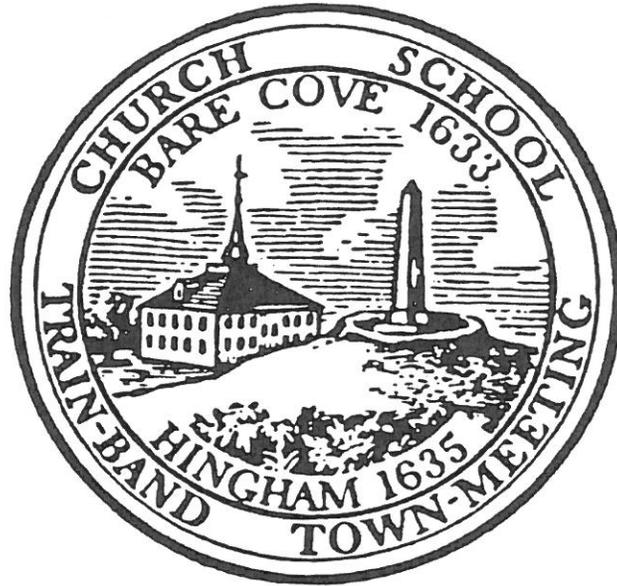


HINGHAM MASTER PLAN



**LAND USE
ECONOMIC DEVELOPMENT
NATURAL RESOURCES
HISTORIC & CULTURAL RESOURCES
OPEN SPACE
ACTIVE RECREATION
HOUSING
TRANSPORTATION
PUBLIC FACILITIES & SERVICES**

Hingham Master Planning Committee

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December, 2001

INTRODUCTION

What is a Master Plan and Why Does Hingham Need One?

A Master Plan is a statement of public policy to guide decision-making for the future development of the entire town. In part, it involves taking stock, to provide a concise baseline of the Town's environment, natural and cultural resources, population, housing stock, economic base needs and opportunities. It describes the trends that have affected the town and makes projections about how those trends might continue or change in the future. Most importantly, the Master Plan articulates a shared community vision of what residents want Hingham to be like in the future.

The Legal Basis for Planning

The legal basis for Master Planning in Massachusetts comes from Chapter 41, Section 81D of the General Laws of Massachusetts. This act creates the requirement for a community Master Plan "to provide a basis for decision making regarding the long-term physical development of the Municipality." The Master Plan, as required by state statute, includes distinct "elements" including Land Use, Economic Development, Natural Resources, Open Space & Recreation, Circulation, Public Services, and Housing. Each of these elements includes specific goals and recommendations, as well as an implementation strategy.

Public participation plays a critical role in the process, as the law requires an "interactive public process" to determine the goals and policies. The Master Plan Committee has actively sought to gain public input by distributing the report to local committees, boards and groups, as well as department heads within Town Hall.

A Master Plan for the Town of Hingham

The last updated Master Plan for the Town of Hingham was prepared in 1968. The process of creating this updated version of the Master Plan began nearly five years ago, in 1996, with the creation of the Zoning By-Law Committee to evaluate and revise the Hingham Zoning By-Law. In 1998, the Zoning By-Law Committee received funding from the Executive Office of Communities and Development (EOCD) for a Community Survey. This survey was mailed to every home and business in Hingham, and served as the benchmark for the master planning process. The 1998 Town Meeting created the Master Planning Committee and funded a "Needs Analysis" to kick off the Master Planning process.

A visioning session was held where the general public was invited to express their beliefs and desires for the future of the community. All boards and departments were interviewed to determine their strengths and weaknesses and how each applied to the Master Planning process. A public forum was held where all members of all Boards and Committees were invited to attend. The committee produced the "needs analysis" document to guide the preparation of the final Master Plan. The information collected through these two phases was instrumental in informing the planning process.

The 1999 annual Town Meeting funded Phase One of the Master Plan. This was largely completed in the Spring of 2000, and addressed Land Use, Economic Development, Natural and Cultural Resources, Open Space and Recreation. The 2000 Annual Town Meeting funded the final phase of the Master Plan, which addressed Transportation, Housing and Public Facilities, and was completed in the fall of 2001. Under the guidance of the Master Plan Committee (a

subcommittee of the Planning Board) work was conducted by consultants John Brown Associates, and the Bluestone Planning Group. All phases of the project included extensive input from the public, a critical component of the planning process.

In conclusion, this final document, completed in 2001, reflects the culmination of more than five years of work on the part of the entire community. As would be expected, some of the findings from the first phase are already out of date. Indeed, the last three years have witnessed unprecedented change and growth in this community. If nothing else, the rate of change reaffirms the importance of this kind of planning effort. The Master Planning process leaves our community well equipped to guide future land use development and redevelopment in a manner that is consistent with Hingham's needs and the best interests of its citizens.

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Section 1: LAND USE

I. LAND USE INVENTORY & ANALYSIS

INTRODUCTION

Land use is the key element in the town's Master Plan. The use of land is central to the function and character of the community. All other systems support the use of the land, including transportation, public facilities, environmental protection and regulatory controls. The community's future well-being and economic potential is directly related to the future use of the town's land.

Hingham is a suburban community, with a majority of its total area already developed. Predominant uses in developed areas are residential and public.

LAND USE INVENTORY

The land use pattern of a community is continually changing. Factors that determine the land use pattern include availability of utilities, soil suitability, topography, regional economics, accessibility and similar opportunities and constraints.

The current existing land use inventory was conducted by means of a number of methods. MassGIS (Executive Office of Environmental Affairs) provided land use data based on 1991 aerial photography, which was very valuable as a starting point. An updated 2000 land use map was compiled through the combination of aerial photographs from 1997, field surveys, and Planning Board and other Town records. (See Figure 1-1, Existing Land Use, Year 2000.)

Tabulation of Existing Land Use

The mapped areas were measured to determine the acreage in each category of land use. This information is shown in Table 1-1.

**Table 1-1
Existing Land Use (2000)**

<u>Land Use</u>	<u>Acres</u>	<u>Percent of Total Town Area</u>	<u>Percent of Developed Land Area</u>
Residential	3,761.9	26.7%	57.7%
(multifamily)	(117.2)	(0.8)	(1.8)
(single family)	(3,644.7)	(25.9)	(55.9)
Commercial	318.2	2.3	4.9
Industrial	223.8	1.6	3.4
Public/Semi-Public	756.5	5.4	11.6
(recreation)	(394.2)	(2.8)	(6.1)
(other public/semi public)	(362.3)	(2.6)	(5.6)
Transportation*	<u>1,454.3</u>	<u>10.3</u>	22.3
Total Developed	6,514.7	46.3	
Protected Open Space	3,162.7	22.4	
Agriculture	381.7	2.7	
Other Vacant Land	<u>3,843.7</u>	27.3	
Total Undeveloped	4,225.4	30.0	
Total Land Area	13,902.8		
Water	<u>189.5</u>	1.3%	
Total Town Area	14,092.3		

Source: Mass GIS, Town records, field surveys

* Local roads were not accounted for in the land use maps provided by MassGIS, thus a portion of land was allocated from other categories to estimate the area in local roads. This was added to regional transportation acreage to provide total area in transportation use.

