included in site plan regulations for Enfield:

- Architecture, scattered siting, green spaces and landscaping influence the rural character of the town.
- Topography should be utilized to minimize both visual impact from the highway and highway noise from the development.
- Double-pitched rather than single-slant or flat roofs are preferable; green areas around each building reduce problems due to water runoff.
- Tenant mix minimizes traffic impact by spreading it over the day; a small number of residential tenants contributes to the security of property.
- High property tax income for the town with minimal outlay for town services is desirable.

Performance Zoning

Performance zoning is a system which controls land use and the intensity of those uses by regulating the impacts, or performance of those uses. Undesirable uses can be prohibited as in traditional zoning. Performance measures include erosion potential, drainage and runoff considerations, access and parking needs, noise, glare, emissions, effluents, impact on community facilities and services, compatibility with existing development, open space, density, the ratio of floor area to lot size. Buffer areas are often used to separate different land uses to eliminate or minimize incompatibilities and reduce adverse impacts.

Overlay Zones

Overlay zones are like zoning districts but occur when a certain set of circumstances are present rather than being fixed on a map. Overlay zones may be associated with standards more stringent than the controls necessarily in place in a given location and are therefore often used to protect natural resources and critical natural areas. For example, an overlay zone could occur whenever

a slope of greater than 25% was encountered. The absolute policy of no development in areas with slopes greater than 25% could be implemented in this way. Wetland, floodplain, slope and agricultural lands are commonly protected by overlay zones.

Density/Intensity Bonus

Underlying the use of density/intensity bonuses is the philosophy that individuals should be rewarded for good development or development that offers special benefits or amenities to the town. These are often used to encourage affordable housing.

Cluster Development

Cluster development is a form of density bonus whereby a developer may locate buildings closer together then would otherwise be permitted. The benefit to the town is the resulting open space. Other advantages to cluster development include reduced construction costs, site-responsiveness and flexibility in site planning, which may result in protection of natural resources such as agricultural land, the ability to efficiently deliver public services and minimal visual impacts.

Development Rights Acquisition

In order to prevent development of important natural or scenic areas, the town could pass a bylaw which would permit the town to negotiate for the purchase of development rights from owners of a special property. This would also necessitate appropriating funds to acquire these rights. The owners of the land would retain title to the land and rights for permitted uses. The Society for the Protection of NH Forests is a good source for assistance.

Transfer of Development Rights

Transfer of development rights allows developers to exceed the recommended density in one area of town provided that other areas of town were not developed to the allowable density. This shift of the development rights to non-adjacent parcels would allow developers to build the same amount of dwelling units but would provide an incentive for them to avoid critical natural areas.

Though this method of guiding growth might, in theory, be effective in keeping development out of certain portions of town, it cannot be viewed as a sole option, and is very complicated to administer. It is not recommended.

Conservation Restriction

New Hampshire has had, for several years, a program whereby a landowner can accrue substantial tax benefits while retaining title to his land by donating a "conservation restriction" to the town. This legally binding document, executed at the discretion of the landowner, can effectively prevent development of the land forever. In return, the landowner receives federal income tax reductions, estate tax reductions, and local property tax relief. He retains title to the land and can continue to use the land within the (self-imposed) limitations of the restriction. Like donations of land, this technique should be promoted and used along with other protection methods.

Point System for Evaluating Development Proposals

A point system could be adopted as a way to evaluate development proposals. It could be used by the Selectmen prior to issuing or denying a building permit or by the Planning Board as part of its subdivision or site plan review. While absolute policies dictate which uses are allowed any place or no place in town and which areas of town may not be developed, a point system could help decisionmaking for relative and density policies.

Local Bylaws

Towns may adopt bylaws for specific purposes relating to the protection of public health. Persuant to RSA 147:1, health officers may make regulations for the prevention and removal of nuisance relating to public health. These regulations can be as simple or as complex as the town may wish, but must have direct relation to the protection of the public health. These could include a septic system bylaw and an underground storage tank bylaw which sets standards for the installation of new underground storage tanks. Wetland and floodplain bylaws are common protection techniques in New Hampshire but are better handled as zoning overlay districts.

16.4 References

Here is a list of references that the Planning Board should have in its library to help implement the Future Land Use Plan.

"Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development" by Robert Yaro and Randall Arendt. Lincoln Institute of Land Policy, 1988.

"Performance Streets" by the Buck County Planning Commission (PA), 1980.

"Preserving Rural Character" by Fred Heyer. American Planning Association, 1990.

"Reinventing the Village" by Susan Sutro. American Planning Association, 1990.

"Vermont's Scenic Landscapes: A Guide for Growth and Protection" by the Vermont Agency of Natural Resources, 1991.

"The Village Planning Handbook" by the Bucks County Planning Commission (PA), 1989.

APPENDIXES

A. Public Participation

B. Soil Lot Size

C. Class VI Highways

APPENDIX A-1

RESULTS

Enfield MASTER PLAN

BUSINESS SURVEY

1. Please indicate the type of business you own/operate: (#)

2	manufacturing	4	professional services (health, legal, etc)
1	transportation, communications, utilities	3	lodgings
8	retail trade	1	recreation
3	wholesale trade	2	agriculture & forestry
1	finance, insurance or real estate	1	construction
		-	mining
2	personal and business services	3	other _____
3	automotive services		

2. Please indicate the number of full-time and part-time employees, including owner: (#)

71	full-time	61	part-time

3. How many additional jobs do you anticipate creating in the next five years: (#)

39	new full-time	32	new part-time

4. What levels of education and skills will be needed by new employees (please indicate the number of employees): (#)

13	high school diploma	0	graduate school
8	vocational degree or training	7	on-the-job training
2	2-year college degree	2	other _____
5	4-year college degree		

5. How do you rate the following local factors in terms of their overall effect on the business climate in Enfield? (%)

	Strength	Weakness	Neutral
Transportation	11	20	62
Communications	11	35	42
Utilities	23	20	37
Capital	0	38	46
Size of work force	11	31	50
Quality of work force	8	23	54
Skill/education level of work force	0	27	58
Education/training resources	4	35	50
Housing costs	23	27	31
Distance to markets	19	27	35
Other _____	0	12	8

6. How do you rate the overall affect of the Town's regulations on your current business or expansion plans? (0/0)

15	permissive	23	prohibitive
35	restrictive	31	no effect

7. What aspects of the Enfield Zoning Ordinance and other land use regulations may limit use of your property for expansion plans: (0/0)

50	types and kinds of permitted uses	19	setbacks
23	location and size of zoning districts	12	construction/development standards
38	signage	42	review and approval process
8	parking	12	administration and enforcement
12	lot sizes	27	site plan review regulations
15	subdivision regulations	15	other

8. General or specific comments on Town regulations: SEE PLANNING BOARD FILES

9. Do you think existing commercial and Industrial zones are adequate in size and location? (0/0)

23 Yes 31 No

Explain SEE PLANNING BOARD FILES

10. What additonal actions could the town take to encourge and support commercial and/or industrial growth?

SEE PLANNING BOARD FILES

TOTAL SURVEYS SENT OUT: 106; TOTAL RETURNED: 26

APPENDIX A-2

TOWN OF ENFIELD
MASTER PLAN SURVEY

RECREATION SURVEY OF COMMUNITY GROUPS AND ORGANIZATIONS

NAME_____**ORGANIZATION**_____

(Please use back of page if you need more room)

1. Does your organization provide recreation opportunities for Enfield residents? Yes___No_____.

If yes, would you please identify them_____
_____
_____
_____

2. Are these aimed at any portion of the community's population (members only, preschool, elderly, women, etc) in particular? Yes____No_____.

If yes, which group or groups?_____
_____
_____

Do these groups have any particular needs which your organization feels deserve special attention in planning recreation opportunities? Yes_____No_____.

What are these needs?_____
_____

3. Does your organization operate or maintain any recreation or open space facilities with the Town? Yes_____No_____.

If so, would you please list these facilities by type, size and number. Also, please locate them on the attached maps.

_____

_____

_____

Who are these facilities currently made available to?

_____

_____

4. Does your organization currently sponsor or operate any recreational/educational programs or activities?
Yes___No_____

If yes, would you please cite the programs or activities below and indicate who may enroll

_____

_____

5. Does your organization have any long range plans for providing additional recreation or open space opportunities for the residents of Enfield? Yes____No_____.

If yes, please explain and locate on the enclosed map.

