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Town of BROOKLINE MASTER PLAN UPDATE



Daniels Academy Building -- Brookline Town Hall

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Prepared by the Brookline Planning Board
with assistance from the Brookline Master Plan Committee

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BROOKLINE MASTER PLAN

1990

Prepared by:

Brookline Master Plan Committee
Brookline Planning Board

with assistance from:

Nashua Regional Planning Commission

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PLANNING BOARD**

1990

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BROOKLINE MASTER PLAN

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Chapter I.

Executive Summary

CHAPTER I

EXECUTIVE SUMMARY

The 1989-90 Master Plan Committee was comprised of eight Town residents from all walks of life and representing many of the Committees and Departments within Town. This Committee was established by the Planning Board in 1989 to update the 1985 Master Plan. One of the issues that the Committee found interesting was the number of activities, ordinances, and policies which many residents now take for granted are results of recommendations in the 1985 Master Plan.

Recommendations included in the 1985 Master Plan which have been implemented in the past five years:

- o Following up on the regional aquifer delineation study by acting to preserve known aquifers through aquifer protection zoning...
- o Develop and adopt wetland and floodplain protection ordinances to insure these are removed from the pool of developable land...
- o The Brookline Conservation Commission should continue to operate under its responsibility of promoting the protection and acquisition of open space and conservation land...
- o To help with the purchasing of critically important parcels of land, the [Conservation] Commission should consider establishing a capital reserve fund for future acquisition...
- o Brookline should consider revisions which encourage more efficient use of the best lands and which do not continue the "cookie-cutter" type subdivisions which prevail...
- o Brookline should require impact statements for relatively large scale developments as well as phasing plans...
- o Develop a Capital Improvements Plan...
- o Brookline should amend its subdivision and site plan review regulations to more carefully control site specific impacts of commercial development....
- o Brookline should develop regulations to better address the proper siting of access points off of the roadways to prevent unsafe traffic conditions...
- o Raise the funds needed to replace the aging [fire] tanker...
- o Consider replacing the existing police cruiser...
- o The Town should make plans for providing an additional 200 square feet of area for Police Department facilities...
- o The Town should begin consideration of alternatives to provide additional space for Town offices...
- o The Town consider computerizing all Town Departments....

- o The Recreation Commission make efforts to provide a cleared outdoor skating area for Townwide use during the winter...
- o The Town should plan and budget for its share of the costs of closing the Souhegan Regional Landfill....

The Master Plan Committee would also like to point out some of the major changes which were made from the 1985 Master Plan to the 1990 Master Plan Update. These include:

- o An entire chapter pertaining to housing.
- o A much more thorough examination of existing and future land use within Town, including recommendations by neighborhood. This chapter also includes data on the remaining vacant land in the Industrial-Commercial zone.
- o An inventory of all Town-owned land. Both in a table and a map showing every Town-owned parcel and its acreage.
- o Another Community Attitude Survey was completed, and the results shown and compared to the 1985 results.
- o More maps, to be used in conjunction with the larger maps which are located in Town Hall completed as part of the 1985 Master Plan.
- o Five sets of population projections instead of relying solely on those made by the New Hampshire Office of State Planning.
- o An update of the road conditions survey, which examines the overall conditions and problems of every road in Town.
- o A discussion of the bridges within Town and cul-de-sacs.
- o Additional standards included for the library (as developed by the American Library Association) and compared with the Brookline library.
- o A total revision to the section on solid waste disposal, as this has changed significantly since 1985. In addition, solid waste volume projections are now given, and a section on septage disposal now included.
- o A section on cemeteries has now been included.
- o An exhaustive list of approved unbuilt subdivisions has been included, indicating that over 250 lots have been approved and can be built at any time.
- o An estimated "maximum buildout" for Brookline to determine the long-term projected population that may occur within Town.
- o A section in which the amount of developed and undeveloped land is displayed in tables and mapped.

Major recommendations (also listed at the end of each chapter) found in this Master Plan Update include:

Natural and Cultural Resources

Slopes

The Planning Board should:

1. Ensure that scenic vistas will continue to be preserved.
2. Ensure that proper safeguards are applied to steep sloped sites to minimize hazards to downslope properties, and these safeguards usually mean costly engineering and landscaping solutions. For these reasons, active use of steep slope sites should be avoided wherever possible, or approached with extreme caution and subjected to a thorough review of the safeguards to be employed. If possible, the Planning Board and Town should consider preserving such areas as open space.
3. Amend the subdivision regulations by including soil erosion and sedimentation control provisions as has already been done in the non-residential site plan review regulations and the excavation site plan review regulations.

Soils

The Planning Board should:

1. Establish an official policy as to when a high intensity soils survey will be required of developers.

Wetlands

The Town should:

1. Promote the development of school and public environmental education programs that utilize the outdoors as natural classrooms.
2. Gain better control of environmentally important areas, through conservation easements, deed restrictions and purchase of development rights of land.
3. Re-examine the wetlands ordinance every few years to determine its effectiveness and make improvements, if necessary.

Floodplains

1. Brookline should attempt to use floodplains as recreational land/open space.

Aquifers

1. The Aquifer Protection Ordinance should be reviewed every few years to determine its effectiveness and make improvements, if necessary.

Open space/Easements

1. The Town boards should coordinate and publicize its acquired open space and easement location throughout town.

Conservation and Preservation

1. Brookline should adopt shoreland protection zoning to protect its two major lakes--Lake Potanipo and Melendy Pond.
2. The Conservation Commission should prepare a Conservation Plan as allowed under RSA 36-A.

Historic Resources

The Historical Society should be encouraged to:

1. Prepare a historic resources inventory of Brookline.
2. Prepare National Register listing for eligible local structures.

The Town Boards should:

3. Promote the upgrading, preservation, and protection of the Town cemeteries, and other historical resources.
4. Promote the establishment of additional scenic roads.

The Planning Board should:

5. Continue the practice of naming new roads with names of Brookline historical significance (such as Conneck, McIntosh, Captain Seaver, Captain Douglass, Shattuck, Parker) approved by the Historical Society.
recommended
6. Include historic resource preservation as a priority when possible in ordinance and regulation.

Transportation

1. The Planning Board should consider implementing traffic impact fees.
2. The Town of Brookline should implement a pavement management system for targeting roads for maintenance, resurfacing and reconstruction.
3. Frontage roads parallel with NH Route 13 within the subdivision(s) should be encouraged in order to limit the number of curb cuts on NH Route 13.
4. Access drives to developments on either side of NH Route 13 should be aligned to form a four-way intersection.
5. The Town should establish a sign ordinance to control the size, type, height, and location of signs to be put up in the future.

Community Facilities

General

1. Brookline should develop a schedule of assessments to soften the impact of development on community facilities and services.
2. Provide for handicapped access to community facilities.
3. Each Town department should develop long-term plans for capital equipment needs and include these in the CIP.
4. Each Town Department should recruit and train staff and reward them with public recognition and adequate protection equipment.

Town Facilities

1. Evaluate and act upon plans for providing the needed expansion area and improvements for the Town facilities--offices, police station, and library.

Fire Protection

1. The Fire Department should continue to actively participate with the Planning Board and Building Inspector to review subdivision, site and building plans to ensure adequate fire department access and fire protection for all new and existing developments.
2. The Fire Department should consider developing an ordinance to address false alarms by automated systems.

Solid Waste

1. The Town should develop a long-term cost-effective form of waste disposal which will meet local, state and federal requirements.

Schools

1. Cable TV should be hooked up in the gym to provide better access to such large events as Town meeting.
2. Continue the sidewalk program to link the Elementary School to the nearby area.

Recreation and Open Space

1. Plan, develop, and geographically distribute playgrounds, tennis courts, and picnic areas to add to the Town's existing recreation facilities.
2. The Recreation Commission should develop a recreation plan which will provide a long range program for the support, expansion, and improvement of park and recreational facilities in Brookline.

3. The Conservation Commission should coordinate and publicize the Town's open space and easement location throughout the Town.
4. The Town should establish a land acquisition policy so that a coordinated effort can be made to acquire/obtain land when it becomes available.
5. Build tennis courts at the existing ballfield.
6. Evaluate the present status of Melendy Pond Authority property and develop long-range plans for its future use to maximize benefit to the Town.
7. The Conservation Commission should establish a recreational trail system in the Melendy Pond area for community use.

Housing

1. The Town's Zoning Ordinance should be changed to:
 - a. Clarify with regard to manufactured housing.
 - b. Accommodate multi-family housing of more than two units if the lot size can support on-site water and septic systems.
 - c. Encourage strategies such as inclusionary housing (encouraging or requiring private developers to provide housing for moderate, low and very-low income households in exchange for density bonuses or zoning changes), elderly housing zones, cluster housing and accessory housing.
2. Encourage the inventory and protection of historic homes within Town.
3. The Planning Board should develop a process to assess the impact of the Town's zoning ordinance and subdivision regulations on housing to ensure that fair requirements exist so as not to prohibit reasonable opportunities for affordable housing to exist within Brookline, and to promote quality, economical development.

Land Use

1. Brookline should amend the Town's existing zoning ordinance to achieve the following:
 - a. Not allow new residential uses in the existing Commercial-Industrial zone and the newly proposed Commercial-Industrial areas.

- b. Add areas to the existing Commercial-Industrial zones. The following five areas could be added (as shown on the future land use map):
 - lots east of Ruonala Road and west of Route 13;
 - lots off Route 130 near the Hollis border;
 - lots east of Route 13 east of North Mason Road;
 - lots just north of the Massachusetts border west of Route 13; and
 - lots west of Route 13 south of Potanipo Hill.
- c. Allow accessory units and cluster developments as a way of increasing housing diversity. These may also fit appropriately in the Town Center area.
- d. Eliminate zoning that splits lots and zone along lot lines and visible features such as rivers and roads as much as possible. This will reduce confusion, and the workload of the Zoning Board of Adjustment.
- e. Rezone lots K-80 and K-81 to Residential-Agricultural.

General Zoning

1. Height restrictions should be created in the interest of public safety and to maintain scenic vistas.
2. The overall zoning ordinance should be reviewed and revised to create a coherent whole.

Chapter III.

Natural and Cultural Resources

CHAPTER III

NATURAL AND CULTURAL RESOURCES

This chapter examines the natural and cultural resources of the Town of Brookline. First, the natural features are identified which impose limitations or constraints to development. Particular emphasis is placed upon those natural features which determine land capability to support land uses of different intensities, such as topography, soils, and both surface and groundwater features. Second, the Town's cultural resources are discussed with regard to their importance to the Town and future planning considerations for their protection.

I. NATURAL RESOURCES

An understanding of Brookline's natural resource base is important when developing an overall plan to guide development. The following sections provide a brief description and inventory of the natural resources found within Town.

The Town of Brookline is located in the Lower Merrimack River Valley. Like most communities in the Nashua region, the Town is overlain by glacial till soils deposited as glaciers slowly retreated in a northwesterly direction over this region thousands of years ago. These glacial till soils are, in many areas of town, sparsely spread over granite or other types of bedrock.

A. Topographic Features

The topography of Brookline can generally be described as consisting of gently sloping hills located in three of its four corners with a central low-land which runs generally from the north-central portion of Town to the southeast. Topographic features consist of two characteristics: elevation and slope.

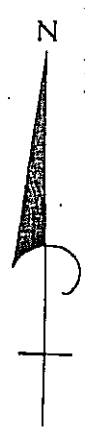
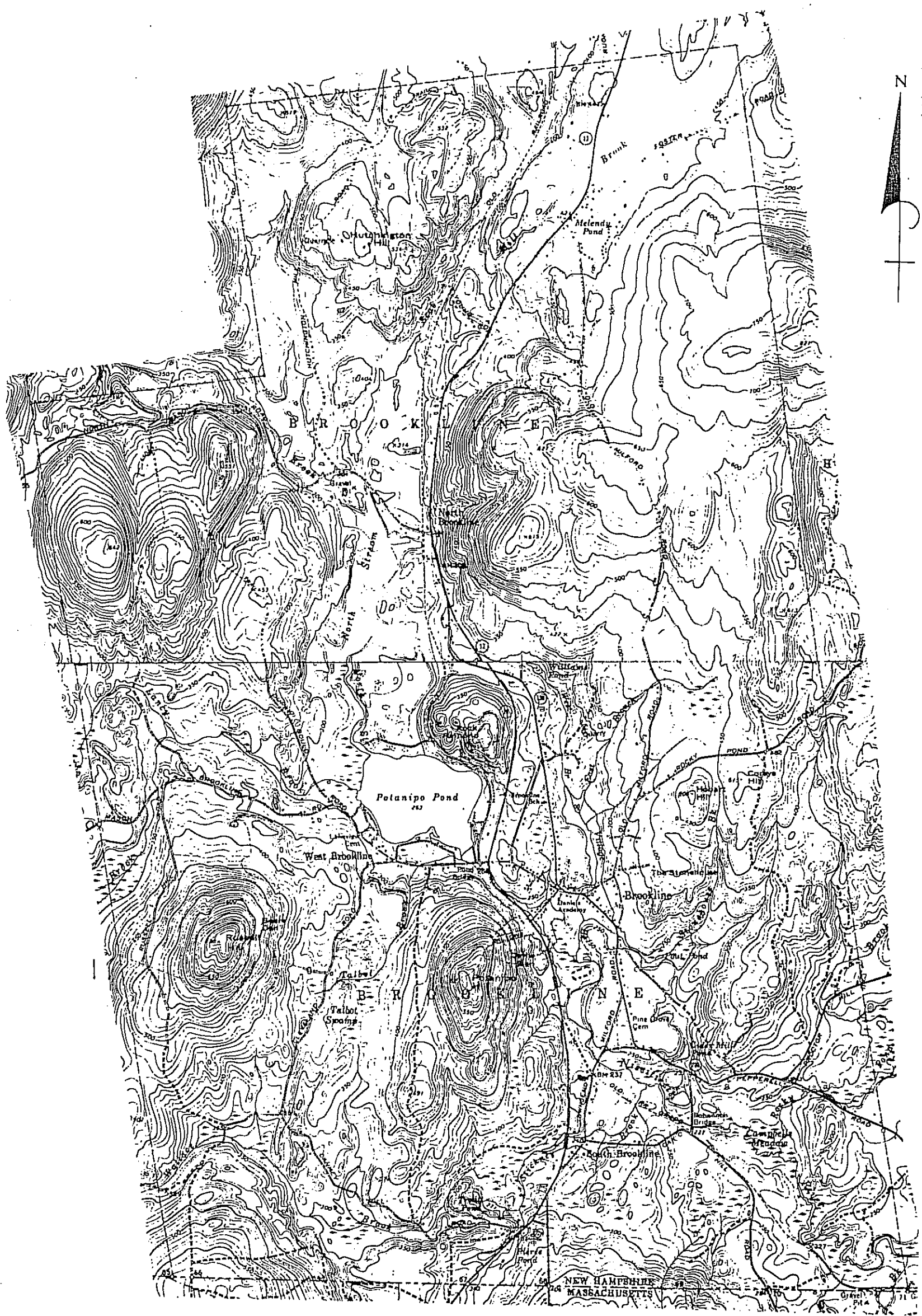
Elevation

Elevation is a measure of the height of a given point of land relative to Mean Sea Level. To make elevations comparable, they are expressed as "feet above Mean Sea Level" (ft. aMSL). Elevations in Brookline range from a low point of under 220 ft. aMSL, in the Town's southeast corner, to a high point of just over 800 ft. aMSL along the Town's eastern border with Hollis, on Birch Hill. Other significant elevations include Russell Hill (Big Muscatanipus) which rises to 738 ft. aMSL, and Potanipo (Little Muscatanipus) Hill and Hutchinson Hill, both over 600 ft. aMSL (See Topographic Map on page III-2).

Building on higher elevations and steep slopes poses problems for septic systems, access, and water supply, due to thin soil cover and shallow depth to bedrock. Conversely, development in low-lying areas may damage wetlands. Development in remote areas may lead to scattered and premature development.

The higher elevation areas within Brookline are also important as they provide a vantage point from which to view the area's scenic vistas. The following hills and their respective directional vistas are potential locations to look out over the Town:

TOWN OF BROOKLINE
NEW HAMPSHIRE



MAP III-1

TOPOGRAPHIC MAP

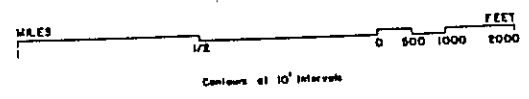


TABLE III-1

SCENIC VISTAS

<u>Hill Name</u>	<u>Viewing Directions</u>
Russell (Big Muscatanipus)	NE to SE
Potanipo (Little Muscatanipus)	All directions
Hobart	W to S
Hutchinson	S to E
Rock Ramond	unknown
Bear Hill	W
Corey's	unknown
Colburn	unknown

Slope

Slope is a measure of the pitch or "steepness" of land between two given points. It is expressed as a percentage which is calculated by dividing the change in elevation between two points by the distance between the two points. Land with 0% slope is level, and land with 100% slope has a pitch equal to a 45 degree angle. The slope or relative steepness of a parcel of land is a critical determinant of its ability to support certain land uses. Slope categories, and the problems of development on them are described below.

25% and Greater Slopes

Land areas in this category are among the most difficult to develop. These areas will require extreme care and usually need special engineering and landscaping to be developed properly. The major problem of development on slopes of 25% or more is that generally, steep slopes have only a very shallow layer of soil covering bedrock. Because of this, safe septic system installation is very difficult, storm water run-off is accelerated rather than absorbed, and soil erosion potential increases. Road and driveway construction to steep sloped sites is more difficult and costly, and also increases the amount and velocity of surface run-off.

15% to 25% Slopes

While somewhat less severe, the same problems and concerns expressed above regarding slopes in excess of 25% apply to slopes in the 15-25% category. The soil layer over bedrock on 15-25% slopes may be slightly deeper, but in many cases it may be insufficient to properly support the safe installation of a sub-surface waste disposal system. Accelerated surface water run-off and soil erosion will also be legitimate concerns of development proposals for these areas. Road construction will also encounter the same problems as in the 25%+ slope category.

Land areas within the 15-25% slope category should also be subject to thorough reviews of the proposed safeguards needed to protect down slope properties from insufficient septic system treatment of wastes, soil erosion and accelerated surface water run-off.



Little Muscatanipus (Potanipo) Hill--Slopes of greater than 25%, such as this one, are difficult to develop.

8% to 15% Slopes

Land areas in this slope category will exhibit, to a lesser extent, similar difficulties to those of steeper slopes; however, in many cases the costs to overcome these problems make the development of such slopes much more feasible. Development potential of such sites will, in most cases, be determined by specific site characteristics, such as depth and type of soils and the intensity of the proposed development. For these reasons, specific site investigations and a close review of proposed septic and erosion safeguards are urged for any development proposals on parcels in this category. It is reasonable to expect that more and more proposals to develop such sites will arise as the more suitable low and flat land becomes developed.

0% to 8% Slopes

Land areas within this slope category are generally the best for active development, provided soil types are suitable. Land in this slope category will generally be capable of supporting the most active or intensive land uses in Town, unless specific site characteristics, other than slope, impose constraints upon its use. One notable exception would be for land of 0 to 3% slope at low elevations overlaid by poorly or very poorly drained soils.

The purpose of establishing these slope categories and delineating steep slopes on a map is not to preclude the use of such areas, but rather to identify such areas and provide a general guide to the potential problems which development of such areas may face. The mapping and descriptions of such slope categories is not a definitive guide as to where development should or should not occur. Specific site characteristics should be investigated to determine the extent to which the potential problems identified herein must be overcome in the course of development. The slope data must be used along with soils and water resources information to determine a specific site's natural capability to support a proposed use.

B. Soil Features

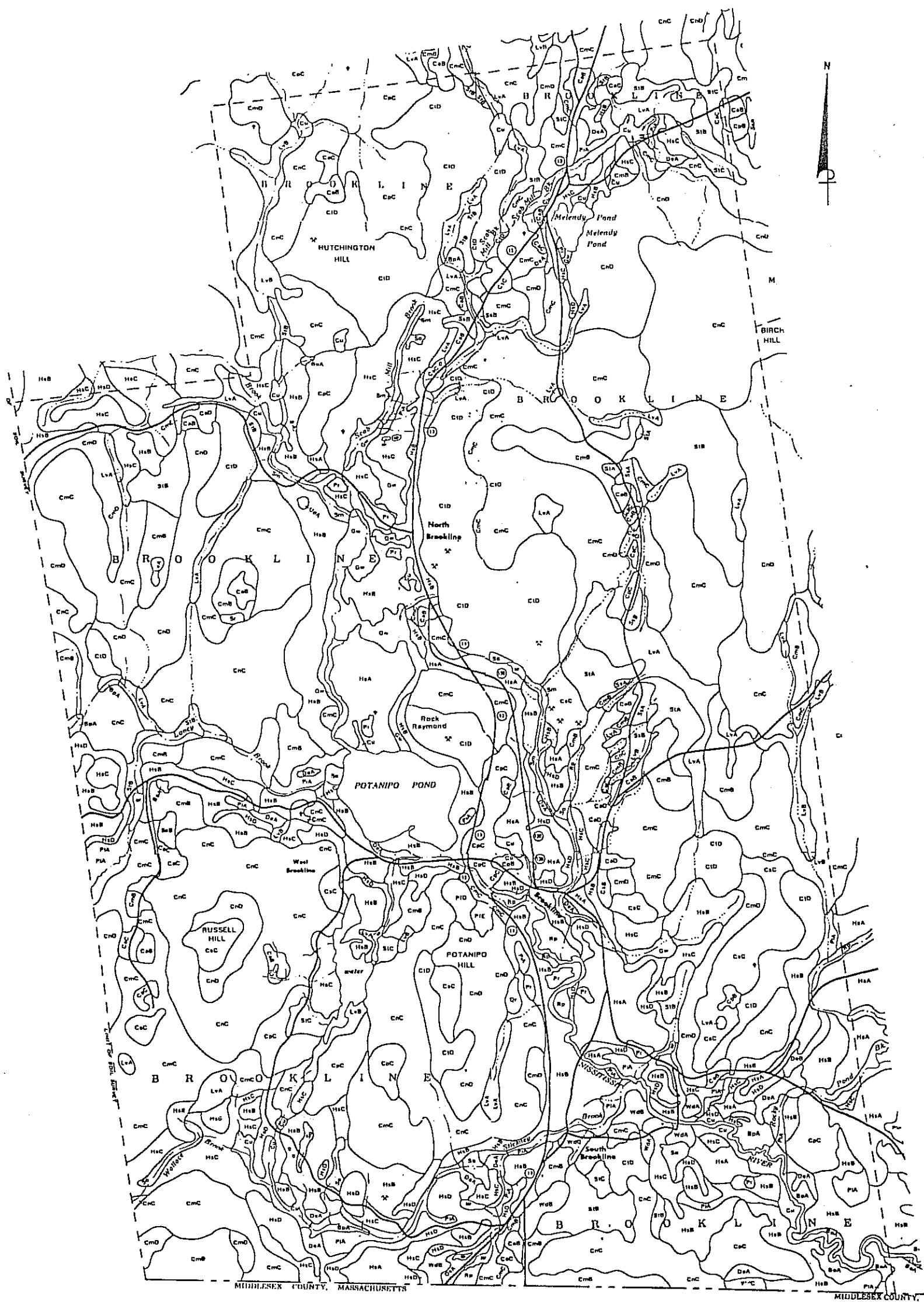
Soil types are perhaps the single most critical determinant of a parcel's capability to support development. In communities such as Brookline, soils serve as the sole medium of sewage purification because of the Town's total reliance upon individual septic systems for the treatment of human waste. Additionally, each soil type has different physical and chemical properties which influence the ways in which that soil may be used. The Soil Conservation Service (S.C.S.) of the U.S. Department of Agriculture, has conducted extensive surveys and analyses of the soils found in Brookline and Hillsborough County. From these surveys and analyses, the S.C.S. has identified the characteristics of each soil type and determined the capabilities and limitations of each for particular uses (see Soil Potentials for Development, Town of Brookline Soils and their Interpretations for various Land Uses, and the Soils Survey of Hillsborough County, New Hampshire--Eastern Part all available in Town Hall).

For planning purposes, soils are examined here in two ways; the first analysis divides the soil types into seven distinct categories which have broad implications regarding development potential and planning for future land uses. The second analysis examines the ability of a soil type to support the proper functioning of a sub-surface septic system by determining the limitations of the soil to absorb and purify septic effluent.

In general terms, Brookline's soils are predominantly of two types: the low-lying land in the Town Center and southeast quadrant is of Hinckley-Windsor types, while the balance of Town is characterized as being of Canton-Chatfield soil varieties. The first type (Hinckley-Windsor) is described as excessively drained, gravelly and sandy. However some land areas within this group are poorly and very poorly drained soils or wetlands. The Canton-Chatfield soils are well-drained, loamy soils and are often found on slopes and covered with forest. The Soils Map on page III-7 shows individual soil types by area throughout Brookline.

A more specific analysis divides the many soil types into the following seven categories: wetland, floodplain, sand and gravel, seasonally-wet soils, shallow-to-bedrock, hardpan, deep-stoney, and soils which are prime farmland or of statewide importance for agriculture. A listing of which soils fall within each category is provided in Appendix A.

- 1) Wetland or Wet Soils: Soils in this category are poorly and very poorly drained, and serve as water storage areas which recharge stream flows during dry months. They are often nearly level and may be ponded or have standing water on their surface. They pose tremendous problems to development and their active use for development purposes is prohibited through the Wetlands Zoning Ordinance. More detail is given to this resource later in the chapter and in the Water Resources Management and Protection Plan.
- 2) Floodplain Soils: These are soils found adjacent to rivers and streams which deposit the soil by flooding of these water courses. Because Brookline has only a few minor water courses, there is little floodplain soil within Town. These soils are often among the finest agricultural soils in the State.
- 3) Sand and Gravel Soils: These soils are excessively drained and are characterized by their rapid permeability. These are among the most predominant soil types in Brookline. Because of the rapid permeability they impose severe limitations upon their use for septic systems and act as a poor filter. These soils may also be stoney, especially the Hinckley soils. They are highly erodible, do not yield groundwater to a great degree, and will not hold as slopes or banks.
- 4) Seasonal Wet Soils: These soils are moderately well drained and found in upland depressions. Because they generally form a relatively thin soil layer over bedrock, they will have a tendency to have a seasonally high water table, which imposes severe restrictions on their ability to be used for septic systems and home construction. They are found in scattered locations among the hills surrounding the low-lying Town Center and southeast portion of Town.
- 5) Shallow-to-Bedrock Soils: This category contains several soils types which generally form an extremely thin layer over bedrock (generally 30 to 40 inches deep). They are moderately to well-drained, are generally covered by woodland and have very limited capacity to yield groundwater. Because they are so thin, their use for septic systems is severely limited, although sites with sufficient depth to bedrock can be found.
- 6) Hardpan Soils: These soils are characterized by a 24 inch layer of well-drained soil underlain by a dense, slowly permeable hardpan layer of up to 60 inches deep. Due to this hardpan layer, these soils have severe limitations for use as septic system leaching areas. They are found in one location in Brookline, just south of Lake Potanipo on the slopes of a drumlin, or glacier-formed hill.
- 7) Deep-Stoney Soils: Soils in this category represent the predominant soil type in Brookline. They are described as well-drained, often contain stones and boulders at or near the surface, and are found on slopes of the hilly uplands which surround the Main Street area and Route 13. Depth to bedrock is typically in excess of five feet, much of this soil type is covered by woodland, and the availability of groundwater is moderate. The



MAP III-2
SOILS MAP

TOWN OF BROOKLINE
NEW HAMPSHIRE
SOILS MAP

Source: SOILS CONSERVATION SERVICE
Prepared by: NASHUA REGIONAL PLANNING COMMISSION
Adapted to Nashua Regional Planning Commission Map System 1982.



greatest limitations to development imposed by these soils are the stoniness of the soils and their designation as having severe limitations to development, although relatively flat or moderately sloped parcels of this soil type may have only moderate limitations to development.

Soils and Septic Limitations

Our second analysis of soils examines the limitations of each soil type and slope combination imposed on its use for subsurface septic system installation and operation. It is important to remember that this analysis combines information regarding both soil types and slope, and that it does this at a scale which is unsuitable for site-specific analysis and decision making. This analysis will not replace or eliminate the need for site investigation to determine land capability. It is provided to give a broad overview of the potential for development in Brookline and to alert the planning board of potential problems which certain land areas will present. While the soil types are delineated on the Master Plan maps with a reasonable degree of accuracy, specific soil types referred to on the map are those of the predominant soil type within the mapped area. Actual boundaries between soils on the ground are not so easily discernible and will vary from those mapped. Thus, site inspections and more thorough study of the soils of any site cannot be replaced by the maps which accompany this plan. (See Septic Limitations Map in Town Hall.)

The septic limitations analysis by the S.C.S. examines the following characteristics or properties of land areas for their capability to support the safe installation and operation of subsurface septic systems:

- 1) permeability of soil
- 2) depth to water table
- 3) depth to bedrock
- 4) steepness of slope
- 5) stoniness or rockiness of soil
- 6) susceptibility to flooding

Land areas have been categorized as possessing either slight, moderate or severe limitations to proper septic system operation due to the combined effect of these six characteristics.

Slight Limitations: Land areas designated as having slight limitations are the most capable of supporting safe operation of septic systems. Any limitations of these areas are considered to be easy and inexpensive to overcome. Unless other site characteristics limit their suitability, they are recommended for active use and development. In fact, because there is so little land of this classification in Town, these parcels should be used as efficiently as possible, perhaps by clustering residential or commercial uses to maximize the efficient use of these most buildable land areas in Brookline.

Moderate Limitations: Land areas in this category have moderate limitations or constraints to septic system installation or operation. Their development and use will require planning, careful review, and usually remedial engineering or landscaping work to overcome the limitations imposed. These limitations will not preclude the development of these parcels, but they are identified to alert interested parties that special consideration and potentially expensive remedial work may be required to safely develop such sites. Land areas in this category are scattered among the hilly uplands, and are in more plentiful supply than parcels of slight limitation. Because there is so small a portion of the land in Town within this category, these land areas should be used as efficiently as feasible while recognizing that limitations to their use exist. Moderate-density clustering may be feasible on selected sites which are so designated.

Severe Limitations: Land areas with this designation have the poorest capability to be used for septic system operations due to one or more of the characteristics used to evaluate its potential. This designation should not be interpreted to mean that these land areas are incapable of supporting development. Rather, the "severe" designation alerts the developer and planning board of the need to identify the limitation(s) and make sure that any and all remedial actions to overcome the limitations are made. The importance of site inspections in such cases cannot be over-emphasized.

By applying this classification to Brookline soils, approximately four-fifths of the Town is found to be in the severe category. As previously mentioned, however, these are six different soil characteristics or properties that are considered in classifying a soil. Depending on which specific property warranted the severe rating, this will be reflected in the economical and technological requirements necessary to use the soil for residential septic systems.

Those areas classified as having moderate limitations for septic system operation, when combined, total approximately one-fifth of the Town's total area. The predominant areas of soils classified as such are located in the southeast corner of Brookline, west and southwest of Russell Hill, south of North Mason Road, along portions of Old Milford Road, and south of Rocky Pond Road.

Unfortunately, not much of the Town is underlain by soils falling into the slight limitation class. These 5-20 acre parcels are scattered over much of the Town, but total only 150-200 acres. Since these areas of slight and moderate septic limitations do not constitute a large portion of the Town, where applicable, planning for future growth should allow for their optimum use.

C. Water Resources

Natural resources within Brookline associated with water include watersheds, floodplains, wetlands and aquifers. A more detailed description and assessment of Brookline's water resources can be found in the Water Resources Management and Protection Plan (scheduled to be completed in 1991 or 1992) which is part of this master plan.

1. Surface Water

Watershed Areas

Brookline can be divided into a number of watershed areas based on the existing stream channel network and topographic divides. The major watersheds include North Stream/Scabbard Mill Brook, Village/Stonehouse Brooks, Talbot Brook, Wallace Brook, and Rocky Pond Brook. Water from each of these watersheds combines to flow into the Nissitissit River, the beginning of which runs through southeast Brookline.

Floodplains

Although the Nissitissit River runs through southeastern Brookline, flowing out from Lake Potanipo, only small amounts of floodplain exist within Town. Most of it is located along the banks of the Nissitissit River, Wallace Brook, Stickney Brook, Mill Brook, Spaulding Brook, North Stream, parts of Scabbard Mill Brook and Stonehouse Brook, and Talbot Swamp, Pout Pond, Trout Pond, Pierce Pond and Lake Potanipo. These are shown as Zone A on the Federal Emergency Management Agency (FEMA) maps dated 1987 and shown in the Water Resources Plan.

Floodplain development is restricted by the Floodplain Ordinance which is part of the Zoning Ordinance.

Wetlands

Existing wetlands include those areas particularly sensitive to development. They perform a unique function within the hydrologic system of each watershed. Wetlands provide the vital link between incoming precipitation and aquifer recharge, flood storage and prevention, erosion control, and water purification of sediment contaminants, and problem nutrients. Depending on type of wetland involved, they also provide important habitat to a variety of vegetation and animal life including aquatic plants, insects, amphibians, fish, and water fowl. In mapping the region's soils, the SCS has delineated those soils having poor to very poor drainage based on individual soil properties. Wetland soils found in Brookline include (see map III-2, the Soils Map, and map VIII-3, the Wetlands Map for exact areas):

Very Poorly Drained

Borohemists (BoA BpA)
Chocorua (Cu)
Greenwood (Gw)
Saco Variet (Sm)
Scarboro (So, Sr)

Poorly Drained

Binghamville (Bg)
Leicester Variant (LeA, LsA)
Leicester-Walpole Complex
(LtA, LtB, LvA, LvB)
Pipestone (PiA, PiB)
Ridgebury (RbA, ReA, ReB)
Saugatuck (Sn)

As one can see from map III-2 and map VIII-3, major concentrations of these soils are found to exist in the areas of Wallace Brook, Stickney Brook, Rocky Pond Brook, and the Nissitissit River in southern Brookline; Lancy Brook, Potanipo Pond, North Stream, Village Brook, and Stonehouse Brook in central Brookline; and Scabbard Mill Brook and Melendy Pond in northern Brookline. Wetland areas are usually located adjacent to or very near open water as found in the Town's rivers, streams, lakes and ponds. This relationship is the result of a localized higher water table and the source of greater quantities of water during periods of high stream flow. There are also some scattered pockets of wetland soils throughout the Town, usually at the bottom of low-lying areas or depressions.

In 1987, the Town passed the Wetland Conservation District which is part of the Zoning Ordinance. This article restricts development within wetlands and ensures that each lot in Town has at least 60,000 square feet of non-wetland area to accommodate sewage disposal.