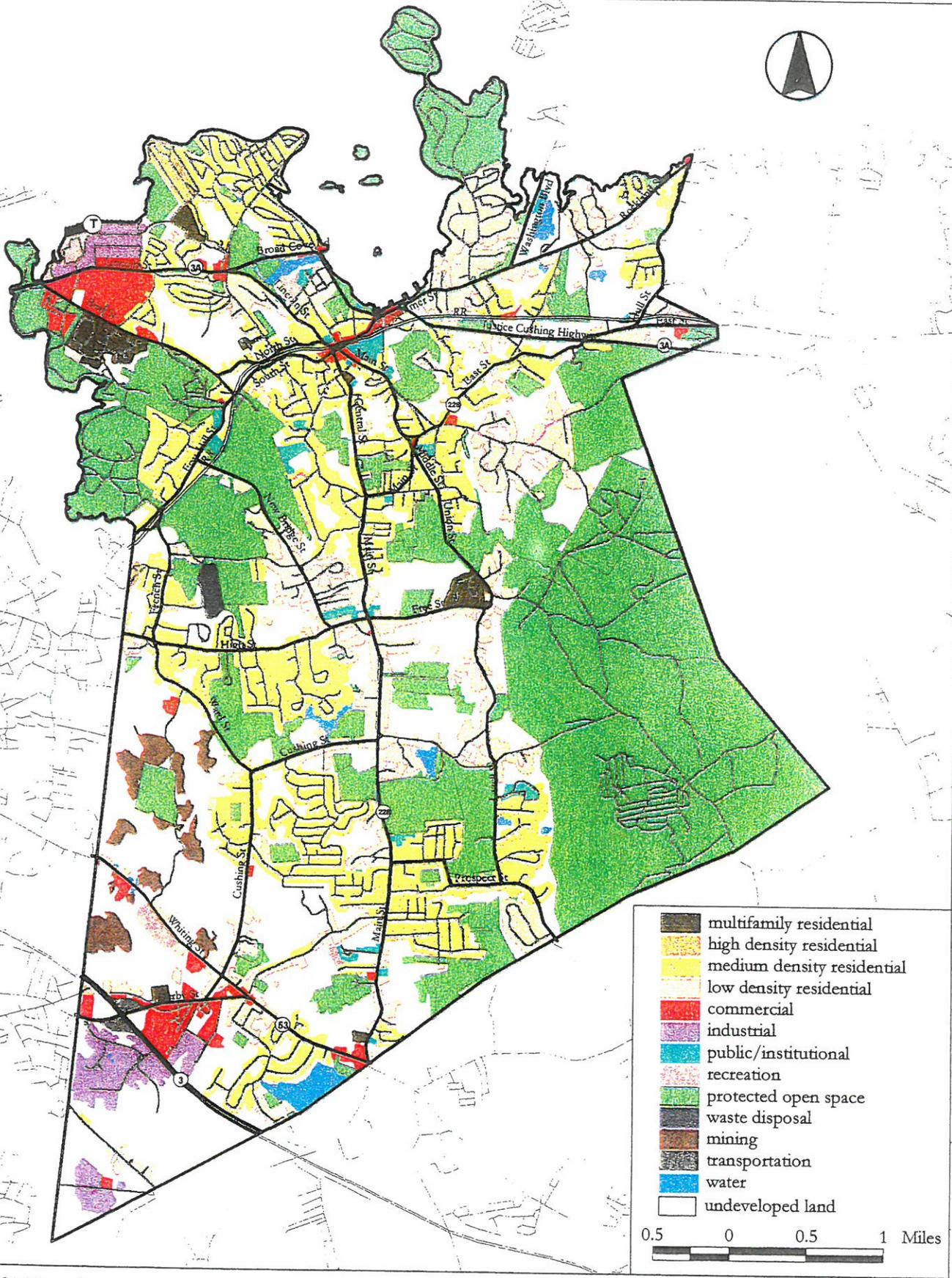
An analysis of each type of land use in Table 1-1 is provided below.

Developed Land

The Town of Hingham contains approximately 14,092 acres (22.02 square miles) of which 13,903 acres are land and 190 acres are water bodies. Developed land comprises 6,515 acres, or 46.3% of the town's total area. Residential use is the largest developed land use category, comprising 57.7% of developed land.

Residential Uses

Of the residential uses, single-family homes constitute the vast majority of the residential development. As of January, 2000 there were approximately 7,216 housing units in Hingham. A total of 3,645 acres is in one-family development. Multifamily development comprises 117 acres. Multifamily residences are defined as those containing three or more units. Additional information on the characteristics of the housing stock is contained in Appendix I of the Economic Characteristics section.



Town of Hingham Master Plan

BA John Brown Associates, Inc.
Planning Consultants

Figure 1-1

Existing Land Use, Year 2000

Residential development is located in all sections of Hingham. Single-family residential neighborhoods are located throughout the town. High density single-family residential use is defined as having lots smaller than $\frac{1}{4}$ acre, while medium density residential is defined as having lots between $\frac{1}{4}$ and $\frac{1}{2}$ acre. Low density residential is defined as lots larger than $\frac{1}{2}$ acre. Most of the residential development is either medium density or low density, as required by current zoning bylaws. One neighborhood with high-density residential development is located along Wompatuck Road in the northern tip of the town. Multifamily residences are located off Beal Street, off Union and Free Streets, and in a few other scattered sites.

Commercial Uses

Commercial uses make up 318 acres, or 3.3% of the developed land area. This category includes retail, service, professional offices, and other office uses. Retail facilities are largely concentrated in the commercial centers of downtown Hingham/Hingham Harbor, the Shipyard area, South Hingham, Queen Anne's Corner, and Hingham Center (at the intersection of Main Street, Leavitt Street and Short Street). Other scattered commercial sites are located on Route 3A, Whiting Street (Route 53) near the Weymouth border, and along Main Street. Some of these are non-conforming uses.

Public and Semi-Public Uses

Within this category are four distinct types of land use that are either publicly-owned or are institutions which serve the public, such as churches and non-profit organizations. Together, public and semi-public uses are the largest land use category in Hingham, comprising 3,919 acres, or 40.5% of the total developed land area.

Recreation This category consists of a number of active recreation facilities, including playfields, parks, and other active recreation facilities. These are described in more detail in the Recreation Inventory section. The total land area in this category is 394 acres, or 3% of the town's total area. There is also a substantial amount of land used for passive recreation which is not included in this total. Passive recreation lands are accounted for under protected open space and vacant land categories.

Other Public/Semi-Public This category includes public property and institutional uses that are privately owned, but which are open to and serve the public. Public property is land serving the public which is owned by a public body, including such uses as public schools, the library, Town Hall, parks, cemeteries, and waste disposal facilities. Examples of other institutional uses include private schools, places of worship, private cemeteries and fraternal or service organizations. Institutional uses are located in widely scattered areas of the town, totaling 362 acres.

Transportation

This category includes 1,410 acres of local roads and 44 acres covered by Route 3. Transportation represents 15% of the total developed land area. Transportation includes all town, state and county roads in Hingham, as well as a number of private ways open to the public.

Protected Open Space

There are approximately 3,162 acres of protected open space in Hingham, including land owned by the Conservation Commission, Massachusetts Department of Environmental Management, the Trustees of Reservations, the Hingham Land Conservation Trust, and the Massachusetts-American Water Company. Major parcels of open space include Wompatuck State Park, Bare Cove Park, Brewer Park, Fulling Mill Pond, and World's End Reservation. Protected open space

covers 22.4% of the Town's land area. A full inventory of protected open space can be found in the Open Space section of this report.

Undeveloped Land

As of 2000, there were approximately 4,221 acres of unprotected vacant and undeveloped land in Hingham, representing about 30 percent of the town's total land area. The Open Space section provides an inventory of the Town's unprotected open space.