_____

_____

6. What does your organization envision as the most pressing problem concerning recreation and open space development currently facing the Town? List in order of priority.

1._____
2._____
3._____

7. What additional recreational programs and services should the Town offer to its residents? _____

_____

_____

8. Please add any additional comments below. Thank you very much.

APPENDIX A-3

EXAMPLE OF TOWN DEPARTMENTS SURVEY

ENFIELD MASTER PLAN

LIBRARY

1. Describe land and buildings managed by the library.

2. Describe goals and objectives of the library system.

3. List facilities and services available

4. Number of volumes and other resources on hand.

5. Number of card holders and circulation figures for last year.

6. List personnel by job category.

7. Provide a breakdown of your current budget.

8. What are existing expansion plans?

9. What is the biggest need of the library right now?

10. What do you think will be the biggest need in five years?

11. What improvements could be made in the organizational structure of the library to improve services?

12. Additional comments.

Town of Enfield, New Hampshire
Planning Board

P.O. Box 373
Enfield, New Hampshire 03748
Tel. 603-632-4067* FAX 603-632-5182
TDD 603-632-4201

MEMO

TO: Enfield Community Renaissance Program Participants (see attached list)

FROM: Alisa Golodetz, Community Planner AG

RE: Enfield Renaissance Committee

DATE: July 5, 1994

Thank you for participating in the Enfield Community Renaissance Program. At the final session, many participants expressed an interest in getting together to begin carrying out some of the ideas which were generated during the program. Several people met as planned on June 16 and decided to call their group the Enfield Renaissance Committee.

The Enfield Renaissance Committee will be meeting again on WEDNESDAY, AUGUST 3, 1994 at 7:00 pm in the conference room on the first floor of Whitney Hall. Margaret and Terry Terry have generously volunteered to facilitate this meeting at which the organization of, goals for, and actions plans for the group will be determined. There are several proposed projects including creating a forum for publicizing information about Enfield and developing a town landmark or logo. Additionally, a corporation owning land near Exit 15 of Interstate 89 is planning to develop there. The corporation is interested in working cooperatively with the town to create a project of interest and benefit to the town as well as to themselves.

We hope that you can attend this very important and exciting meeting. It is a chance for you to be involved in developing concrete plans for improving the economic viability of Enfield. If you know someone else who may be interested in participating, please invite them to come. This meeting is open to the public and will be publicly announced.

If you would like more information about the Enfield Renaissance Committee, please feel free to contact me at the number listed above or in the Planning and Zoning Office in the Police/Municipal Facility. I look forward to seeing you at the next meeting of the Enfield Renaissance Committee.

cc: Enfield Board of Selectmen
cc: Verne Crosier

ENFIELD COMMUNITY RENAISSANCE PROGRAM
PARTICIPANTS

Howard Adams
Cecilia Aufiero
Clifton Below
Ron Berthasavage
Mary Campbell
Marjorie Carr
Greta Crilley
Sylvia de Montigny
Bert Gilbert
Bonnie Hemberger
Mike Hemberger
Sybil Ibey
Tim Jennings
Ray Lobdell
Jim Martel
Lynne Martel
Kaye Mirski
Evelyn Palmer
Mary Quintasa
Nancy Scovner
Tim Taylor
Margaret Terry
Terry Terry

APPENDIX A-5

ENFIELD COMMUNITY PROFILE

(Complete Report on file with Planning Board)

TOWN OF ENFIELD, NEW HAMPSHIRE

COMMUNITY PROFILE STEERING COMMITTEE

Dear Enfield Community Profile Participants:

Thank you all for your enthusiastic and positive participation in Enfield's Community Profile. It was a great success with about 70 people attending over the day and a half. All the feedback we have received has been upbeat with particular attention paid to the delicious food offered at the potluck!

We hope the Profile was a worthwhile way for each of you to spend part of your busy weekends and that you enjoyed sharing your perspectives on and hopes for Enfield. So many good ideas were developed and we look forward to seeing them put into action! This report will serve as a reminder of all the hard work we did and we hope that it inspires further participation. The participant list in the appendix should help us all stay in touch as we work towards our goals.

Creating a collective vision for our future and an effective action plan to achieve those goals is never an easy task, but we certainly made an admirable beginning. As we all expressed in our visioning exercise on Friday evening, Enfield is a special place. We hope it will remain that way as we move towards the 21st century with the renewed energy, valuable information, and strong community spirit generated at the Profile.