Wetlands such as this one near Lake Potanipo are protected by the Wetland Conservation District which is part of the Zoning Ordinance.

2. Groundwater

Aquifers

Existing aquifers presently being used or having potential for future use in Brookline are grouped either as being composed of stratified drift, glacial till, or bedrock materials. Studies and mapping completed by the USGS in 1987 entitled Hydrogeology of Stratified Drift Aquifers and Water Quality in the Nashua Regional Planning Commission Area, better delineates the hydrogeologic characteristics of this resource (see Map III-3).

Stratified drift aquifers provide the best potential for providing adequate supplies of water in Brookline. According to the USGS study, 31 percent of Brookline is underlain by stratified drift. These deposits laid down in the valleys during periods of glacial retreat are generally well sorted sands and gravels. These materials have a higher porosity than finer-grained sediments or poorly sorted till deposits and therefore contain larger quantities of water and provide larger well yields. High potential aquifer areas exist north of Lake Potanipo, between Route 13 and Main Street, and in southeast Brookline near the Nissitissit River. These are shown in dark blue on the USGS aquifer map located in Town Hall. Moderate potential aquifer areas are more numerous in Brookline. These mapped areas are found farther north and directly south of Potanipo Pond, along Wallace Brook, and beneath more of the Nissitissit River northwest of the high potential area.

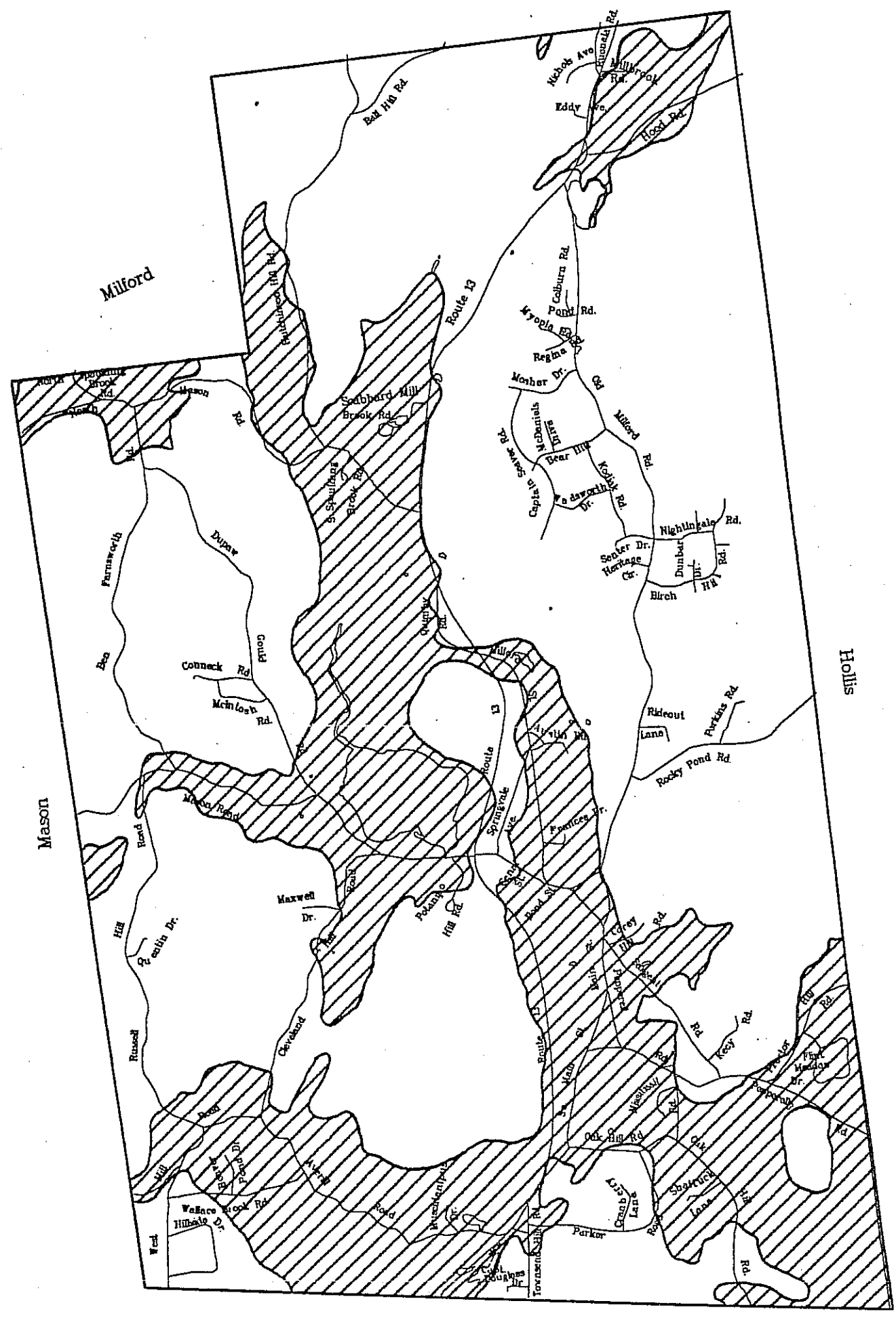
Other mapped areas in this study included low potential yielding aquifers within the glacial till deposits covering much of the remainder of Town. The poorly-sorted nature of these materials and their shallowness contribute sufficient quantities of water for domestic use only.

The USGS study delineates where the till aquifers may be by showing where stratified drift deposits are not found. Because of the type of material involved in till aquifers, this type of aquifer is relatively shallow and directly overlaying bedrock. It is also very likely to be localized in extent. These aquifers can be easily impacted by contaminants from land use practices including septic system operation, agriculture, industry, underground fuel storage tanks, and surface runoff containing road salt. Unfortunately, little else is known about the till aquifers other than where the deposits are. Further site specific study using existing water well and soils information may be helpful in defining them. As these localized, shallow aquifers are tapped for a large percentage of private water supplies, compatible land use siting is of concern here as it is with the stratified drift aquifers.

D. Construction Materials (Extractive)

Construction materials, such as sand and gravel, are usually found in areas with stratified drift deposits. Excessive removal of the materials overlying the saturated drift can increase the potential for groundwater contamination. The soil above the groundwater acts as a filter by removing suspended contaminants as the water percolates down. Thus, if too much material is removed, the filtering capacity of the soil is diminished and contaminants can reach the groundwater more rapidly and in increased concentration.

Canton and Hinckley soils, which are found throughout most of Brookline, are also good indications of the presence of sand and gravel. Both the Soils Map (Map III-2) and the Aquifer Map (Map III-3) show the location of construction materials within Brookline.



- Stratified Drift Aquifer
- Till

MAP III-3
AQUIFERS

In November 1989, the Planning Board adopted Excavation Site Plan Review Regulations. Before 1989, earth removal permits were granted by the Board of Selectmen. Permits which have been granted by the Town and other recent decisions regarding earth removal are listed in Table III-2.

TABLE III-2

EXCAVATIONS WITHIN BROOKLINE*

<u>Year</u>	<u>Lot</u>	<u>Name</u>	<u>Description</u>
1984	J-57	Torres	Averill Road; To excavate muck from pond and refill pond.
1985	C-10	Bourassa	South Spaulding Brook Road; project was finished in 1987.
1986	H-91	Joki	Completed.
1986	D-89	Whitcomb	Route 13 Scabbard Mill Brook Road; renewed annually, last renewal was May 1990 for another year.
	D-3-3		
1987		Kowalski	Permit not needed, incidental to an approved subdivision.
1988	J-9-2	Johnson	Averill Road.
1989	J-57	Torres	Permit not needed, incidental to silvicultural activities.

* Note that these are excavations which have been granted permits under RSA 155-E or have been approved by the Town since 1984. The extent of these excavations is not known.

Source: Brookline Town records.

E. Agricultural Land Use

As mentioned earlier, there is little floodplain soils within Brookline. Since floodplain soils are usually areas of good agricultural land, Brookline does not have large acreages of good agricultural land. No land areas in Brookline are currently under agricultural use.

F. Wildlife

Brookline is endowed with a vast array of plant, fish and animal species. The variety is due to the variations in habitat, such as hills and mountains, rivers, lakes, ponds, and streams, wetlands, open fields and forests found within Town. Variety and quality of habitat are the most important factors in maintaining a diversity of species in quantities healthy enough to ensure their viable continuation. Wildlife habitat areas are important because they meet specific needs of certain species. Wetlands and fresh water marshes provide nursery areas for waterfowl and fish, hunting grounds for predatory birds and general habitat for many

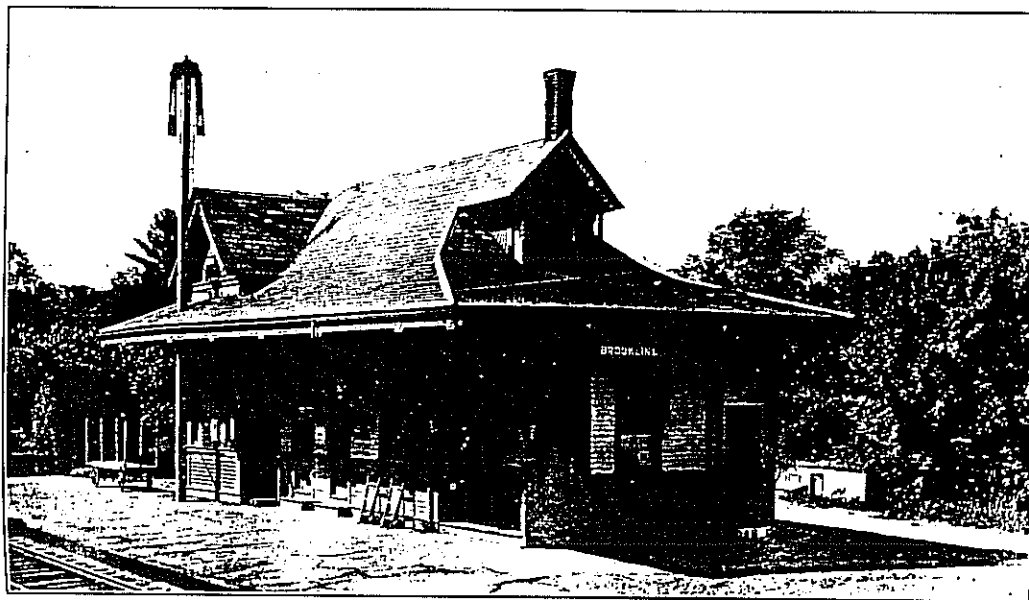
species of birds, small mammals, reptiles and amphibians. It should also be noted that many species of endangered and threatened plants and animals can be found in or rely on wetland areas. Change, however, is inevitable, and some species are better adapted to change than others. Those species unable to adapt will move elsewhere and be replaced by a species better suited to the environmental conditions.

Both the Federal and State governments have established inventories of endangered and threatened species. The New Hampshire Natural Heritage Inventory records indicate that endangered and threatened species are found in Brookline, as they are in almost all Nashua region communities. Those species found in Brookline include the great blue heron (rookery), piled-up sedge, and prostrate tick-trefoil.

II. CULTURAL RESOURCES

Cultural resources include the historical aspects of Brookline's development. Brookline is the product of over 200 years of history. Many of the roads in Town follow paths originally beaten through the wilderness. Stone walls, memorials to the enormous labors of early farmers, trail through the woods. Today's Brookliners are privileged to be surrounded by that abundant history. In terms of planning, historic structures and sites should be considered an integral part of the community's environmental resources for, like other resources of this nature, they are non-renewable. Preservation opportunities that are passed by today may never be available again.

Historic sites are found throughout Town, although the main concentration is in the Town Center/Main Street area. Historic sites in this area include, but are not limited to: Daniels Academy Building (Town Hall), Brookline Train Station, churches, old post office, historic homes along Main Street, and one of the four old cemeteries within Town, the locations of which are briefly described below.



The Brookline Train Station, built in late 1800s is located at the corner of Bond Street and Route 13.

Four old cemeteries exist within Town: the Pond Cemetery (west cemetery) on the west side of Lake Potanipo, and shown on page III-17; the South Cemetery on Main Street; the North Cemetery on the west side of Route 13; and the Cemetery-in-the-Woods, located south of Rocky Pond Road, which dates to at least 1752. Even as early as 1914, as documented in the History of Brookline, there was concern over protecting these historic cemeteries.

Master Plan Survey Results

Both the 1985 Community Attitude Survey and the 1989 Master Plan Survey (See Appendix B) showed strong community support for addressing historic resource preservation. In 1985, there was response in favor of historic preservation within Brookline. The voter's subsequent rejection of the creation of a formal historic district zone proved that involuntary restrictive regulation was not acceptable at that time. Protection of historic resources is clearly an important priority supported by the Town residents. This was shown again in the 1989 Master Plan survey when two-thirds of the respondents either "strongly agreed" or "agreed" that the Town should take public actions to preserve and protect historic homes, buildings and other sites. The replies regarding historic resources from both the 1985 and 1989 surveys are shown below.

"Do you think Brookline should take public actions to preserve and protect historic homes, buildings and other sites?" (1985: added following wording-- "such as establishing an Historic District under zoning laws")?

1985	1989		1985	1989	
27%	32%	strongly agree	9%	5%	strongly disagree
39%	34%	agree	12%	10%	disagree
3%	12%	no opinion	12%	8%	not sure/don't know

1989: "If you agree, can you identify any sites or structures that you would like to see preserved or protected?"
(five or more responses listed here)

Town Hall--38

Community Center/Youth Center--18

Historic Homes (non-specific)--12

Village Store--9

Churches--8

Brookline Train Station--6

American Legion Post #74

(Old Schoolhouse)--5

Historic Inventory

Although a variety of different sites and structures were specified by many respondents of the survey, defining an exhaustive list of what is or is not of historical importance cannot be done until there has been a comprehensive historic inventory conducted throughout the Town. An inventory should ideally document all structures, sites, events, trails, and cemeteries having any cultural or historical significance to the Town. The list should include, but not be limited to: mill dams, "Cemetery in the Woods", the Stone House, Devil's Den, Bear's Den and stone walls and other structural remnants.



Stone walls and cemeteries are valuable historic resources that should be preserved.

Once the inventory has been completed, setting boundaries for an Historic District and the drafting of necessary ordinances and regulations, or protection of individual historic sites within the town can begin. Interpretation of the historic inventory results by the Brookline historical society, Planning Board, and other assisting officials will govern where the District boundaries will be, or what individual sites will be protected. Inventory findings will also have an effect on the type of regulations and ordinances if any, that will be necessary to adequately protect the historical nature of a District.

Brookline is fortunate to have an existing historical society. This group along with other Town Boards and the interested public, can begin to organize the necessary tasks involved in protecting the town's cultural resources while there is still time.

National Register of Historic Places

The National Register of Historic Places is the official list of the Nation's resources worthy of preservation. The Register lists properties of local, state, and/or national significance in the areas of American history, architecture, archaeology, engineering, and culture. Resources may be nominated individually, or in groups, as districts or as multiple resource areas and must generally be older than 50 years. 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. Although eighteen individual buildings or sites and four districts in the Nashua Regional Planning Commission (NRPC) region are listed on the Register, none are in Brookline.

Historic Markers

Originated by the NH Legislature in 1955, the aim of the Historical Marker Program is the erection of appropriate markers designating events, people and places of historical significance to the State of New Hampshire. Communities who would like to be considered for a marker submit a request for consideration by the State Highway Department and Division of Historical Resources. There is generally no cost involved for a marker on a state-maintained road, and a \$900 charge for a marker on a private road. Statewide, there are approximately 150 historical markers, few of these in NRPC communities. There are no markers of this type in Brookline.

Scenic Road Designations

Brookline's country roads constitute an important local resource and to date several have been locally designated as scenic roads. Such designation enables a community to preserve the rural environs around its historic structures and stimulates pride in, and respect for, the existing landscape. Two roads in Town, North Mason and Averill Roads, have been designated as scenic roads. A discussion of scenic roads can be found in the Transportation Chapter of this Master Plan.

III. CONCLUSIONS

Considerable natural and cultural resources currently exist within the Town of Brookline. Those types of resources considered worthy of additional protection efforts include steep slopes, poorer soils, wetlands, aquifers, any existing agricultural uses, and cultural features. The needed protection of these resources can come from developing and/or updating wetland, aquifer, and historic district ordinances; subdivision regulation amendments to address steep slopes and poorer soils; and seeking additional professional consultation (SCS, hydrologist, botanist, etc.) when there is a question concerning the impacts of development on a particular resource.

IV. RECOMMENDATIONS

Slopes

The Planning Board should:

1. Ensure that scenic vistas will continue to be preserved.
2. Ensure that proper safeguards are applied to steep sloped sites to minimize hazards to downslope properties, and these safeguards usually mean costly engineering and landscaping solutions. For these reasons, active use of steep slope sites should be avoided wherever possible, or approached with extreme caution and subjected to a thorough review of the safeguards to be employed. If possible, the Planning Board and Town should consider preserving such areas as open space.

3. Amend the subdivision regulations by including soil erosion and sedimentation control provisions as has already been done in the non-residential site plan review regulations and the excavation site plan review regulations.

Soils

The Planning Board should:

1. Establish an official policy as to when a high intensity soils survey will be required of developers.

Wetlands

The Town should:

1. Promote the development of school and public environmental education programs that utilize the outdoors as natural classrooms.
2. Gain better control of environmentally important areas, through conservation easements, deed restrictions and purchase of development rights of land.
3. Re-examine the wetlands ordinance every few years to determine its effectiveness and make improvements, if necessary.

Floodplains

1. Brookline should attempt to use floodplains as recreational land/open space.

Aquifers

1. The Aquifer Protection Ordinance should be reviewed every few years to determine its effectiveness and make improvements, if necessary.

Open space/Easements

1. The Town boards should coordinate and publicize its acquired open space and easement location throughout town.

Conservation and Preservation

1. Brookline should adopt shoreland protection zoning to protect its two major lakes--Lake Potanipo and Melendy Pond.
2. The Conservation Commission should prepare a Conservation Plan as allowed under RSA 36-A.

Historic Resources

The Historical Society should be encouraged to:

1. Prepare a historic resources inventory of Brookline.
2. Prepare National Register listing for eligible local structures.

The Town Boards should:

3. Promote the upgrading, preservation, and protection of the Town cemeteries, and other historical resources.
4. Promote the establishment of additional scenic roads.

The Planning Board should:

5. Continue the practice of naming new roads with names of Brookline historical significance (such as Conneck, McIntosh, Captain Seaver, Captain Douglass, Shattuck, Parker) approved by the Historical Society.
6. Include historic resource preservation as a priority when possible in ordinance and regulation.

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Chapter IV.

Population

CHAPTER IV

POPULATION

This chapter provides a statistical and descriptive profile of the population of Brookline, including significant features of the population's growth, projections of its future growth, and an examination of current and future housing for the population. The data used here are derived primarily from the 1980 Census (the 1990 Census data is not yet available) although some more recent state, local and regional sources are used.

This chapter provides the base upon which the balance of this plan rests -- its assumptions and projections determine how much growth in population is expected, and thus, how much should be accommodated in land use regulations and community facilities planning.

Population Growth

Brookline's population has increased rapidly since 1960, while before then, the Town experienced minor fluctuations in the absolute count of persons. The following table summarizes the Town's population growth since 1880.

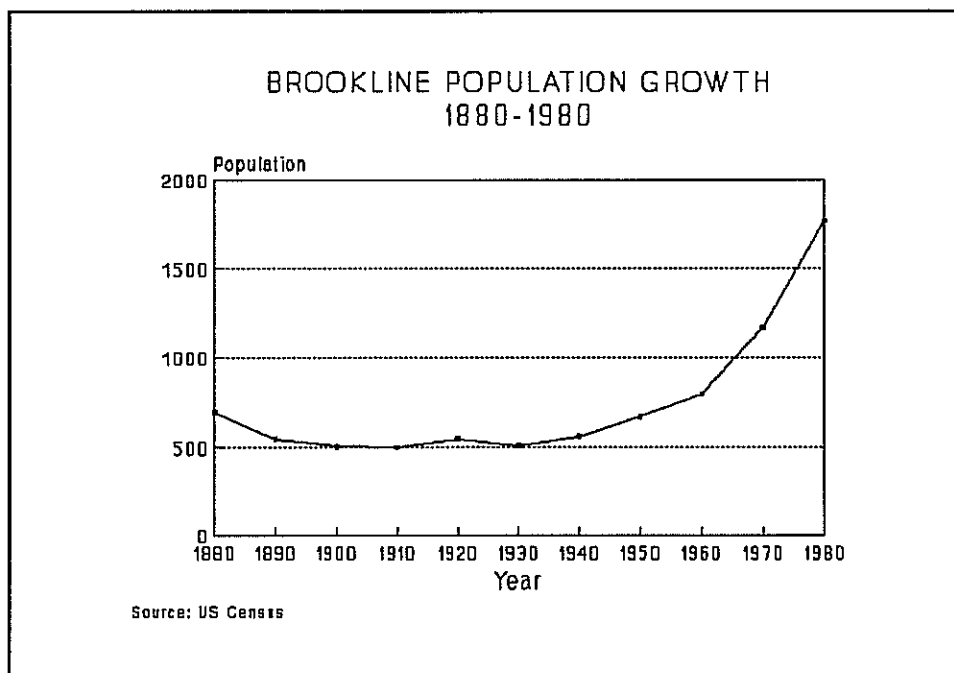
TABLE IV-1

**POPULATION GROWTH 1880-1980
BROOKLINE, NRPC REGION, HILLSBOROUGH COUNTY,
NEW HAMPSHIRE, U.S.A.**

YEAR	BROOKLINE	Percent Change	Nashua Region	Percent Change	Hillsborough County	Percent Change	State of New Hampshire	Percent Change	U.S.A.	Percent Change
1850	541		23,282		57,478		317,976		23,191,876	
1860	450	-16.8%	23,982	3.0%	62,140	8.1%	326,073	2.5%	31,443,321	35.6%
1870	401	-10.9%	24,419	1.8%	64,238	3.4%	318,300	-2.4%	39,818,449	26.6%
1880	698	74.1%	25,102	2.8%	75,634	17.7%	346,991	9.0%	50,155,783	26.0%
1890	548	-21.5%	30,998	23.5%	93,247	23.3%	376,530	8.5%	62,947,714	25.5%
1900	505	-7.8%	36,731	18.5%	112,640	20.8%	411,588	9.3%	75,994,575	20.7%
1910	501	-0.8%	38,467	4.7%	126,072	11.9%	430,572	4.6%	92,228,496	21.4%
1920	546	9.0%	40,796	6.1%	135,512	7.5%	443,083	2.9%	106,021,537	15.0%
1930	511	-6.4%	45,347	11.2%	140,165	3.4%	465,293	5.0%	123,202,624	16.2%
1940	561	9.8%	48,214	6.3%	144,888	3.4%	491,524	5.6%	132,164,569	7.3%
1950	671	19.6%	52,900	9.7%	156,987	8.4%	533,242	8.5%	151,325,798	14.5%
1960	795	18.5%	63,893	20.8%	178,161	13.5%	606,921	13.8%	179,323,175	18.5%
1970	1,167	46.8%	100,864	57.9%	223,941	25.7%	737,578	21.5%	203,211,926	13.3%
1980	1,766	51.3%	138,089	36.9%	276,608	23.5%	920,475	24.8%	226,504,825	11.5%

SOURCE: U.S. Bureau of Census

FIGURE IV-1



Like many communities in Southern New Hampshire, Brookline experienced rapid growth in population from 1960 to 1980, increasing by nearly 1,000 persons in that twenty-year period. As shown in Table IV-1, from 1960 to 1970 Brookline's population increased 46.8%, and from 1970 to 1980, it increased 51.3%. The New Hampshire Office of State Planning's (OSP) 1988 estimate of the Town's population was 2,220, indicating 25.7% growth in the past 8 years--slightly over 3 percent growth annually.

Population growth in a community may be attributed to two factors: natural population increase due to more births than deaths, and increases caused by more persons taking up residence in town than those who move away (net in-migration). While we cannot count in-migrants, by recording the natural population growth and subtracting it from the total growth in population we can calculate how much of the Town's growth is due to in-migration.

A brief analysis of vital statistics recorded by the State from 1970 through 1980 indicates that the Town of Brookline had a natural population increase of 151 persons (259 births - 108 deaths = 151 net increase). The U.S. Census Bureau reported a total population increase of 599 persons in Brookline over the same period. Thus, we can see that of the 599 new residents between 1970 and 1980, 151, or 25.2 percent, can be attributed to natural population growth while the balance, 448 persons, or 74.8 percent of population growth between 1970 and 1980, can be attributed to net in-migration to the Town.

This figure of 75 percent of growth due to in-migration may be of little predictive value because the extent of future in-migration will be a function of both the availability of housing in Town and jobs within the region. And these two factors are most influenced by national economic conditions, although the Planning Board can have some impact on the local housing supply. Unfortunately, we are unable to predict future population growth solely on the basis of prior in-migration trends. However, it is reasonable to suggest that as the national economy grows, housing starts and employment opportunities will both increase locally and regionally; thus, in-migration and population growth will continue at a relatively high rate. If the national economy does not continue to grow, both the local and regional economies may also suffer.

TABLE IV-2

BIRTHS, DEATHS, AND POPULATION GROWTH
BROOKLINE, 1970-1989

	Births	Deaths	Net Increase	Total Population		Births	Deaths	Net Increase	Total Population
1970	26	10	16	1,167	1980	27	12	15	1,766
1971	23	11	12		1981	26	8	18	
1972	22	11	11		1982	25	12	13	
1973	31	10	21		1983	24	11	13	
1974	21	7	14		1984	23	8	15	
1975	24	10	14		1985	37	8	29	
1976	19	6	13		1986	39	13	26	
1977	25	12	13		1987	30	17	13	
1978	19	10	9		1988	41	17	24	
1979	22	9	13		1989	41	11	30	
1980				1766					
	232	96	136			313	117	196	

SOURCE: Population, US Census 1970, 1980
Births and Death counts--NH Department of Health and Welfare,
Office of Vital Records and Statistics.
Town Reports 1987, 1988, 1989 (best data available--Does not include
births and deaths outside of New Hampshire).

From 1981 to 1988, a majority of the growth in Town was again attributable to in-migration, although the number of births has been increasing in the last few years. There was a net increase of 151 persons; and according to OSP estimates, a total growth of 454 occurred, indicating a natural increase of 33%. This indicates that 66% of the Town's growth from 1981 to 1988 can be attributed to net in-migration. This is slightly less than the 1970 to 1980 in-migration rate, but still significant.

Population Growth Projections

The task of projecting future population growth in a community such as Brookline is extremely uncertain for a number of reasons. Brookline has a relatively small population currently residing in a community with a large proportion of vacant developable land (see Chapter VIII for more detail on the amount of vacant developable land). There is the potential for significant subdivision activity to occur. There are also many factors which influence the

rate of growth in Brookline which are relatively unpredictable and beyond the control of the Town. Because of this large growth potential and the unpredictable nature of other growth factors, an accurate projection of future population for a given future date is uncertain at best.

With these caveats in mind, and because it is essential that the Master Plan identify reasonable expectations of future growth in population, the following population projections are offered.

TABLE IV-3

POPULATION PROJECTIONS

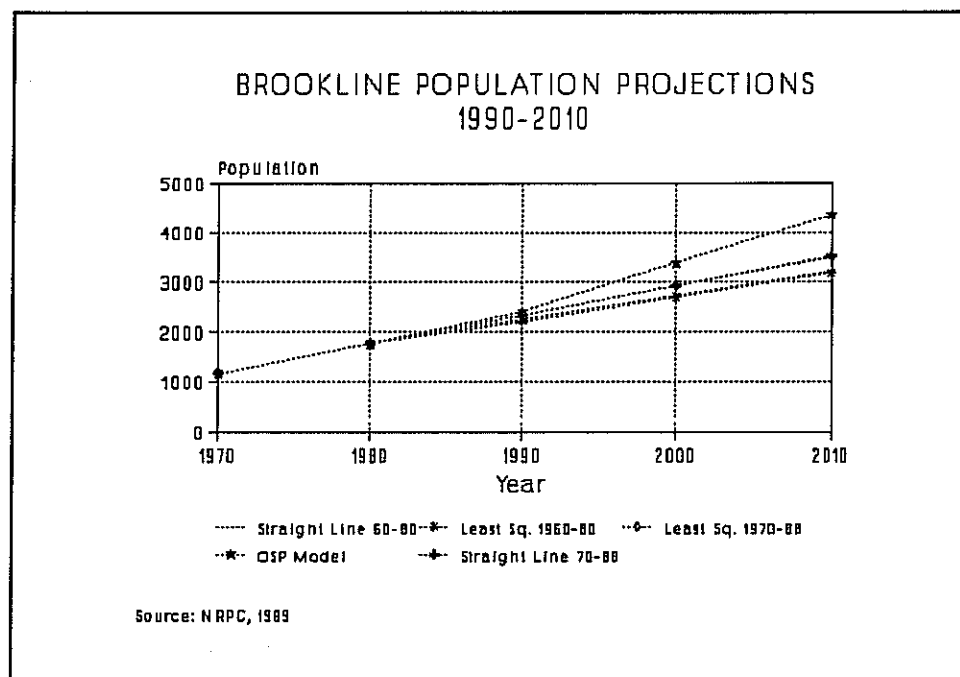
<u>Year</u>	<u>Straight Line 1960-80</u>	<u>Straight Line 1970-88</u>	<u>Least Squares 1960-80</u>	<u>Least Squares 1970-88</u>	<u>OSP Model</u>
1990	2,252	2,351	2,214	2,342	2,408
2000	2,737	2,936	2,699	2,928	3,385
2010	3,223	3,521	3,185	3,513	4,349

SOURCE: NH OSP, New Hampshire Population Projections -- Total Population for Cities and Town, May 1987.

Table IV-3 and Figure IV-2 show five sets of projections using three different methodologies. The first two projections are based on a least squares line that was fitted on population figures from 1960 to 1980 and 1970 to 1988 and carried out into the future. The 1960 to 1980 and 1970 to 1988 straight-line trends were computed by extending the 1960-1980 and 1970-1988 increases in growth (49 and 58 people annually, respectively) into the future. These projections, therefore, are based upon the assumption that economic, social, and natural conditions present in the 1960's and 1970's will continue for the next 20 years.

The fifth of these population projections were prepared by the Office of State Planning by using a demographic/economic model called DEMOS. The model has been designed to interrelate growth pattern components of the State's population and economy. The demographic variables included population, births, deaths, migration (both employment and retirement related), households, labor force, etc. The economic variables include employment, earnings, and personal income. These variables have been applied to the Town's base line conditions as portrayed by the April 1, 1980 U.S. Census data and other growth trends since 1980 which have also been taken into account. The year 2000 projections range from approximately 2,699 to 3,385 and the year 2010 projections from 3,185 to 4,349.

FIGURE IV-2



CHARACTERISTICS OF THE POPULATION

Age Distribution

The distribution of Brookline's population among selected age groups nearly mirrors that of the region as a whole. As shown in Table IV-4, Brookline has a similar age distribution as the region, except for a having a slightly smaller percentage of pre-schoolers and a higher percentage of school-age children. Although the number of 0-5 and 6-17 year-olds in Town has increased, their percentage of the total population has decreased, indicating that these groups have not grown as rapidly as other age categories. Note the clear decline in the proportion of the population less than 5 years old.

**TABLE IV-4
1980 AGE DISTRIBUTIONS
BROOKLINE, NRPC REGION**

age	Brookline %	Region %
0-4	6.7	7.4
5-17	26.3	24.4
18-54	52.9	52.9
55-64	6.7	7.7
65 +	7.4	7.7

Source: 1980 US Census

The following table shows the historical trends of age distribution in Brookline. This table clearly shows the large increase in all age groups except pre-schoolers over the past 20 years. The largest increase has been in the labor force, reflecting the strong growing economy in the southern New Hampshire region over the past 20 years.

TABLE IV-5
AGE DISTRIBUTIONS 1960-1980

Age Group	1960		1970		1980	
	#	%	#	%	#	%
0-5 years	115	14.5	149	12.8	141	8.0
6-17 years	198	24.9	342	29.3	442	25.0
18-61 years	406	51.1	581	49.8	1024	58.0
62+ years	76	9.6	95	8.1	159	9.0
Totals:	795	100	1167	100	1766	100

Source: 1980 U.S. Census

Education

The education levels of a population are generally measured by the median number of school years completed by persons over 18 years of age (median is the point above and below which 50 percent of respondents fall). In Brookline, the median education level was 12.1 years in 1960, and 12.3 years in 1970. Data for 1980 have not provided median years completed, but rather the following:

TABLE IV-6
EDUCATIONAL ATTAINMENT - 1980
BROOKLINE/NASHUA REGION

Years of Schooling; persons >18 years	Brookline		Region	
	#	%	#	%
(1) Elementary through 3 years high school	265	22.6	22,098	23.5
(2) 4 years high school	391	33.3	36,148	38.4
(3) College: 1-3 years	271	23.1	18,267	19.4
(4) College: 4 years	170	14.5	10,989	11.7
(5) College: 5 + yrs.	78	6.6	6,635	7.0
Totals:	1,175	100.0	94,137	100.0

Source: 1980 Census

Household Characteristics

Brookline's population was found to have been divided into 561 households in 1980. Of these 561 households, 466 were reported to be families, as defined by the Census Bureau. Households include families which are persons who reside together and are related by blood, marriage, or adoption.

Persons per household: Household size across the nation has declined sharply over the last decade, and this trend holds true in the Nashua region and in Brookline.

TABLE IV-7

ESTIMATED HOUSEHOLD SIZE
BROOKLINE, 1988

Estimated Population	2,220
Estimated Households	860
Persons per Household	2.58

Source: Estimated Population - OSP Population Estimates, 1988.
Estimated Households - 1980 U.S. Census
Town of Brookline Building Permit Data

Chapter V.

Transportation

CHAPTER V

TRANSPORTATION

The purpose of this chapter is to inventory the existing highway network in the town of Brookline, including highway classification, traffic volumes, roadway conditions and travel patterns. Issues regarding highway policy, safety and capacity deficiencies, forecasts of future travel are discussed. Recommendations for improvement to the highway network are also provided.