Vacant Land There are 3,839 acres of vacant land in the town (27% of total town area), not counting agricultural land. Much of this land is only marginally developable because of the presence of wetlands, unsuitable soil types, or other considerations. The amount of land that is actually developable is quantified in the next section under Buildout Analysis.

Agriculture A small portion of the town's undeveloped land is in agricultural use, including plant nurseries, minor crops and hayfields. Approximately 382 acres are used for agriculture, or 3% of the town's total area. Some of the agricultural land is classified under Chapter 61A. This land is not permanently protected, and may become available for development.

Water Bodies

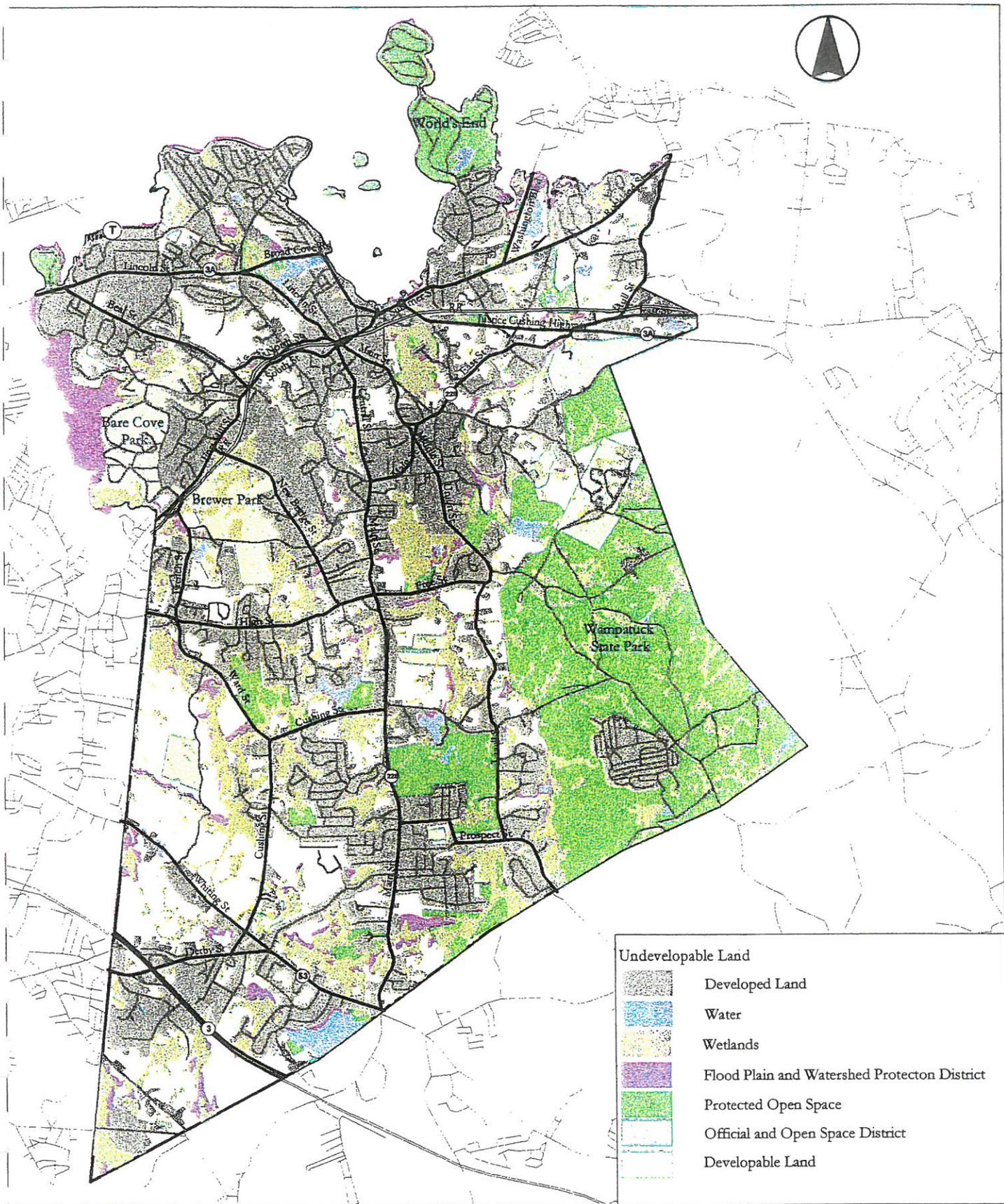
Water bodies comprise 190 acres, or 1.3% of the town's total area. Water bodies include Broad Cove, the Weir River, Foundry Pond, Brewer Pond, Bouve Pond, Triphammer Pond, Fulling Mill Brook and Pond, Cushing Pond, Accord Brook and Pond, the Plymouth River, and a number of other smaller ponds and streams.

BUILDOUT ANALYSIS

The amount of developable land in Hingham was determined by subtracting the developed land and undevelopable land from the total land area. Developed land includes all land shown to be in residential, commercial, transportation, and public/semi-public use. Undevelopable land includes wetlands and water⁽¹⁾, and protected open space, as well as land that is within the Official and Open Space District, and the Flood Plain Overlay District. (See Figure 1-2, Development Constraints.) Table 1-2 shows the quantities of developable and undevelopable land.

It should be understood that the buildout analysis shown herein represents the highest amount of potential development under current zoning, if all suitable land were made available. This amount of development is unlikely to be reached and could be termed the "worst case scenario". It is presented here to show the outside limits of potential development. It also includes "back lands" which would require assembling of land to create lots, which may be difficult to accomplish. On the flip side, this analysis does not take into account the potentially high density of development that could occur under a Comprehensive Permit, which allows for relief from all local zoning in exchange for a limited amount of affordable housing. An alternative buildout using the more restrictive Board of Health regulations (rather than zoning) shows a reduced buildout (see Appendix 1-1).

⁽¹⁾ Interpreted by staff at UMASS Amherst from stereo, 1:12,000 scale, color-infrared photography and field checked by Department of Environmental Protection Wetlands Conservancy Program.



Town of Hingham Master Plan

Figure 1-2



John Brown Associates, Inc.
Planning Consultants

Development Constraints

Table 1-2
Quantities of Developable and Undevelopable Land

Total Town Area	14,092 acres	%
(less) Developed Land	6,515	46.2
(less) Wetlands and Water ⁽¹⁾	2,208	15.7
(less) Protected Open Space ⁽²⁾	2,566	18.2
(less) Flood Plain Overlay District ⁽³⁾	229	1.6
(less) Other Official and Open Space District Land ⁽³⁾	152	1.1
Developable Land	2,423	17.2

- (1) Some areas reported as wetlands overlap with land already developed; where this occurs the area was included under the total developed area and not under wetlands.
- (2) An additional 596.6 acres of protected open space are included under wetlands.
- (3) Only includes area not constrained by other factors.

Of the total land in the town, 4,774 acres are not developable because they are either wetlands or protected open space. In addition, about 381 acres of land (excluding areas that overlap with wetlands, protected open space, or which are already developed) are in zoning districts that forbid or significantly restrict private development. Approximately 2,423 acres, or 17% of the developable land in the town remains to be developed.