Thank you all again and may our endeavors enjoy great success!

Best Wishes,

Sandy Chouinard

Sandy Chouinard
for the
Enfield Community Profile Steering Committee

PO Box 373, Enfield, New Hampshire 03748 • Telephone 603-632-4067 • FAX 603-632-5182 • TDD 603-632-4201

TABLE OF CONTENTS

APPENDIX

Enfield Community Profile Participants

Celie Aufiero - RR1, Box 288, Canaan, NH 03471
Harry Auger - RR1, Box 272, Enfield, NH 03748
David Beaufait - RR2, Box 112, Enfield, NH 03748
Barbara Jean Beede - RR2, Box 36, Enfield, NH 03748
Clifton Below - 25 Perley Ave., Lebanon, NH 03766
James Broehl - RR2, Box 106B, Enfield, NH 03748
Henry and Pat Brown - P.O. Box 368, Enfield, NH 03748
David and Sharon Carr - RR4, Box 307, Enfield, NH 03748
Sandy Chouinard - P.O. Box 11, Enfield, NH 03748
Sue Cronenwett - RR2, Box 43, Enfield, NH 03748
Emily Cuthbertson* - P.O. Box 92, Enfield, NH 03748
Harrison Drinkwater - HC 64, Box 211, Lebanon, NH 03766
Betty Eastman - RR2, Box 17B, Enfield, NH 03748
Alf Elvestad - RR2, Box 165, Enfield, NH 03748
April Farewell - RR1, Box 175, Enfield, NH 03748
Don Gamache - 29 Lower Shaker Village, Enfield, NH 03748
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Geraldine Goslar - P.O. Box 924, Enfield, NH 03748
Sue Hagerman* - P.O. Box 60, Enfield Center, NH 03749
Steve Hanlon - P.O. Box 513, Hanover, NH 03755
Charles and Mary Harrington - 4 Patricia Court, Enfield, NH 03748
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Christina and Ray Howe - RR2, Box 443, Enfield, NH 03748
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Ray Lobdell - Lobdell Associates, RFD1, Box 50, Landaff, NH 03585
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Elaine Malm - RR2, Box 142, Enfield, NH 03748
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Keith Pfeiffer - P.O. Box 787, Enfield, NH 03748
Jane Plumley - P.O. Box 756, Enfield, NH 03748
Kevin and Tammy Poitras - P.O. Box 398, Enfield, NH 03748
Rebecca Powell* - RR2, Box 25, Enfield, NH 03748
Mary Quintana - P.O. Box 350, Enfield, NH 03748
Ilene Reed - RR2, Box 376, Enfield, NH 03748
Kip Riley - 7 Hemlock Hills, Enfield, NH 03748
June Rock - P.O. Box 924, Enfield, NH 03748
Joyce Ruel - P.O. Box 67, Enfield, NH 03748
Nancy Scovner - RR1, Box 293B, Canaan, NH 03741
Howard Shaffer, III* - P.O. Box 299, Enfield, NH 03748
Chuck Stone - Enfield Elementary School, Enfield, NH 03748

Frans Strandberg - RR2, Box 435, Enfield, NH 03748
Harold Toms - RR2, Box 431G, Enfield, NH 03748
Ed and Mary Tyler - 6 Mountain View Dr., Enfield, NH 03748
Bill Warren - P.O. Box 640, Enfield, NH 03748

Enfield Community Profile Coordinators

Delia Clark* - P.O. Box 668, Wilder, VT 05088
Alisa Golodetz* - P.O. Box 470, Hartland, VT 05048

Enfield Community Profile Large Group Facilitators

Jerry Howe - UNH Cooperative Extension, 313 James Hall, Durham, NH 03824
Bill McMaster - UVM Cooperative Extension, HCR 31, St. Johnsbury, VT 05819