EXISTING HIGHWAY NETWORK

A. Highway Classification

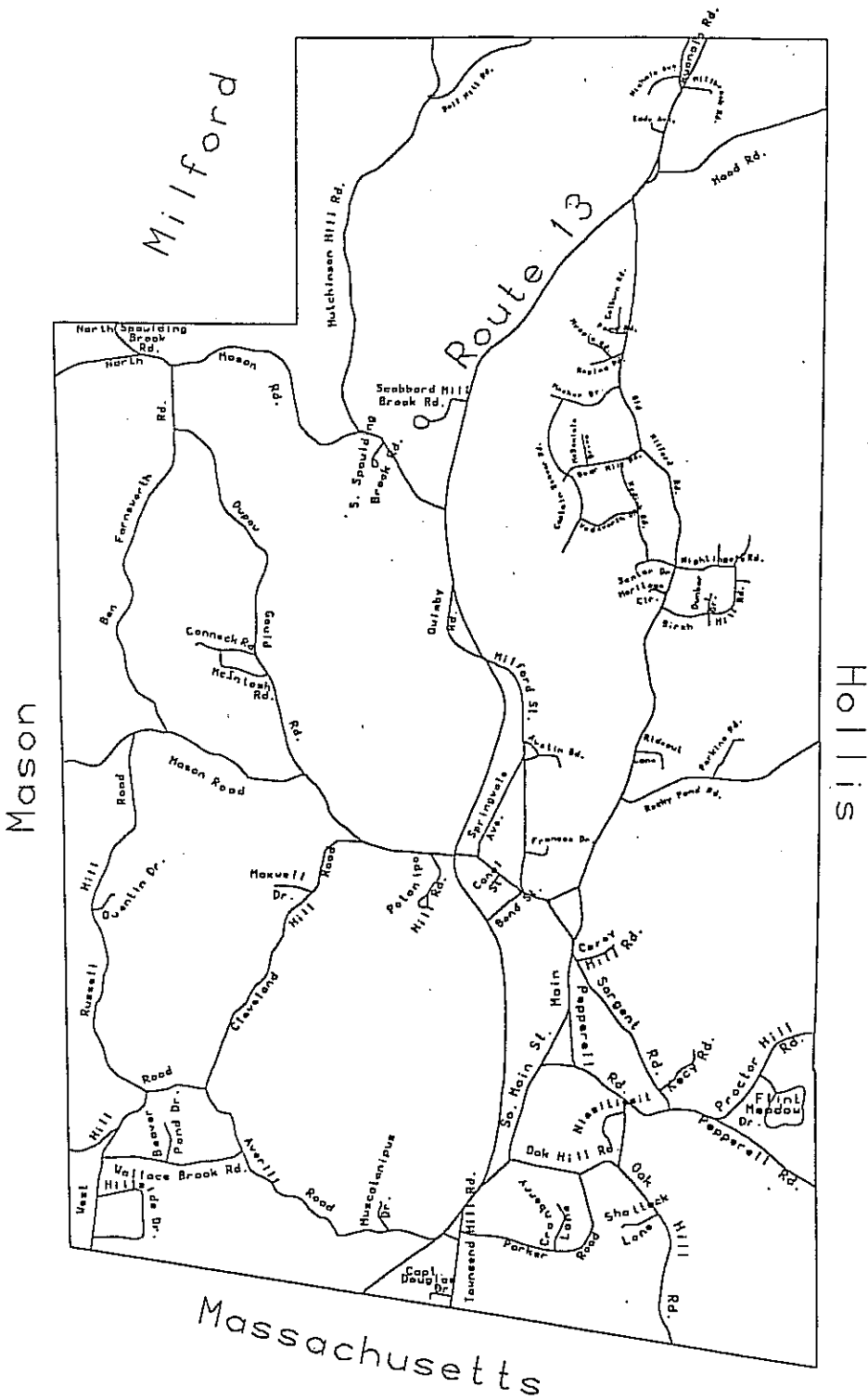
There are a total of 43.65 miles of road in Brookline. Figure V-1 provides a map of the Brookline's existing roadway network. Highways generally are classified into different categories according to their functions and source of funding.

1. Functional Classification

The following provides a description of the urbanized and small area functional classification system characteristics:

<u>Functional System</u>	<u>General Characteristics</u>
Major arterial	<ol style="list-style-type: none">1. Serves the major traffic movements within urbanized areas such as between central business districts and outlying residential areas, between major intercity communities, or between major suburban centers.2. Serves a major portion of the trips entering and leaving the urban area, as well as the majority of the through traffic desiring to bypass the central city.3. Provides continuity for all rural arterials which intercept the urban area.
Minor arterial	<ol style="list-style-type: none">1. Serves trips of moderate length at a somewhat lower level of travel mobility than principal arterials.2. Provides access to geographic areas smaller than those served by the higher system.3. Provides intracommunity continuity, but does not penetrate identifiable neighborhoods.
Collector	<ol style="list-style-type: none">1. Collects traffic from local roads and channels it into the arterial system.2. Provides both land access and traffic circulation within residential neighborhoods, commercial and industrial area.

FIGURE V-1
GENERAL HIGHWAY MAP
TOWN OF BROOKLINE



Functional
System

Local

General Characteristics

1. Comprises all facilities not on higher systems.
2. Provides access to land and higher systems.
3. Through traffic usage discouraged.

Table V-1 provides a summary of the functional classification of roads in Brookline. About sixteen percent (16%) of the road mileage is classified as non-public. NH 13 provides the major arterial mileage and NH 130 accounts for the major collector mileage. Those roads classified as minor collector are Pepperell Road, between NH 130 and the Hollis town line, and Mason Road between NH 13 and the Mason town line. Figure V-1 on page V-2 shows Brookline's highway and road network.

TABLE V-1

FUNCTIONAL CLASSIFICATION OF ROADS
IN BROOKLINE AS OF JANUARY, 1988

	<u>Mileage</u>	<u>Pct. of Total</u>
Non-Public Road	7.34	16.8%
Major Arterial	6.81	15.6%
Major Collector	2.56	5.9%
Minor Collector	2.75	6.3%
Local Systems	24.19	55.4%
Total	43.65	100.0%

Source: New Hampshire Department of Transportation, 1988

2. Funding Classification

a. State Aid

The State-aid classification system has been defined by RSA 229-231 to determine responsibility for construction, reconstruction and maintenance as well as eligibility for use of state aid funds. The following is a description of the State-aid system:

Class I, Trunk Line Highways, consist of all existing or proposed highways on the primary state highway system, excepting all portions of such highways within the compact sections of towns and cities, provided that the portions of turnpikes and interstate highways within the compact sections of those cities are Class I highways.

Class II, State-Aid Highways, consist of all existing or proposed highways on the secondary state highway system, excepting portions of such highways within the compact sections of towns and cities.

All sections improved to the satisfaction of the Commissioner are maintained and reconstructed by the State. All unimproved sections, where no state and local funds have been expended, must be maintained by the town or city in which they are located until improved to the satisfaction of the highway commissioner.

All bridges improved to state standards with state-aid bridge funds are maintained by the State. All other bridges shall be maintained by the city or town until such improvement is made.

Class III, Recreational Roads, consist of all such roads leading to, and within state reservations designated by the Legislature. The NH DOT assumes full control of reconstruction and maintenance of such roads.

Class IV Highways, consist of all highways within the compact sections of cities and towns listed in RSA 229:5, V. The compact section of any such city or town shall be the territory within such city or town where the frontage on any highway, in the opinion of the Highway Commissioner, is mainly occupied by dwellings or buildings in which people live or business is conducted, throughout the year. No highway reclassification from Class I or II to Class IV shall take effect until all rehabilitation needed to return the highway surface to reputable condition has been completed by the State.

Class V, Rural Highway, consist of all other traveled highways which the town or city has the duty to maintain regularly.

Class VI, Unmaintained Highways, consist of all other existing public ways, including highways subject to gates and bars, and highways not maintained in suitable condition for travel for five years or more.

Scenic Roads, are special town designations of Class IV, V, and VI roads where cutting or removal of a tree, or disturbance of a stone wall, must go through the hearing process and written approval of local officials (See RSA 231).

Table V-2 summarizes the state aid classification road mileage in Brookline.

TABLE V-2

STATE AID CLASSIFICATION OF ROADS
IN BROOKLINE AS OF JANUARY, 1988

	<u>Mileage</u>	<u>Pct. of Total</u>
Class I	6.81	15.6%
Class II	7.17	16.4%
Class III	0.00	0.0%
Class IV	0.00	0.0%
Class V	21.68	49.7%
Class VI	7.99	18.3%
	-----	-----
Total	43.65	100.0%

Source: New Hampshire Dept. of Transportation, 1988

b. Federal Aid

A second funding classification is the Federal-aid highway system. Highways which fall into this category are eligible for funds that are distributed by formula. In Brookline, the 6.78 miles of NH 13 is classified as a federal-aid primary highway, while the 2.56 miles of NH 130 fall into the rural secondary category of the Federal-aid system.

B. Traffic Volumes

Traffic volume data for the Town of Brookline's road network comes from three basic sources. First, the N.H. Dept. of Transportation which collects traffic counts along highways on a periodic basis throughout the State. Second, the Nashua Regional Planning Commission (NRPC) which has an ongoing traffic counting program for its member communities. A third source of traffic count data is traffic impact studies conducted for some larger developments within Town.

Because of the Town's size and rural character, the N.H. DOT has not collected a significant amount of information for roads in Brookline except NH 13. A State permanent traffic recorder is located on NH 13 just north of Old Milford Road near Melendy Pond. Historical traffic growth at this location is shown in Table V-3 and Figure V-2.

From 1983 to 1986, traffic on NH 13 grew at an annual rate of over ten percent. Average annual growth rates since 1970 are approximately six percent per year. Compared with the trend in other permanent counting stations in the area for the same period, this growth rate is close to the growth on NH 101 in Amherst (5.1%), and NH 101A in Milford (6.1%).

Significant fluctuations occur in average daily traffic counts from season to season. January is typically the lowest traffic volume month, with counts generally rising to a peak during the June-August summer season. Table V-4 provides data on monthly fluctuations for NH 13 for 1987, 1988 and 1989.

Short-term traffic count data collected since 1984 for the town are presented in Table V-5. These counts are average counts of two to five weekdays when the recorder was present at a location (summer season). Figure V-4 further indicates the locations where these counts were collected.

The most heavily traveled road is NH 13, which runs north-south through the Town provides access for through traffic from Massachusetts and Milford. NH 130, which connects with NH 13 near the center of the Town provides access to Hollis and Nashua also carries a large amount of traffic. Beside these two state routes, other roads in Brookline serve predominantly local traffic.

TABLE V-3

HISTORICAL TRAFFIC GROWTH ON NH 13
NEAR MELENDY POND IN BROOKLINE

Year	Average Sunday	Average Saturday	Average Weekday	Adjusted Daily Average	Percent Gain/Loss
1970	2,811	2,600	2,037	2,227	
1971	2,821	2,622	2,167	2,325	4.4%
1972	2,883	2,604	2,238	2,384	2.5%
1973	3,239	2,984	2,492	2,668	11.9%
1974	3,083	2,909	2,575	2,695	1.0%
1975	3,365	3,064	2,724	2,864	6.3%
1976	3,445	3,249	2,852	2,993	4.5%
1977	3,704	3,501	3,143	3,275	9.4%
1978	2,672	3,407	3,317	3,227	-1.5%
1979	3,674	3,673	3,401	3,478	7.8%
1980	3,778	3,582	3,312	3,416	-1.8%
1981	3,974	3,729	3,468	3,578	4.7%
1982	3,848	3,660	3,431	3,523	-1.5%
1983	4,001	4,114	3,962	4,002	13.6%
1984	4,541	4,709	4,416	4,476	11.8%
1985	4,900	5,299	4,891	4,950	10.6%
1986	5,023	5,659	5,231	5,262	6.3%
1987	5,478	5,939	5,947	5,879	11.7%
1988	5,759	6,139	6,289	6,192	5.3%
1989	5,963	6,434	6,471	6,392	3.2%
Growth					
'70-89	112.1%	147.5%	217.7%	187.0%	

Source: New Hampshire Department of Transportation, 1970-89

FIGURE V-2

HISTORICAL GROWTH TRENDS ON NH 13

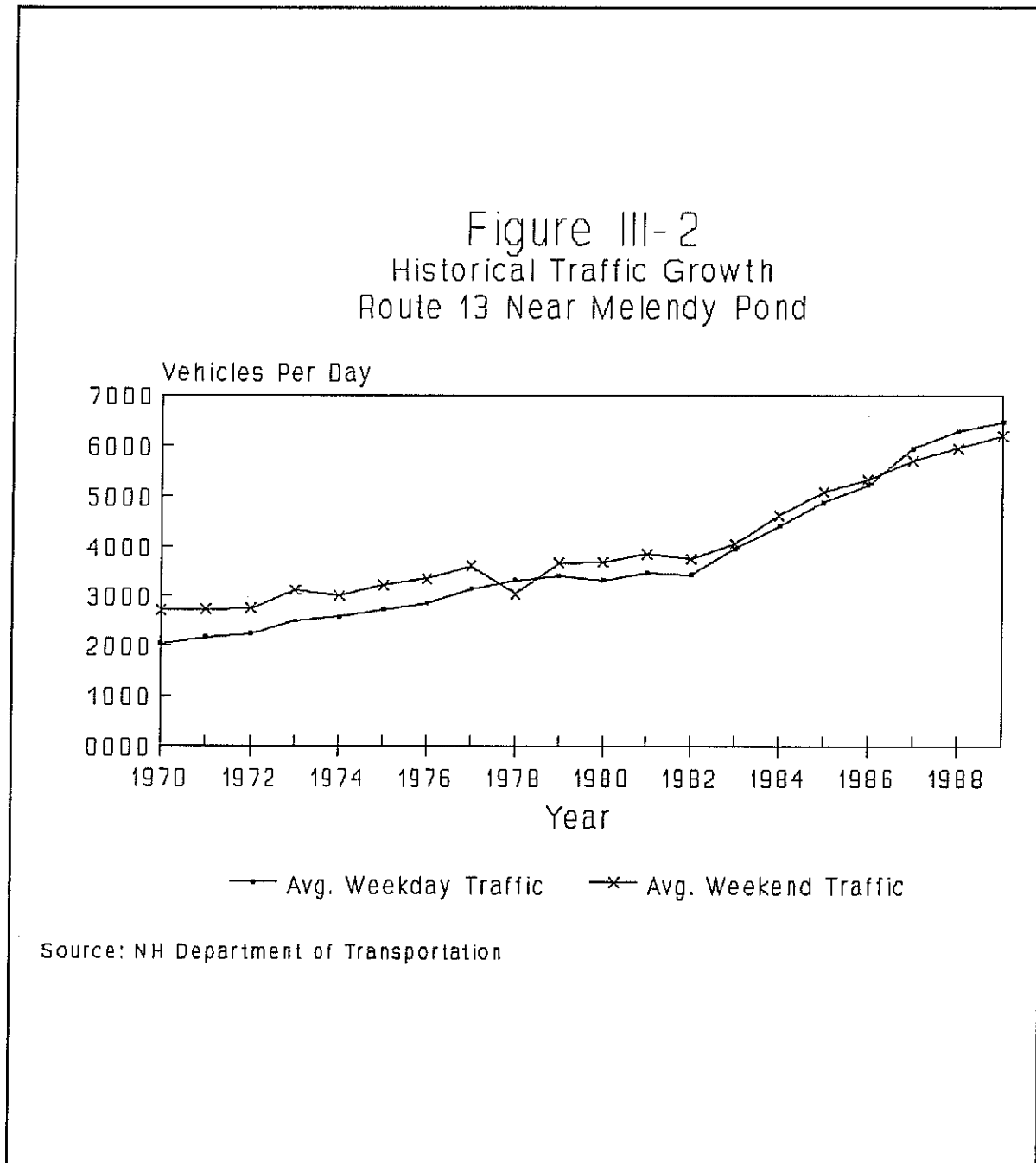


TABLE V-4

AVERAGE DAILY TRAFFIC BY MONTH OF YEAR
ON NH 13 NEAR MELENDY POND IN BROOKLINE

Month	1987		1988		1989		1990	
	ADT	% Yr.	ADT	% Yr.	ADT	% Yr.	ADT	% Yr.
January	4,486	6.4%	5,127	6.9%	5,434	7.1%	5,582	N/A
February	5,089	7.3%	5,299	7.1%	5,508	7.2%	5,518	N/A
March	5,080	7.3%	5,759	7.7%	5,962	7.8%	6,125	N/A
April	5,659	8.1%	6,182	8.3%	6,320	8.3%	6,246	N/A
May	6,166	8.8%	6,606	8.9%	6,697	8.8%	6,746	N/A
June	6,403	9.2%	6,603	8.9%	6,907	9.1%	6,713	N/A
July	6,491	9.3%	6,855	9.2%	6,732	8.8%		
August	6,640	9.5%	6,941	9.3%	7,038	9.2%		
September	6,291	9.0%	6,673	9.0%	6,751	8.9%		
October	6,288	9.0%	6,455	8.7%	6,760	8.9%		
November	5,797	8.3%	6,131	8.2%	6,192	8.1%		
December	5,579	8.0%	5,918	7.9%	5,893	7.7%		
Total	69,969		74,549		76,194			

ADT - Average Daily Traffic

NA - Not Applicable

Source: N.H. Department of Transportation, 1987-90

FIGURE V-3

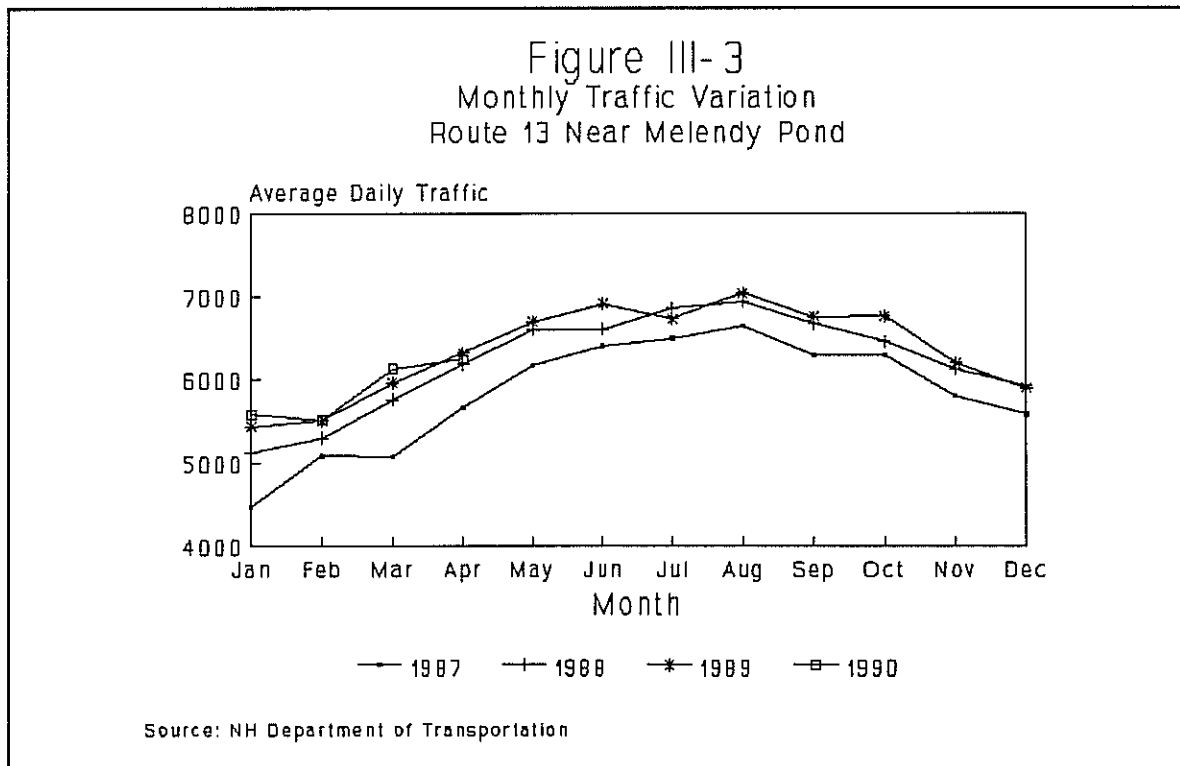
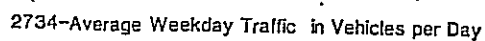


TABLE V-5
WEEKDAY TRAFFIC COUNTS IN BROOKLINE

Street	Location	1984	1988	1989
Main St.	S. of Sargent Rd.	2,613		
Main St.	W. of Milford St.	1,177		
Pepperell Rd.	E. of Cross Rd.	3,540		
Mason Rd.	at Mason Town Line	906		
NH 13	MASS State Line	4,339	5,212	
NH 13	Milford Town Line			6,617
NH 13	S. of NH 130			4,649
NH 13	S. of Mason Rd.			5,523
NH 130	S. of Sargent Rd.	2,795		
NH 130	E. of NH 13	1,421		2,116
NH 130	at Hollis Town Line	2,998	3,860	4,255
Old Milford Rd.	S. of NH 13	364	592	
Old Milford Rd.	at Bear Hill Rd.	483		
Old Milford Rd.	at Rocky Pond Rd.		646	
Mason Rd.	W. of NH 13			2,734
NH 130	N. of Main St.	1,431		

Source: Nashua Regional Planning Commission

Figure V-4 shows the locations and respective counts of some of these sites.

TRAFFIC COUNT LOCATIONS (*)
AND 1989 TRAFFIC COUNTS

* Traffic Recorder Location

Source: NRPC, 1989 & 1990.

See Table V-5

C. Roadway Conditions

The pavement conditions of Brookline roads were surveyed by members of the Master Plan Committee. The Survey was a subjective assessment of road conditions based on type of surface (paved vs. gravel), overall pavement condition based on the amount of bumps and/or cracks, smoothness of the ride, and other problems specific to the segment of road being surveyed, such as narrow width, steep slope, sharp curves, poor shoulders or poor drainage. The survey found that, generally, the heavier travelled roads were already paved and in fair to good condition, while most of the unpaved roads were rutted, narrow, and/or accessible only with four-wheel drive vehicles. Most roads built as part of new developments since 1984 are paved and in excellent condition. The results of the survey are summarized in Table V-6.

Except for the state-maintained roads, most of the collector roads in Brookline were found to be narrow when compared to State guidelines that set pavement widths depending on road traffic levels. For two lane roads (one lane in each direction) carrying 0-50 vehicles per day (vpd), the State guideline is for 9 foot lane width (18 foot total width). When Average Daily Traffic (ADT) is 50-200 vpd, the guideline is for a 10 foot lane width. Above this figure, lane and shoulder widths continue to increase with an increase in ADT. All roads in Brookline except for Route 13 are two lanes. Coupled with the problem of narrow width, most of the roads in Brookline have poor or no shoulders, which creates a safety hazard for pedestrians, bicyclists, and joggers and provides no room for vehicles to pull over during emergency situations.

The problems identified in the Road Condition Survey were also reflected in the resident's Attitude Survey completed as part of the 1989 Master Plan Update. In the survey, 115 or fifty-nine percent (59%) of the residents responding are satisfied with the current road conditions in town, while 67 or thirty-four percent (34%) of them are not, the remaining thirteen answering 'not sure'. However, this does not mean that fifty-nine percent of the town residents are satisfied with the condition of every road in town since most people are only familiar with the roads they use most often. The Attitude Survey also asked residents to list the road(s) they think need to be improved. The results are summarized in Table V-7.

Beside Routes 13 and 130, Old Milford Road and Mason Road are the most heavily traveled roads in town (see Table V-5); these two roads are also ranked at the top of the list in Table V-7 on page V-16. With a total pavement width of only 18 feet, poor shoulders, and average weekday traffic of 646 (1988) Old Milford Road near Rocky Pond Road is in need of improvement. Heavy truck traffic were also noticed at this section of Old Milford Road during the Road Condition Survey.

Mason Road, ranked second on the list, has a pavement width of only 17.5 feet (no shoulder) which is too narrow for a road carrying 2,734 (W. of NH 13, 1989) vehicles a day. Between the Mason town line and Russell Hill Road, the pavement on Mason Road is in poor condition; a count of 906 vpd was measured at the town line in 1984. The section of this road between Russell Hill Road and Ben Farnsworth Road has been scheduled for upgrade in 1990 in the current Capital Improvement Program (CIP) of the Town.

Summary of Road Condition Survey

Road Name	Type of Road	Year Paved	Road Width (ft)	Type of Surface		Overall Condition	Hide at Speed Limit	Problems				Comment	
				Paved	Gravel			Narrow Width	Steep Slope	Sharp Curves	Other		
Austin Rd. (0.1 mi., to end of pavement)	(dead end)		18	X		Excellent	Bumpy	Smooth	X	X			
Averill Rd. (from NH 13)				X						X	X		
Averill Rd. (to Cleveland Hill Rd.)	Class VI			X		X	X	X	X	X	X		
Ball Hill Rd.													
Bear Hill Rd.			24	X		X	X	X	X				
Beaver Pond Rd. (cul-de-sac)		1988	19	X		X	X	X	X			4 WD only	
Ben Farnsworth Rd.	Class VI												
Birch Hill Rd.			24	X		X	X	X	X	X		4 WD only	Subject to town approval
Bohanon Bridge Rd.		1984-88 mid '70's		X								Wood Bridge	
Bond St.				X		X	X	X	X				
Canal St. (dead end)				X			X						
Captain Douglass Dr. (cul-de-sac)		1989	20	X		X	X	X	X				
Captain Seaver Dr. (dead end)			20	X		X							
Cleveland Hill Rd. (.2 mile, N. of Averill)			19	X		X							
Cleveland Hill Rd.			21	X		X	X	X	X				
Cleveland Hill Rd. (near Maxwell Dr.)			21	X		X	X	X	X				
Colburn Rd. (dead-end)				X						X			
Conneck Rd. (cul-de-sac)		1986		X		X							
Corey Hill Rd. (dead-end)	Private	1987	20	X		X			X	X		Poor drainage	
Cranberry Ln. (cul-de-sac)				X		X							
Cross Rd.				X		X							
Dunbar Rd. (hammer head)		1988	20	X		X	X	X	X				
Dupaw Gould Rd. (North end) (dead end)	Class VI												
Dupaw Gould Rd. (South end) (dead end)	Class V			X		X			X	X		Narrow bridge	
Eddy Ave. (cul-de-sac)		1986		X		X							
Elm St.				X		X				X			

Table III-6
Summary of Road Condition Survey

Road Name	Type of Road	Year Paved	Road Width (ft)	Type of Surface		Overall Condition	Ride at Speed Limit		Problems					Comment	
				Paved	Gravel		Excellent	Good	Fair	Poor	Bumpy	Smooth	Narrow Width		Steep Slope
N. Mason Rd. (W. of Dump)	Class VI	1988	15.5		X		X			X		X			Subject to town approval
N. Mason Rd. (.8 mile, E. of Dump)			19	X			X			X				Narrow bridge	
N. Spaulding Brook Rd.			15		X		X			X		X			
Oak Hill Rd. (to Town Line)			21	X			X				X	X			
Oak Hill Rd. (S. Main to Shattuck Ln.)				X			X			X					
Old Milford Rd. (near Melendy Pond)	Class II Private	1970,86	21	X		X				X		X			Subject to town approval
Old Milford Rd. (near Rocky Pond Rd.)			18	X			X			X		X			
Old Milford Rd. (near Steam Mill Hill Rd.)			21	X			X			X		X			
Old Milford Rd. (near Steam Mill Hill Rd.)			21	X			X			X		X			
Parker Rd.			22	X			X			X		X			
Pepperell Rd.		1987		X			X			X		X			Subject to town approval
Perkins Rd.				X			X			X		X			
Peterson Rd. (cul-de-sac)				X			X			X		X			
Pond Rd. (dead end)			20	X			X			X		X			
Potanipto Hill Rd. (cul-de-sac)				X			X			X		X			
Quentin Dr. (cul-de-sac)		1986		X			X			X		X			Subject to town approval
Quimby Rd.				X			X			X		X			
Regina Rd. (E. of Myopia Rd.)				X			X			X		X			
Regina Rd. (W. of Myopia Rd.)				X			X			X		X			
Rideout Lane (cul-de-sac)			20	X			X			X		X			
Rocky Pond Rd. (to Town Line)	Class VI (dead end)	1988		X			X			X		X		No shoulders	Subject to town approval
Rocky Pond Rd. (.3 mile, E. of Old Milford)			19	X			X			X		X			
Ruonala Rd.				X			X			X		X			
Russell Hill Rd. (dead end)			15.5	X			X			X		X			
Russell Hill Rd. (.5 mile, from Mason)				X			X			X		X			
Russell Hill Rd. (near W. Hill Rd.)		1989		X			X			X		X			Part subject to town app.
Sargent Rd. (dead end)				X			X			X		X		Close to Macy Rd.	
Senter Dr. (cul-de-sac)			20	X			X			X		X			

Table III-6
Summary of Road Condition Survey

Road Name	Type of Road	Year Paved	Road Width (ft)	Type of Surface		Overall Condition	Ride at Speed Limit		Problems				Comment	
				Paved	Gravel		Excellent	Good	Fair	Poor	Bumpy	Smooth		Narrow Width
Shattuck Ln. (cul-de-sac)	Private	1989		X		X			X	X	X			
Skyline Dr.			X											
South Main St.			X											
Springvale Ave.			X											
Steam Mill Hill Rd.	Private	1987		X		X			X	X	X			
Stonehedge Rd.			X											
S. Spaulding Bk. Rd. (cul-de-sac)			X											
Townsend Hill Rd.			X											
Wadsworth Dr.		1987	18	X		X			X	X	X			No shoulders
Wallace Brook Rd.		1988	22.5	X		X			X	X	X			
W. Hill Rd. (E. of R. Hill Rd.)			12	X					X	X	X			
W. Hill Rd. (W. Bk. Rd.-R. Hill Rd.)			15	X					X	X	X			
W. Hill Rd. (.4 mile, S. of Wal. Bk. Rd.)		1989	20.5	X		X								Subject to town approval

CONDITION: Excellent - very smooth, little or no cracking.
Good - smooth, with some signs of wear.
Fair - visible signs of wear (cracks, ruts, etc.) prevalent travel speed may be reduced.
Poor - badly rutted or cracked, speeds reduced, in need of repair.

Subject to town approval

TABLE V-7

ROADS WHICH NEED IMPROVEMENT ACCORDING TO
1989 MASTER PLAN SURVEY RESPONSES

<u>Road Name</u>	<u>Number of Responses</u>	<u>Road Name</u>	<u>Number of Responses</u>
Old Milford Road	31	Hood Road	6
Mason Road	22	Russell Hill Road	5
Oak Hill Road	17	South Main Street	4
Cleveland Hill Road	17	Dupaw-Gould Road	4
North Mason Road	16	Corey Hill Road	4
Averill Hill Road	15	West Hill Road	3
Rocky Pond Road	15	Sargent Road	3

Third on the list is Oak Hill Road, which had a daily traffic count of 1,423 in 1984. The road has a 0.3 mile paved section west of South Main Street, which is in fair condition and has a narrow width and steep slope. Improvement of this road is scheduled between 1992 and 1995 and is also included in the Town's 1990-95 CIP.

In Table V-7, number of responses drops significantly for the roads after Rocky Pond Road, this may indicate that only a small number of people travel on these roads. It is also noted that parts of both Russell Hill and Dupaw-Gould Roads are classified as Class VI and that Corey Hill Road is a Private Road.

Given the rural character of the Town of Brookline, it is concluded that the capacity of the Town's roadway network is adequate to handle existing traffic volumes. However, to ensure traffic safety, some roads are in need of improvement, especially those collectors that had experienced major growth in traffic during the last few years. The Town should investigate the need for a long-term roadway maintenance/improvement program as part of an overall Capital Improvement Plan. This issue will be addressed in further detail in the last section of this chapter.

D. Bridges

There are five bridges in Brookline, as listed in Table V-8. These were each inspected by the NH Department of Transportation in 1986 and 1987, with results described below.

Bridge 063/115 on North Mason Road is a concrete and steel bridge completed in 1989. Approach conditions are not feasible for caution crossing--there is not enough sight distance.

The bridge on Dupaw-Gould Road is actually an aluminum structural plate arch (box culvert). The box culvert is in good condition, with good approach alignment and a remaining life of 50 years.

TABLE V-8

TOWN-MAINTAINED BRIDGES IN BROOKLINE

Bridge Number	Location	Bridge Length	Width	Over	Restrictions
063/115	North Mason Rd.	52'4"	14'6"	Spaulding Br.	
065/085	Dupaw-Gould Rd.	22'0"	26'0"	Lancy Brook	
067/115	North Mason Rd.	13'10"	18'1"	Scabbard Mill Brook	
088/074	Bond St.	45'0"	24'0"	Nissitissit River	
105/055	Bohannon Br.Rd.	34'8"	13'11"	Nissitissit River	1 lane

Bridge 067/115 on North Mason Road is a concrete slab in fair condition and having a fair approach alignment, and a remaining life of ten years without major reconstruction. Inspector's recommendations include installation of an adequate rail system, cleaning and paving of the deck shoulders, rebuild and raise the wings to retain roadway and remove beaver dam and drift.

The Bond Street bridge is an I-beam concrete bridge, in fair to good condition. The guardrail is substandard and in poor condition. The approach alignment is good and there is a remaining life of 15 years without major reconstruction. Inspector's recommendations include installing an adequate rail system and deck expansion seal.

The bridge on Bohannon Bridge Road is a one-lane I-beam wood bridge with substandard deck rails and guard rails. Inspector's recommendations include installing an adequate rail system, attaching the deck to all stringers for lateral support, and concrete facing of the north substructure. The bridge has a remaining life of five years without major reconstruction and should be programmed for replacement.

E. Travel Patterns of Brookline Residents

The most recent available information on origin and destination patterns for travel to work place is the 1980 U.S. Census. Unfortunately, such data are now nine years old and total commuter trips have risen significantly since that time. This is evident from the estimated population growth figures for the last nine years as well as from actual traffic count trends that have occurred along major arterials in the region. An extrapolation of the 1980 data to the present has been made by applying the growth in employment that has occurred in each community for the 1980-86 period, applying the growth rate to the 1980 commuter destination totals, and extrapolating the trend to 1988.

Table V-9 presents both the original 1980 and estimated 1988 commuting patterns in Brookline. Results from the Community Attitude Survey done in 1984 regarding travel patterns of Brookline residents is also included in the Table. The numbers in the table indicate the number of persons commuting from one community to another, not the number of daily round trips made.

The 1988 estimates show that 14.5% of Brookline residents work in town while over forty percent commute to Nashua (26.0%) and neighboring Milford (17.5%). About seventeen percent commute to Massachusetts, most of them to nearby towns such as Pepperell, Townsend, Groton, and the Fitchburg area, while only a small percentage commute to the Boston area.