The Town's Zoning Map is included herein as Figure 1-3. Developable land was identified by zoning district (see Figure 1-4, Developable Land by Zoning district) and zoning regulations were applied to determine the buildout capacity (see Appendix 1-1 for parameters). The buildout analysis assumes the highest probable use will take place. Types of commercial land use are simplified into categories that include retail/service, office/R&D, and industrial. Retail includes retail and personal service establishments, restaurants, and hotels. In some zoning districts only shopping centers, i.e., "retail groups", are permitted. Office uses include professional services and business establishments. Industrial includes manufacturing, distribution, and warehousing, and some high technology uses. Where more than one use is permitted by right, an estimation was made of the proportion of each type of development that would take place given market trends. Table 1-3 shows the number of residential units and the amount of commercial space that can be developed under current zoning regulations.

The Metropolitan Area Planning Commission (MAPC) has recently prepared two studies which included buildout analyses for the Town of Hingham. The first study focused on the South Hingham area which would be impacted from the reuse of the South Weymouth Naval Air Station. The second study was a buildout analysis of the entire town, following the methodology provided by the Massachusetts Executive Office of Environmental Affairs. A comparison of these MAPC studies with the present buildout analysis is provided in Appendix 1-2.

**Table 1-3
Development Capacity Under Current Zoning**

<u>Zoning District</u>	<u>Acres</u>	<u>% of Developable Area</u>	<u>Buildout Capacity</u>
Residential A	285.1	12	497 dwelling units (d.u.)
Residential B	482.5	20	560 d.u.
Residential C	1,295.4	54	1,129 d.u.
Residential D	9.5	1	66 d.u.
Residential E	4.7	1	5 d.u.
Business District A	-	-	-
Business District B	3.0	1	64,500 s.f. (retail/service)
Office Park District	42.0	2	365,800 s.f. (office/R&D) ⁽¹⁾⁽²⁾
Industrial District	6.1	-	33,800 s.f. (industrial) ⁽¹⁾ 33,800 s.f. (office/R&D) 53,100 s.f. (retail group)
Industrial Park District	221.7	9	1,545,200 s.f. (industrial) ⁽¹⁾⁽²⁾ 1,303,800 s.f. (office/R&D) 1,448,600 s.f. (retail group)
Limited Industrial Park District	1.6	-	12,600 s.f. (industrial) ⁽¹⁾ 12,600 s.f. (office/R&D)

Summary of Total Buildout Capacity

Total Residential Units	2,257 dwelling units
Total Retail/Service	1,566,200 s.f.
Total Office/R&D	1,716,000 s.f. ⁽³⁾
Total Industrial	1,591,600 s.f.

⁽¹⁾ Includes a portion developed at the density allowed by right and a portion developed at the density allowed by special permit.

⁽²⁾ All remaining developable land is located within South Hingham Development Overlay District. Density varies depending on location within or outside of district, and whether developed by right or by special permit.

⁽³⁾ Includes retail group.

The buildout analysis reflects the “highest and best” use of all developable land in the town under existing zoning regulations. The amount of potential development reported in this analysis is a worst case scenario. As individual development proposals come forward, additional land may be found to be undevelopable because of wetlands or other environmental conditions, and some land may not be developed to its fullest potential. In addition, some of the areas shown to be developable would require the assembling of small lots or back land to create buildable lots, which may not necessarily take place. Alternately, this analysis does not consider the potential

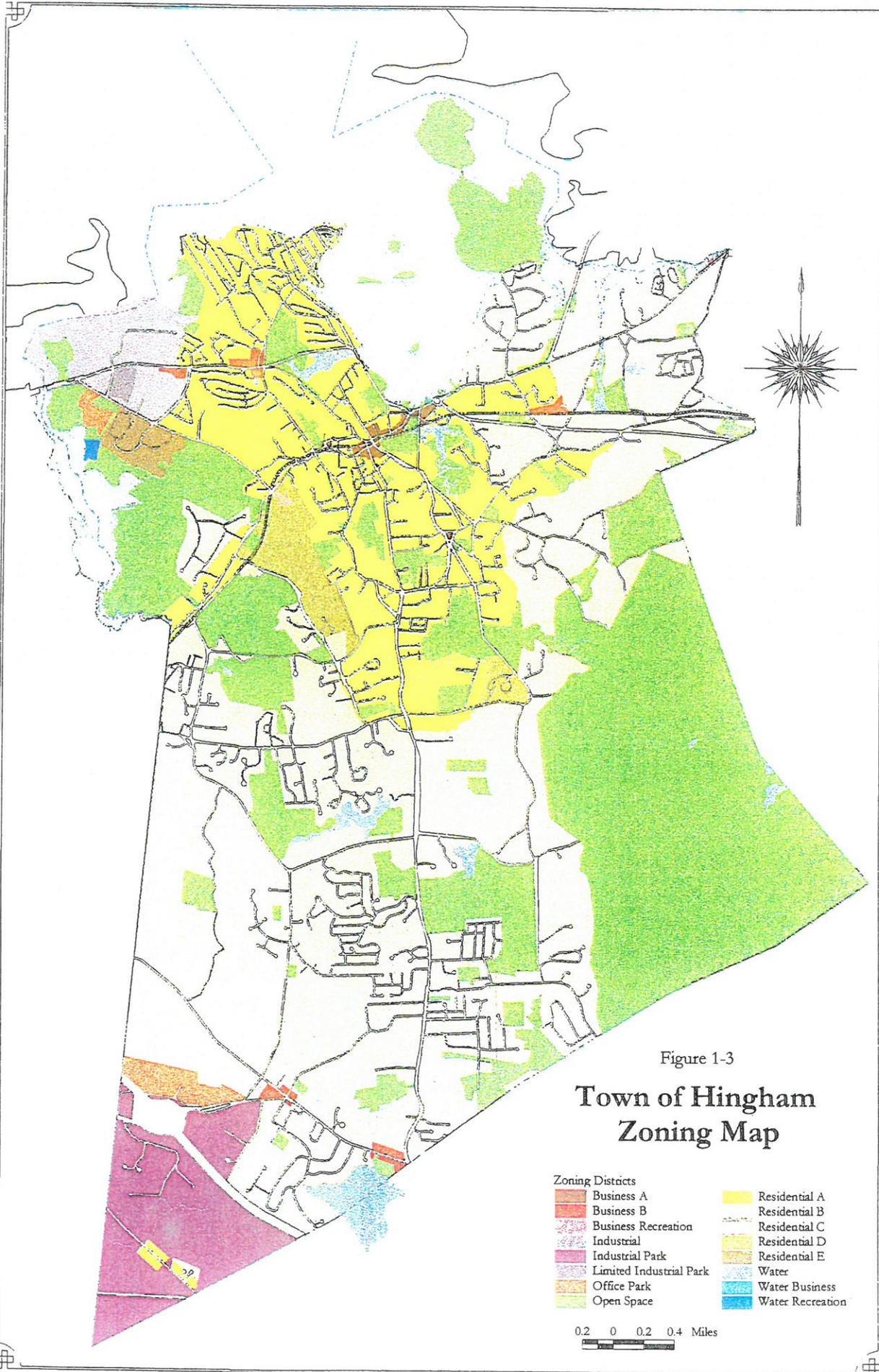
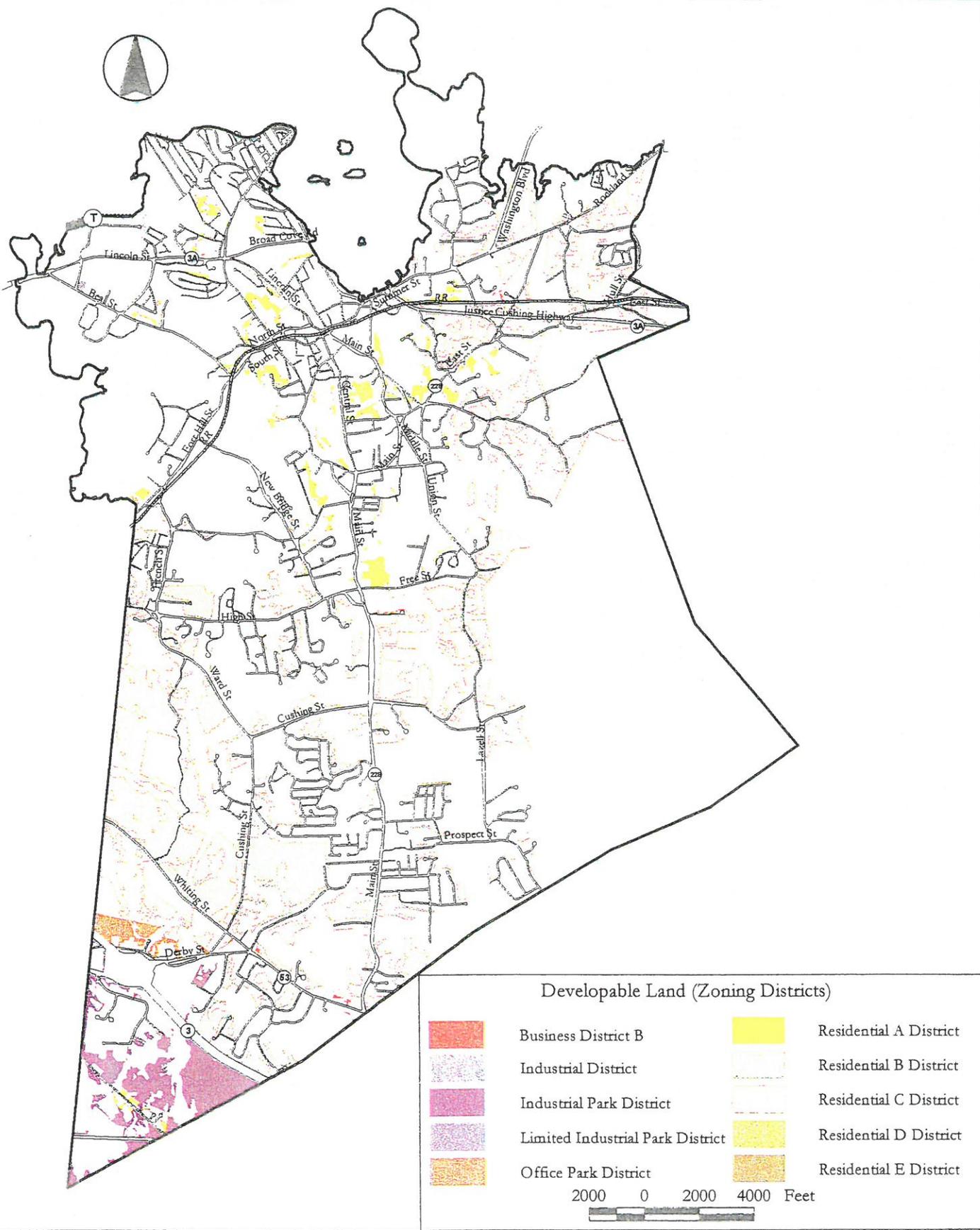