* Indicates Small Group Facilitators

APPENDIX B

SOIL TYPES, LOT SIZES AND CONDITION GROUPS

Soil Condition Groups /[1]	Symbol	Soil Name	Development Potential	Lot Size	% Enfield Land Area
3	1	Ondawa Fine Sandy Loam, Frequently Flooded	VL	N/A	.02
3	1*	Occum Fine Sandy Loam, Frequently Flooded	VL	N/A	.22
3	102	Sunday Loamy Sand	VL	N/A	.02
2	104	Podunk Fine Sandy Loam	VL	N/A	.14
1	105	Rumney Fine Sandy Loam	VL	PD	.60
3	108	Hadley Silt Loam, Occasionally Flooded	VL	N/A	.02
1	109	Limerick Silt Loam	VL	PD	.42
1	114	Walpole-Binghamville	VL	PD	.17
4	130C*	Hitchcock Silt Loam	M	75,000	.04
2	132A	Dartmouth Silt Loam	M	75,000	.03
1	15	Searsport Mucky Peak	VL	VP	.22
3	2*	Suncook Loamy Fine Sand	VL	N/A	.25
3	201	Ondawa Fine Sandy Loam, Occasionally Flooded	VL	N/A	.02
4	22A	Colton Loamy Sand	M	40,000	.03
4	22C	Colton Loamy Sand	M	45,000	.01
4	24A	Agawam Fine Sandy Loam	M	40,000	.01
4	24B	Agawam Fine Sandy Loam	M	40,000	.06
7	254B	Monad Mock-Hermon, Stony	H	40,000	.19
7	254C	Monad Mock-Hermon, Stony	H	45,000	.16
7	254D	Monad Mock-Hermon, Stony	M	60,000	.20
7	255B	Monad Mock-Hermon, Very Stony	H	40,000	.48
7	255C	Monad Mock-Hermon, Very Stony	H	45,000	2.78
7	255D	Monad Mock-Hermon, Very Stony	M	60,000	3.14
7	255E	Monad Mock-Hermon, Very Stony	VL	N/A	1.31
4	26A	Windsor Loamy Fine Sand	M	40,000	.03
4	26B	Windsor Loamy Fine Sand	M	40,000	.21
4	26C	Windsor Loamy Fine Sand	M	45,000	.04
4	26E	Windsor Loamy Fine Sand	VL	N/A	.03
4	27B	Groveton Fine Sandy Loam	H	40,000	.04
2	28A	Madawaska Fine Sandy Loam	M	60,000	.04
2	28B	Madawaska Fine Sandy Loam	M	60,000	.01
1	295	Greenwood Mucky Peat	VL	VP	1.97
-	298	Gravel Pit	VL	N/A	.19
4	310A	Quomset Loamy Sand	M	40,000	.04
4	310B	Quomset Loamy Sand	M	40,000	.24
4	310C	Quomset Loamy Sand	M	40,000	.04
4	310E	Quomset Loamy Sand	-	-	.05
2	313	Deerfield Loamy Fine Sand	M	60,000	.05
6	330B	Bernardston Silt Loam	H	50,000	.32
6	330C	Bernardston Silt Loam	M	75,000	.91
6	330D	Bernardston Silt Loam	L	100,000	.77
6	331B	Bernardston Silt Loam, Very Stony	H	50,000	.34
6	331C	Bernardston Silt Loam, Very Stony	M	75,000	1.71
6	331D	Bernardston Silt Loam, Very Stony	L	100,000	1.88
6	331E	Bernardston Silt Loam, Very Stony	VL	N/A	1.21
2	334B	Pittstown Loam	M	60,000	1.44
2	334C	Pittstown Loam	M	90,000	1.24
2	336B	Pittstown Loam, Very Stony	M	60,000	.96
2	336C	Pittstown Loam, Very Stony	M	90,000	1.89
2	336D	Pittstown Loam, Very Stony	L	N/A	.64
1	341A	Stissing Silt Loam, Very Stony	VL	PD	.51
1	341B	Stissing Silt Loam, Very Stony	VL	PD	.92
5	347A	Lyme-Moosilauke	VL	PD	.25
7	355C	Hermon Fine Sandy Loam	H	45,000	.13
7	355D	Hermon Fine Sandy Loam	M	60,000	.27
7	355E	Hermon Fine Sandy Loam	VL	N/A	.02