TABLE V-9

COMMUTING PATTERNS FROM BROOKLINE

Place of Work of Brookline Residents	1980 CENSUS	Pct. Total	1984 Survey	Pct. Total	1988 Est.	Pct. Total
Amherst	32	3.8%	9	3.1%	80	6.4%
Brookline	134	16.1%	35	11.9%	180	14.5%
Hollis	31	3.7%	3	1.0%	46	3.7%
Merrimack	65	7.8%	10	3.4%	96	7.7%
Milford	101	12.1%	30	10.2%	217	17.5%
Nashua	213	25.6%	114	38.6%	323	26.0%
Manchester	15	1.8%	9	3.1%	18	1.4%
Bedford	17	2.0%	3	1.0%	20	1.6%
Other N.H.	45	5.4%	13	4.4%	50	4.0%
Massachusetts	179	21.5%	69	23.4%	213	17.1%
Total	832		295		1243	

Source: 1980 U.S. Census

Brookline Community Attitude Survey, 1984

NRPC estimates 1988

The travel patterns indicate that the majority of work trips made by Brookline residents are through NH 13 and/or NH 130. These travel patterns do not pose any problems with the capacity of existing roadways. However, any increase in employment opportunities in Brookline, if desired as a long-term goal of this Plan, may result in an increase in incoming and outgoing commuter traffic on Brookline roads.

KEY HIGHWAY ISSUES

1. Development Impacts On Highways

Communities face the problem of having to upgrade the local road network as new development occurs. To the extent that new development projects create a need for improvements, developers should be required to pay their proportion of the cost to implement these improvements. The amount of developer contributions should bear a rational connection to the needs created by and the benefits conferred upon the subdivision.

While traffic impact fees can be easily assessed for immediate improvements, the process is more complicated for larger-scale highway projects which may not be needed (or adequately funded) for several years. To assess traffic impact fees for longer range projects, the Town should identify future highway projects in its Capital Improvement Program, which is updated annually,

including estimated costs and projected funding sources. A rational formula should be developed to allocate financial responsibility between the municipality and developer. Factors to be used in determining the allocation of costs may include, but are not limited to, the following:

- o The standard to which the Town presently maintains the road;
- o The frontage of the proposed development;
- o The potential traffic increase necessitated by the proposed development;
- o The character and potential for development of the neighborhood served by these access roads; and
- o The number of residences presently fronting on or normally trafficking these roads and compliance with the Town's Master Plan.

2. Scenic Road Designation

As New Hampshire's residential, commercial and industrial development has grown, so has the need to improve the road system, thereby reducing the number of country roads that constitute an important asset to the State. To prevent the elimination of scenic roads, communities are enabled by State legislation to designate roads other than state highways as Scenic Roads. This Law protects such roads from repair or maintenance which would involve the cutting or removal of medium and large-sized trees, except with the written consent of an official body. The law is an important tool in protecting the scenic qualities of roads. The large trees and stone walls that line many rural roads are irreplaceable and contribute heavily to the New England character of the region's towns.

In Brookline, North Mason and Averill Roads have been designated as Scenic Roads. The Town should continue to utilize the N.H. Scenic Road Law as a method of preserving the town's rural character.

3. Surface Treatment and Road Maintenance

The gravel or paved surface of a roadway cannot be maintained in good condition if due consideration is not given to the design and construction of the road itself. A gravel surface on a suitable base and sub-base will last for many years in good condition if the roadway is properly graded and drained. Thus, the Town may require a paved surface or gravel surface treatment, which is deemed to best serve the needs of a particular area of town.

An ongoing issue for communities is how to best maintain their road system. Typically, road maintenance is conducted on a "worst first" basis, but there is no system in place that encompasses the entire road network. The Town of Brookline should consider implementation of a pavement management system for targeting roads for maintenance, resurfacing and reconstruction. The benefits of such a program are improved pavement conditions, reduced long run costs and establishment of a permanent data base for the road network conditions. The N.H. Dept. of Transportation has adopted a pavement management system and conducted analysis for the State highways. The results of the analysis for the Town of Brookline are detailed below in Table V-10. A brief explanation of analysis criteria is provided. Ratings rank from 0 (worst) to 5 (best).

Sub-grade Index (SGI) - The estimate of the subgrade adequacy.

Surface Distress Index (SDI) - A measure of the surface pavement structure.

Ride Comfort Index (RCI) - Indication of how the public views a road.

Pavement Service Index (PSI) - A total measure of the quality of the pavement, through combining the SDI and RCI.

The Town of Brookline could utilize the same pavement management system for analysis of its own highway network. N.H. DOT equipment for performing the road inspections is made available to those who have been properly trained by State personnel.

TABLE V-10

PAVEMENT MANAGEMENT DATA IN BROOKLINE

Route	Section	Length (miles)	Rut Depth		SDI	RCI	PSI
			SGI	(inches)			
NH 13	A1 01	1.87	2.8	0.10	4.08	3.07	3.58
NH 13	A2 01	2.15	2.8	0.10	2.28	2.73	2.50
NH 13	A3 01	2.79	2.5	0.14	2.54	2.51	2.52
NH 130	A1 01	1.89	2.0	0.21	3.36	2.40	2.88
NH 130	A1 02	1.05	2.0	0.21	3.36	2.40	2.88
NH 130	A1 03	0.64	2.0	0.21	3.36	2.40	2.88
Quimby Rd.	B7 01	0.48	2.0	0.17	1.41	1.42	1.42
Meeting House Hill Rd.	B8 01	1.57	1.7	0.12	3.08	2.18	2.63
Pepperell Rd.	C2 01	0.55	2.6	0.15	1.89	2.96	2.42
S. Main St.	C3 01	0.98	2.1	0.14	1.98	2.85	2.42

Source: 1987 Pavement Management Report, N.H. DOT

4. Development Policy for Class VI Roads

Class VI roads, which in general are unpaved roadways in poor condition, make up approximately eighteen percent of the roads in Brookline. The Town should form a policy to control and guide future developments along these roads. The Planning Board should consider the effect which proposed subdivisions may have on the roads and require the developer to upgrade the roads as a condition for subdivision approval. Even if the new road in a subdivision meets the Town's specifications, the other roads (especially Class VI roads) in the area may not be adequate to accommodate the increased traffic resulting from the new development. In this case the developer/subdivider should pay his proportion of the cost to upgrade these off-site roads. In principle, developments along Class VI roads should be disallowed.

5. Cul-De-Sacs

Cul-De-Sacs can be an integral part of an efficient road network if used properly. If sited improperly, cul-de-sacs can lead to an inefficient road system and level of service problems on collector roads.

One of the many issues raised when reviewing plans with cul-de-sacs is whether the road should extend to the property boundary. The following should be used as a guide to both the planning board and developers in building roads in Town.

The Planning Board should encourage cul-de-sacs to the property boundary in the following situations:

- o Extending cul-de-sacs to the property edge to have less curb cuts off Route 13. For example, Rock Ramond Road can service a lot which also has access from Route 13, thereby discouraging a curb cut on Route 13, and close to a major intersection.
- o Where a future possible connection may be appropriate for establishing an efficient road network in Town. For example, by including a stub road off of Talbot Road, future access to other lots and possibly Route 13 may exist, thereby establishing another possible east-west road from Cleveland Hill to Route 13, possibly reducing traffic along Mason Road and Averill Road.

The Planning Board should discourage cul-de-sacs to the property boundary in the following situations

- o Where the cul-de-sac would be between two zones. For example, a through road leading from a solely residential zone to a solely commercial zone may not be appropriate. A through road may encourage truck traffic and patrons to drive through a residential neighborhood to get to the commercial area. However, at this time, there is no zone in town which is zoned for only commercial use.
- o Where extending it would produce a dangerous intersection.
- o Where it is coming off of an existing cul-de-sac. This may produce long cul-de-sacs, when an option of building a proper road network exists.
- o Where an extension of the cul-de-sac to abutting property would be infeasible due to steep slopes, major wetland areas or other natural features of the land.
- o Where an extension would lead to property which would be better serviced from another road. For example, a cul-de-sac off of Averill Road may be better than one off of Hillside Drive, an existing cul-de-sac.

6. Development Control on NH 13

The only industrial/commercial zones in Brookline are 1000 feet wide along NH 13; south of Mason Road to the State Line in the South, and between 500 feet South of Milford Street and North Mason Road to the North. The Town should have a well planned and consistent way of dealing with future development plans along NH 13 so that it will not become another highway that is characterized by numerous traffic lights and curb cuts causing severe traffic tie-ups and delays (NH 101A in Nashua is an example). In preparing such a policy for development control along NH 13, the Planning Board should consider the following:

- o Future developments should provide safe and convenient access to NH 13. The safest possible location for access shall be selected and all access points should meet the minimum safe sight distance standard shown as follow:

<u>Type of Road</u>	<u>Speed Limit, or if None, Typical Speed</u>	<u>Minimum safe Sight Distance</u>
Minor roads	30 mph or lower	200 feet
Through roads	31 - 40 mph	275 feet
Through roads	41 - 50 mph	350 feet
Major roads	50 mph and over	400 feet

Source: AASHTO

- o The existing frontage requirement of 200 feet and existing setback requirements in the zoning ordinance will also maintain the rural characteristics of NH 13. Buffers in the front of the lots will also serve this purpose. Good examples of front yard buffering along NH 13 are Grant Plastics and Bingham Lumber.

RECOMMENDATIONS

1. The Planning Board should consider implementing traffic impact fees.
2. The Town of Brookline should implement a pavement management system for targeting roads for maintenance, resurfacing and reconstruction.
3. Frontage roads parallel with NH Route 13 within the subdivision(s) should be encouraged in order to limit the number of curb cuts on NH Route 13.
4. Access drives to developments on either side of NH Route 13 should be aligned to form a four-way intersection.
5. The Town should establish a sign ordinance to control the size, type, height, and location of signs to be put up in the future.

Chapter VI.

Community Facilities

CHAPTER VI

COMMUNITY FACILITIES

How well a town functions is often governed by the type and adequacy of community services it provides. This section of the Master Plan identifies existing community facilities of Brookline. Also presented are recommendations to better address deficient areas of service.

As recently experienced by many New Hampshire towns, inadequacy of community facilities is the result of accelerated town growth. New residential, commercial, and industrial growth brings with it a greater demand on existing facilities and requirements for added levels of service. School enrollments increase, greater volumes of waste need to be disposed of, and more calls are made to the town for fire, police, and ambulance services. Town roads require upgrading and extension, as do water and sewer facilities if they exist. Any town is obligated to provide certain community services to its residents and businesses. As town growth takes place, so must the level of community facilities and services provided.

The following chapter outlines existing areas and levels of service provided by the Town of Brookline and anticipated needs to meet existing deficiencies and cover future levels of projected growth. The recommendations at the end of the chapter are based on future growth projections. Should growth patterns be found to differ from what is projected, so must the Town's plan change to meet those different community needs.

This chapter does not provide the financial analysis found in the Capital Improvements Program (CIP), but it does help define the goals and priorities that a CIP is based on, and should be used in conjunction with the CIP when analyzing community facilities. The following facilities and services are examined to determine their capability to meet present and projected future needs:

- | | |
|--------------------------|------------------------------------|
| - Fire Protection | - Solid Waste and Septage Disposal |
| - Police Protection | - Cemeteries |
| - Ambulance Service | - Recreation and Open Space |
| - Town Office Facilities | - Public Schools |
| - Public Library | |

BROOKLINE FIRE DEPARTMENT

Brookline's fire protection service is typical of many rural New Hampshire towns. A community force of residents operate town and department-owned equipment to answer local and mutual-aid fire alarms. Neither totally volunteer force nor full-time paid, the Brookline Fire Department is referred to as "call paid". Fire Department engineers all receive a yearly minimal stipend for being on the force. Volunteers receive an hourly salary for time spent answering calls. The following sections examine various aspects of the service: its structure, its adequacy, and future planning needs.

Personnel

The Brookline Fire Department relies on citizens coming forth to fill its ranks. The Fire Department is headed by three Town-elected "Fire Engineers". With one elected as the Fire Chief, the three Fire Engineers oversee all operations within the Department. This includes personnel training, equipment maintenance, and most important, making sure all fire calls are handled in the most professional and timely manner possible. There are 25 volunteers, which is the self-imposed limit. A breakdown of the Department's past ten year record of the type and number of calls answered is presented in the accompanying table.

Activity

The number of fire calls from 1979-1989 is shown in Table VI-1, below.

TABLE VI-1

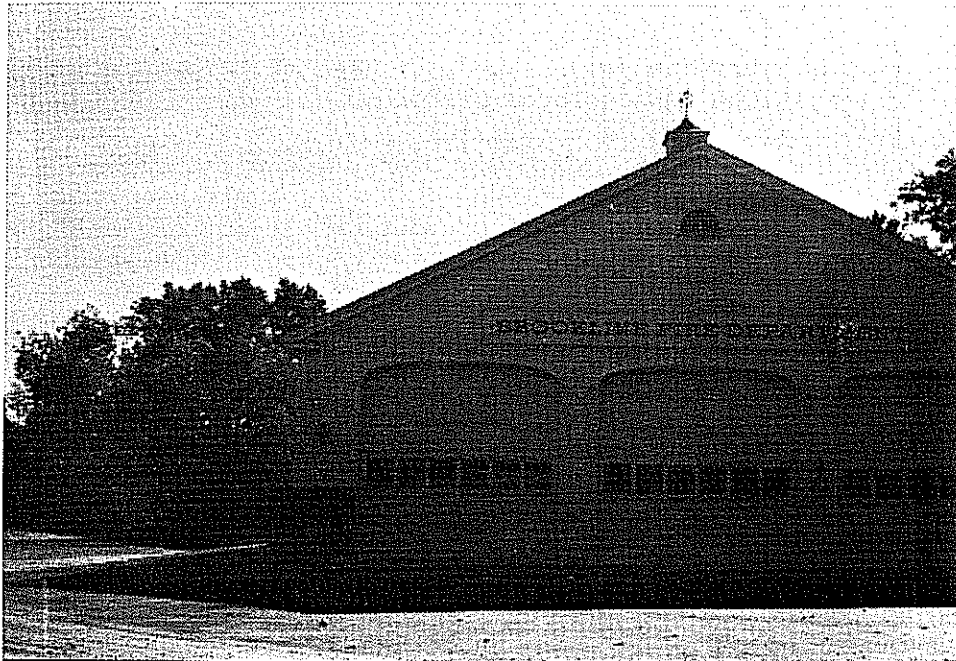
BROOKLINE FIRE DEPARTMENT CALLS 1979-1989

Type of Call	1979	80	81	82	83	84	85	86	87	88	89
Structure Fire	1	5	2	2	2	0	3	2	1	9	5
Chimney Fire	4	14	7	15	18	11	11	7	4	5	6
Brush/Forest Fire	7	7	17	5	8	8	3	3	6	12	5
Mutual Aid Call (stand by or assist)	8	14	12	10	21	16	15	5	10	20	5
Auto Fire	0	0	2	3	3	0	0	0	3	5	1
Auto Accident	3	0	6	3	5	1	0	0	0	0	0
Alarm Activations	-	-	-	-	-	-	-	-	-	18	17
Other	32	17	16	11	10	21	21	21	20	24	27
Total # of Calls	55	67	50	52	67	51	53	38	44	75	66

Note: Fire alarm activations not separated out in Town Reports before 1988.
Source: Town Reports.

Facilities

The Brookline Fire Department, shown in the picture below, is on Bond Street next to Town Hall. The adequacy of the Fire Department is greatly enhanced by its south central location within the Town, and its proximity to NH Route 13 (see Map VI-1 on page VI-5). The 2400 square foot facility was built in 1968 to house the Department's expanding fleet of fire fighting vehicles. Before taking over its present headquarters, the Department operated out of what now houses the Brookline Ambulance Service. Between 1979 and 1982, a 1400 square foot addition was built to provide space for meetings, training sessions, fund raising functions and storage of additional equipment. The new addition also houses the Department's collection of antique fire vehicles which the Town once operated.



The Fire Department is located on Bond Street next to Town Hall and has 3 bays.

Space Needs

The present Fire Station is considered to be adequate for present and future needs. No anticipated expansion of this facility is felt necessary at this time, and the only renovation needed is a new roof. The Fire Station's present location, vehicle inventory, and level of service provided are adequate in offering Town-wide fire protection. New development in the north portion of Town is adequately covered by the department and a new substation in this part of Town is not felt to be necessary. However, the rate and magnitude of future development in this section of Town will determine the need for a northern substation, which could house one of the Department's "attack" pumper trucks and one of the tankers.

Equipment

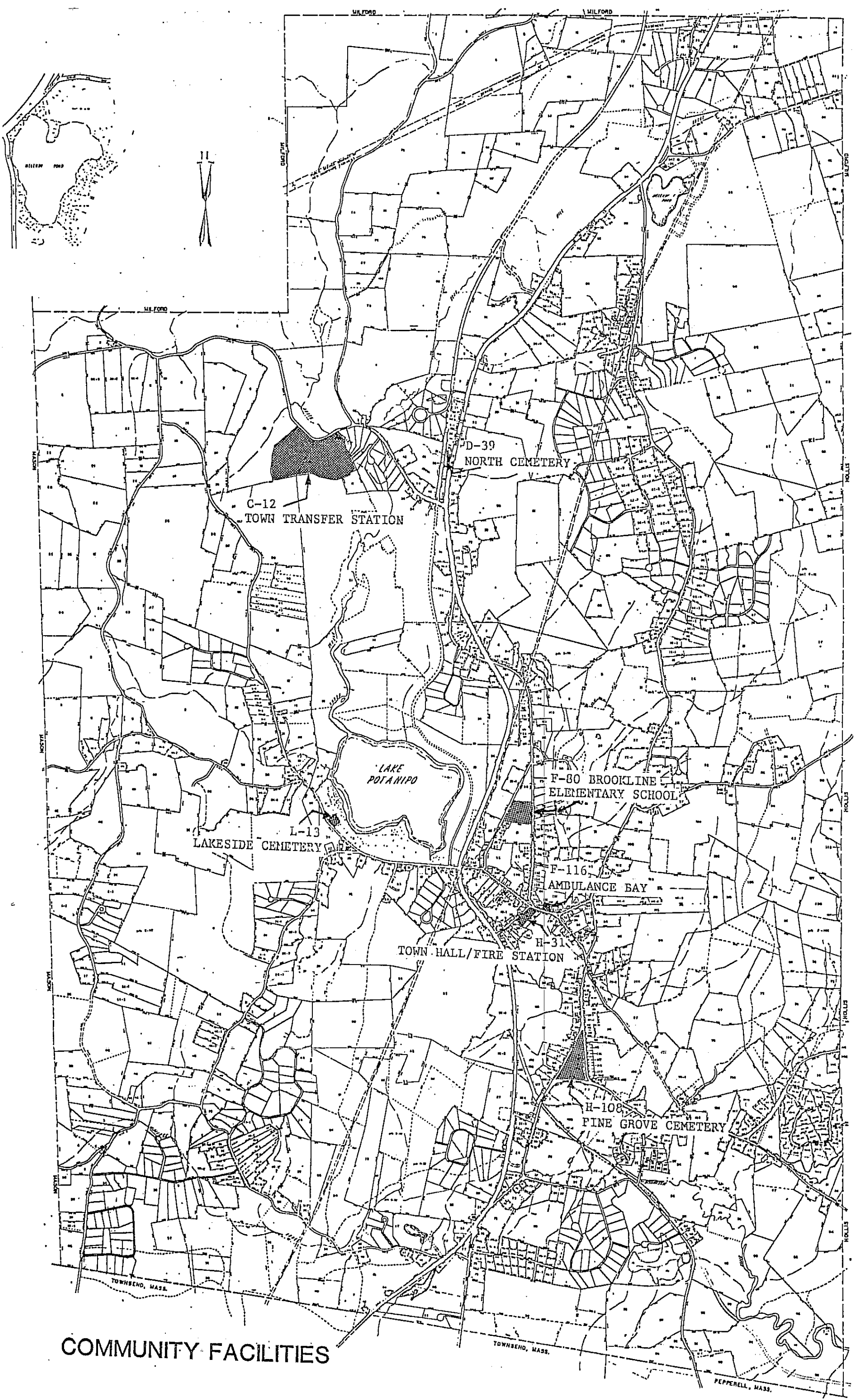
The Brookline Fire Department vehicle and equipment roster is included in Table VI-2 below.

TABLE VI-2

FIRE DEPARTMENT EQUIPMENT

Vehicle Year	Capacity [Gallons]	Type of Equipment
1989	1000	Pumper/Tanker 2500 gallon tank
1984	1000	1000 gallon per minute (gpm) hose/pumper truck with 3000 feet of four inch hose coiled on a 3600 foot capacity rear, power operated reel.
1979	1000	750 gpm, "attack" pumper truck
1968	1000	750 gpm, "attack" pumper truck
1969		4-wheel drive forestry pickup Two, 250 gpm, portable pumps, two portable generators Various mechanized saws, eleven air packs Twenty-five fire fighting uniforms Hose inventory consisting of: 4000 feet of four inch hose 6000 feet of two and one-half inch hose 2000 feet of one and one-half inch hose 3000 feet of one and one-eighth inch hose (Forest Fire Use Only)

All equipment is maintained under the Department's own maintenance program. Each piece of equipment is expected to age out of use rather than wear out before it needs to be replaced. Through Town appropriations and Department fund raising, money for the replacement tanker is now being raised annually and set aside in a capital reserve fund. Also, all hose inventories are inspected annually and replaced as needed.



COMMUNITY FACILITIES

COMMUNITY FACILITIES

MAP VI-1

BROOKLINE POLICE DEPARTMENT

Personnel

The Brookline Police force consists of a full-time police chief, two full-time officers and five part-time officers. Of the five part-time officers, one is the Department police matron handling female arrests and administrative assistant duties.

Activity

The accompanying Tables present annual totals for the various types of calls the Department has responded to from 1980-1989.

TABLE VI-3

BROOKLINE POLICE DEPARTMENT
ANNUAL MOTOR VEHICLE ACTIVITY, 1980-1989*

Type of Call	80	81	82	83	84	85	86	87	88	89
Accidents (#/Fatalities)	57/0	60/0	42/1	31	32	65	71	90	92	65/0
Driving While Intoxicated	-	-	8	11	2	9	10	-	20	17
Motorist Assists	-	-	51	56	74	12	36	38	62	40
Motor Vehicle Complaints	185	146	53	46	57	22	49	97	77	61
Parking Tickets Issued	43	57	81	42	23	83	99	183	188	58
Summons	277	30	391	625	280	501	619	615	687	685
Warning/Equipment Checked	159	105	621	745	514	137	467	459	515	1192

- * All figures were taken from respective Annual Town Reports. Unless specified by a zero figure, in some instances it was difficult to determine from the Town Reports if a type of activity actually did not happen or was included under another category.

TABLE VI-4

BROOKLINE POLICE DEPARTMENT - ANNUAL ACTIVITY, 1980-1989*

Type of Call	1980	81	82	83	84	85	86	87	88	89
Abandoned Vehicles	-	-	-	-	-	9	14	34	38	34
Alarms Answered	-	-	-	22	10	15	14	-	-	-
Animal Complaints	-	-	-	-	-	24	51	60	85	68
Arrests	45	53	23	24	43	36	17	40	62	134
Assaults	12	25	3	5	8	2	5	8	5	3
Bad Checks/Forgery	3	2	-	-	-	4	5	10	3	29
Burglary/Theft	41	46	35	26	27	31	41	13	40	67
Complaints, Non-Criminal	1243	1200	197	327	208	17	-	-	866	838
Complaints, Criminal	87	53	27	16	44	25	-	-	224	222
Harassment	-	-	-	-	-	10	5	8	23	12
Incidents (Misc.)	-	-	-	-	-	0	106	256	-	-
Juvenile Cases	91	75	-	-	-	34	19	24	33	31
Mutual Aid	-	-	68	71	65	60	84	153	147	114
Missing Persons	4	6	9	10	9	9	7	18	31	25
Noise	-	-	-	-	-	17	15	37	29	37
OHRV	-	-	-	5	7	13	15	6	9	11
Open Door/Window	-	-	-	-	-	11	14	39	32	39
Possession of Alcohol	-	-	-	-	-	3	2	8	19	27
Possession of Drugs	-	-	-	-	-	6	-	1	2	3
Reckless/Disorderly Conduct	-	-	-	-	-	6	11	-	-	2
Shots Fired	-	-	-	-	-	7	4	23	11	32
Suicide Attempts	4	3	-	-	-	-	5	1	-	-
Suspicious Persons	-	-	-	-	-	20	12	24	12	17
Suspicious Vehicles	-	-	-	-	-	26	19	32	30	32

* All figures were taken from respective Annual Town Reports. Unless specified by a zero figure, in some instances it was difficult to determine from the Town Reports if a type of activity actually did not happen or was included under another category.

Facilities

The Brookline Police Department facility consists of a single room of approximately 120 square feet in the basement of the Daniels Academy Building (Town Hall). Within this extremely limited area, the Police Department processes defendants, stores evidence, and administers its activities. There are two desks and two filing cabinets also in this room. One small closet is available for storage but it has long since been filled and additional space is greatly needed to securely store all evidence collected. A smaller room was added through renovations of the area near the Town Vault. A table has been set up in this area for photo and finger printing equipment plus other supplies for processing defendants. This room is only 100 square feet and cannot be locked as it would prevent access to the Town Vault.

There is agreement that the present facility is inadequate. Plans have been completed to enlarge the first room and build a doorway to the room housing the Town Vault. Ideally, an additional 200-250 square feet is felt necessary to house the operations of the Police Department. This room would house one desk for officer use, one for the administrative assistant, and area for filing cabinets and some storage. The existing office would be used by the police chief.

There is a problem with after-hours access to the office area. When the Town Building is not open, access is gained through basement doors to the lower meeting hall and through another door which leads into the hallway in front of the office. The problem arises when an officer is bringing in a defendant after hours for processing while the lower meeting hall is in use. Those using the meeting room are disrupted at the sight and/or sounds of those being brought in. The problem could be alleviated by building a partitioned entrance way connecting the outside basement doors to the door leading into the hallway. Another solution would be to build a door in place of the window on the stair's first landing. By building stairs to this door on the outside, access to the office would be possible without encroaching on the available space within the lower meeting hall.

Equipment

The vehicles being used by the Police Department are a 1986 Ford LTD, and a 1988 Chevy Caprice. The Caprice was purchased new, has approximately 55,000 miles on it (as of June 1990), and is in very good condition, but the Ford, which has 130,000 miles on it, is scheduled for replacement in 1991. A capital reserve of \$8,000 annually has been included in the 1989 CIP to replace the police cruisers every five years.

BROOKLINE AMBULANCE SERVICE

The following sections look at various aspects of the Ambulance Service, its structure, facilities and equipment.

Personnel

Brookline Ambulance Service consists of a 10-member force that is a mixture of 2 full-time paid attendants and 8 volunteers. With this small group, the service is able to provide 24 hour a day, 365 days a year emergency responses. However, this is not an easy task as the Ambulance Service is presently short-staffed on all shifts. Volunteer membership is about one-third the level felt to be necessary. To adequately cover all shifts, it is estimated that a volunteer force of 25 to 30 members is needed.

The Ambulance Service is always looking into different ways to get new members and better fill their ranks. The addition of two daytime paid attendants has taken a great deal of the burden off the volunteer members. The day shift has always been the most difficult to cover. With addition of a full time paid director and another full time paid attendant, this is no longer a problem.

The mutual aid agreements between neighboring towns has developed into something greatly beneficial to all involved. Neighboring town ambulance services have joined together into a loose "association" to provide joint CPR and EMT training sessions, emergency methods testing, and local/regional councils to advance their cause. Each neighboring town's ambulance service has within it a core of very dedicated individuals. This core group has and continues to work together for the benefit of all.

Activity

Ambulance service activity from 1980-84 and 1989 are shown below. Note that there has probably been less ski accidents since the closing of the Musket Mountain Ski Area.

TABLE VI-5

BROOKLINE AMBULANCE SERVICE, 1980 - 1989(1)

Type of Call	1980	81	82	83	84	85	86	87	88	89
Motor Vehicle	12	7	17	15	15					11
Home Illness	37	37	35	37	42					17
Home Accidents (2)	23	14	13	28	24					-(4)
Pediatric Runs (3)	0	7	1	1	3					-(4)
Total	72	65	66	81	84	79	81	56		54

SOURCE: Brookline Ambulance Association, Inc.

- (1) 1985-1988 data not available.
- (2) Included in Home Accidents are Ski Accidents.
- (3) Pediatric Runs are a sub-category which cut across the other three categories.
- (4) Data is now broken down differently.

Emergency Response Time

As with all organizations responding to an emergency, the time it takes for equipment and personnel to reach the scene is critical. The Brookline Ambulance Service average response time is between two and three minutes. This varies with the location of the emergency and the time of day of the call. Factors favoring a short response time include the central location of the station, the proximity to NH Route 13, and the nearby location of on-call volunteers. After a call is taken in, volunteers are paged and through radio and telephone conversations know where to go and what each volunteer is responsible for.

Facilities

Housed in what was once the Brookline Fire Station, the Brookline Ambulance Service benefits from its centrally located headquarters on Main Street with easy access to NH Route 13 (see Map VI-1 on page VI-5).

The downstairs of the two-story facility offers one bay for parking the ambulance and some room for equipment storage. There are two rooms upstairs used for meetings, office space, and training sessions. The door to the parking bay initially had to be raised to allow the ambulance enough clearance to get in. The bays width allows only about one and one half feet of space on either side of the vehicle and about six feet of space at its rear where equipment is stored and loaded from. The space available for storing the ambulance is minimally sufficient at present while the upstairs room is adequate for meeting and training needs. Upgrading of the ambulance bay is scheduled for 1992. This will include insulating and finishing off the back room for a storeroom, installing stairs to the garage, installing a fire alarm system, and expanding the bathroom into the back room with a shower stall and new fixtures.

Equipment

The ambulance used for all emergency work is a 1986 Braun. The Safety Service section of the NH Safety Department advises that if an ambulance service has only one vehicle to rely on, it not be more than five years old. If it is a backup or secondary vehicle then its age is not a concern as long as it is in satisfactory running condition. Since the vehicle being used in Brookline is their only vehicle, its age is of concern to the Ambulance Service.

As Brookline continues to grow and if there is the increase in the number and type of local and emergency calls as expected with a population increase, additional equipment may be necessary. The Ambulance Service has stated that unless there is a great increase in the number of calls, a second ambulance will not be necessary. Depending on the condition of the 1986 Braun, it may be replaced in 1993 when it will be 7 years old.

BROOKLINE TOWN OFFICE FACILITIES

Brookline houses the majority of its Town offices and functions within the Daniels Academy Building (dedicated in 1913) located in the center of Town, at the corner of Bond St. and Main St. (see Map VI-1 on page VI-5). The building houses the Police Department, the Selectmen's Office, Planning Board Office, Building Inspector's Office, the Tax Collector's Office, the Public Library, the Town Vault, two meeting halls, a kitchen area, and the Historical Society archives which will be completed by 1991.

The Selectmen's Office is located on the main floor and consists of approximately 400 square feet of space used for meetings and file storage. Connected to this office is a smaller room of about 200 square feet in size and used by the Selectmen's Secretary and Town Treasurer. Adjoining the Secretary's office are two rooms of half that size which are the Building Inspector's Office and the Tax Collector's Office. Also located on the main floor is the Public Library which has 1600 square feet available for its use. (Brookline's Public Library is covered in a separate section of this Chapter.)

The upper floor of the Daniels Academy Building consists of approximately 1800 square feet of floor space, with a raised stage area and balcony. The Town Fire Chief has rated the upper hall capacity at 180 people. The upper hall is rarely used except for the theater group, nursery school, and other group activities. The hall is also available for other public functions for a small rental fee. It is not handicapped accessible, however.

The basement floor of the building also houses a variety of rooms and functions. This includes the lower hall, having approximately the same floor area as the upper hall, kitchen facilities and an area for storage. The lower hall space is used for Grange meetings, Town agency meetings, and voting. The Fire Chief has rated the capacity of this hall space at 100 people. The basement area also houses the Brookline Police Department. Besides the lower hall and Police Department, the basement floor contains the 36 square foot Town vault and rest rooms. The basement is the only part of the building that's handicapped accessible.

Not considering the Public Library and Police Department, the above facilities are considered barely adequate at this time. At present, library space is considered very inadequate, based on space and structural limitations. If it is decided to relocate the Library facility, this would allow other Town offices to expand.

BROOKLINE PUBLIC LIBRARY

The Brookline Public Library was founded in 1877, an outgrowth of the Young Men's Library Association of Brookline (1861) and the Social Library of Brookline (1823). The library was originally housed in the rear of the E.E. Tarbell Store. In 1894, the library was moved to the East Room of the Milford Street Village School, and in 1914 moved to the Daniels Academy Building. Within the Daniels Academy Building, the library first occupied the present Library Children's Room, but was later moved to the current Selectmen's Office. In 1968, the library was moved back to its present location and expanded.

Use of Space

The Brookline Public Library presently occupies 1,602 square feet on the main floor of the Daniels Academy Building. Of this total, the Adult Room area takes up 690 square feet and the Children's Room area takes up 544 square feet. The circulation and work area totals 228 square feet in size while bathroom and storage areas together total 140 square feet.

Within the Adult Room area, space taken up by library facilities, materials, and/or equipment is shown in Table VI-6.

TABLE VI-6
FLOOR SPACE BREAKDOWN
ADULT ROOM AREA, BROOKLINE LIBRARY

Adult Room Area	690.00 Square Feet, Total		
Wall Shelving	41.25 square feet		
Floor Shelving and Aisles	126.00	"	"
Record Cabinet	9.50	"	"
Magazine Racks	14.00	"	"
Paperback Racks	4.00	"	"
Reference Bookcase	1.35	"	"
Two Tables with four chairs ea. (additional chairs can be taken from storage to seat eight per table)	45.00	"	"
Table holding paperbacks	3.00	"	"
Bookcase for NH RSA Law Books	1.90	"	"
Dictionary Rack	2.00	"	"
Total Occupied Floor Area	248.00	"	"

The remainder of the floor space in this area (442 square feet) is necessary for allowing access to wall shelving; dictionary, magazine and paperback racks; record cabinet; reference and RSA bookcases; and table seating.

Within the Children's Room area, space taken up by facilities, materials, and/or equipment is shown in Table VI-7.

TABLE VI-7
FLOOR SPACE BREAKDOWN
CHILDREN'S ROOM AREA, BROOKLINE LIBRARY

Children's Room Area	544.00 Square Feet, Total
Wall Shelving	25.00 square feet
Floor Shelving and Aisles	64.20 " "
One Table and Six Chairs	28.25 " "
File Cabinets	5.00 " "
Card Catalogs	7.75 " "
Record Cabinet	4.00 " "
Display Case	5.80 " "
Total Occupied Floor Area	140.00 " "

The remainder of the floor space in this area (404 square feet) is necessary for allowing access to wall shelving, record and file cabinets, card catalog, display case, and sitting at the table or on the floor.