Figure 1-3

Town of Hingham Zoning Map

- Zoning Districts**
- Business A
 - Business B
 - Business Recreation
 - Industrial
 - Industrial Park
 - Limited Industrial Park
 - Office Park
 - Open Space
 - Residential A
 - Residential B
 - Residential C
 - Residential D
 - Residential E
 - Water
 - Water Business
 - Water Recreation

0.2 0 0.2 0.4 Miles



application of Comprehensive Permits under Chapter 40B, which allows for a waiver of local zoning in exchange for the development of a limited amount of affordable housing, and could potentially result in even higher density.

The Board of Health regulations effectively require a larger minimum lot size than currently allowed throughout much of the town under zoning regulations. This would result in a substantially lower buildout than shown in the table above. Table 3 in Appendix 1-1 shows the buildout potential under the Board of Health regulations. Under strong market conditions, however, developers may be able to circumvent the density restrictions of the Board of Health regulations through alternative wastewater treatment facilities. Hence, full buildout may actually fall somewhere between the two estimates.

Land Use Impacts

Market forces and the ability of the Town to provide services to meet resident and business needs will determine the rate at which development takes place, thus the full impacts of the buildout may not be felt for years to come. An estimate of the changes that would occur as a result of development under current zoning regulations is provided here. A further analysis of the impacts of development under the current regulations as well as under alternative planning approaches is provided on page 1-15 of this section.

Residential Growth

In 2000 the total number of housing units in the town was 7,216. Under current zoning, the number of housing units could increase by approximately 2,257 units or 31.3%. This includes about 2,191 units of single-family homes and 66 units of multi-family units. The population growth that would accompany the increase in housing units would represent significant costs to the town for education and other public services. Estimating the occupancy of new homes at an average of 3 persons per household, the number of residents may increase by about 6,771. This represents a growth of 31.5% over the 2000 population of 21,479 persons. Education represents a major fiscal cost, thus the number of school-aged children that will result from growth is an important impact to consider. According to household projections provided by DHCD, the number of school-aged children would increase under this growth scenario by approximately 1,467 children. The increase in population and school-aged children is less from higher density residential development than from single-family development. These growth projections do not take into account the potential application of Comprehensive Permits under Chapter 40B, which allows for a waiver of local zoning in exchange for the development of a limited amount of affordable housing, and could potentially result in even higher numbers of new homes.

Commercial and Industrial Growth

In contrast to residential growth, industrial and commercial growth is likely to produce less of an increase in costs of government services; however, they do have requirements for infrastructure which can be costly and sometimes produce ancillary costs that are difficult to quantify. By rough estimate, the potential commercial and industrial development may generate employment for an additional 10,000 persons, and use an additional 1.5 million gallons of water per day.

It is also important to keep in mind that the above analysis does not include estimates of increased intensity of use that may take place as a result of potential redevelopment of existing sites such as the Hingham Shipyard, Hingham Plaza, and some existing industrial areas.

II. LAND USE GOALS & RECOMMENDATIONS

The land use inventory and analysis presented information on the amount and location of various land uses within the town of Hingham. It also included the potential buildout of residential and non-residential buildings under existing zoning regulations. This section presents land use goals and preliminary recommendations for future land use.

GOALS

General Goals

- Safeguard residential neighborhoods from encroachment by all forms of incompatible uses and other potentially damaging environmental influences.
- Protect and enhance the aspects of Hingham's existing image and character that most citizens agree epitomize the positive physical character of the community, including the town's "village" character, attractive and vital residential areas, scenic vistas, protected open spaces, historic buildings and sites, and coastal resources.
- Do not allow excessive growth and development to destroy Hingham's village character.
- Maintain the open and green space of the community by designating more land for protected open space or recreational use.
- Manage residential, commercial, industrial and recreational development in a way that carefully balances growth and economic benefits with the need to protect the character of existing neighborhoods.
- Reduce the potential for commercial sprawl and strip development.
- Encourage high quality nonresidential development in appropriate areas to reduce the dependence upon the homeowner for tax revenues.