APPENDIX B

SOIL TYPES, LOT SIZES AND CONDITION GROUPS

Soil Condition Groups /[1]	Symbol	Soil Name	Development Potential	Lot Size	% Enfield Land Area
5	360B	Cardigan-Kearsarge Complex	L	60,000	.29
5	360C	Cardigan-Kearsarge Complex	L	80,000	.50
5	360D	Cardigan-Kearsarge Complex	VL	N/A	.34
5	361B	Cardigan-Kearsarge-Rock Outcrop Complex	L	80,000	.04
5	361C	Cardigan-Kearsarge-Rock Outcrop Complex	L	100,000	2.40
5	361D	Cardigan-Kearsarge-Rock Outcrop Complex	VL	N/A	5.52
5	361E	Cardigan-Kearsarge-Rock Outcrop Complex	VL	N/A	5.86
4	36A	Adams Loamy Sand	M	40,000	.01
4	36B	Adams Loamy Sand	M	40,000	.38
4	36C	Adams Loamy Sand	M	45,000	.60
4	36E	Adams Loamy Sand	VL	N/A	.33
1	395	Chocorua Mucky Peat	VL	VP	.35
-	398	Quarries, Pits	VL	N/A	.02
2	4*	Pootatuck Very Fine Sandy Loam	VL	N/A	.25
3	401	Occum Fine Sandy Loam, Occasionally Flooded	VL	N/A	.05
1	406	Medomack Silt Loam	VL	VP	.05
1	5*	Rippowam, Fine Sandy Loam	VL	N/A	.30
1	534	Binghamville Silt	VL	PD	.04
2	558B	Skerry Fine Sandy Loam	M	60,000	.64
2	559B	Skerry Fine Sandy Loam, Very Stony	M	60,000	.73
2	559C	Skerry Fine Sandy Loam, Very Stony	M	90,000	1.26
2	559D	Skerry Fine Sandy Loam, Very Stony	L	120,000	.17
6	56B	Becket Fine Sandy Loam	H	50,000	.22
6	56C	Becket Fine Sandy Loam	M	75,000	.42
6	56D	Becket Fine Sandy Loam	M	100,000	.12
6	57B	Becket Fine Sandy Loam, Very Stony	H	50,000	.47
6	57C	Becket Fine Sandy Loam, Very Stony	M	75,000	1.11
6	57D	Becket Fine Sandy Loam, Very Stony	M	100,000	1.03
6	57E	Becket Fine Sandy Loam, Very Stony	VL	N/A	.20
2	59B	Waumbek Loamy Sand, Very Stony	M	50,000	.92
2	59C	Waumbek Loamy Sand, Very Stony	M	75,000	.38
2	613	Crogan Loamy Fine Sand	M	75,000	.15
1	614	Kinsman Sand	VL	PD	.17
5	61B	Tunbridge-Lyman Rock Complex	L	60,000	.14
5	61C	Tunbridge-Lyman Rock Complex	L	80,000	2.54
5	61D	Tunbridge-Lyman Rock Complex	VL	N/A	4.01
5	61E	Tunbridge-Lyman Rock Complex	VL	N/A	4.40
7	62B	Charlton Fine Sandy Loam	H	40,000	.03
7	62C	Charlton Fine Sandy Loam	H	45,000	.17
7	62D	Charlton Fine Sandy Loam	M	60,000	.07
1	633	Pemi Silt	VL	PD	.01
7	63B	Charleton Fine Sandy Loam	H	40,000	.08
7	63C	Charleton Fine Sandy Loam	H	45,000	.29
7	63D	Charleton Fine Sandy Loam	M	60,000	.26
7	63E	Charleton Fine Sandy Loam	VL	N/A	.53
1	647A	Pillsbury Fine Sandy Loam, Very Stony	VL	PD	1.06
1	647B	Pillsbury Fine Sandy Loam	VL	PD	1.77
6	701B	Becket-Skerry Assoc., Gently Sloping, Very Stony	M	**	.00
7	711D	Monadnock-Hermon Assoc., Hilly, Very Stony	M	**	.24
6	719D	Marlow-Tunbridge Assoc., Hilly, Very Stony	VL	**	2.22
6	719E	Marlow-Tunbridge Assoc., Steep, Very Stony	VL	**	3.13
6	720D	Marlow-Lyman-Rock Outcrop Complex, Hilly	VL	**	.86
6	720E	Marlow-Lyman-Rock Outcrop Complex, Steep	VL	**	.70
2	721B	Peru-Marlow Assoc., Gently Sloping, Very Stony	M	**	.23
2	723B	Peru-Pillsbury Assoc., Gently Sloping, Very Stony	VL	**	.12