The circulation and work area has available a total of 228 square feet. Within this area is a circulation desk, a file cabinet, a flat work area, some storage space, and two wall bookcases which together take up 5.5 square feet. This area generally offers enough space for only one person at a time to work.

Finally, the bathroom and storage areas, 140 square feet, consist of two closets for storage and the bathroom area. For lack of additional storage space, the bathroom area is also being used for some storage. One closet is used primarily for magazine storage. The library presently subscribes to 49 magazines and four newspapers. Magazines are retained for an average of only two years, depending on title and popularity, because of the lack of space to store them. This closet area also houses the library's 20 extra folding chairs and contains 45 linear feet of shelving.

The other closet, also used for storage, holds the story hour materials and library supplies. The closet is full, with no unused floor space or room for additional shelving. The bathroom area would be adequate for the library's needs, except that, as mentioned earlier, it is also used for storage due to lack of space elsewhere.

The library is supplemented by the library at the Brookline Elementary School.

TABLE VI-8

BROOKLINE PUBLIC LIBRARY ANNUAL STATISTICS - 1980-1989

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Volumes in Library	9188	9531	9985	10426	11040	11129	11314	11833	12328	13335
Records, Cassettes, Videos	382	433	491	583	829	698	808	885	913	973
Registered Patrons	726	709	723	742	688	677	745	773	850	889
Adult Circulation	7055	6918	7457	7220	7220	7137	6737	6067	5536	5634
Children Circulation	4814	5086	5292	4991	4694	5416	5654	4489	4440	4755
Magazine Circulation	1893	1975	2058	2151	1853	1820	1701	1763	1206	1149
Records, Cassettes, & other Circulation	765	868	848	848	1078	1056	1253	1512	1448	1677
Total Circulation	14427	14857	15655	15210	14745	15429	15345	13831	12630	13215
Inter-Library Loan										
Borrowed	131	170	131	92	94	80	68	87	116	239
Loaned	79	105	68	128	135	106	96	76	137	231

Source: Town Reports.

Space Needs

Every section of the library needs area for expansion. New volumes are being added, new shelves needed to hold them, more people needing to use the work area, and more materials needing to be stored.

Table VI-8 shows that the library is now averaging about 500 new volumes added to its collection each year. This does not include records, tapes and video cassettes which are also increasing in numbers each year. In 1989, there were 13,335 volumes in the collection and only 1,044 linear feet of shelf space to hold them. The American Library Association guidelines recommend the following:

PER CAPITA CURRENTLY IN BROOKLINE
(estimated population 1990 = 2,408)

Floor space	.7 sq. ft.	.694
Total Building Area:	.6 sq. ft.	
(Greater for smaller communities such as Brookline.)		
Magazines:	.01	.024
Volumes:	5	5
Volumes added to collection annually:	.2	.21
Also:		
1 linear foot per 7-8 volumes		
1 staff member per 2,000 population		

With Brookline's present population of 2,408, the Library should have a total of 1,505 linear feet of shelving, or 461 linear feet more than at present. The only way the Library is able to shelve the number of new books acquired each year is to remove books from circulation. Some weeding is necessary to keep the collection current; however, the weeding and removal of books should not have to be done to the extent it is, just to make room for new additions.

TABLE VI-9

CURRENT AND PROJECTED LIBRARY NEEDS,
BROOKLINE 1988-2010

Year	Projected Population	Fl. Space Needed in Sq. Ft.	Staff Needed	Collection Size	Linear Shelf Space
1988	2,220	1,554	1.0	11,100	1,388
1990	2,408	1,685	1.2	12,040	1,505
1995	2,890	2,023	1.5	14,450	1,806
2000	3,385	2,320	1.6	16,925	2,116
2005	3,867	2,707	2.0	19,335	2,417
2010	4,349	3,044	2.0	21,735	2,717

Source: NH Office of State Planning (OSP) Population Projections 1987, and OSP Population Estimates, 1988. Numbers based on ALA recommended standards listed above, taken from Nolan Lushington & Willis Mill, Jr. Libraries Designed for Users, A Planning Handbook, 1979.

This indicates a need of an additional 60 feet of linear feet of shelving annually. A minimum of another 400-500 square feet of floor space is needed to expand the existing shelving area and adequately display the library's present collection. The library facility has enough floor space, at present, for only one low set of shelving. The added shelving would provide approximately another 30-35 linear feet of new shelf space.

However, the floor weight capacity of the library has been exceeded and cannot hold any additional volumes and shelving. This has been determined from a structural engineering analysis conducted on the first floor area in early 1985. The study found the first floor live-load capacity to be approximately 40 pounds per square foot (psf). The current required floor live-load capacity for new libraries is 150 psf for stack areas and 60 psf for reading areas. Actual first floor live-loads from the existing seven foot high stacks and the load from library users in the open space between stacks has been determined to be 90 psf, or 125% overloaded. Therefore, no new shelving can be installed to provide additional space for existing and future volumes.

The existing stacks were distributed to the perimeter. However, a long term solution to the floor overloading problem is necessary and could include relocation of the library or strengthening of the first floor's structure. The last option would include the addition of new support beams, columns and footings to reduce the span of the floor joists.

Besides space for shelving new books, additional space is needed in the circulation and work area. The space is needed to help process and keep track of all the books, magazines, records, etc., that are checked in and out of the library. Additional space is necessary for filing and circulation storage. As it is now, work space is about half what the Librarian feels is needed. The work area and desk space are so small, that it is very difficult for two people to work there at the same time.

The library is also part of the Hillstown Cooperative and has access to the NH State Library. If the library does not have the book or item requested, most can be obtained through the existing exchange program. Belonging to the Cooperative allows greater purchasing power for member libraries. Purchasing as a group through the Cooperative, a library can obtain up to a 42% discount on the books it buys. Without the Cooperative, a library could only get a discount of up to 25%. This has definitely helped limited library dollars go a lot further in providing materials for its patrons. A computer is being utilized which allows the Brookline Library to contact the Hillstown Cooperative on interlibrary loans. This computer did not cost the town any funds as it was taken from surplus equipment. Programs can be developed in the future to automate some of the library staff's duties thereby freeing them to provide the library patrons with a greater variety of programs.



The library has its own entrance on the north side of Town Hall.

Library Staffing

The duties of running the Brookline Public Library are, at present, all handled by part-time staffing. The Librarian works 18 hours per week, and the Assistant Librarian works 11 hours per week. Four other volunteer workers complete the library staff and each works a two hour night shift every other week. The library is open to the public 23 hours per week: Monday: 7 - 9 PM; Tuesday: 10 AM - 5 PM; Wednesday: 7 - 9 PM; Thursday: 10 AM - 5 PM; Friday: 2 - 5 PM; and Saturday: 10 AM - 12 Noon. Should patron use or demands increase with an expanded library collection, adding a few more hours to the schedule may be desired to provide greater access to the public and allow the staff to handle the workload.

The Trustees of the Brookline Public Library continue to express great concern for the current facility's limited space for growth. Additional space is felt to be required shortly in order to permit the library to serve the Town adequately. The 600-700 additional square feet of floor area recommended for expansion is not available in the present building due to structural and other limitations. Consideration of options available to alleviate the situation are now taking place to some degree.

SOLID WASTE DISPOSAL

Currently, Brookline residents bring their trash to the Town transfer station located on 35 acres on North Mason Road (lot C-12), two-thirds of a mile east of NH Route 13 (see Map VI-1 on page VI-6). Here, waste is dumped directly into trailers, compacted, and then delivered to the Souhegan Regional Landfill, located on 37 acres off of NH Route 101 in Amherst. This landfill serves Amherst, Brookline, Hollis, and Mont Vernon, who are members of the Souhegan Regional Landfill District (SRLD).

Hazardous materials, manure and empty hazardous containers are not accepted at the transfer facility or landfill. Metals, tires and oil are stored at the transfer facility and the Town must contract periodically for their removal. Stumps are buried at the transfer facility and brush is burned. In 1989, Brookline began a voluntary recycling program at the transfer station. Items which are separated include glass, aluminum cans, newsprint, scrap metal, corrugated, PET plastic and HPDE plastic.

Currently, State permitting problems at the Souhegan Regional Landfill have prevented its use, and trash is being trucked to a landfill in Pennacook, New Hampshire. The Amherst landfill is in the process of being closed.

Brookline is also part of the Nashua Region Solid Waste Management District which includes eight other communities: Amherst, Hollis, Hudson, Merrimack, Milford, Mont Vernon, Nashua, and Windham. The District was formed at the direction of the legislature, which required all communities in the State, except those with an "approved facility", to join into an inter-municipal solid waste planning district. Chapter 149-M requires the formation of a solid waste management plan by the district. A partial draft of the NRSWMD plan was submitted to the State in early January 1990.

As growth continues, so does the amount of solid waste produced. Table VI-10 shows solid waste volume projections based on NRPC and Camp, Dresser, McKee (CDM) solid waste generation rates. The range for Brookline is 2,143 to 2,778 tons per year by the year 2010. At \$80 per ton for disposal (which includes a tipping fee, transportation costs, and the operation of the transfer station) this would be \$171,440 to \$222,240 annually for solid waste management. Note that these figures do not include a reduction in waste volumes due to an aggressive recycling program. Recycling may reduce the waste volumes up to 20 to 25 percent.

TABLE VI-10

SOLID WASTE VOLUME PROJECTIONS,
NASHUA REGION SOLID WASTE MANAGEMENT
DISTRICT 1990-2010

	OSP POPULATION			NRPC SOLID WASTE VOLUME PROJECTIONS TONS/YEAR			CDM SOLID WASTE VOLUME PROJECTIONS TONS/YEAR		
	1990	2000	2010	1990	2000	2010	1990	2000	2010
AMHERST	8,832	10,902	14,142	7,414	9,152	11,872	5,641	6,964	9,033
BROOKLINE	2,408	3,385	4,349	1,187	1,668	2,143	1,538	2,162	2,778
HOLLIS	8,154	12,596	15,909	5,506	8,505	10,743	5,208	8,046	10,162
HUDSON	19,987	25,424	29,055	15,685	19,951	22,801	15,685	19,951	22,801
MERRIMACK	19,932	27,193	38,372	22,917	31,265	44,118	16,369	22,332	31,513
MILFORD	11,539	15,171	19,122	12,214	16,059	20,241	7,371	9,690	12,214
MONT VERNON	2,181	2,876	3,342	876	1,155	1,342	1,393	1,837	2,135
NASHUA	89,228	116,291	145,694	127,016	165,540	207,395	128,644	167,663	210,054
WINDHAM	7,969	10,512	14,729	5,236	6,906	9,677	4,945	6,523	9,139
TOTAL	170,230	224,350	284,714	198,050	260,202	330,332	186,795	245,168	309,829

VOLUME PROJECTIONS = (population x days/yr. x rate) / (lbs./ton)

Source: Populations Projections--New Hampshire Population Projections--
Total Population for Cities and Towns, NH Office of
State Planning, August 1987.

NRPC Solid Waste Management District Projections, 1988.
Nashua Region Solid Waste Management Plan, April 1987
Camp, Dresser, & McKee.

SEPTAGE DISPOSAL

Because there is no sewer system in Brookline, residents rely on on-site septic systems for wastewater disposal. These private systems typically use 1,000 gallon tanks and require pumpout every three to five years. Brookline's septage is currently hauled to Milford or Merrimack for treatment at their municipal wastewater facilities. Few problems with existing septic systems in the Town have been reported to date.

In spite of the small number of problems that have occurred so far, several factors have made the search for a long-term septage disposal arrangement a high priority for Brookline. As residential growth in the Town has continued, so has the need for a reliable septage disposal site. It is estimated that the amount of septage generated in Brookline will increase by about 32 percent from its 1985 level of 100,000 gallons per year by the year 2000.

New Hampshire RSA 149-M:13 mandates that "each town shall either provide, or assure access to, an approved septage and solid waste facility for its residents." Finding a long-term solution, however, is no easy task. Municipal wastewater treatment plants and other facilities are increasingly unwilling to accept septage because of its high concentration of wastes and associated potential for air or water pollution or because of existing or anticipated capacity constraints. Moreover, facilities and sites that currently accept septage are often unwilling to make promises about their willingness to accept septage in the future. There is nothing to prevent facilities that accept septage today from rejecting it tomorrow. The Town does not anticipate construction of its own sewage treatment facility given that federal construction grants for municipal treatment plants are no longer readily available.

Brookline has been seeking a feasible septage disposal arrangement for over ten years with the other three towns of the Souhegan Septage District (Amherst, Hollis, and Mont Vernon). The Souhegan Septage District has investigated septage disposal tie-ins with the proposed Bon Terrain package sewage treatment plant in Amherst, the Nashua WWTF, the Manchester WWTF and the Merrimack WWTF.

The prospect of a tie-in with Bon Terrain looks unfavorable due to local environmental concerns. The District has contacted Merrimack and Nashua again in hopes that an arrangement can be made to treat some or all of the District's septage at their facilities. The District has asked the New Hampshire Department of Environmental Services to conduct a site suitability analysis for a septage land-spreading operation within the four-town region. Despite the setbacks it has encountered, Brookline remains committed to finding an acceptable solution to meet its legal obligation and to plan for the future needs of its residents.

CEMETERIES

There are four cemeteries within Brookline. These are listed in Table VI-11. The Cemetery-in-the-Woods is the oldest of these, dating back to at least 1752. As one can see, Pine Grove is the only cemetery in Town which has space available. It has at least one acre of open land remaining which is felt to be adequate to meet future needs.

TABLE VI-11

BROOKLINE CEMETERIES

Name	Location	Lot	Acreage	Status
Lakeside	Mason Road	L-13	2.10	full
Pine Grove	Cross St/Main St	H-108	10.00	room
North Cemetery	w. side of Rte 13	D-39	0.20	full
Cemetery-in-the-Woods	s. of Rocky Pond Rd			full

Source: Brookline Tax Records.

BROOKLINE RECREATION FACILITIES AND CONSERVATION AREAS

By providing recreation facilities and conservation lands, a Town gives its residents a great opportunity to enjoy themselves and the natural resources within the community. Brookline is very fortunate to have areas of forest, open space, and water resources within its boundaries to take advantage of. Each of these is shown in the Table below and on Map VI-2 on the following page.

TABLE VI-12

ACTIVE RECREATION FACILITIES

<u>Name</u>	<u>Location</u>	<u>Acres</u>	<u>Facilities</u>
Elementary School	Milford St.	1.5	Playground, Basketball Courts
Youth Center			Gymnasium
Ball Park	Frances Dr.	6.5	1 softball field
			1 baseball field
			small playground
Lake Potanipo	Mason Road	170	Boating, Swimming, Fishing,
			Ice Skating
Max Cohen	Mason Road	1.2	Swimming area, Picnic Area,
Memorial Grove			Ice Skating
Melendy Pond	Route 13	265 (land)	Boating
		19 (water)	Swimming, Fishing
Talbot-Taylor	Cleveland	92	Canoeing
Wildlife Sanctuary	Hill Rd.		Fishing
Palmer Land	West of Rt. 13	73.3	Hiking
Skating Rinks	Lake Potanipo & Other Areas		Ice Skating
Oak Hill Rd.	Oak Hill Rd.		1 baseball field (under
Ballpark			construction)

Source: NRPC, 1990.

Recreation/Conservation Inventory

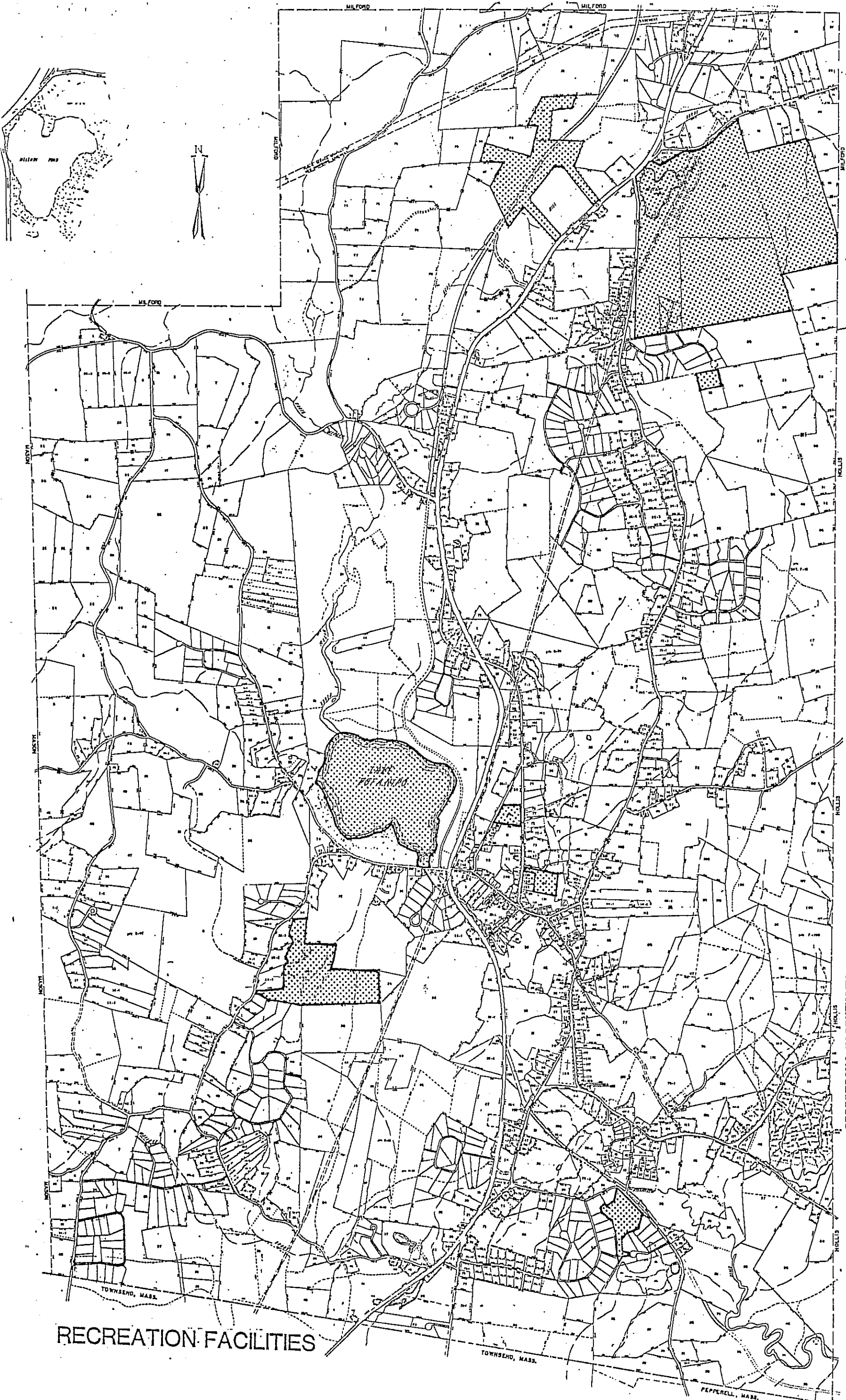
An inventory of Brookline's recreation and conservation areas was conducted in 1983. After additional updating, much of the information from this inventory is presented in Table VI-12 and described below.

Brookline Elementary School Playground

The playground area of the Elementary School covers one and one half acres of the seven acre parcel. Within this area there is a playground equipped with swings, jungle gyms, slides and monkey bars. The area also includes an outside basketball court. Though owned and maintained by the Elementary School, Town resident use is encouraged.

MAP VI-2

RECREATION FACILITIES



RECREATION FACILITIES

Brookline Ball Park

Owned and maintained by the Town, the 6.5 acre Brookline Ball Park provides both a baseball ^{field} ~~field~~, a softball playing field, and a playground. A utility building and team benches are the only structures on the grounds. Existing parking currently holds 40 cars but can be expanded to be 60-80 cars.

Not all of the area is currently being utilized for recreation. There remains enough open space on the lot for two tennis courts to be built. Brookline presently does not have any tennis court facilities and current standards based on its population suggest a Town of its size have at least 1-4 playing courts. (Refer to Table VI-15, comparing existing facilities to current needs.)

Lake Potanipo and the Max Cohen Memorial Grove

Providing approximately 170 acres of state-managed surface water to enjoy, Lake Potanipo offers boating, fishing, and swimming to the Brookline community. Any body of water over ten acres in size is considered a "great pond" and falls under State regulations for protection and public access requirements (Melendy Pond is also a great pond). Access to the lake for boating is over a designated right-of-way where a gravel, public boat launching area has been constructed. Officially, there is no area at the boat ramp for parking of vehicles and boat trailers. Across the road from the boat launch is a lot which most people use to park. Up to 20-30 cars can be found parked on the property during a busy weekend day. As this lot now has an approved site plan, the parking lot may no longer be available.

Additional recreation use is made of Lake Potanipo from a Town-owned lake-shore park known as the Max Cohen Memorial Grove. Within this one and one-half acre area, there is approximately 0.3 acres for picnicking or day use, with 5 picnic tables provided. Along the property's 250 feet of lake frontage, there is approximately one-quarter acre of public beach and one acre ³⁰ ~~50~~ of buoyed-off swimming area. There is parking at the site for approximately 50 vehicles.

Melendy Pond

Town-owned and managed under the Melendy Pond Authority, this 265.4 acres of land and 19 acres of water provides summer recreation for those leasing the existing camp lots. There are 36 (50' X 75') lots on the property within a 3.1 acre area that are leased out on a long term basis for summer use rather than as primary residences. At present, there are 23 privately-owned homes on lots rented from the Melendy Pond Authority. The owners of the structures pay real estate tax on the structures alone. The yearly rental payments on these homes vary from \$75 to \$110 per year. All existing leases now have a uniform termination date of 2019.

The 19 acres of surface water provide recreation to those who lease camp lots, and to Brookline residents. There is one boat launch area at the edge of the lot and a 30' X 30' sandy beach. No area is provided for parking of vehicles at this launch/beach area. There is another beach area on the opposite side of the lake with 50 feet of lake frontage. This area's use is limited to only the people leasing lots from the Melendy Pond Authority.

The remaining 262.3 acres of land being managed by the Melendy Pond Authority is primarily forest. There are no existing recreational trails within this forested area.

Town Land Near Melendy Pond

Abutting the property managed by the Melendy Pond Authority is a 109.9 acre parcel of land also owned by the Town. Managed by the Brookline Conservation Commission, the property consists of mostly forest vegetation and no recreation improvements as of yet. Future management considerations could include hiking trails and tree management practices.

Talbot-Taylor Wildlife Sanctuary

Termed Brookline's "best kept secret" by the Town's Conservation Commission, Taylor Pond is a 92 acre parcel of forested/open land and water. Certain rights, easements and interests have been deeded to the Town by the owners. Through a deed-of-dedication process, the owner's intent is for the Town to develop the area to provide public recreation for Town residents and to protect the natural and water resources of the area. With 70 acres of land and 22 acres of surface water, the area has considerable nature education and wildlife sanctuary potential. The dedicated public right-of-way to the pond and the addition of a future nature trail system will allow public recreation (canoeing, hiking and fishing) to occur within this sensitive conservation area.

Florence Palmer Conservation Land

According to the terms and conditions of Florence Palmer's gift, this property is to be managed by the Conservation Commission for the town, and is to be maintained as an undeveloped tract of land in its natural state. It will, in effect, be reserved in perpetuity as a refuge for wildlife, a water recharge area and a limited recreational resource. The deed states that hunting, off-road vehicles, and overnight camping will not be allowed. Hiking, skiing and (with the permission of the Brookline Conservation Commission) camping by groups will be allowed.

In the 1930's, ice from Potanipo as well as granite and lumber from the town were transported along the Brookline spur of the Boston and Maine railroad which ran through the property. Oaken ties can still be found along a splendid walking trail which runs through the land.

The land is comprised of a variety of woodlands and wetlands, conifers, hardwoods, softwoods, streams, a marsh and ponds. It is an important wildlife habitat and serves as a natural watershed and flood control plain (a wetland area capable of absorbing vast amounts of water). Waters from Melendy Pond pass through the Palmer property into Lake Potanipo and eventually into the Nissitissit River. The land has significant natural resource as well as aesthetic value and is a very important asset to the town.

Ice Skating Rinks

In the winter of 1989-90, volunteers created and maintained a skating rink in front of the Max Cohen Memorial Grove. In addition, many Brookline residents skate on Lake Potanipo.

Oak Hill Rd. Ball Park

Currently under construction.

Analysis of Existing Facilities and Current Needs

The NH Outdoor Recreation Plan (1977) outlines a suggested range of recreation facilities standards which can be used in assessing a Town's future recreation needs. Estimates are calculated using recreation facility "standards" generated by the NH Office of State Planning. These standards reflect the "norm" for each type of facility found in NH communities -- as determined through an extensive survey process. As such, they are less "requirements" as they are "indications of average performance" to which a community may be compared. Over- or under-abundance of facility may not be cause for alarm, however a community should assess whether any such surplus or shortfall is justifiable given the recreational preferences of the residents. Table VI-13 lists common recreation facilities to consider and their respective range of suggested amounts based on a given population size. Based on these suggested standards and Brookline's current population, Table VI-14 compares the Town's existing facilities to the suggested range of standards developed for Brookline. Resulting from this comparison are the suggested areas and levels of current recreational needs of the Town. The current needs column of Table VI-14 shows suggested areas where the Town may be deficient in recreational facilities based on its population.

Fifty percent of Brookline households responding to the 1989 Master Plan survey felt that the Town had enough park and recreational facilities, and thirty-four percent did not. Tennis courts was the most common answer when respondents were asked what the Town could do to improve. This was followed by developer donations for recreation, an additional children's playground, opening the lake/beach to Town residents, and walking, running and hiking trails. The results of the survey are shown in Appendix B.

To project Brookline's recreational needs farther into the future, suggested standards can be based on Office of State Planning population projections. Table VI-15 extends Brookline's suggested recreation facility needs to the years 1995, 2000 and 2010, based on the Town's projected population for these years. This table may be used as a guide in planning to provide the community with recreational opportunities in the future.

TABLE VI-13

RECREATION FACILITY SUPPLY STANDARDS

STANDARDS - RANGE:

Facility (unit of measure)	Units Per 1,000 persons		Population	Persons Per Unit	
Ballfields (number)	.6	to	1.0	1,000	to 1,600
Tennis Courts (number)	.5	to	1.5	660	to 2,000
Hard Court Games (courts)	1.0	to	4.0	250	to 1,000
Playgrounds (number)	.2	to	2.0	550	to 5,000
(acres)	1.3	to	3.5	290	to 770
Parks (acres)	1.0	to	20	50	to 1,000
Picnic Areas (acres)	.2	to	10	200	to 5,000
Picnic Tables (number)	2.0	to	10	100	to 500
Campgrounds (acres)**	1.5	to	3.5	280	to 670
Campsites (number)**	5.0	to	1.5	67	to 200
Wilderness Camping (acres)**	100	to	260	4	to 10
Boating Areas (acres)**	23	to	95	11	to 43
Sailing Areas (acres)**	8	to	15	67	to 125
Beaches (acres)	.1	to	1.5	660	to 10,000
Outdoor Swimming Pools (#)	0.7	to	.4	2,500	to 14,820
(sq.ft.)	200	to	500	2	to 5
Indoor Swimming Pools (#)	.05	to	.2	5,000	to 20,000
Outdoor Ice Areas (number)	.2	to	.5	1,000	to 5,000
(sq.ft.)	2000	to	7000	.14	to .5
Indoor Ice Areas (number)	.02	to	.5	2,000	to 5,000
Gymnasiums (number)	.2	to	1.0	1,000	to 5,000
18-Hole Golf Course (number)	.02	to	.03	33,000	to 50,000
Downhill Ski Areas (acres)	.1	to	.5	2,000	to 10,000

Source: NH Outdoor Recreation Plan, 1977.

** Standard suggested for use at regional scale.

TABLE VI-14

ANALYSIS OF EXISTING FACILITIES
BROOKLINE 1990

Facility	Current Standards (by population 2,350 ²²)	Existing Facilities	Current Needs
Ballfields	1.4 to 2.4	2	-
Tennis Courts	1.2 to 3.5	0	1.0 to 3.5
Hard Courts	2.4 to 9.4	1	1.4 to 8.4
Playgrounds (#)	.5 to 4.7	2	0 to 2.7
(acres)	3.1 to 8.3	1.5	1.5 to 7.0
Parks (acres)	2.4 to 47.2	4.3	-
Open space		>400 land/ 272 water	
Picnic Areas (acres)	.5 to 23.6	0.3	0 to 23
Picnic tables	5 to 23.6	5	0 to 18.6
Beach (acres)	0.24 to 3.5	0.5	0 to 3
Outdoor Ice Areas	.5 to 1.2	1	-
(square feet)	4,720 to 16,520	?	-
Gymnasium	.47 to 2.40	1	0 to 1

TABLE VI-15

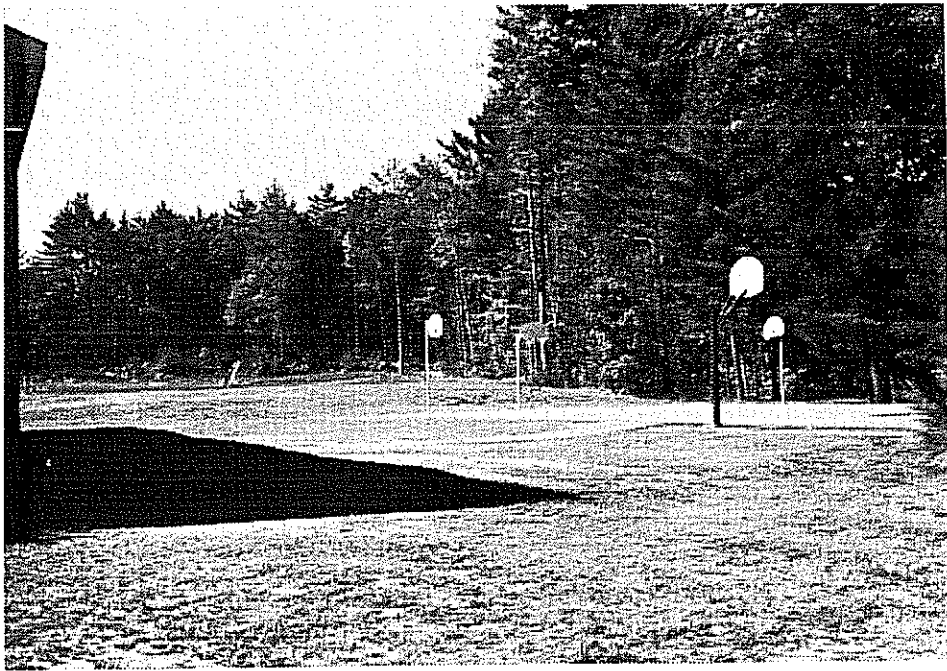
PROJECTED RECREATIONAL FACILITY REQUIREMENTS
BROOKLINE 1990 - 2010

Year	Existing Facilities 1990	Projected Addt'l.	1995	2000	2005	Recreation Needs** 2010
Population **	2390 ²³⁹⁰ 2498 *	2890	3385	3867	4349	
<u>Type of Facility</u>						
Ballfields (no.)	2	0-1	0-1	0-2	1-2	
Tennis Courts (no.)	0	1-4	2-5	2-6	2-6	
Hard Courts (no.)	1	2-11	2-12	3-14	3-16	
Playgrounds (no.)	2	0-4	0-5	0-6	0-7	
Playgrounds (acres)	1.5	2-9	3-10	3-12	4-14	
Parks (acres) Active	4.3	0-53	0-63	0-73	0-83	
Picnic Areas (acres)	0.3	0-29	0-34	0-38	1-43	
Picnic Tables (no.)	5	1-24	2-29	3-34	4-38	
Beaches (acres)	0.5	0-9	0-5	0-5	0-6	
Outdoor Ice Areas (no.)	1	0-1	0-1	0-1	0-1	
Gymnasium (no.)	1	0-2	0-2	0-3	0-3	
Boating Areas (acres)	286	16-30	18-33	19-35	20-37	

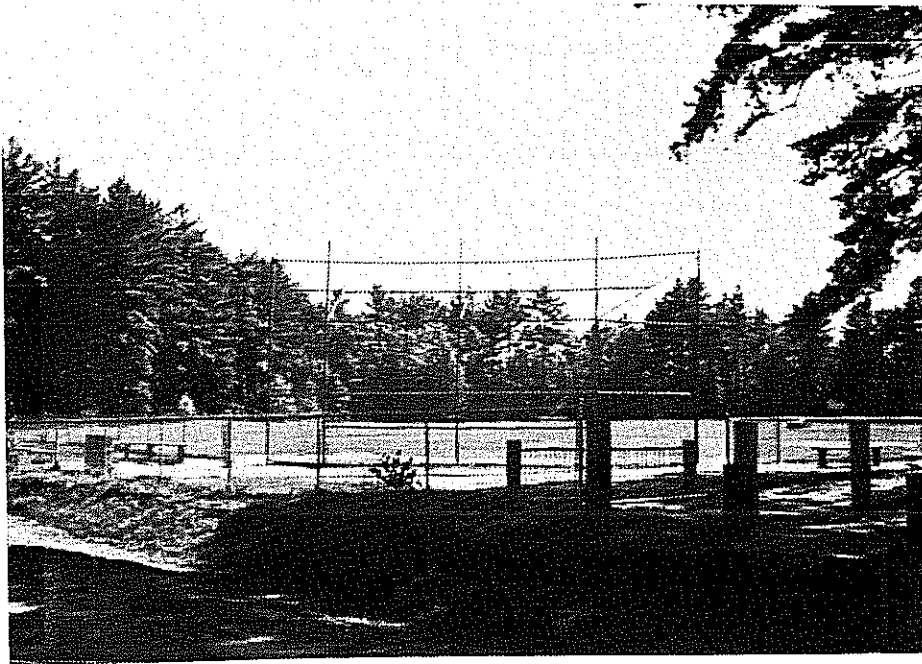
Source: NH Outdoor Recreation Plan, 1977.

* 1990 Population Estimate. Preliminary U.S. Census Figure

** OSP Population Projections, May 1987.



At the Brookline Elementary School there is one hard court which has 6 basketball nets.



The Ball Park on Frances Drive has 1 softball field, 1 baseball field and a playground.

Listed below and shown on the following page is an inventory of Town-owned land. This land is scattered throughout Town, with much of it vacant or used for conservation purposes.