Specific Goals

- Maintain a continuous and coordinated town planning process to anticipate future needs and plan for their resolution.
- Support and strengthen community design and the design review process so that high standards of design excellence are maintained in all development projects.
- Identify design standards that separate new development from existing natural and built environments.
- Implement design standards that ensure that new development does not overwhelm existing neighborhoods.
- The town's decision-making should be based both on a project's capacity to limit adverse fiscal impacts on the town and on harmony between a proposed development plan and existing development and the natural landscape.

- Continue to improve coordination between town departments relative to land use.
- Provide a vehicle for design review of new subdivisions and multi-family housing.
- Reserve sufficient land for community facilities to serve future land uses.
- Pay special attention to the entrances to the town on major roadways (gateways) since they represent a visitor's first impression of the town.
- Link open spaces to create networks and to separate neighborhoods and land uses.
- Initiate GIS land mapping for community planning and management.
- Review and evaluate the existing by-laws, zoning districts and regulations and revise them, where appropriate, to achieve the desired land use goals.
- Regulate house size in relation to lot size.
- Allow no more commercial use than is necessary. Cluster commercial uses in strategic locations.
- Institute regulations or a review board for new residential and commercial development to ensure that the historic character of the Town be maintained.
- Identify and protect key areas, vistas, historic buildings, and open spaces which contribute significantly to Hingham's unique character.
- Create a usable and workable cluster by-law.

RECOMMENDATIONS

The future land use recommendations for the town are presented through a map entitled "Guide Plan For Future Land Use" and supporting text and tables. The Guide Plan is intended to serve as a guide to decisions relating to land use and to support potential zoning changes, both in the short term and in the long term.

Guide Plan For Future Land Use

There are various ways to develop a guide plan for future land use (future land use plan). In rural and relatively sparsely developed towns, planners frequently prepare alternative development scenarios which look at the possible extreme directions in which development could take place. One extreme scenario is usually labeled "economic development plan" for a plan which is heavily biased toward commercial and industrial development and higher density residential development. The opposite type scenario is usually labeled "environmental plan" and is heavily biased toward open space preservation, low density residential development, and relatively little commercial and industrial development. There is usually a third scenario which is labeled "composite plan" and combines some of the features of the other two plans which reflect community goals and objectives. The purpose of the exercise is to show the contrasts among the plans and to help the towns zero in on the type of plan best suited for their community.

Hingham Guide Plan Method.

In Hingham (as in other relatively mature communities), a different method works better to arrive at the desired guide plan for future land use. Since all of the inventory work is completed we have a pretty good idea of the following important facts:

- The amount and location of permanently protected open space.
- The amount and location of other land uses, including public and institutional property, developed residential property, and developed commercial and industrial property.
- The amount and location of developable land by zoning classification (vacant land not restricted by wetlands, flood plains, or other development constraints).

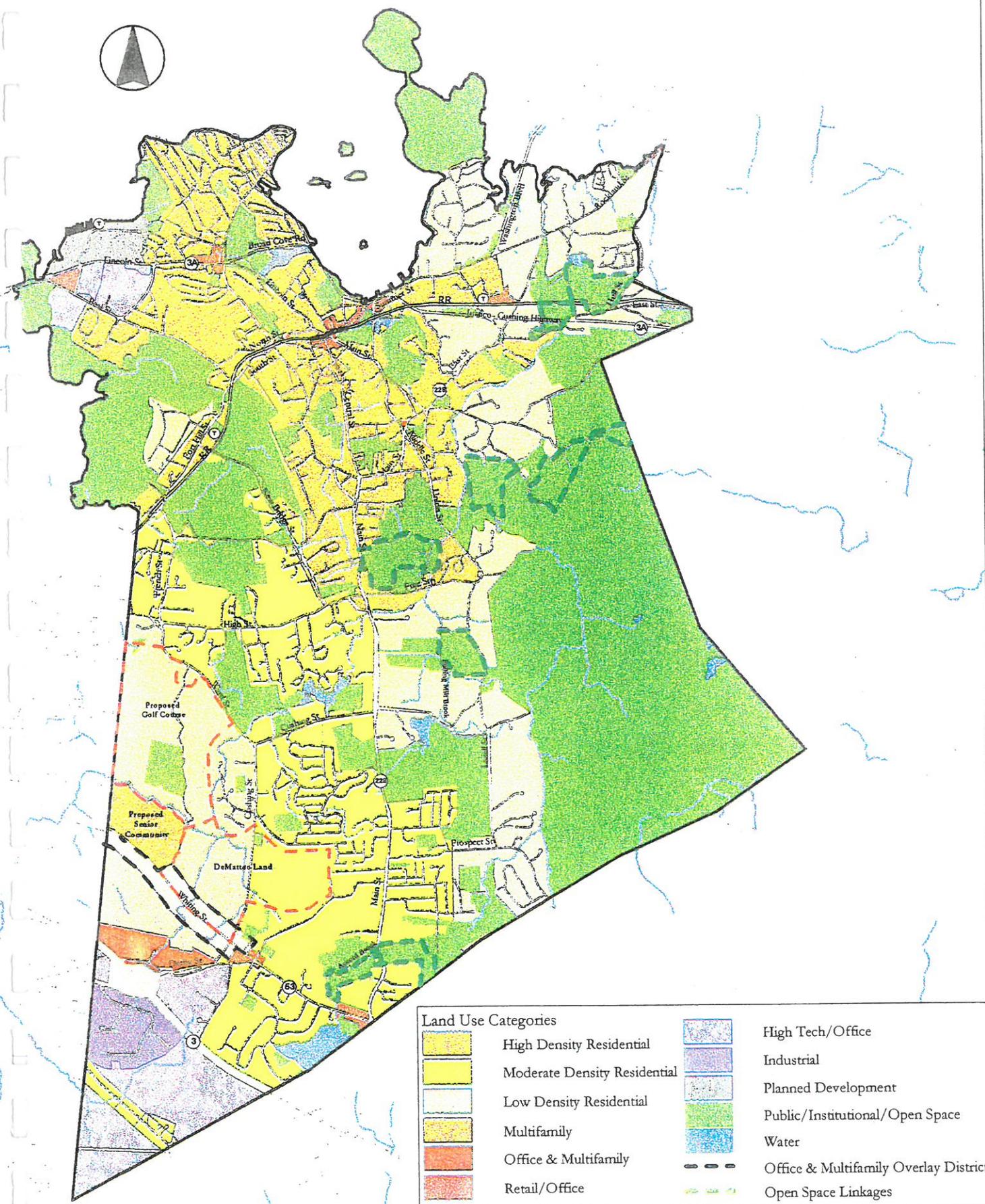
We start by plotting the protected open space and developed land on the base map. We then overlay the current zoning on the above uses and undeveloped land. (The town’s zoning map is the short term land use plan for all town land.) We then plot new projects or proposals that are in the pipeline or in preliminary stages of approval. We also consider the relationship of other master plan elements including economic and fiscal objectives, open space and recreation needs, historical and environmental concerns, infrastructure availability, and other goals, objectives and desires of the community.