APPENDIX B

SOIL TYPES, LOT SIZES AND CONDITION GROUPS

Soil Condition Groups /'	Symbol	Soil Name	Development Potential	Lot Size	% Enfield Land Area
5	726D	Rock Outcrop-Lyman Complex, Hilly	VL	**	.10
2	729B	Waumbek-Lyme Assoc., Undulating, Very Stony	VL	**	.00
1	731	Peacham and Ossipee Soils, Very Stony	VL	**	1.05
7	73B	Berkshire Loam, Very Stony	H	40,000	.02
7	73C	Berkshire Loam, Very Stony	H	45,000	.07
7	73D	Berkshire Loam, Very Stony	M	60,000	.12
7	73E	Berkshire Loam, Very Stony	VL	N/A	.13
6	76B	Marlow Fine Sandy Loam	M	50,000	.65
6	76C	Marlow Fine Sandy Loam	M	75,000	.67
6	76D	Marlow Fine Sandy Loam	L	100,000	.04
6	77B	Marlow Fine Sandy Loam, Very Stony	M	50,000	.21
6	77C	Marlow Fine Sandy Loam, Very Stony	M	75,000	1.36
6	77D	Marlow Fine Sandy Loam, Very Stony	L	100,000	2.18
6	77E	Marlow Fine Sandy Loam, Very Stony	VL	N/A	.50
2	78B	Peru Fine Sandy Loam	M	60,000	.83
2	78C	Peru Fine Sandy Loam	M	90,000	.10
2	79B	Peru Fine Sandy Loam, Very Stony	M	60,000	1.99
2	79C	Peru Fine Sandy Loam, Very Stony	M	90,000	3.10
2	79D	Peru Fine Sandy Loam, Very Stony	L	N/A	.13
3	8	Hadley Silt Loam, Frequently Flooded	VL	N/A	.02
2	819B	Peru-Tunbridge	L	60,000	.24
1	9	Winooski Silt Loam	VL	PD	.03
5	90B	Tunbridge-Lyman Complex	L	60,000	.38
5	90C	Tunbridge-Lyman Complex	L	80,000	.36
5	90D	Tunbridge-Lyman Complex	VL	N/A	.31
-	W	Water	-	-	6.33

N/A - Not Allowed
PD - Poorly Drained
VP - Very Poorly Drained
* - On Site Necessary
** - Order III Mapping, More Detailed Soil Survey Necessary
1/ - See Text
2/ - VH - Very High; H - High; M - Medium; L - Low; VL - Very Low

Source: Grafton County Conservation District

APPENDIX C

ROADS DISCONTINUED BY TOWN VOTE

These are no longer public right of ways as said roads were discontinued not subject to gates and bars therefore the town gives up all rights to the land which reverts to abutting landowners as stated in the 1986 New Hampshire Roads and Highways Manual page 27.
--preceding numbers correspond to road map location. ^ means that a portion is also Class VI and/or town maintained.

2. ^Blood Road: from the Enfield-Grafton town line to Rubenstein property (tax map 13 lot 20) except portion that is Class VI. 1917 Town Warrant Article 13 and 1933 Warrant Article 23.

15. ^Blue Jay Road: from intersection with Palmer road across route 4-A to intersection with Grafton Pond Road. 1884 Warrant Article 12 and 1928 Warrant Article 22C.

3. ^Chebacco Street: from intersection with Hazen Road to intersection with East Hill Road. 1885 Warrant Article 8.

16. Eastman Hill Road Area: Five different roadways, 3 between Enfield-Lebanon Town line, Eastman Hill Road, and Interstate 89. 1 from Potato Hill Road to Eastman Hill Road. 1 from Old Route 10 near Johnson property (tax map 6 lot 35) into AMCA property (tax map 6 lot 31). 1893 Warrant Article 10, 1894 Warrant Article 8, 1960 Warrant Article 21, 1962 Warrant Article 5.

17. Gerhardt Road: from intersection with Route 4 to intersection with Hardy Road. 1907 Town Warrant Article 13.

6.^Goodhue Hill Road: from the old town farm to the Grantham line and also a triangular piece on 4-A and Strickland property (tax map 40 lot 3). 1919 Town Warrant Article 18 and 1932 Article 25.