TABLE VI-16

TOWN OWNED LAND

Lot Number	Location	Use	Acreage
B-37	West of Route 13	Vacant	12.0
B-49	Milford Town Line	Vacant	.6
B-54	Milford Town Line	Vacant	3.4
B-55	Melendy Pond	Camps	284.4 (incl.water)
B-65-11	West of Route 13	Vac.-(Palmer land)	73.3
B-94	Mountain Road	Vacant	109.9
C-3	N. Spaulding Brook Rd.	Vacant	.5
C-11	North Mason Road	Vacant	5.0
C-12	North Mason Road	Town Dump	40.0
D-39	West of Route 13	North Cemetery	.2
F-17	N. of Rocky Pond Road	Vacant	36.4
F-62	Hollis Town Line	Vacant	4.4
F-80	Milford St.	Elementary School	6.2
F-116	Main St.	Ambulance Bay	.5
F-132	Frances Dr.	Ballpark	6.5
F-144	Meetinghouse Hill Rd.	Hist. Soc. Bldg.	.8
G-65	Cleveland Hill Road	Vacant	.1
H-31	Bond St.	Town Hall/Fire Sta.	1.6
H-43	Main St.	Vacant	.4
H-108	Cross Rd./Main St.	Pine Grove Cemet.	10.0
H-70	Proctor Hill Rd.	Vacant	7.1
H-71	Proctor Hill Rd.	Vacant	4.0
J-2	Russell Hill Rd.	Vacant	9.1
J-33-11	Beaver Pond Dr.	Vacant	8.3
J-35	West Hill Road	Vacant	12.8
J-58	Mason Town Line	Vacant	2.8
K-58	Oak Hill Rd.	Vacant	6.4
L-13	Mason Road	Lakeside Cemetery	2.1
L-35	Mason Road/Lake Potanipo Right-of-way		1.2

MAP VI-3

TOWN OWNED LAND



TOWN OWNED LAND

Conservation Easements

In response to the need for protection of the Town's major wetland and water resource areas, conservation easements have been sought. A total of nine acres of land within the 33 acre South Spaulding Brook Road subdivision on North Mason Road has been deeded to the Town through a conservation easement. The conservation land "buffer" protects both Spaulding and Scabbard Mill Brooks which flow through the property in addition to their adjacent wetland areas. Besides protecting the water/wetland resource, the easement allows public access to the brooks for fishing and hiking along their banks.

Additional conservation easements have been granted within both the Thurston and Millbrook Estates Subdivisions. Within the Thurston Subdivision, (west of NH Route 13 and southwest of Melendy Pond) approximately 1.1 acres of land has been given in a conservation easement to the Town for the protection of Scabbard Mill Brook. The easement extends ten feet along both sides of the Brook and also includes a small area to the rear of the subdivision, adjacent to a stream entering Scabbard Mill Brook to the southwest.

Within the Millbrook Estates Subdivision, (east of NH Route 13 and north of Hood Road) approximately 25.4 acres of wetland area has been given added protection. A conservation easement of approximately 0.9 acres has been given to the Town along Scabbard Mill Brook. Also, approximately 24.5 acres of wetland area has had restrictive covenants attached to all property deeds. The covenants are designed to prevent damage to sensitive wetland areas within each lot that are all inter-connected within the subdivision. As with all conservation easements, the Brookline Conservation Commission has been given the responsibility and authority to enforce any and all provisions of the easements and deed covenants.

Nissitissit River Land Trust

Formed to protect natural conservation lands along the Nissitissit River, the Nissitissit River Land Trust owns and manages land areas in both Brookline and Hollis. Within Brookline, the Land Trust owns and manages ten parcels of land totaling nearly 100 acres.

Beaver Brook Association

Also formed to protect conservation lands in Brookline, the Beaver Brook Association holds title to, and conservation easements on, a number of parcels. The Association owns eight lots totaling over 100 acres and two conservation easements totaling 16 acres.

TABLE VI-17

CONSERVATION LAND

Owned By <u>Nissitissit River Land Trust</u>		Owned By <u>Beaver Brook Associates</u>	
Lot	Acreage	Lot	Acreage
H-9	1.5	K-94-1	8.5
H-34	.6	K-95	84.2
H-31	1.8	H-146	1.0
H-29	.7	K-62	1.2
H-102	2.5	K-62-1	0
K-14	4.7	K-62-B	.6
K-59	2.8	K-91	4.0
K-92	27.0	F-61	5.3
K-93	13.6		
K-42	35.1		

Source: Tax Records.

TABLE VI-18

MAJOR CONSERVATION EASEMENTS

<u>Name</u>	<u>Name</u>
Thurston Subdivision	Spaulding Brook
Flint Meadow Drive	Capt Douglass
Millbrook Estates	Lorden/Elevations
Moran Land	Austin Subdivision
Nowak Land	Lakin Rd.
Wallace Brook Estates II	N. Johnson
Frances Drive	McHowery Subdivision

Source: Tax Records.

Brookline Elementary School

The Brookline Elementary School is a one story concrete block building built on a concrete foundation slab, with 13,725 square feet of usable space. The building includes ten classrooms, a principal's office, a faculty room, a boiler room, and a multipurpose room. Based on State requirements the school could accommodate up to 250 students. Located on seven acres on Route 130, construction of the main, four-classroom building was completed in 1962, with a six classroom addition that was completed in 1967. In 1982 half of the original flat roof was covered with a pitched roof and the remaining portion was completed in 1983.

In December of 1986, the latest addition to the Brookline Elementary School was dedicated. This project added 27,364 square feet to the pre-existing 13,725 square feet of floor space. With this addition, the overall facility now consists of: a gymnasium with kitchen space and two bathrooms; library; art room; music room; computer room; new main entrance with foyer; administrative area with principal's office, reception area, nurse's room, bathroom, conference room, teachers' room; thirteen classrooms; and two resource rooms. The addition also included additional floor space consisting of an unfinished basement area of approximately 12,000 square feet with rough plumbing for two bathrooms, electrical setup, windows, outside entrance and interior stairway for future classroom expansion. This area presently serves as storage and a spillover activity area used by such organizations as a local karate club.

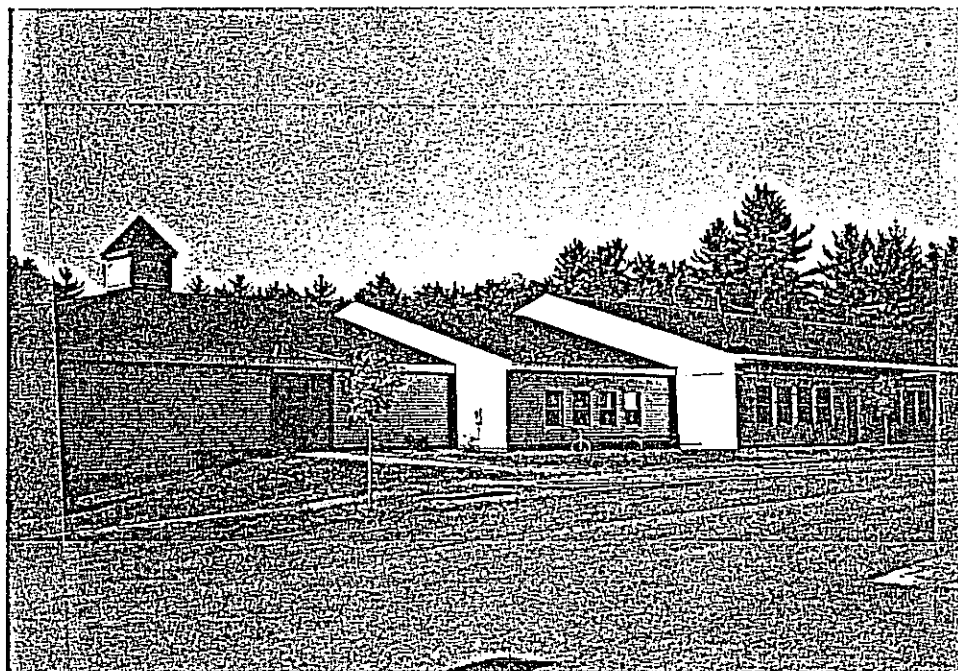
In the 1989-1990 school year, the staff consisted of a principal, one secretary, thirteen regular teachers, one special needs teacher, one nurse, one librarian, one music teacher, two physical education teachers, one art teacher, and one custodian. Exceptional programs beyond the core curriculum included: readiness (for 6 year olds not ready for grade 1), instrumental music (grades 5 and 6), environmental science program, Chapter I and local tutors in math and reading, special education for handicapped pupils, and a speech therapist.

Since its construction, the elementary school gym has been put to exceptional use, serving not only school activities such as physical education, lunch and other programs, but also serving as the town's primary meeting place for uses such as town meeting, school board meeting, a new basketball league, volleyball league, scouting activities, and PTO activities.

The elementary school has an active parent-teacher organization (PTO) which offers diverse volunteer help to the school as well as funding for teacher requests, library acquisition, playground acquisitions, and enrichment programs, such as performances, shows, and visiting artists.

Hollis Area Junior and Senior High Schools

In 1989, Brookline and Hollis voters agreed to establish a cooperative school district for their joint junior and senior high schools. Starting with the 1991-1992 school year, Brookline students, as previously, shall attend 7th and 8th grade at the Hollis Junior High facility, and 9th through 12th grad at the Hollis High School facility. Whereas previously, Brookline participation was on a tuition basis under an AREA agreement between the two towns, the towns shall now participate as partners. The cooperative school board consists of 5 members, two of whom are from Brookline. Brookline now has an ownership interest in the high school physical plant.



The Brookline Elementary School, located on Milford St., was completed in 1987.

TABLE VI-19

SCHOOL ENROLLMENTS
1970-1989

Grade	1970	1974	1980	1984	1989
1	30	31	26	35	37
2	20	27	20	27	32
3	44	35	31	26	34
4	37	31	34	21	31
5	42	31	37	27	33
6	29	21	32	20	21
	202	176	180	156	188
7	42	45	30	35	42
8	20	43	33	32	27
	62	88	63	67	69
9	30	37	28	36	24
10	23	28	33	33	33
11	17	33	37	21	29
12	14	15	26	28	33
	84	113	124	118	119

Source: 1970-80 Figures: Superintendent of Schools.
1984 Figures: Town Reports.
1989 Figures: Superintendent of Schools.
All figures are October enrollments except 1989 which are December.

RECOMMENDATIONS

General

1. Brookline should develop a schedule of assessments to soften the impact of development on community facilities and services.
2. Provide for handicapped access to community facilities.
3. Each Town Department should develop long-term plans for capital equipment needs and include those in the Capital Improvements Program (CIP).
4. Each Town Department should recruit and train staff and reward them with public recognition and adequate protection equipment.

Town Facilities

1. Evaluate and act upon plans for providing the needed expansion area and improvements for the Town facilities--offices, police station, and library.

Fire Protection

1. The Fire Department should continue to actively participate with the Planning Board and Building Inspector to review subdivision, site, and building plans to ensure adequate fire department access and fire protection for all new and existing developments.
2. The Fire Department should consider developing an ordinance to address false alarms by automated systems.

Solid Waste

1. The Town should develop a long-term cost-effective form of waste disposal which will meet local, state and federal requirements.

Schools

1. Cable TV should be hooked up in the gym to provide better access to such large events as Town meeting.
2. Continue the sidewalk program to link the Elementary School to the nearby area.

Recreation and Open Space

1. Plan, develop, and geographically distribute playgrounds, tennis courts, and picnic areas to add to the Town's existing recreation facilities.

2. The Recreation Commission should develop a recreation plan which will provide a long range program for the support, expansion, and improvement of park and recreational facilities in Brookline.
3. The Conservation Commission should coordinate and publicize the Town's open space and easement location throughout the Town.
4. The Town should establish a land acquisition policy so that a coordinated effort can be made to acquire/obtain land when it becomes available.
5. Build tennis courts at the existing ballfield.
6. Evaluate the present status of Melendy Pond Authority property and develop long-range plans for its future use to maximize benefit to the Town.
7. The Conservation Commission should establish a recreational trail system in the Melendy Pond area for community use.

Chapter VII.

Housing

CHAPTER VII

HOUSING

The characteristics of a community's housing supply are of critical importance in determining how it will grow in future years. The availability of housing of various types may be the most significant factor in determining population distribution, future population growth and the demand for local services.

This chapter will examine several aspects of the role and function of Brookline's housing market: the number, type, cost, value and size of housing units as well as recent housing growth. In addition, housing projections to the year 2010 are made, followed by a comparison of housing growth to other NRPC communities and a local housing needs analysis based upon the Regional Housing Needs Assessment as required by RSA 674:2, II.

HOUSING CHARACTERISTICS

The housing supply of a community is comprised of a variety of housing types. These are categorized as single-family, multi-family (including duplexes), and manufactured housing. Manufactured housing includes mobile homes. Pre-site built homes are included in the other categories. Among these categories, the number of units of each type are counted, where a unit provides housing for one household, whether it is a family, individual, or a group of persons.

Single family units are the most common type of housing found in Brookline, and are usually owner-occupied. Duplexes and multi-family housing units are two or more units in one structure, and are typically rented or leased to the occupants. Manufactured housing also offers an alternative to single-family homes. Table VII-1 shows the distribution of these types of units in Brookline in 1970, 1980, and 1989.

Brookline's zoning ordinance does not allow more than a 2 family unit (duplex). But the zoning ordinance is only one of the factors affecting the type of housing built in Brookline. Residential development is also determined by other factors including: lot size requirements; the lack of public water and sewer; the supply and demand variables within the construction market and economy; proximity to employment; and existing housing units.

Brookline had the fifth fastest rate of housing growth in the NRPC region from 1970 to 1980, increasing by over 200 housing units (65%). Although the housing growth rate from 1980-1989 was about the same, Brookline had the second fastest rate of growth in the NRPC region from 1980 to 1989, an increase of 61 percent (over 300 units).

TABLE VII-1

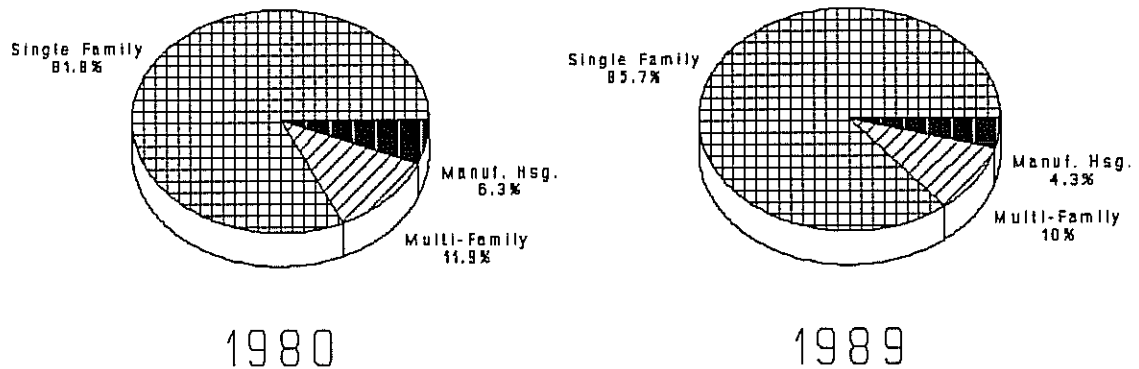
HOUSING UNITS BY TYPE
BROOKLINE 1970, 1980, 1989

	<u>1970</u>	<u>Percent of Total</u>	<u>1980</u>	<u>Percent of Total</u>	<u>1989</u>	<u>Percent of Total</u>
Single Family	311	87.6	480	81.8	808	85.7
Multi-Family & Dupl.	21	5.9	70	11.9	94	10.0
Manufactured Housing	23	6.5	37	6.3	41	4.3
TOTAL UNITS:	355	100.0	587	100.0	943	100.0

Source: US Census, 1980; NH Office of State Planning, Current Estimates & Trends in New Hampshire's Housing Supply - Update: 1987, Nov. 1988. Brookline Town Report 1988.

FIGURE VII-1

HOUSING UNITS BY TYPE
BROOKLINE 1980 & 1989



Source: US Census, OSP Estimates.
Brookline Town Reports.

HOUSING TYPE

Every community in the Nashua region has experienced a large increase in the number of housing units during the 1980's. Table VII-1 on the previous page shows housing unit growth in Brookline during the 1980's by comparing 1970 and 1980 Census figures with 1989 estimates based on residential building permits issued. Significantly, Brookline has been one of the fastest growing communities in the region, increasing its total housing stock by over 60% since 1980.

Single Family Homes

As shown in Figure VII-1, over 85 percent of the housing stock in Brookline is single family homes. The percentage of housing units which were single family homes dropped six percent between 1970 and 1980, as the amount of multi-family and duplex housing increased. From 1980 to 1989, the number of single family homes increased sixty-eight percent. 92% of the total housing growth in Brookline since 1980 has been single-family homes. Table VII-2 and Figure VII-2 show the number of building permits issued annually by type since 1980. These figures clearly show the large amount of growth during the "building boom" of the late 1980's.

TABLE VII-2

BUILDING PERMITS ISSUED, BROOKLINE 1980 - MAY 1, 1990

	1980 CENSUS UNITS	PERMITS ISSUED:											TOTAL
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
SINGLE FAMILY	467	13	10	13	25	29	40	68	49	53	41	9	817
MULTI-FAMILY	68	2	2	0	2	0	4	4	6	2	4	0	94
MFD. HOUSING	37	0	0	0	2	1	0	1	0	0	0	0	41
TOTAL	572	15	12	13	29	30	44	73	55	55	45	9	952

Source: NH Office of State Planning, Current Estimates & Trends in
New Hampshire's Housing Supply: Update: 1987, Nov. 1988.
Brookline Town Reports 1988, 1989.
Brookline Building Permit Book.

Duplexes and Multi-Family Housing

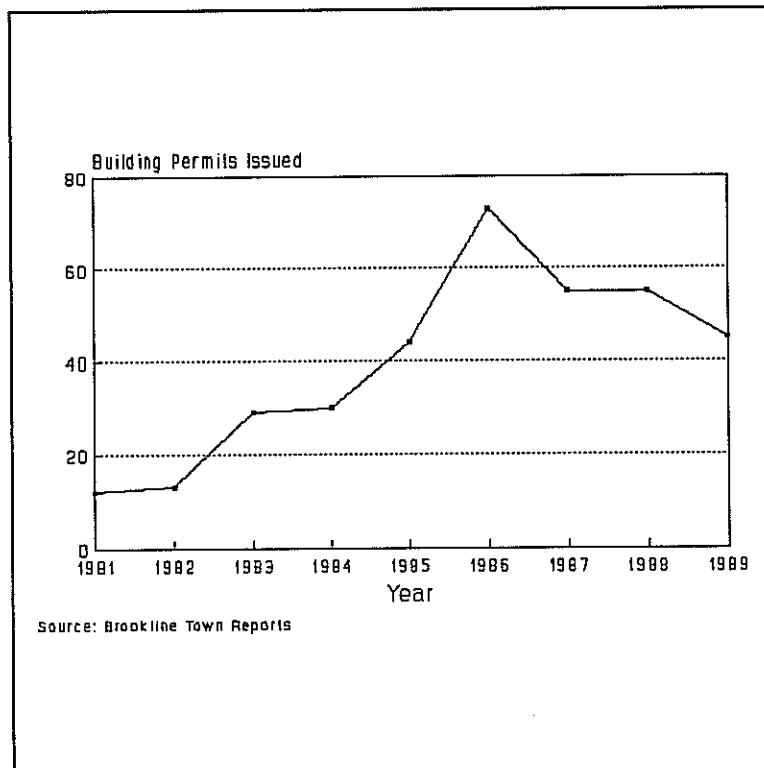
Brookline's current zoning allows duplexes anywhere in town on a minimum lot size of 160,000 square feet, but allows only pre-existing multi-family housing of more than two units. There are currently three apartment buildings within Town, all near the Main Street/Steam Mill Hill Rd. area totalling 12 units. There has been an increase of 24 multi-family units since 1980, which have been in the form of 12 duplexes. Over half of the multi-family housing and duplexes in Brookline were built in the 1970's.

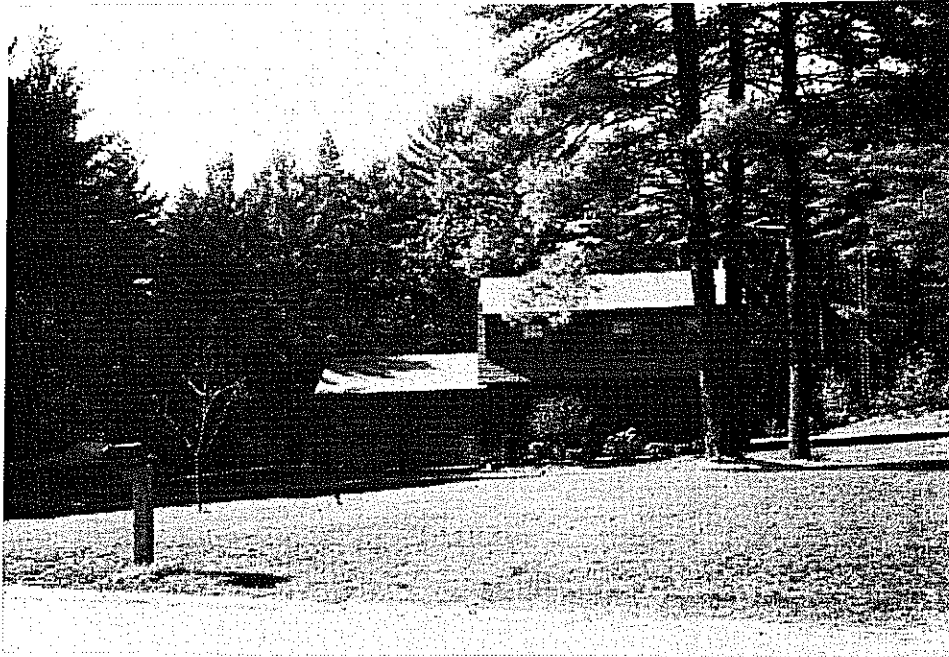
Manufactured Housing

Brookline's zoning ordinance permits manufactured housing in the Residential-Agricultural District only as part of Mobile Home District of 20 acres or greater. Since 1980, there has been an increase of only 4 units of manufactured housing. The only manufactured housing park within Town is the Field and Stream Trailer Park located on Dupaw-Gould Road, which is seasonal and has 54 hookups. The rest of the manufactured housing is scattered throughout the Town.

FIGURE VII-2

NUMBER OF BUILDING PERMITS ISSUED,
BROOKLINE, 1981 to 1989





Over 85 percent of the housing stock in Brookline is single-family homes.



The Field and Stream Trailer Park has 54 units of manufactured housing and is located just west of the North Stream.

In addition to the current housing stock, 258 new house lots have been approved by the Planning Board since 1985 which may be developed at any time. These are listed in Table VII-3, below. None of these approved developments include manufactured housing, and only a small percentage are suitable for duplexes. Note that if all of these are built, Brookline's population will increase by 666 persons, based on an average household size of 2.58, the currently estimated household size (see page IV-7). Obviously, this population and housing growth will have a large impact on the Town.

TABLE VII-3

APPROVED UNDEVELOPED LOTS
IN BROOKLINE
(AS OF MAY 1, 1990)

Subdivision Name	(Lot #'s)	# of Approved Lots	# of Developed Lots	# of Vacant Lots
Bear Hill Est.	(D-52)	54	21	33
Birch Hill Phase I	(D-55)	21	5	16
Bremer	(D-26)	3	0	3
Capt. Douglass Dr.	(K-83)	4	1	3
Coon	(F-43)	3	0	3
Cropp	(E-12)	5	0	5
Croteau/Leonard	(J-3)	3	0	3
Lakin Road	(B-84)	10	1	9
Lorden-Elevations	(J-17)	23	0	23
Maxwell Dr.	(G-5)	6	2	4
Mountain Rd. Ph. I	(D-18)	24	0	24
Muscatanipus Rd.	(J-57)	6	1	5
Noury/Martin W.Hill Rd.	(J-36)	10	6	4
Oak Hill Estates	(K-66)	41	21	20
Peterson	(F-22)	4	0	4
Peterson Rd.	(K-57)	13	0	13
Rideout Lane	(F-51)	6	4	2
Rock Ramond Est.	(E-22)	12	0	12
Rose/Connolly	(E-11)	4	0	4
Scabbard Mill Brook Rd.	(D-89)	13	1	12
Serenity Homes	(D-67-1)	10	4	6
S. Spaulding Br.Rd.	(C-10)	16	12	4
Talbot-Taylor Est.	(G-61)	24	0	24
Wallace Brook Est. ph. I	(J-30)	41	28	13
Wallace Brook Est. ph. II	(J-33)	12	3	9
TOTALS:		368	110	258 329

5/2/91
3 subdivisions
added

Source: Brookline Planning Board files and minutes.

AGE OF HOUSING STOCK

Data regarding the age of a region's housing stock can relay useful information relative to housing needs of a particular area. Statistics from the 1980 Census indicate that approximately a quarter of the NRPC region's housing stock was built before 1939, as compared to 39% of the units statewide, reflecting the tremendous amount of new construction experienced in the region since World War II. By contrast, according to the 1980 Census, Wilton and Lyndeborough each had more than half of their housing units predate 1940.

In general, a large proportion of older houses may serve as an indication of the need for renovation and rehabilitation. A large number of older homes may also suggest a high percentage of buildings of potential historic significance.

In 1980, over one-third of Brookline's housing stock was built before 1939. This was the fourth highest percentage in the region. Note that due to the large number of housing units built in Brookline in the 1980's, the percent of housing units in town built before 1939 has dropped to 23% (216 pre-1939 units/ 943 total units), assuming that no units built before 1939 have been destroyed since the 1980 Census. If the projects from the preceding page are developed, the percentage would drop to 18%.

TABLE VII-4

YEAR-ROUND HOUSING UNITS
BUILT BEFORE 1939
NRPC REGION, 1980 & 1989

MUNICIPALITY	UNITS PRE-1939	TOTAL 1980	PERCENT OF 1980 TOTAL	TOTAL 1989	PERCENT OF 1989 TOTAL*
AMHERST	531	2,598	20.4	3,217	16.5
BROOKLINE	216	587	36.8	943	22.9
HOLLIS	364	1,563	23.3	2,159	16.9
HUDSON	670	4,533	14.8	6,957	9.6
LITCHFIELD	110	1,360	8.1	1,890	5.8
LYNDEBOROUGH	198	376	52.7	490	40.4
MERRIMACK	335	4,711	7.1	8,121	4.1
MILFORD	1,292	3,287	38.3	4,731	27.3
MONT VERNON	178	487	36.6	651	27.3
NASHUA	7,765	25,928	30.0	33,551	23.1
PELHAM	277	2,411	11.5	3,003	9.2
WILTON	571	926	61.7	1,171	48.8
NRPC REGION	12,507	48,767	25.6	66,884	18.7

*Assuming no loss of pre-1939 units between 1980 and 1988.

Source: US Census, 1980
1989 totals based on Current Estimates and Trends in New Hampshire's Housing Supply. Update: 1988 (New Hampshire Office of State Planning). The number of building permits issued in each community in 1989 was added to this figure.

HOUSEHOLDS

The average annual growth rate of households in the NRPC Region from 1970 to 1980 was 4.5%, while the average annual rate from 1990 to 2000 is anticipated to be 3.1%, based on the NH Office of State Planning (OSP) projections. Average annual growth predicted for the decade 2000-2010 is expected to be even lower, at 2.8%. Thus, the projections indicate a significant anticipated decline in the growth of the number of households in the coming decades. However, these rates produce a near doubling of the absolute number from 1990 to 2010.

As noted in Chapter IV, household size is decreasing in Brookline. Table VII-5 shows the projected population and number of households in Brookline to the year 2010. Note the nominal decrease in household size continuing to 2010. As mentioned in Chapter IV, this trend might be expected to have an effect on the housing needs in Brookline, although the decrease may be too small to bear out that possibility. The Office of State Planning has projected a higher household size for Brookline than for the NRPC region as a whole. The region is projected to have an average household size of 2.45 by the year 2010.

TABLE VII-5
POPULATION, HOUSEHOLDS, AND AVERAGE HOUSEHOLD SIZE,
HISTORICAL AND PROJECTED
BROOKLINE 1970-2010

	CENSUS 1970	CENSUS 1980	1990	PROJECTIONS 1995	2000	2005	2010
POPULATION	1,167	1,766	2,408	2,974	3,385	3,794	4,349
HOUSEHOLDS	331	561	835	1,068	1,252	1,441	1,692
AVG. HOUSEHOLD SIZE	3.53	3.15	2.88	2.78	2.70	2.63	2.57

Source: US Census, NH OSP Population Projections 1980-2010, May 1987, and NH OSP Household Projections, May, 1987.

HOUSING COSTS

The New Hampshire Housing Finance Authority (NHHFA) maintains a database containing owner-occupied cost information for each of the communities in the state. NHHFA has been tracking the purchase price of homes broken down by new and existing (previously occupied) homes. Based on this survey, purchase prices of both new and existing single family homes are near the \$200,000 level in Amherst and over \$200,000 in Hollis. The NRPC region purchase price average for new and existing homes in 1987 according to NHHFA was \$158,000. It should be noted that these figures are based on a small sample size.

Table VII-6 and Figure VII-3 show that Brookline's average purchase price in 1987 is below Hollis, Amherst, and Mont Vernon. Also reflected is the fact that Brookline's average purchase price for new homes is below that of Hollis, Amherst, Mont Vernon and Pelham. The small difference in price between new and existing homes sold may indicate the homogeneity of Brookline's housing stock (3 or 4 bedroom single family homes on large lots). Note that the discrepancy between Tables VII-6 and VII-7 are due to a different sample size.

Table VII-7 shows the average purchase prices of single family homes from 1986 to 1989, as collected by the Multiple Listing Service. The number of bedrooms is listed to indicate that approximately the same ratio of homes in each bedroom category were sold each year and the data can be compared.

TABLE VII-6

AVERAGE PURCHASE PRICES OF SINGLE FAMILY HOMES NRPC REGION, 1987

	NEW	EXISTING	NEW AND EXISTING
AMHERST	\$222,681	\$190,592	\$197,010
BROOKLINE	\$173,264	\$165,195	\$168,712
HOLLIS	*\$283,108	\$199,114	\$220,112
HUDSON	\$145,047	\$129,466	\$133,479
LITCHFIELD	\$163,689	\$138,710	\$145,048
LYNDEBOROUGH	*\$134,306	\$132,330	\$132,786
MERRIMACK	\$153,571	\$134,003	\$139,265
MILFORD	\$137,174	\$117,939	\$125,753
MONT VERNON	*\$199,820	\$166,833	\$176,535
NASHUA	\$146,098	\$136,061	\$138,327
PELHAM	\$224,219	\$148,826	\$166,855
WILTON	*\$170,296	\$141,675	\$151,215

* Sample size less than 10

Source: NH Housing Finance Authority, 1988

FIGURE VII-3

AVERAGE PURCHASE PRICES OF SINGLE FAMILY HOMES
NRPC REGION, 1987

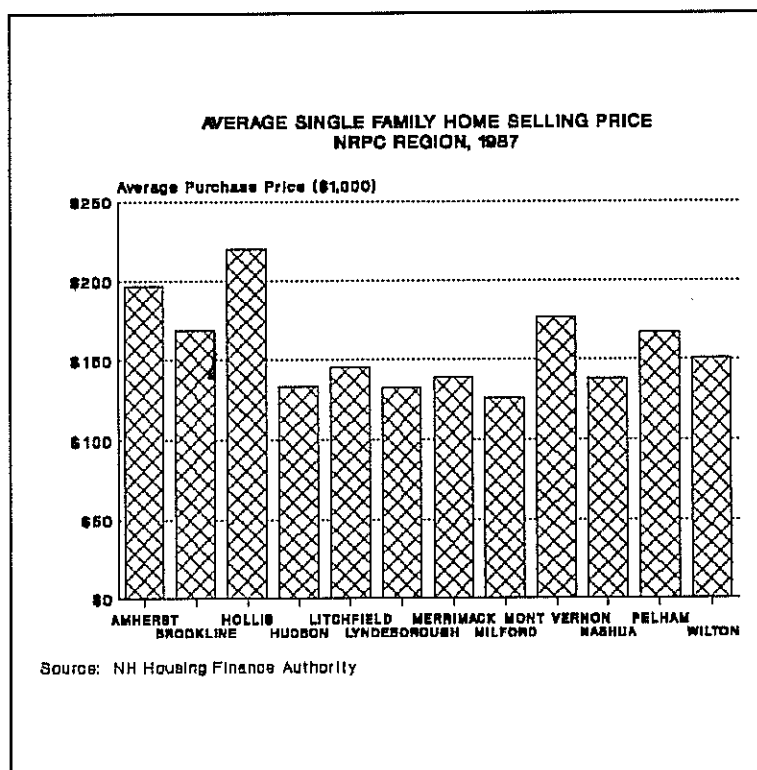


TABLE VII-7

AVERAGE PURCHASE PRICES OF SINGLE FAMILY HOMES,
IN BROOKLINE, 1986-1989

Year	Total	Average Price	Number of 2 bedroom	Number of 3 bedroom	Number of 4 bedroom	More than 4 bedrooms
1986	31	\$143,685	3	21	7	0
1987	31	\$174,362	5	18	7	1
1988	31	\$175,000	1	21	9	0
1989	35	\$183,658	3	15	15	2
TOTALS:	128		12 (9%)	75 (58%)	38 (30%)	3 (3%)

Source: Multiple Listing Service (MLS) Listings.

Note: This is only a sample of the homes sold in Brookline, both new and existing during this time.

COST OF RENTAL HOUSING

Rental units account for approximately one-third of the region's total housing stock based on 1980 Census figures. Based on a statewide survey conducted annually by the New Hampshire Housing Finance Authority, the cost of rental housing in the region has shown a steady increase. Median rents for all units in the state increased from approximately \$407 in 1983 to approximately \$589 in 1988. In Nashua, median rents for all units increased from \$452 to \$627 between 1983 and 1988.

Few rental units exist in Brookline. These include the duplexes and the preexisting apartment buildings mentioned earlier and other rental units such as a refinished basement, room, or barn, or renting of an entire single family home.

According to the 1980 Census, there were 86 renter occupied units within Town. At that time, it was 15% of the total number of units within Town. It is now estimated that about 10% to 12% of the units within Brookline are rental, as only 11 duplexes were built in the 1980's. Brookline landlords say that vacancy rates are extremely low, and that rental units are advertised for only short periods of time (usually less than a week) before being taken. The demand is outweighing the supply, which is driving up prices. Because of the small number of rental units within Town, obtaining rental price data is not possible. The best indication of Brookline rental costs are shown in Table VII-8 which shows the range and median of 1987 rental costs in the Nashua Primary Metropolitan Statistical Area (PMSA), and Table VII-9 which shows Nashua PMSA prices from 1983 to 1988.