Guide Plan Proposals. The above process was used in Hingham. We have identified the following appropriate land use categories (within which more detailed zoning districts can be identified, as needed):

	Symbol	Intensity
Residential:		
Multifamily	MF	6 units/acre
High Density Single-family	HD	20,000 SF lots
Medium Density Single-family	MD	30,000 SF lots
Low Density Single-family	LD	40,000 SF lots
Commercial:		
Retail & Office	RO	FAR @ 0.35 (0.45 w/SP)
Office and Multifamily	OM	FAR @ 0.25
Industrial:		
High Tech & Office	HO	FAR @ 0.35 (0.45 w/SP)
Industrial	I	FAR @ 0.35 (0.45 w/SP)
Public & Semi Public	P	
Planned Development	PD	FAR @ 0.35 (0.50 w/SP)

On the accompanying map entitled “Guide Plan For Future Land Use” (Figure 1-5) all land in the town has been designated for one of the above categories. Developable land within each area is indicated by a sepia line. Please note the following:

- 1) The Hingham Shipyard has been designated as “Planned Development” since it is a



Land Use Categories	
	High Density Residential
	Moderate Density Residential
	Low Density Residential
	Multifamily
	Office & Multifamily
	Retail/Office
	High Tech/Office
	Industrial
	Planned Development
	Public/Institutional/Open Space
	Water
	Office & Multifamily Overlay District
	Open Space Linkages

Town of Hingham Master Plan

Figure 1-5

special mixed use redevelopment project and has already received preliminary approval by the Town.

- 2) Since one of the objectives of the Town's open space plan is to connect existing open spaces to form open space networks and trail systems, some additional land has been designated as "public and semi-public" (which includes protected open space). Some additional land in the South Hingham area has also been designated for open space.
- 3) Existing single-family densities (lot sizes) have been retained.
- 4) Our "retail and office" category includes most of the land in the Business District A and Business District B zoning districts.
- 5) Our "office and multifamily" category includes land in the Office Park zoning district.
- 6) Our "industrial" category includes the developed South Shore Industrial Park land.
- 7) Our "high tech and office" category includes some land now in the Industrial Park District, the Limited Industrial Park District and the Industrial District.
- 8) Some land in the current Industrial District has been shown in the "retail and office" category (i.e. the shopping center at the corner of Lincoln Street and Beal Street), to reflect current uses.

The "multifamily" category includes land in the Residential D and Residential E zoning districts as well as the proposed senior community on Whiting Street.

Options and Alternatives That Were Considered The following areas were identified as areas where alternative land use approaches could be considered. There may be additional such areas.

- 1) Hingham Plaza Area Options:
 - High Tech and Office with maximum of 20%-25% retail
 - Retail & Office
- 2) Route 53 (East) Options:
 - Medium Density Single-Family
 - Office and Multifamily Overlay
- 3) Abington Street Options:
 - Medium Density Single-Family
 - High Density Single-Family
 - Low Density Single-Family
- 4) South Hingham Triangle Area Options:
 - North of Abington Street:
 - Industrial [west]; High Tech and Office [east]
 - All Industrial
 - South of Abington Street:
 - High Tech and Office (preferred option)

- Industrial

Description of Guide Plan

1. Town-wide Land Use

Town-wide land use patterns are generally stable, with most residential uses protected from adverse impacts of nonresidential or transportation facilities. Nonresidential uses generally reflect regional highway patterns and are concentrated in the north and south parts of the town. The town is fortunate to have a substantial amount of open space, which helps to separate land uses, provide passive and active recreation opportunities, and helps to preserve environmental amenities.

2. Residential Uses

The town has a variety of residential lot sizes to accommodate dwellings of various size and cost, ranging from 20,000 square feet to 40,000 square feet. The smaller lot sizes are generally in areas served by public sewage disposal. Larger lot sizes are required in areas served by on-site septic systems (in some cases substantially larger). No significant changes are proposed for the town's residential districts, although a few changes are discussed within the recommendations below.

- Cluster development such as that permitted through the recently developed Flexible Residential Development By-Law should be encouraged. This is discussed further in the implementation section below.
- Multi-family residential uses are limited in number at the present time but population trends indicate there will be increasing pressure to provide additional facilities. There is a current proposal for over 2,000 units of senior and assisted living units on Whiting Street near the Weymouth town line. Another proposal is to allow dwelling use above commercial uses in the downtown area (in existing structures). This proposal also appears to have merit and is discussed further in the Economic Development section. It is estimated that only about 15-25 units would result if this approach is adopted, and would have no significant negative impacts.
- In addition, opportunities for additional multi-family development exist in the current Office & Multi-family District on Derby Street and the proposed Office and Multifamily Overlay District on Whiting Street. Quantities of dwelling units (and their potential impacts) are discussed in the next section.

3. Nonresidential Uses

The most substantial changes to nonresidential uses are expected to take place in the Shipyard area off of Route 3A and in South Hingham south of Route 53, including areas adjacent to the former South Weymouth Naval Air Station (SWNAS).

Hingham Shipyard A redevelopment proposal in the shipyard area would create an additional 280,000 square feet of retail and office space and a 60 room hotel, as well as creating approximately 500 townhouse, condominium and apartment units.

South Hingham A substantial potential for redevelopment also exists in South Hingham. The

Hingham Plaza area on Derby Street is recommended for high tech, office, and retail use. The “triangle area” to the south of Route 3 is appropriate for industrial, high tech and office uses. Some parts of the South Shore Industrial Park have the capacity for more intensive development, with multi-story office and high tech development replacing some of the single-story industrial buildings that presently exist. The entire length of Abington Street is proposed for moderate density residential development to protect the existing residential environment. The proposed Route 3 connector road that would serve the SWNAS development would provide improved access to the South Hingham triangle area from Route 3.

Along Whiting Street, an Office & Multi-family Overlay District is proposed. The proposed district is shown as 500 feet in depth on each side of the street but may be subject to revision based upon specific development proposals.

The Guide Plan recommends no other substantial changes for nonresidential uses. The Economic Development section discusses nonresidential uses in more detail.

4. Open Space

Open space is discussed in more detail in the Open Space section of this report. Generally speaking, the Guide Plan proposes primarily to provide linkages between the current substantial open space parcels so as to create opportunities for pedestrian and bicycle trails, wildlife migration and passive and active recreation. This can be accomplished by purchase or donation of land, land swaps, easements and other methods which are discussed in more detail in the Open Space section. As a general rule, placement of land into open space and removal of it from potential residential development could have beneficial long-term fiscal impacts for the Town.

Impacts Resulting From Guide Plan

Buildout The build out that would result from the proposed land use recommendations is summarized in Table 1-4 below. A detailed spreadsheet is provided in Appendix 1-3. Full buildout would result in an additional 2,913 residential units, including 1,153 multifamily/condominium units and 1,760 single family homes. This is an increase of approximately 44% over the number of units that existed in 1999. In contrast, the existing zoning regulations could result in the construction of 2,257 single family homes, in addition to the 552 multifamily units that are planned for the Shipyard redevelopment. Although the total number of units is higher under the Guide Plan, the balance of multifamily and single-family units will result in a more favorable fiscal impact (see Table 1-5), as well as a smaller consumption of land for residential use.

The Board of Health regulations are more restrictive than the zoning regulations, and would result in a smaller potential buildout. However, improved wastewater treatment technology could enable developers to gain approval for a higher density of development. The actual density of future development may lie somewhere between what is permitted under the two sets of regulations. The Board of Health regulations could also constrict the potential buildout under the Guide Plan for Future Land Use by up to about 30%. The Board of Health regulations tend to reduce the availability of affordable housing options by requiring relatively large lot sizes. This can be resolved through allowing the construction of multi-family or high-density developments with localized waste treatment facilities.

Alternately, neither of these approaches considers the widespread application of Comprehensive Permits under Chapter 40B, which allows for a waiver of local zoning in exchange for the

development of a limited amount of affordable housing, and could potentially result in even higher residential density.