18. Hubbard Road: from intersection with Rice Road to intersection with Slack Road. 1939 Warrant Article 8.

19. Old Choate Road: from intersection with Lockehaven Road to intersection with Choate Road. 1932 Warrant Article 25A.

20. Old Shaker Mountain Road: from intersection with Route 4-A to the intersection with Smith Pond Road. 1932 Warrant Article 25B.

21. ^Palmer Road: from the Enfield-Grafton Town Line to Paine residence (tax map 5 lot 7). 1889 Warrant Article 11.

22. ^Rice Road: from Miles property (tax map 2 lot 51) to the intersection with Methodist Hill Road. 1928 Warrant Article.

23. Springfield Town Line: from the intersection with George Hill road to intersection with the Bog Road. 1884 Warrant Article 12.

14. Witter Road: from the intersection with Oak Hill Road to the intersection with Boys Camp road. 1916 Warrant Article.

APPENDIX C

CLASS SIX ROADS

The town does not maintain or accept any liability with said roads but they are a public right of way.

Numbers correspond to map location. ^ means that a portion is discontinued and/or town maintained.

1. Atherton: from Lebanon Town Line to the Plainfield Town Line.

2.^Blood Road: from Potato Road easterly 1600 feet, 100 feet from western corner of Haffenreffer's property (map 17 lot 20).

3. ^Chebacco Street: from the Canaan town line to the intersection with Hazen road which is also class six.

4. Crystal Lake Boat Launch: from Algonquin Road to Crystal Lake.

5. ^Fuller Hill Road: from the intersection with Shaker Boulevard to a point 100' westerly of Monmanney's property (map 25 lot 33).

6. ^Goodhue Hill Road: from the mobile home of Dixon (tax map 40 lot 1) to the Old Town Farm.

26. Hackett Road: from the Palmer residence (Tax map 39 lot 8) to the intersection with Goodhue Hill Road.

7. ^Hazen Road: from the house of Maurer (tax map 17 lot 15-2) to the intersection with Chebacco Street.

8. Mascoma Lake Boat Launch: from Shakoma Beach to Mascoma Lake.

9. McCallister Road: from the intersection with Methodist Hill Road to the Lebanon Town Line.

10. Old County road: from the intersection with U.S. Route 4 to the Lebanon town line.

11. Old Kluge Road: from the intersection with Kluge Road to the intersection with Lockehaven Road.

25. Old NH Turnpike: see individual sheet

12. Old Route 10 (Stony Brook/ Dartmouth College Road): from the Enfield--Grantham Town Line to the Bike Path and from the Lois Devins residence (tax map 6 lot 34) to the property of Whaleback Mountain Inc. (tax map 6 lot 30).

24. Old West Farms Road: from Rte 4 to Enfield-Canaan Town line.

13. Pinnacle Road: from the Grafton Town line to the intersection with Oak Hill Road and Grafton Pond Road.

14. West Canaan Road (Mud Pond Road): from the intersection with East Hill Road to the Canaan Town Line.

APPENDIX C

Previously Misclassified as Class VI

A. Eastman Hill Road: the portion in question is actually a different road that has been discontinued. (see discontinued roads on Eastman Hill).

B. First Right off of School Street: this is a private Right of Way and has never been accepted by town vote or approved by the Selectmen.

C. Georgia Avenue: this road was accepted by town vote in 1969 and no portion is class six.

D. Glen Road: this road is a private right of way as it was not accepted by town vote or by the Selectmen.

E. Goodwin Road: this is a private right of way and was not accepted by town vote or approved by the Selectmen.

F. Hardy Road: this road was laid out in 1906 and has never been discontinued and is still town maintained.

G. Hawley Drive: this road is a private road and has never been accepted by town vote or approved by the Selectmen.

H. Mascoma Heights Drive: only the portion that is tar is a town road, the remaining portion that was planned by the developers was never accepted by the Selectmen as a town road.

I. Oak Hill Road Extension: the portion in question is another road that has been made class six (see class six road--Pinnacle Road).

J. Quimby (Harry Nichols/ Darmsteder Road): this is a private road never accepted or maintained by the town.

K. Smith Pond Road: Town Road only to turn around, the remaining portion of the road to Smith Pond is a private right of way.