TABLE VII-8

COST OF MONTHLY RENT FOR ALL RENTAL HOUSING NASHUA PMSA 1986 AND 1987

BEDROOMS:	SAMPLE SIZE	1987 RANGE (\$)	1987 MEDIAN (\$)	1986 MEDIAN (\$)
0	16	250-481	---	420
1	103	373-613	515	510
2	233	437-850	598	601
3	65	566-947	---	936
4	3	700-840	---	---
ALL UNITS	420	250-947	578	587

--- indicates inadequate sample size

Source: New Hampshire Housing Finance Authority, 1987 New Hampshire Rental Survey

As seen in Table VII-9, in the Nashua PMSA the cost of one and two bedroom rental units has increased steadily, while the cost of three bedroom units rose at a faster rate. Note that the cost of rental housing in the Nashua PMSA is higher than state and county averages.

TABLE VII-9

AVERAGE MONTHLY RENTAL HOUSING COSTS
NASHUA PMSA 1983-1988

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
1 BEDROOM	\$427	\$431	\$495	\$515	\$510	\$ 578
2 BEDROOMS	\$488	\$654	\$567	\$598	\$601	\$ 644
3 BEDROOMS	\$521	\$795	\$801	----	\$936	\$1000

---- indicates data not available.

Source: New Hampshire Housing Finance Authority, Residential Rental Cost Survey, 1983-1988.

INCOMES NEEDED TO PURCHASE AND RENT

The average purchase price for a single family home in Brookline can be translated to the approximate income needed to purchase a single family home within Town. These figures are general, as there are many variables involved in the amount of money needed to purchase a home. Some of these variables include the prevailing interest rate, the amount of downpayment, the tax on assessment of each community, the amount of outside financial assistance, and the length of the mortgage. It is likely that only those families in the middle or higher income categories (as shown on page VII-14) could afford to purchase the average home in Brookline selling for \$183,658.

It is much simpler to estimate the income necessary to rent a 1, 2 or 3 bedroom unit in Brookline. This is based on the general rule-of-thumb that one should spend no more than 30% of monthly income on housing. Based on \$500, \$600 and \$900 per month rent for a 1 bedroom, 2 bedroom and 3 bedroom unit, the estimated annual incomes needed are:

<u>#bedrooms</u>	<u>monthly rent</u>	<u>annual income needed</u>
1 bedroom	\$500	\$19,800
2 bedroom	\$600	\$23,760
3 bedroom	\$900	\$35,640

LOCAL HOUSING NEEDS ASSESSMENT

A growing concern nationally, as well as in New Hampshire, has been the ability of low- and moderate-income households and special needs groups, such as the elderly and the handicapped, to find safe and sanitary housing at costs within their means. Recent New Hampshire legislation and court decisions have attempted to address this issue by encouraging communities to take positive steps to address the housing needs of all people including low and moderate-income families and individuals.

In 1988, the New Hampshire Legislature enacted Senate Bill 317-FN, which amended RSA 674:2, II and RSA 36:47, II, requiring that the housing section of a municipal master plan address "current and future housing needs of residents of all levels of income of the municipality and of the region in which it is located..." These needs are identified in the 1989 Regional Housing Needs Assessment, which provides the foundation upon which this chapter is based.

The courts have also had a powerful role in influencing local housing policy. Recent Court decisions in New Hampshire have been based on the following principals:

- It is unconstitutional to use local land use regulations to discourage or prevent realistic opportunities for the development of housing affordable to certain economic classes of people
- Land use regulations cannot be used to create enclaves for the rich or ghettos for the poor. A town cannot devise its regulations to permit housing to be developed for only certain classes of people, nor can it delegate sections of a community to house people by economic class.
- Multi-family housing is the only reasonable means of providing housing for most low and all very-low income families in the southern tier of New Hampshire.

Defining Low and Moderate Income

To determine the categories of very low, low, moderate, and middle income in an area, a comparison is made to the area's median family income. In this case, the median family income for a family of four in the Nashua Primary Metropolitan Statistical Area (PMSA) is \$46,200 for 1989. The Nashua PMSA contains the following communities: Amherst, Brookline, Hollis, Hudson, Litchfield, Londonderry, Merrimack, Milford, Mont Vernon, Nashua, and Wilton. Income categories for a family of one, two, three, and four in 1989 for the PMSA are shown on the following page.

As mentioned on page VII-12, only those families in the middle or higher income categories have the annual income needed to purchase the average home in Brookline. Table VII-10 shows the income ranges for each category as defined by the New Hampshire Housing Finance Authority.

TABLE VII-10

INCOME CATEGORIES
NASHUA PMSA, 1989

FAMILY OF FOUR, NASHUA PMSA*, 1989

<u>Category</u>	<u>Percent of Median Income</u>	<u>Median Family Income</u>
Very low income	less than 50	less than \$23,100
Low income	50 to 80	\$23,100 to \$36,960
Moderate inc.	80 to 120	\$36,960 to \$55,400
Middle income	120 to 150	\$55,400 to \$69,300
Higher incomes	more than 150	more than \$69,300

FAMILY OF THREE, NASHUA PMSA*, 1989

<u>Category</u>	<u>Percent of Median Income</u>	<u>Median Family Income</u>
Very low income	less than 50	less than \$20,800
Low income	50 to 80	\$20,800 to \$33,280
Moderate income	80 to 120	\$33,280 to \$49,920
Middle income	120 to 150	\$49,920 to \$62,400
Higher incomes	more than 150	more than \$62,400

FAMILY OF TWO, NASHUA PMSA*, 1989

<u>Category</u>	<u>Percent of Median Income</u>	<u>Median Family Income</u>
Very low income	less than 50	less than \$18,500
Low income	50 to 80	\$18,500 to \$29,600
Moderate income	80 to 120	\$29,600 to \$44,400
Middle income	120 to 150	\$44,400 to \$55,500
Higher incomes	more than 150	more than \$55,500

FAMILY OF ONE, NASHUA PMSA*, 1989

<u>Category</u>	<u>Percent of Median Income</u>	<u>Median Family Income</u>
Very low income	less than 50	less than \$16,150
Low income	50 to 80	\$16,150 to \$25,840
Moderate income	80 to 120	\$25,840 to \$38,760
Middle income	120 to 150	\$38,760 to \$48,450
Higher incomes	more than 150	more than \$48,450

*The Nashua PMSA includes the following communities: Amherst, Brookline, Hollis, Hudson, Litchfield, Londonderry, Merrimack, Milford, Mont Vernon, Nashua, and Wilton.

Incomes are approximate

Source: NHHFA, February, 1989.

Tables VII-11 through VII-14 compute the number of housing units needed from 1980 to 2010 and the number of housing units needed in each income category, so that housing needs for future residents in all income categories can be addressed.

The population and persons per unit (average household size) figures are taken from the NH Office of State Planning Population and Household Projections. The three percent vacancy rate is included to allow people to move between homes and is considered a healthy vacancy rate to ensure competitive pricing. The accuracy of these projections relies mainly on the accuracy of the population projections and the average household size.

TABLE VII-11

PROJECTED HOUSING NEEDS
BROOKLINE 1980-2010

<u>Year</u>	<u>Population</u>	<u>Persons Per Unit</u>	<u>Housing Units Needed</u>	<u>Plus 3% Vacancy</u>	<u>Total Units Needed</u>
1980	1,776	3.15	561	17	578
1990	2,408	2.88	836	25	861
1995	2,974	2.78	1070	32	1,102
2000	3,385	2.70	1254	38	1,292
2005	3,794	2.63	1443	43	1,486
2010	4,349	2.57	1692	51	1,743

Source: Population Projections: NHOSP, New Hampshire Population Projection--Total Population for Cities and Towns, May 1987.
NH OSP Household Projections, May, 1987. 1980 US Census.

TABLE VII-12

PROJECTED HOUSING NEEDS
NRPC REGION 1980-2010

<u>Year</u>	<u>Population</u>	<u>Persons Per Unit</u>	<u>Housing Units Needed</u>	<u>Plus 3% Vacancy</u>	<u>Total Units Needed</u>
1980	138,089	3.19	43,288	1,299	44,587
1990	181,366	2.74	66,192	1,986	68,178
1995	211,603	2.65	79,850	2,396	82,246
2000	236,526	2.57	92,033	2,761	94,794
2005	263,976	2.50	105,590	3,168	108,758
2010	296,733	2.45	121,116	3,633	124,749

Source: Population Projections: NHOSP, New Hampshire Population Projection--Total Population for Cities and Towns, May 1987.
NH OSP Household Projections, May, 1987. 1980 US Census.

Table VII-13 shows the approximate breakdown of the NRPC region by income range based on the 1988 median family income of \$42,000. Distributing the 882 housing units needed from 1990 to 2010 in Brookline and the 56,571 units needed in the NRPC region to the various income categories produces the housing needs by income found in Table VII-14.

TABLE VII-13

INCOME DISTRIBUTION OF FAMILIES
NRPC REGION, 1989

<u>Category</u>	<u>Percent of Median Income</u>	<u>Percent of Total</u>
Very low income	less than 50	16
Low income	50 to 80	19
Moderate income	80 to 120	26
Middle income	120 to 150	17
Higher incomes	more than 150	22

TABLE VII-14

HOUSING NEEDS BY INCOME
BROOKLINE & NRPC REGION

<u>Income Range</u>	<u>Percent of Total</u>	<u>Brookline Units Needed By 2010</u>	<u>Brookline Units Needed Annually</u>	<u>NRPC Region Units Needed By 2010</u>	<u>NRPC Region Units Needed Annually</u>
Very low inc.	16	141	7.0	9,051	452.5
Low income	19	168	8.5	10,749	537.5
Moderate inc.	26	229	11.5	14,708	735.5
Middle income	17	150	7.5	9,617	481.0
Higher incomes	22	194	10.0	12,446	622.0
	-----	-----	-----	-----	-----
	100%	882	44.5	56,571	2,828.5

Table VII-14 shows the needs by income level over the next twenty years for both Brookline and the NRPC region. Although there is a large housing need by the year 2010, the amount of housing to be built per year is rather small. The difficulty, however, is achieving a range of housing for all types of needs and income levels.

Currently, Brookline provides limited housing opportunities to the very-low, low, and moderate income groups. Single family homes on 80,000 square foot lots can provide housing for middle and higher income groups. The prohibition of multi-family housing and the limitations on manufactured housing are barriers to the in-migration of some low, and most very-low income households, and those families or individuals who desire multi-family or manufactured housing for reasons other than income such as small family size and lifestyle.

HOUSING NEEDS BY TYPE/SPECIAL HOUSING NEEDS

In addition to housing needs based on income, the housing stock within a community should provide housing for the broad range of differing lifestyles, household types and for population groups with special housing needs such as the elderly, families without children, the handicapped, deinstitutionalized individuals and others. The housing needs and housing types most appropriate for some of these groups is described below.

Elderly

As shown in Table IV-5, the percent of the population which is elderly increased slightly from 1970 to 1980. This is expected to continue from 1980 to 1990 and from 1990 to 2010, following the national trend of an overall older population. Although the housing needs of the elderly vary, it is generally true that elderly households are smaller than average and, therefore, require smaller home sizes than typical single family homes.

Families Without Children

Families or households without children are the largest growing segment of the population. Single adults comprise over 30% of the region's population. In many ways, these individuals or families have housing needs similar to independent elderly households. The housing types most suitable to their lifestyles are usually smaller than conventional single-family homes. For many childless households, multi-family rental units or condominiums are the housing types of choice.

STRATEGIES TO MEET BROOKLINE'S HOUSING NEEDS

Both Brookline and the Nashua region need to address housing needs for families of all income categories. These housing needs can be met in a variety of ways. The following is a brief discussion of some of the options available to Brookline. It will ultimately be up to the Town's residents, the Selectmen and the Planning Board to decide which alternatives are most suitable.

Rental Housing: In order to increase the amount of rental housing, it is recommended that the Town consider:

a) Converting and/or renovating large old houses into several units. One way to do this would be through a Board of Adjustment special exception. While in many cases it is both practical and desirable to convert these homes into multi-family dwellings, the issues of parking, sewage disposal, structural and landscaping alterations, density, and compatibility with adjacent land uses should be reviewed by the Planning Board.

b) Amending the current zoning ordinance to allow for accessory units: the creation of a small unit within the structure of existing homes in certain locations by special exception on a case by case basis. This would allow new units to be built while still maintaining the rural residential character of the Town.

c) Encouraging the construction of elderly/handicapped housing in the Town, preferably near Main Street or near the new Post Office on Route 13, to give better access to Town facilities. Note that elderly housing may or may not be low-income housing, but may be smaller units.

d) Allowing multi-family housing of three or more units. This will increase the amount of rental housing within town, and if sited properly, can fit in with Brookline's rural New England character. In the 1989 Master Plan survey, nearly one-third of respondents felt that allowing multi-family housing in certain area(s) of town would help provide more affordable housing--the highest response of any option.

Home Ownership: In order to increase the amount of home ownership, it is recommended that the Town consider:

There should be no unreasonable barriers to home ownership. Options include:

- a) Increasing the availability of manufactured housing.
- b) Cluster housing as a potential means of making diversified housing schemes available.

RECOMMENDATIONS

1. The Town's Zoning Ordinance should be changed to:

- a. Clarify with regard to manufactured housing.
- b. ~~Accommodate multi-family housing of more than two units if the lot size can support on-site water and septic systems.~~
accommodate moderate housing maintain density
- c. Encourage strategies such as inclusionary housing (encouraging or requiring private developers to provide housing for moderate, low and very-low income households in exchange for density bonuses or zoning changes), elderly housing zones, cluster housing and accessory housing.

2. Encourage the inventory and protection of historic homes within Town.

3. The Planning Board should develop a process to assess the impact of the Town's zoning ordinance and subdivision regulations on housing to ensure that fair requirements exist so as to not prohibit reasonable opportunities for affordable housing to exist within Brookline, and to promote quality, economical development.

Chapter VIII.

Land Use

CHAPTER VIII

LAND USE

This chapter describes and analyzes both existing and future land use. It examines existing land use and zoning, incorporating the information presented in earlier chapters, and concludes with a future land use plan for the year 2000 and recommendations to meet the goals and tactics listed in Chapter II.

This chapter examines each neighborhood in Brookline and makes recommendations regarding future land use. In addressing where future growth is directed, and compiling a future land use map, the following will be considered: existing land use patterns (see Map VIII-1 on page VIII-2); current zoning (Map VIII-2 on page VIII-4); natural limiting factors such as topography and soils (on pages III-2 and III-7 respectively); existing Town facilities (page VI-5); and community growth attitudes and desires.

A. EXISTING LAND USE PATTERNS

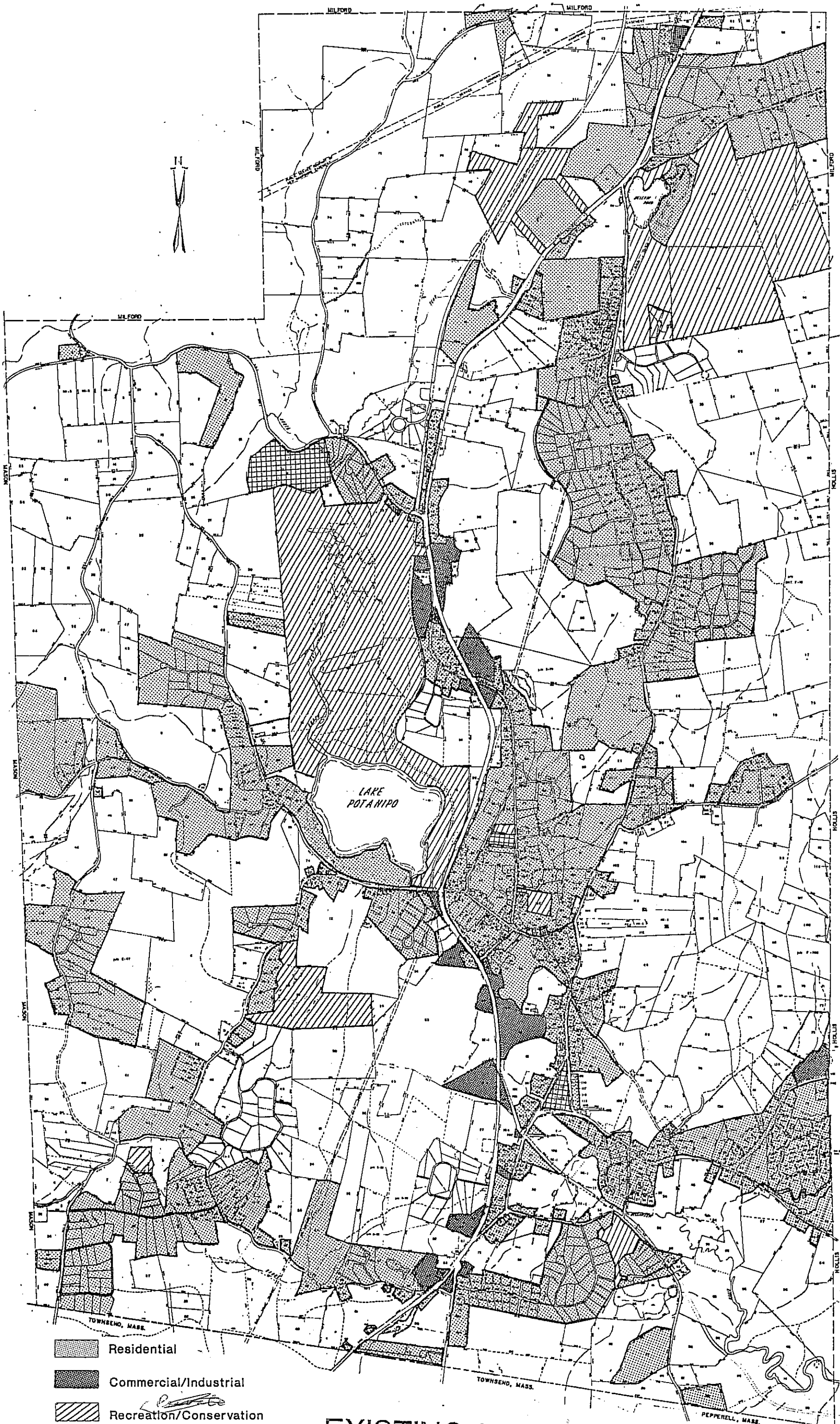
Mapping and analyzing existing land use patterns are necessary to support long range planning, the creation of a future land use map, and the implementation of necessary land use controls.

As shown on Map VIII-1, residential land use is the most common land use within Town. As mentioned in Chapter VII, most of the residential uses in Town are single family homes on at least two acres of land. There are three "grand-fathered" multi-family units in the Town center area, and duplexes and manufactured housing scattered throughout the Town. Most of Brookline's residential development has occurred in the Town Center; along Old Milford Road; west and south of Lake Potanipo; and along Averill and Pepperell Roads.

The existing land use map on the following page shows that nearly all of the non-residential uses within Town are located along Route 13. Also shown on the map are institutional land uses (such as cemeteries, the elementary school and Town Hall), and both public and private conservation and recreation land.

In examining existing land use patterns, it is useful to look at the extent of each land use in the community, and the quantity of land that remains to be developed in Brookline. Table VIII-1 inventories all land uses in Brookline, assigns an approximate acreage figure to each use, and computes the undeveloped land remaining in Brookline.

Of the nearly 13,000 acres in Brookline, over 8,000 acres remain undeveloped, although some of this land (probably about 1,100 to 2,500 acres) may not be suitable for development due to the presence of wetlands, steep slopes, floodplains, or inappropriate soil types.



MAP VIII-1

EXISTING LAND USE MAP

EXISTING LAND USE

- Residential
- Commercial/Industrial
- Recreation/Conservation
- Institutional
- Vacant

TABLE VIII-1

CURRENT LAND USE
TOWN OF BROOKLINE, 1990

A. CURRENT LAND USES	ACRES		ACRES
1. Water	272.0		
Lake Potanipo	170.0		
Melendy Pond	19.0		
Other Water Bodies	83.0		
2. Town Owned Land	489.4		
Town Owned (not incl. Inst., Rec.)	224.0		
Melendy Pond Authority land	265.4		
3. Commercial-Industrial	120.1		
Commercial (17 lots)	56.9		
Industrial (8 lots)	55.2		
Comm. not in I-C zone (4 lots)	8.0		
4. Residential	2,595.8		3,104.8
Single Family @ 3 acres each	2,424.0	(3.63)	2,933.0*
Duplex @ 4 acres each	164.0		164.0
Field & Stream Tr. Park (E-29)	7.8		7.8
5. Roads	264.5		
50' right-of-way x 43.65 mi. of road x 5280 ft./mile / 43560 sq.ft./acre			
6. Institutional	60.6		
Elementary School (incl. recr.)	6.2		
3 Cemeteries	12.3		
Town Hall & Ambulance Bay & Fire Sta.	2.1		
Town Dump (C-12)	40.0		
7. Recreation	361.7		
Town Ballpark (F-132)	6.5		
Talbot-Taylor Wildlife Pres.	92.0		
Oak Hill Rd. Ballpark (K-66-20)	15.0		
Max Cohen Memorial Grove	1.2		
Camp Tevya	173.7		
Palmer Land (B-65-11)	73.3		
8. Utilities	80.4		
East-West PSNH Easement	42.5		
North-South PSNH Easement	37.9		
9. Undeveloped	8,619.5		8,110.5
	-----		-----
TOTAL ACREAGE OF BROOKLINE	12,864.0		12,864.0

First column assumes 3 acres per existing single family unit.
 *Assumes 3.63 acres per single family unit. See page VIII-14.
 Note: All acreage is approximate.
 Source: Brookline Tax Maps, 1985 Brookline Master Plan.

B. CURRENT ZONING

In the early 1970s, Brookline established two Districts within town: a Residential-Agricultural District and an Industrial-Commercial District. Since then, three overlay districts have been added--the Wetlands Conservation District, the floodplain ordinance and the aquifer ordinance. The following is the description of location and uses permitted in the Industrial-Commercial District, taken directly from the Zoning Ordinance.

ARTICLE IV
Industrial-Commercial District

A. Location

1. The Industrial-Commercial Districts shall be the area within 500 feet of Route 13 from the Massachusetts State Line as far north as Bond Street on the easterly side and as far north as Mason Road on the westerly side of said Route 13 and the area within 500 feet of Route 13 from a point 500 feet south of Route 130 North to North Mason Road, on both sides of said Route 13.

B. Uses Permitted

1. All uses permitted in the Residential-Agricultural District shall be permitted in the Industrial-Commercial District.
2. Any Industrial or Commercial use which does not offend by emission of smoke, dust, gas, noise, odor, or fumes and
 - (a) is located at least 30 feet from the edge of the right of way and not less than 20 feet from each side and rear boundary.
 - (b) provides adequate parking facilities for freight and delivery trucks, employee parking and for vehicles attracted to the business.

Note that all residential uses are allowed in the Industrial-Commercial zone. This has resulted in a significant amount of residential intrusion in this zone, enough so that the amount of vacant land remaining in the Industrial-Commercial zone is limited. The location and uses permitted in the Residential-Agricultural zone as described in Article V of the Brookline Zoning Ordinance are as follows:

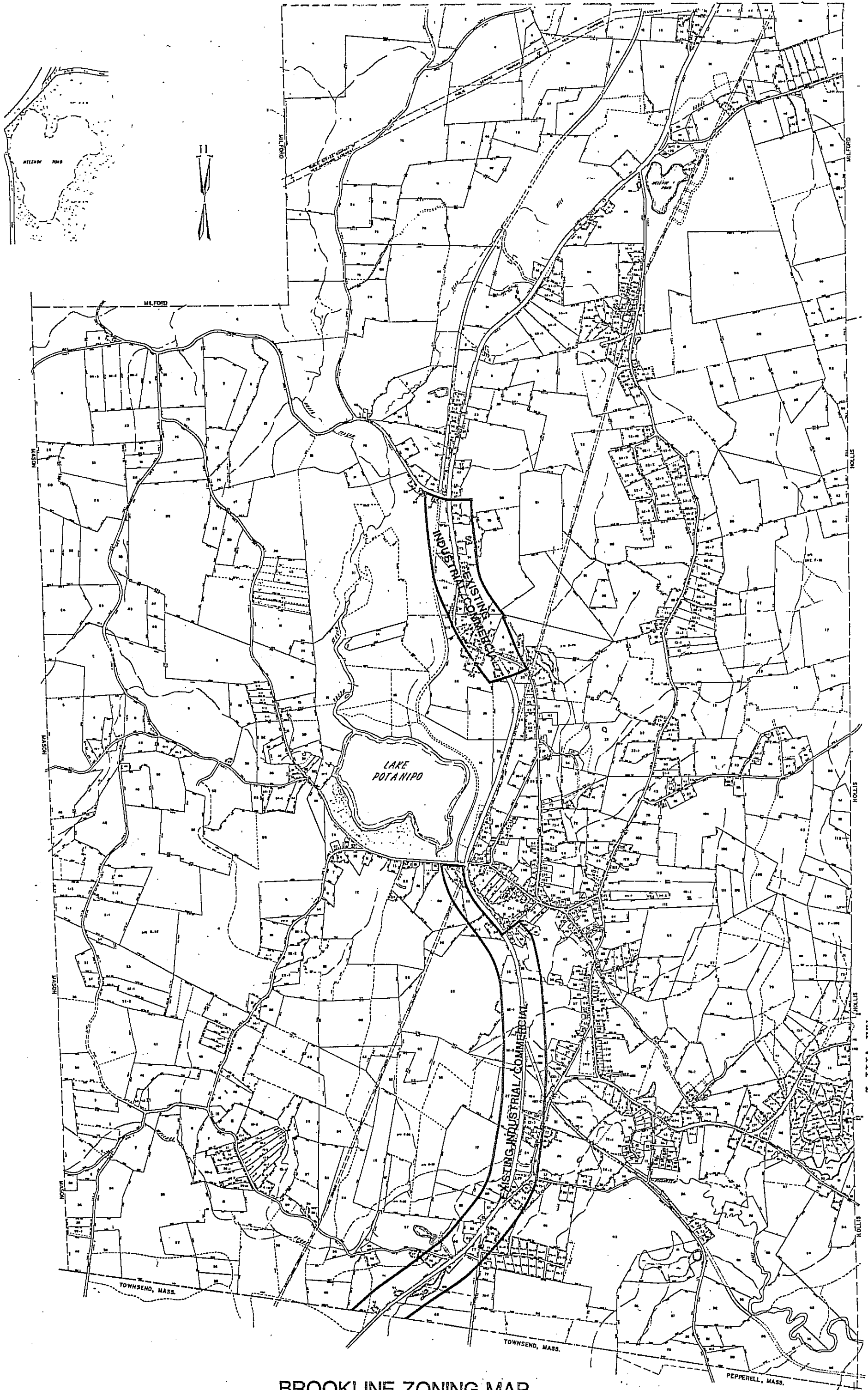
ARTICLE V
Residential-Agricultural District

A. Location

1. All areas of the town not designated as Industrial-Commercial District shall be the Residential-Agricultural District.

B. Uses Permitted

1. Single Family and Two-Family dwellings.
2. Churches, synagogues, parish houses, convents, hospitals, sanatoriums, day nurseries and kindergartens, recreational and community center buildings and grounds for games and sports.
3. Municipal buildings, schools and institutions of higher education.



BROOKLINE ZONING MAP

MAP VIII-2

4. Residences may be used to house uses by the owner or tenant as offices for doctor, engineer, architect, lawyer, real estate and insurance or other recognized profession or home occupation such as hair-dressing, barber shops, dress-making, manufacture of craft products for sale, or manufacture of food products except that the number of persons employed at any one location shall not number more than four persons in addition to the owner or tenant.
5. Farming and forestry activities are permitted when incidental to primary residential use, but any use injurious, obnoxious, or offensive to the neighborhood is prohibited.
6. Home produce and products may be bought and sold and exposed for sale.

Industrial-Commercial District

For discussion purposes, the Industrial-Commercial District is divided into two areas, a north area and a south area (see Map VIII-2):

- North: The area within 500 feet of Route 13 from a point 500 feet south of Route 130 North to North Mason Road, on both sides of said Route 13.
- South: The area within 500 feet of Route 13 from the Massachusetts State Line as far north as Bond Street on the easterly side and as far north as Mason Road on the westerly side of said Route 13.

These areas combined comprise 370.75 acres, or approximately three percent of all the land in town. A detailed breakdown is shown in Table VIII-2.

TABLE VIII-2

ZONING DISTRICTS BY ACREAGE & PERCENT

	<u>Acreage</u>	<u>Percent</u>
Residential-Agricultural	12,493.3	97.1%
Industrial-Commercial	370.7	2.9%
North	98.7	.8%
South	272.0	2.1%
TOTAL:	12,864.0	100.0%

Source: NRPC, 1990.

There are a few "grandfathered" commercial establishments within Town not within the Industrial-Commercial District, such as those along the northern section of Route 13 near Milford and the few commercial establishments along Main Street in the center of Town.

History of Industrial-Commercial Zoning

Recently, amendments have been proposed to the current Industrial-Commercial zoning. Although all have been defeated, they are listed here to show some of the areas of Town which have been considered for non-residential development.

1. In 1983, an addition to the current Industrial-Commercial zoning was placed on the ballot at Town Meeting. This read as follows:

The Industrial-Commercial District shall be the area within 500 feet easterly edge of right of way and within 500 feet westerly edge right of way, of Route 13 from the Massachusetts State Line in the south, to the town line of Milford in the North (by petition, not recommended by the Planning Board). Defeated.

2. In 1984, the following amendment was defeated:

The Industrial-Commercial District shall include all land within present lots of record having frontage on Route 13 (by petition, not recommended by the Planning Board).

3. In 1987, the following area was to be added to the existing Industrial-Commercial District:

...plus the remainder of lot D-72, the remainder of lot D-37, lot D-70, the southern half of lot D-50 (the area of the lot south of an east-west dashed line which extends from the northernmost corner of lot D-70 to lot D-51 as shown on the Brookline tax map).

and a Commercial District added which would have been:

lots H-73, H-73-1, H-74, K-55, and K-54.

This article was approved by the Planning Board but also defeated.

1985 Master Plan recommendations

The 1985 Master Plan identified "Areas the town should consider directing its planning and zoning efforts for industrial and commercial uses.."

1. Light Industrial/Commercial
East of Route 13, north of the highway's intersection with Milford St.
2. Industrial
West of Route 13, near existing industrial and commercial areas, south of North Mason Road and north of Quimby Road.
3. Commercial
An increase in commercial density in an area of existing similar land use along Route 13 in south Brookline. Includes those areas between Route 13 and Main St.
4. Commercial
South of Pepperell Road at the Hollis Town Line.
5. Commercial
An increase in the commercial density in an area north of Route 130 at the Hollis Town Line.

As mentioned earlier, there have been no amendments to the District that have passed at Town Meeting.

Lot-By-Lot Examination

Table VIII-3 lists the number of lots in the entire Industrial-Commercial District, and further breaks that total down into the north area and the south area. As of November 1, 1989, there are 116 lots partially or entirely in the Industrial-Commercial District. Of these, only ten lots, totalling 12.5 acres are vacant and located entirely in the Industrial-Commercial District.

TABLE VIII-3

LOTS IN THE INDUSTRIAL-COMMERCIAL DISTRICT

	<u>North</u>	<u>South</u>	<u>Total</u>
TOTAL # of lots	44	72	116
acreage of the lots	477.5	521.5	999
Lots entirely in district	24	35	59
acreage of the lots	35.7	78.4	114.1
Lots partially in district	20	37	57
acreage of the lots	441.8	443.1	884.9
TOTAL # VACANT lots	8	21	29
acreage of the lots	137.6	297	434.6
Vacant lots/acres entirely in district	2 3.8	8 8.7	10 12.5
Vacant lots/acres partially in district	6 133.8	13 288.3	19 422.1

Source: NRPC, 1990

This information indicates that there are only ten lots which are vacant and entirely in the Industrial-Commercial zone. Most of the remaining vacant land in the District is in the southern zone, as shown in Figure VIII-1. Table VIII-4 shows that there are less than 40 vacant developable acres within the 370.7 acres of Town which are zoned Industrial-Commercial. Note that this is less than one half of one percent of the total undeveloped acres within Brookline (see Table VIII-1).

FIGURE VIII-1

VACANT ACRES OF LOTS
PARTIALLY OR ENTIRELY IN THE
INDUSTRIAL-COMMERCIAL DISTRICT

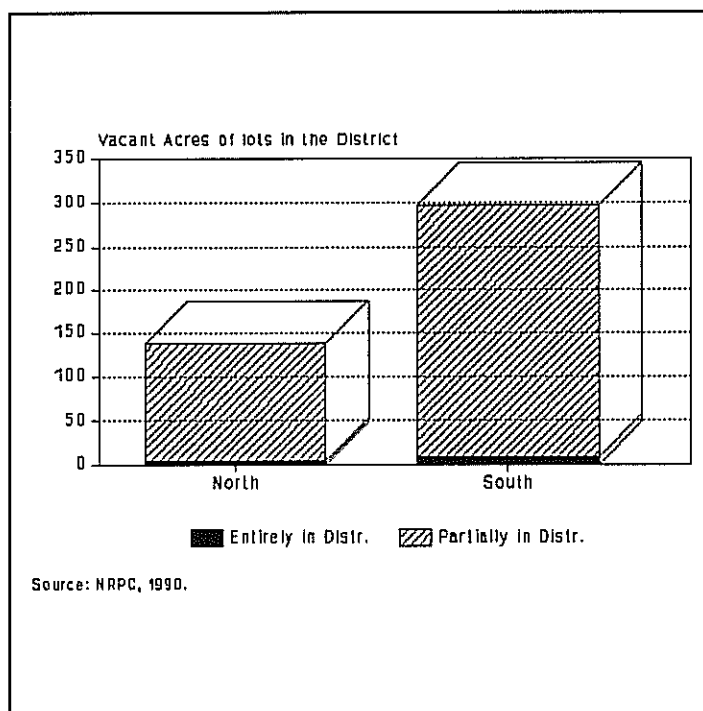


TABLE VIII-4

VACANT DEVELOPABLE LAND IN THE
INDUSTRIAL-COMMERCIAL DISTRICT
BROOKLINE, 1990

370.7	ACRES IN INDUSTRIAL-COMMERCIAL ZONE (Table VIII-2)	
- 56.9	acres	developed commercially
- 55.2	acres	developed industrially
- 176.9	acres	developed residentially
<hr/>		
= 81.7	acres	undeveloped
- 35.0	acres	wetlands, steep slopes, floodplain (estimated)
<hr/>		
= 46.7	acres	remaining acres developable
- 9.3	acres	less 20% for roads, rights-of-way
<hr/>		
= 37.4	acres	VACANT DEVELOPABLE LAND IN INDUSTRIAL-COMMERCIAL ZONE

Source: NRPC, 1990.

Survey Results

In both 1985 and 1989, a Master Plan survey was distributed to Brookline citizens asking them their opinions on the Industrial-Commercial District. The results are shown below:

1. I think the rate of commercial growth (retail, services) in Brookline since 1980 (1985) has been:

<u>1985</u>	<u>1989</u>	
2.7%	2.2%	Much Too Fast
3.2%	5.4%	Too Fast
47.3%	50.8%	About Right
28.9%	25.9%	Too Slow
11.0%	10.8%	Much Too Slow
7.0%	4.7%	Don't Know/No Opinion

Note that the results to this question were nearly identical when asked on both surveys. The amount of commercial growth in both time periods (1980-1985 and 1985-1989) was also fairly similar. Another question on the 1989 survey was the following:

2. What statement best expresses your opinion regarding commercial-industrial development?

- 6.1% Brookline should not allow more commercial-industrial development
- 63.9% Brookline should keep the current commercial-industrial zoning (predominantly along Route 13).
- 29.4% Brookline should add commercial-industrial areas to the zoning to encourage industry to locate in Town.
- .5% Don't Know/No opinion

Although nearly two-thirds of respondents wished to maintain the current zoning, comments written on the survey indicate that many people want "clean" commercial/industrial uses added to Town to expand the tax base and keep taxes lower. As explained in the analysis of the District, by keeping only the current boundaries, future Commercial-Industrial development in Town will be extremely limited.

Residential-Agricultural District

As mentioned earlier, the Residential-Agricultural District comprises 97% of Brookline. There is an 80,000 square foot minimum lot size for single-family homes and twice that for duplexes within this zone. Other permitted uses include churches, recreation buildings and grounds, home occupations, and farming and forestry activities.

Overlay Districts

The three overlay districts, each passed in the late 1980s, add special requirements in addition to the use requirements set out in the two aforementioned districts.

The Wetlands Conservation District, passed in 1987, requires that wetlands can comprise no more than 25 percent of a minimum lot size. It also requires septic tank or leach field setbacks of 75 feet or 125 feet depending on the type of soil. Map VIII-3 shows the location of wetland soils within Town.

The Floodplain Ordinance, passed in 1985, restricts development in the floodplain, which is located adjacent to most water bodies within Town.

The Aquifer Protection Ordinance, passed in 1989, restricts the type of permitted uses in the Aquifer Protection District (shown on page III-13). These restrictions include the subsurface storage of petroleum; the storage, processing, or disposal of hazardous waste; and the covering of more than 30% of a lot in the Residential-Agricultural zone, and 60% of a lot in the Industrial-Commercial zone by impervious surfaces.

C. NATURAL LIMITING FACTORS

Chapter III identified the natural limitations to development within the Town of Brookline. These included steep slopes, wetlands, and floodplains. Other types of natural features warranting consideration include the location of ground and surface waters, soils of agricultural importance and forest lands.

D. EXISTING TOWN FACILITIES

Like many other small or rural New Hampshire communities, Brookline does not have public water or sewer facilities to offer or direct future growth. The most relevant facility the Town does have for guiding future growth is its road system. As roads become paved and connected with existing roads, areas of Town are "opened up" for development.

E. COMMUNITY GROWTH ATTITUDES

As reflected in the 1989 Master Plan Survey (Appendix B), over sixty percent of Town residents felt that the rate of residential growth from 1985-1989 was too fast, while a third felt that it was about right. During this time, it is estimated that Brookline grew at a rate of eight percent annually, as there were 272 building permits issued during this period, and 671 existing units in town at the end of 1984.

Over one-third of residents felt that commercial growth in the 1985-1989 time period was too slow. In addition, twenty-nine percent felt that additional commercial/industrial areas should be added.



Water

Long-Term Population Projection for Brookline

By considering the requirements of the Town's zoning districts in conjunction with the natural limitations to development as described in Chapter III, one can estimate the maximum buildout of Brookline and estimate a long-term population projection for Brookline, assuming maximum buildout.

As noted in Table VIII-1, of the 12,864 acres in Brookline, 8,100 to 8,600 acres remain undeveloped. These two numbers represent undeveloped land in Brookline assuming that the existing single-family homes in Town average 3 acres per lot and 3.63 acres per lot. Because this number could not be accurately determined, both numbers will be used.

Other assumptions include each future house lot being an average of 3 acres, about 70% more than the minimum requirement of 1.8 acres per house lot. This was determined to be a reasonable assumption because the recently approved subdivisions listed in Table VII-3 average 3.63 acres per lot which includes steep slopes, wetlands, and floodplains. This 3 acres does not include these lands which are considered on a separate line.

A total of 1,100 and 2,500 acres of steep slopes, wetlands and floodplains are assumed in different scenarios to give a range of buildout populations, and these lands are considered undevelopable. An average household size of 2.58 persons per household is assumed, which was the estimated household size in 1988.

Four scenarios are shown on the next page. Scenarios 1 and 2 assume 8,110 acres of vacant undeveloped land, and differ only in their estimates of remaining undevelopable land (steep slopes, wetlands, and floodplains). Scenario 1 assumes 1,100 acres while scenario 2 assumes 2,500 acres. Scenarios 3 and 4 assume 8,619 acres of vacant undeveloped land and also differ only in their estimates of remaining undevelopable land. Four separate scenarios are shown to give a long-term population range, and show that by adjusting certain assumptions, different buildout populations result.

Note that these computations do not account for any rezoning that may occur. If more commercial-industrial zones are added which do not permit residential uses, or if minimum lot sizes are increased, the maximum population of Brookline would be less than the 5,623 to 6,937 range shown in Table VIII-5.

TABLE VII-5

COMPUTATION OF LONG-TERM POPULATION PROJECTION

Scenario:	1	2	3	4
Vacant Undeveloped Land (from Table VIII-1)	8110.5	8110.5	8619.5	8619.5
Approved Unbuilt Subdivisions (from Table VII-3) -936.5 258 lots x 3.63 acres each		936.5	936.5	936.5
less Steep Slopes, wetlands, floodplains	- 1100.0	2500.0	1100.0	2500.0
GROSS DEVELOPABLE LAND:	6074.0	4674.0	6583.0	5183.0
Less 20% for roads and rights-of-way	- 1214.8	934.8	1316.6	1036.6
NET DEVELOPABLE LAND:	4859.2	3739.2	5266.4	4146.4
divide by 3 acres per dwelling unit	1619.7	1246.4	1755.5	1382.1
multiply by 2.58 persons per household	4178.9	3215.7	4529.1	3565.9
add existing population (1990)	²³⁹⁰ + 2408.0	²³⁹⁰ 2408.0	²³⁹⁰ 2408.0	2408.0
BROOKLINE BUILDOUT POPULATION:	6586.9	5623.7	6937.1	5973.9

Note: all acreages are approximate.

Source: NRPC, 1990. Brookline Tax Maps, 1985 Brookline Master Plan

1990
2390

ANALYSIS OF EXISTING AND FUTURE LAND USE BY NEIGHBORHOOD

The Master Plan Committee has decided to analyze land use by area of Town. Each neighborhood analysis will describe the existing land use, the current zoning, natural limitations, and existing Town facilities in that area. For the purposes of this analysis, the Town is divided into eleven neighborhoods. These neighborhood boundaries are divided as shown in Map VIII-4, on page VIII-15. The boundaries were drawn along the major roads within Town. The future land use and recommendations for each neighborhood are then made, and a future land use map is shown on page VIII-25.

Neighborhood 1 Northwest/Hutchinson Hill Rd./Spaulding Brook

Location: the area west of NH Route 13 and north of North Mason Road.

This area is the one of the least developed within Town, with more than half of the lots in the neighborhood undeveloped. The entire neighborhood is currently zoned Residential-Agricultural. The only future approved development in the area is Scabbard Mill Brook Road, a 13 lot subdivision, which is currently being excavated.

The North Cemetery is located in this area, south of the proposed Scabbard Mill Brook Road.

Recreation needs in this area are provided through the Palmer Land, lot B-65-11, which provides hiking opportunities.

Recommendations

No development should be allowed to occur on Hutchinson Hill Road, or on the western half of North Mason Road until they are brought up to Class V road standards.

This area of Town provides a good location for multi-family housing.

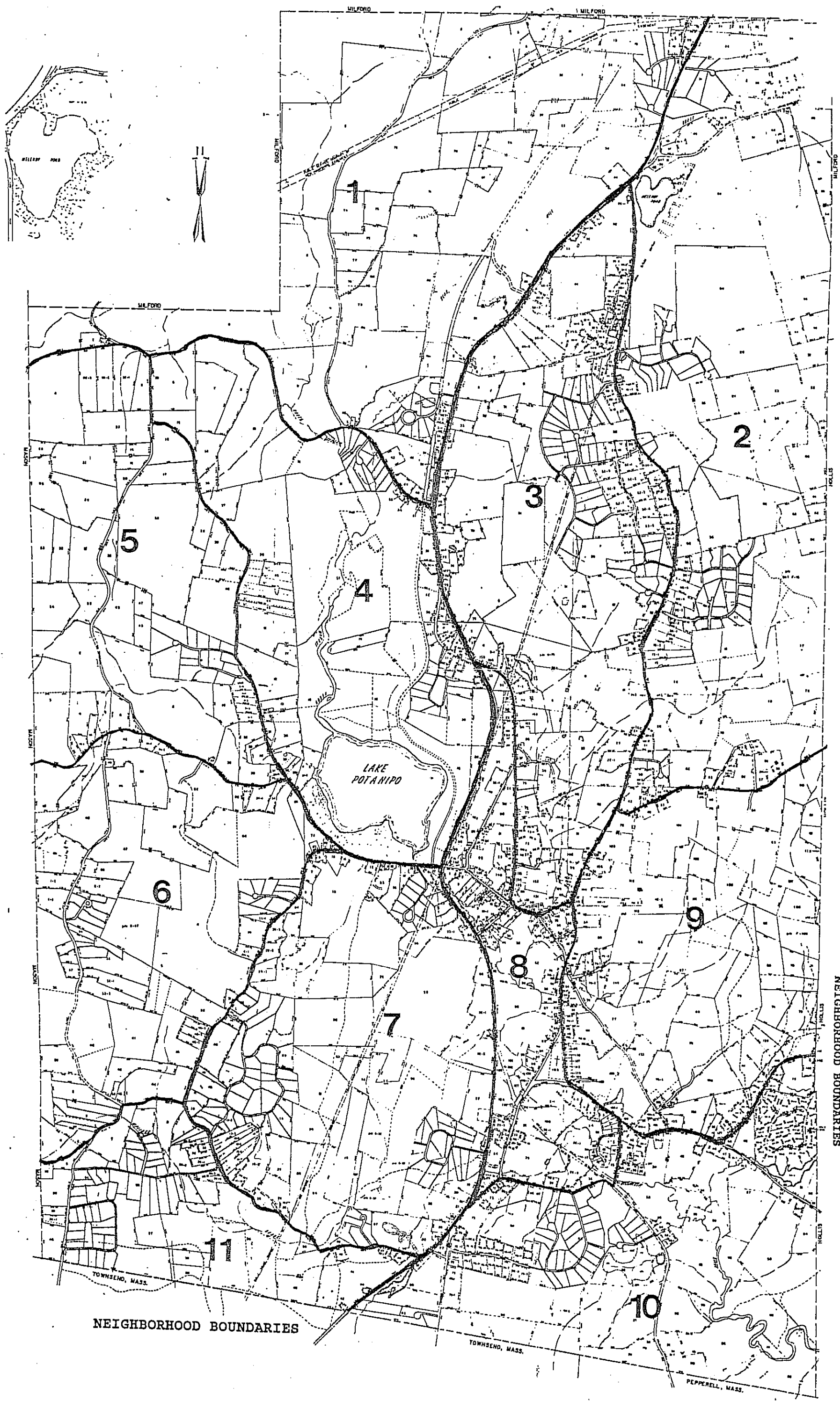
The Planning Board should encourage roads to be built off of Route 13, in order to limit the number of driveways off of this road and to ensure proper traffic flow.

The area of Route 13 east of Ruonala Drive and west of Route 13 could be rezoned for commercial/industrial development. This would include four lots, one of which is the current Ladd's Deli.

Development on Ball Hill Road, with sole access taken from Milford should be discouraged. Development in this area may lead to problems with emergency services. No further development should be allowed on this road until Hutchinson Hill Road is built.

The Town should add to the Town-owned Palmer land as development occurs in this area, to increase the size of this valuable conservation area, and add passive recreation opportunities within Town.

North Spaulding Brook Road should be renamed Mile Slip Road, to avoid confusion with South Spaulding Brook Road.



NEIGHBORHOOD BOUNDARIES

Neighborhood 2 Birch Hill/Melendy Pond

Location: the area east of Old Milford Road and Route 13, and North of Rocky Pond Road.

This area is all zoned Residential-Agricultural, and has been developed mostly within the past 10 years.

Lots B-21 and B-24 have frontage on Route 13, but due to the Millrock Road development, may not be proper for commercial development. Extensive wetlands exist south of Millrock Road near the corner of Hood Road and Route 13, which would also present natural limitations to the commercial development of these lots. This wetland area is a bog which was once used to harvest peat moss.

Recreation needs in this area are provided through the recreation area on lot D-25, and Melendy Pond.

It is projected that this area will be one of the fastest growing in the 1990's, with four major approved unbuilt subdivisions in the area totalling over 100 lots.

The Town owns a large amount of land in this neighborhood. Lot B-94 and lot B-55 total over 394 acres.

Recommendations

As additional development occurs in this area, developers should be required to purchase equipment and facilities to add to the proposed park on lot D-25.

The Planning Board should encourage future connections to the proposed Hollis Lane in order to produce a through road to Hollis or a connection to Rocky Pond Road. This would relieve some traffic through the Town Center and along Route 130.

All future roads should be required to connect to existing rights-of-way.

The Town should add to lot D-57-7, which is mostly wetlands, if land becomes available. This would ensure that this large wetland area will be preserved.

Neighborhood 3 East-Central/Bear Hill

Location: the area east of NH Route 13, west of Old Milford Road, and north of Meetinghouse Hill Road.

This area is characterized by the Bear Hill Estates subdivision which contains 54 lots. Future approved development also includes Lakin Road which contains 10 lots.

The Town ballpark, lot F-132, in the southern part of this neighborhood, is the major recreation area within Town. Since some of this lot is vacant, future recreational development (such as the addition of tennis courts) is possible.

This neighborhood has some areas in both the Residential-Agricultural zone and some in the Industrial-Commercial zone. Recent commercial development includes Stoney Ledge and the new Post Office development.

Note that much of this neighborhood is developed. There are only seventeen vacant lots remaining in this neighborhood, with many of them having no road frontage.

The opportunity exists in this neighborhood to rezone some land for Industrial-Commercial development, and to better define a "Town Center", which could help to define a sense of community and a central gathering place. Master Plan Survey responses were split between the Town Hall and the new Post Office, for the site of a Town Center.

Recommendations

Consider rezoning lots D-79, D-50, D-30, D-51, and D-33 for industrial or commercial development.

The Town should preserve and protect the current character of the Town Center zone, part of which is located in the southern part of this neighborhood.

Neighborhood 4 Lake Potanipo/North Stream

Location: the area west of NH Route 13, East of Dupaw-Gould Road, south of North Mason Road, and North of Mason Road.

This area consists primarily of Lake Potanipo, and the nearby Camp Tevya, a private recreation facility. The Camp owns all of the adjacent land to the east and north of Lake Potanipo, with old cottages on the southern boundary.

There are seventeen vacant lots in this neighborhood which are neither owned by the Camp, nor have an approved development. All of the commercially zoned land in this neighborhood has been developed.

Field and Stream Trailer Park is located on Dupaw-Gould Road and provides 54 hookups. Field and Stream provides a majority of the manufactured housing within Town.

North Stream splits this neighborhood, and any chance for an east-west road through this neighborhood is limited because of this natural feature and its adjacent wetlands.

Quimby Road, the home of many commercial sites, is well designed as an ideal location for commercial and industrial uses with excellent access to Route 13, but doesn't produce traffic problems along Route 13.

Recommendations

The Town should preserve and protect Lake Potanipo and its waters. This would provide a wide variety of recreation facilities for residents, including greater Lake access for boating and swimming. Brookline should also obtain easements and land around the lake for aesthetic, recreation and conservation purposes. Future zoning changes should strengthen protection of the water.

Approved unbuilt developments in this area include Rock Ramond Road, an 12 lot subdivision. Lot E-25, which has frontage on Route 13, should take access from Rock Ramond Road rather than from Route 13, to reduce the number of curb cuts on Route 13, and to avoid a natural feature, Rock Ramond.

Parking for Lake Potanipo needs to be considered. Options include the purchase or lease of lot G-20, an approved future commercial site.

Neighborhood 5 Ben Farnsworth Rd. area/ Lancy Brook

Location: the area west of Dupaw-Gould Road, north of Mason Road, and south of North Mason Road.

Similar to neighborhood 1 (Hutchinson Hill), this area is comprised of a Class VI road, and mostly vacant land.

Recent development includes Conneck Drive and McIntosh Road.

Recommendations

No development along Ben Farnsworth Road or the northern section of Dupaw-Gould Road should be permitted to occur until they are brought up to Class V.

Neighborhood 6 Russell Hill

Location: the area south of Mason Road, west of Cleveland Hill Road,
and north of West Hill Road.

Road extensions from Russell Hill to Cleveland Hill Road are not likely due to the steepness of Russell Hill. The only possibility is an old woods road extending from Mason Road (lot E-52) to lot G-4 on Cleveland Hill Road.

Recommendations

No development along Russell Hill Road should be permitted to occur until it is brought up to Class V.

The Town should acquire and denote Bear's Den and promote it as an historic resource.

Neighborhood 7 South-Central/Potanipo Hill/Talbot Swamp

Location: the area east of Cleveland Hill Road, north of Averill Road,
west of NH Route 13, and south of Mason Road.

Recent approved unbuilt developments in this area include Talbot-Taylor Estates, 24 approved lots; Elevations, 23 approved lots; and Muscatanipus Road, 6 approved lots.

There is currently no Town owned land or institutional uses in this neighborhood.

Conservation/recreation land in this area includes the Talbot-Taylor Wildlife Sanctuary, located on lot G-26.

The Commercial-Industrial zone extends 500 feet to the west of Route 13, and includes portions of over 20 lots in this area. The opportunity exists to expand the Commercial-Industrial zone so that entire lots can be located in the zone, rather than only the portions of the lot closest to Route 13.

Recommendations

If lot G-27, adjacent to the proposed Elevations subdivision is developed into a commercial or industrial use, the road from Elevations should not be extended; but rather, a new access from Route 13 should be built, and proper steps taken to ensure that Elevations is properly buffered from this non-residential development. If the lot is developed residentially, access should be taken from Lorden Lane.

Roads should be encouraged in this neighborhood, as there are many "interior" lots, which do not have frontage, and may be landlocked in the future.

The Town should take steps to preserve the Talbot-Taylor Wildlife Sanctuary.

The entire portion of lots G-52, G-27, and G-63 could be rezoned Commercial-Industrial. These lots have good access to Route 13 and are in what is currently an undeveloped area.

Neighborhood 8 Town Center

Location: the area east of NH Route 13, west of Main Street/ Route 130, north of Oak Hill Road, and south of Milford Street.

This neighborhood is nearly entirely developed, as it is one of the oldest neighborhoods in Town.

Institutional uses include the Town Hall/Library and Fire Station, Pine Grove Cemetery, and the Brookline Elementary School.

Local recreation facilities include the basketball court at the School, and the ballpark, which is off of Milford Street.

There are only 15 vacant lots remaining in this neighborhood. Five of these are partially or entirely in the Commercial-Industrial zone.

Recommendations

The Town should preserve and protect the Town Center area including non-residential uses and existing historic homes. The Town Center is located on Bond Street, Main Street and Springvale Avenue and Milford Street, and include such structures as the Fire Station, Town Hall, Village Store, many historic homes, and the old Post Office.

Neighborhood 9 South of Rocky Pond Rd./Stonehouse Brook

Location: the area south of Rocky Pond Rd., east of Main Street, and north of NH Route 130.

This area is projected for the most development in the next 10 years.

Most of the frontage along Route 130 has been developed, which prevents the lots not along this road from getting access.

An existing commercial use in this area is the Auction House on lot H-73-1, near the Hollis border. Although it's in the Residential-Agricultural zone, this commercial use operates with a variance.

Recommendations

The opportunity exists for a road extending from Rocky Pond Road to NH Route 130, parallel to Main Street.

~~Near Route 130, Hollis has zoned land industrial. Brookline should consider a possible commercial zone adjacent to this area, as there is a right-of-way set aside along the Hollis border for a road. Lots to be included in the zone would be H-69, H-70, H-71, H-72, H-73-2, H-146, and H-74. This area provides an ideal opportunity to add to the commercial zone.~~

Future access to this neighborhood will be from Kegy Road and Sargent Road. One foreseeable problem is renaming the road when these two roads connect.

Neighborhood 10 Oak Hill/Nissitissit River

Location: south of NH Route 130, east of NH Route 13, south of Oak Hill Road and east of Bohannon Bridge Road.

The Commercial-Industrial zone extends into this neighborhood. All land within 500 feet of Route 13 is in the zone. This includes all or part of 15 lots.

Recreation needs are served by the Oak Hill Road ballpark (under construction).

Significant wetlands exist in this neighborhood, especially near the Nissitissit River.

Some of the land in this area is owned by Beaver Brook and the Nissitissit River Land Trust, two conservation groups.

Recommendations

Lot K-80 and K-81 should be zoned Residential, as it would be difficult to take access from NH Route 13 due to wetlands, and commercial development should be discouraged from taking access from a local road such as Townsend Hill Road. The land west of Townsend Hill Road, east of Route 13, and south of Parker Road, should therefore be zoned Residential.

The Nissitissit River Land Trust should continue to be used to protect land along the river.

Neighborhood 11 Wallace Brook

Location: the area south of Averill Road, south of West Hill Road, and west of NH Route 13.

This neighborhood is located in two zones, with all land within 500 feet of Route 13 being in the Industrial-Commercial zone, and the remainder being located in the Residential-Agricultural zone.

There are no recreation areas in this neighborhood, nor are there any institutional uses.

This neighborhood is comprised almost entirely of the Wallace Brook Estates subdivision, and has only recently been developed. The Town owns three parcels of land in this area, lots J-35, J-58, and J-33-11.

Future development off of Hillside Drive (lot J-37 and the eastern portion of J-33) is not possible as steep slopes separate it from the eastern part of this neighborhood.

Recommendations

With a substantial amount of frontage on Route 13, proximity to the Massachusetts State Line, and the large amount of vacant land in the eastern part of this neighborhood, lots J-38, J-40, J-41, J-60 and part of J-39 are suitable for future commercial and industrial development. However, a large buffer and setback requirement should be created for the northern part of this zone (on lot J-39) in order to protect Fresh Pond.

The Town should develop one of the Town-owned parcels in this area into a park. *Donational area*
~~Lot J-33-11 is best because it is centrally located, although it is divided by Wallace Brook.~~

Fresh Pond and its associated wetlands are a valuable Town asset, providing habitat to many animal species. This area should be preserved and protected by the Town.

Conclusions

Table VIII-6 shows lists the number of lots in each neighborhood categorized by use. Note that some neighborhoods are nearly entirely developed. In the next ten years, development in neighborhoods 2 and 7 will nearly double, as there are over 45 approved subdivision lots in each neighborhood (see page VII-6).

TABLE VIII-6

1990 EXISTING LAND USE BY NEIGHBORHOOD

Neighborhood	Number of lots	=====NUMBER OF LOTS=====				
		Resid.	Comm./Ind.	Rec/Con.	Inst.	Vacant*
1-NW, Hutch. Hill	82	42	1	1	1	37
2-Birch Hill	154	100	0	1	0	53
3-East Central	209	168	8	1	1	31
4-Lake Potanipo	117	78	5	2	1	31
5-Ben Farnsworth Rd.	66	33	0	0	0	33
6-Russell Hill	74	46	0	0	0	28
7-South Central	143	57	8	1	0	77
8-Town Center	139	114	7	1	3	14
9-Stonehouse Brook	73	23	1	0	0	49
10-Nissitissit River	157	125	2	1	0	29
11-Wallace Brook	71	55	0	0	0	16
TOTAL:	1,285	841	32	8	6	398

*Includes approved subdivisions

Source: NRPC, 1990.

Map VIII-5 shows a future land use map for the Town of Brookline. This map incorporates currently approved unbuilt developments.



Residential

MAP VIII-5
FUTURE LAND USE MAP

FUTURE LAND USE

RECOMMENDATIONS

1. Brookline should amend the Town's existing zoning ordinance to achieve the following:
 - a. Not allow new residential uses in the existing Commercial-Industrial zone and the newly proposed Commercial-Industrial zones.
 - b. Add areas to the existing Commercial-Industrial zones. The following ~~five~~ ^{four} areas could be added (as shown on the future land use map):
 - lots east of Ruonala Road and west of Route 13;
 - ~~lots off Route 130 near the Hollis border;~~
 - lots east of Route 13 east of North Mason Road;
 - lots just north of Massachusetts border west of Route 13; and
 - lots west of Route 13 south of Musket Mountain.
 - c. Allow accessory units and cluster developments as a way of increasing housing diversity. These may also fit appropriately in the Town Center area.
 - d. Eliminate zoning that splits lots and zone along lot lines and visible features such as rivers and roads as much as possible. This will reduce confusion, and the workload of the Zoning Board of Adjustment.
 - e. Rezone lots K-80 and K-81 to Residential-Agricultural.
2. Height restrictions should be created in the interest of public safety and to maintain scenic vistas.
3. The overall zoning ordinance should be reviewed and revised to create a coherent whole.

1/8futurel

Appendix A.

APPENDIX A¹

Map Symbol	Wet Soils	Flood- Plain Soils	Sand & Gravel Soils	Seasonal Wet Soils	Shallow to Bed- rock Soils	Hardpan Soils	Deep Stoney Soils	Important Farmland Soils **
AgA			*					P
AgB			*					P
BaA				X				P
BaB				X				P
BdA						X		P
BdB						X		P
BdC						X		S
BdC						X		
BeC						X		
BeD						X		
Bg	X							
BoA	X							
BpA	X							
CaB							X	S
CaC							X	S
CaD							X	
CmB							X	
CmC							X	
CmD							X	
CmE							X	
CnC							X	
CnD							X	
CoC	----- Not Evaluated -----							
CpB					X			
CpC					X			
CpD					X			
CsB					X			
CsC					X			
CtD					X			
Cu	X							
DeA			*	X				
DeB			*	X				
Dp	----- Not Evaluated -----							
Gw	X							
HsA			X					
HsB			X					
HsC			X					
HsD			X					

¹ - See Map I-2 on page I-7.

APPENDIX A, cont'd

Map Symbol	Wet Soils	Flood- Plain Soils	Sand & Gravel Soils	Seasonal Wet Soils	Shallow to Bed- rock Soils	Hardpan Soils	Deep Stoney Soils	Important Farmland Soils **
LeA	X							
LsA	X							
LtA	X							
LtB	X							
LvA	X							
LvB	X							
MoB						X		P
MoC						X		S
MoD						X		
MtB						X		
MtC						X		
MtD						X		
NnA			*	X				P
NnB			*	X				P
Oc		X						P
Om		X						P
PbB						X		P
PbC						X		S
PbD						X		
PfB						X		
PfC						X		
PfD						X		
PfE						X		
PhB					X			P
PhC					X			S
PhD					X			
PiA	X		*					
PiB	X		*					
Pr	----- Not Evaluated -----							
PtA				X		*		P
PtB				X		*		P
Pu		X		X				P
Qr	----- Not Evaluated -----							
RbA	X					*		
ReA	X					*		
ReB	X					*		

APPENDIX A, cont'd

Map Symbol	Wet Soils	Flood- Plain Soils	Sand & Gravel Soils	Seasonal Wet Soils	Shallow to Bed- rock Soils	Hardpan Soils	Deep Stoney Soils	Important Farmland Soils **
Rp	X	X						
Sm	X	X						
Sn	X		*					
So	X		*					
Sr	X							
SsA				X		*		S
SsB				X		*		S
SsC				X		*		S
StA				X		*		
StB				X		*		
StC				X		*		
Su		XX						
UdA	-----			Not Evaluated		-----		
Ur	-----			Not Evaluated		-----		
WdA			X					
WdB			X					
WdC			X					
WdD			X					
WnC	-----			Not Evaluated		-----		
WoA				X		*		P
WoB				X		*		P
WvB				X		*		
WvC				X		*		

* = Would not be shown according to ARP&D, Section II Inventory 10/76

** = Prime (P) farm soils from published report

Statewide (S) farm soils from Tech Guide, interpreted to published symbols.

Appendix B.

October 14, 1989

Dear Brookline Resident:

The Town of Brookline, as you may know, has recently begun updating the master plan for the town's future originally adopted in December 1985. The plan will consider such items as the local natural resources, local land uses and the adequacy of community facilities and roads.

Your assistance is being requested through this survey. The purpose of the survey is to allow you and other local residents to provide your opinions on the issues which the Town will face in the future. There is also room on the survey for you to include any additional comments or opinions you may wish to offer.

Please help in this process by completing and returning this survey questionnaire as quickly as possible. The person who distributed the questionnaire to you will be glad to stop by again today and pick it up if you will take the time to answer it immediately (it should take just a few minutes to complete). If more time is needed, the volunteer will return later today, or surveys may be dropped off at the Brookline Village Store on Main Street, Kehrli's Delicatessen or Ladd's Convenience Store on Route 13 by Thursday, October 19.

All responses are confidential.

Thank you.

BROOKLINE MASTER PLAN COMMITTEE

Brookline Master Plan Opinion Survey 1989

INSTRUCTIONS

1. Check only one response per question, unless more are requested.
2. To meet the requirements of the survey, We can accept only one questionnaire per household.
3. Your written comments, observations or suggestions are most welcomed. Please use the margins, the back of the sheets or attach pages.

GROWTH

1. I think the rate of residential growth (single family homes, duplexes, and manufactured housing) in Brookline since 1985 has been:

(28%) <u>57</u>	much too fast	(.5%) <u>1</u>	too slow
(33%) <u>66</u>	too fast	(.5%) <u>1</u>	much too slow
(32%) <u>65</u>	about right	(5%) <u>11</u>	don't know

I think the rate of commercial growth (retail, services) in Brookline since 1985 has been:

(3%) <u>5</u>	much too fast	(26%) <u>52</u>	too slow
(5%) <u>10</u>	too fast	(10%) <u>21</u>	much too slow
(51%) <u>103</u>	about right	(5%) <u>10</u>	don't know

3. What should be the minimum required lot size for new homes in Town?

(9%) <u>18</u>	about one acre (44,000 sq. ft.)
(67%) <u>135</u>	about two acres (88,000 sq. ft.)
(16%) <u>32</u>	three or more acres (132,000 sq. ft.)
(7%) <u>14</u>	site specific, based on soil capability, slope or other standards.
(.5%) <u>1</u>	don't know

4. Should a pedestrian oriented Town Center be developed?

(12%) <u>25</u>	strongly agree	(15%) <u>30</u>	no opinion
(22%) <u>44</u>	agree	(12%) <u>25</u>	not sure
(25%) <u>49</u>	disagree		
(13%) <u>26</u>	strongly disagree		
	(9 more responses)		

5. If so where? Town Hall area - 34

New Post Office area - 7

HISTORIC RESOURCES

6. Do you think Brookline should take public actions to preserve and protect historic homes, buildings and other sites?

(31%) 65 strongly agree (12%) 23 no opinion
(34%) 68 agree (8%) 16 not sure
(10%) 19 disagree
(5%) 9 strongly disagree

7. If you agree, can you identify any sites or structures that you would like to see preserved or protected? (5 or more responses)

a. Town Hall - 38 b. Historic Homes (non-specific) -12

c. Community Center/Youth Ctr. - 18 d. Village Store - 9
Churches - 8 Brookline Train Station - 6

HOUSING

VFW Hall - 5

8. Does Brookline have an affordable housing problem?

(40%) 79 yes (34%) 68 no (26%) 51 not sure

9. How can Brookline provide for more affordable housing within Town:
(CHECK ALL THAT APPLY)

(8%) 16 reduce required lot sizes
(31%) 62 allow multi-family housing in certain area(s) of Town
(8%) 16 allow manufactured housing (mobile homes) anywhere in Town
(22%) 44 encourage more duplexes
(26%) 52 allow cluster housing
(14%) 27 other-please specify: Lower taxes - 8
(3 or more responses) Lower priced homes - 3

ROADS

10. Are you satisfied with the present condition of roads in Town?

(58%) 115 yes (35%) 70 no (7%) 14 not sure

11. What roads in Town need to be improved? (Please be specific.)

<u>Old Milford Rd. - 31</u>	<u>Hood Rd. - 6</u>
<u>Mason Rd. 22</u>	<u>Russell Hill Rd. - 5</u>
<u>Oak Hill Rd. - 17</u>	<u>Corey Hill Rd. - 5</u>
<u>Cleveland Hill - 17</u>	<u>Dupaw-Gould Rd. - 4</u>
<u>North Mason Rd. - 16</u>	<u>South Main St. - 4</u>
<u>Averill Hill Rd. - 15</u>	<u>West Hill Rd. - 3</u>
<u>Rocky Pond Rd. - 15</u>	<u>Sargent Rd. - 3</u>

(3 or more responses)

ZONING

12. What statement best expresses your opinion regarding commercial/
industrial development?

- (6%) 12 Brookline should not allow more commercial/industrial
development.
(64%) 126 Brookline should keep the current commercial/industrial zoning
(predominantly along Route 13).
(29%) 57 Brookline should add commercial/industrial areas to the zoning
to encourage industry to locate in Town.
(.5%) 1 Don't know.
0 No opinion.

PARKS & RECREATION

13. Does Brookline have enough park and recreational facilities?

(50%) 100 yes (34%) 68 no (15%) 30 not sure

14. If not, what can the Town do to improve? (4 or more responses)

Tennis Courts - 16

Open Lake/Beach to Residents (Town Beach) - 10

Thank you for taking the time to complete this survey. Your written
comments are welcome below.

Developers donations of land or money - 8

Walking, running, hiking trails - 8

Additional children's playground - 7

Ski Area (or cross country trails)- 5

Picnic Area - 4

Improve existing ballpark - 4

Better beach parking - 4

Town purchase land -4

Basketball court - 3