The recommendations under the Guide Plan for Future Land Use could allow for the construction of an additional 4.4 million square feet of commercial space, including retail, office, high tech, and industrial space. The greater portion of this potential development is located in South Hingham. The rate of absorption is dependent upon outside market forces, as well as the ability of the Town or private developers to provide infrastructure to serve commercial users.

**Table 1-4
Estimate of Potential Buildout From Guide Plan**

Category	Min. Lot Size	Max Units	FAR	Acres	Buildout
High Density Res.	20,000	1/lot		180	313 d.u.
Moderate Density Residential	30,000	1/lot		467.7	543 d.u.
Low Density Residential	40,000	1/lot		1,039.2	904 d.u.
Multifamily Residential		6/acre		100.2	601 d.u.
Office & Multifamily			0.25	42.2	459,600 s.f.
Retail & Office			0.35	3	45,700 s.f.
High Tech/Office (with s.p.)			0.45	93.3	1,828,900 s.f.
(without s.p.)			0.35	93.2	1,420,900 s.f.
Industrial District (with s.p.)			0.45	9.5	186,200 s.f.
(without s.p.)			0.35	9.5	144,800 s.f.
Planned Development		-	-	(see Shipyard, Table 1-6)	

Summary of Estimated Guide Plan Buildout (including Shipyard Development)

Residential, Single Family	1,760 units
Residential, Multifamily/Condominium	1,153 units
Retail	295,700 s.f.
Office/High Tech	3,739,400 s.f.
Industrial	331,000 s.f.
Hotel	60 rooms

The potential impacts from the proposed changes under the Guide Plan for Future Land Use are shown in Table 1-5. Multi-family and condominium units are expected to attract smaller households and fewer schoolchildren per unit than single-family homes. The total increase in school children that is expected to result from development under the Guide Plan is just over 1,300 students (including residents of the Shipyard redevelopment project), while the increase in school children from buildout under existing zoning could reach over 1,500 students.

The projected fiscal impacts from development under the Guide Plan for Future Land Use are more favorable than under current regulations. Under both existing zoning and Board of Health regulations, the projected expenditures outweigh the projected increase in tax base. This would result in an increase in the tax rate to maintain the same level of service provided in 2001. Under the Guide Plan, however, the increase in the tax base exceeds the growth in expenditures. These projections do not include the impacts from the proposed Hingham Shipyard redevelopment.

Based upon the analysis prepared by BonzREA for the proposed Hingham Shipyard Redevelopment Program, the fiscal impacts will be quite favorable from the proposed development. The project will generate substantial revenues for the town, while attracting few new school children. However, the study does not take into consideration the traffic impacts or water/sewer demand from the proposed development, nor the costs of town services aside from schools which might be needed by the new development. Even with these additional considerations, the project most likely will still generate considerable excess revenue for the town.

**Table 1-5
Estimates of Potential Impacts From Development Under Alternative Scenarios
(Existing Zoning, Board of Health Regulations, and Guide Plan [Excluding Shipyard])**

	Index ⁽¹⁾	Existing Zoning	Board of Health Regulations	Guide Plan Buildout
Single-family Units		2,257	1,809	1,760
Multi-family Units				601
Commercial Space		4,873,800	2,177,600	4,086,100
Population ⁽²⁾	3.00/household	6,771	5,427	6,302
School Children ⁽²⁾	0.65/household	1,467	1,176	1,264
Employees	2.0/1,000 s.f.	9,748	4,355	8,172
Local Govt Expend. ⁽³⁾	\$2,100/capita	\$14,219,100	\$11,396,700	\$11,088,000
Tax Revenues				
residential	\$4,000/home	\$9,028,000	\$7,236,000	\$9,444,000
commercial	\$800/1,000 s.f.	\$3,899,040	\$1,742,080	\$3,268,880
Water/Sewer Demand				
residential	100gal/pers/day	677,100	542,700	630,170
commercial	150gal/empl/day	1,462,140	653,280	1,225,830

⁽¹⁾ Based on standards published in Department of Housing and Community Development (DHCD) Growth Impact Handbook (modified in some cases where DHCD indices probably overstate impacts). For commercial use, all types of establishments are aggregated into a single generalized category. Projection indexes are rough estimates only.

⁽²⁾ For multifamily units, the expected population increase is 1.7 persons per household, with 0.2 school children.

⁽³⁾ Index is based on actual Town expenditures in recent years, which includes school and non-school expenditures.

**Table 1-6
Estimated Impacts from Proposed Hingham Shipyard Project**

	Buildout	School Children	Tax Revenues
Multi-family Units	552 units	45	\$1,746,536
Retail	250,000 s.f.		405,896
Office	30,000 s.f.		42,908
Hotel	60 rooms		\$67,292

⁽¹⁾ Source: Cost and Benefit Analysis, Proposed Redevelopment Program, The Hingham Shipyard

Implementation

The following zoning changes would need to be carried out in order to implement the recommendations of the Guide Plan for Future Land Use. These include changes to the zoning map, as well as allowed uses and dimensional requirements.

- The area along Abington Street in South Hingham should be rezoned to Residential A.
- An Office and Multifamily overlay district should be created along the westerly portion of Whiting Street.
- Newly acquired open space should be added to the Official and Open Space District.
- The South Hingham area should be rezoned to limit the amount of retail use that can take place within the Industrial Park District.
- The maximum lot coverage should be restricted in residential areas, limiting the potential area of dwellings relative to lot size.
- Cluster development such as that permitted through the Flexible Residential Development Zoning By-Law should be encouraged. (see Open Space element).

Appendix 1-1
BUILDOUT ANALYSIS UNDER EXISTING ZONING

Table 1
Buildout Analysis for Residential Zoning Districts

A District	B Minimum Lot Size	C Units/Acre	D Developable Acres	E New Units @ Full Buildout
Residential A	20,000	1.74	285.14	497
Residential B	30,000	1.16	482.48	560
Residential C	40,000	0.87	1,295.39	1,129
Residential D	5,000	6.97	9.54	66
Residential E	30,000	1.16	4.66	5
	Section IV-A	(43560*0.8)/B	(from GIS analysis)	D*C

Notes:

1. The buildout analysis assumes only single-family development takes place in all residential districts, despite the potential for higher density development described below.
 - In residential districts A, D, E, and F, housing for low income families and seniors can be constructed by special permit with a minimum of 3,000 s.f. lot area per unit.
 - In residential districts D, E, and F, townhouse and multifamily housing can be constructed by special permit with a minimum lot size of 5,000 s.f.
 - In Residential district E, smaller lot sizes for single family homes apply within a PUD (10,000 s.f.). Not more than 20% of dwelling units within a PUD may be single family, while the remaining 80% must be a combination of garden apartments and townhouses.
2. The acreage is reduced by 20% to account for new roads and irregular lots.

(Continued)

Appendix I-1 (Continued)

Table 3
Buildout Under Existing Zoning
with Board of Health Regulations

A	B	C	D	E	F	G	H	I	J	K
District	Land Use	GPD/1000s.f. Effective FAR		A: 100% each use Buildout per acre	B: Land distributed between uses Proportion of Buildable Area	Buildout per acre	Effective Minimum Lot Size	D.U./Acre	Acres	Full Buildout
Residential A	single family						50,000	0.8712	285.14	248
Residential B	single family						50,000	0.8712	482.48	420
Residential C	single family						50,000	0.8712	1,295.39	1,129
Residential D	single family						50,000	0.8712	9.54	8
Residential E	single family						50,000	0.8712	4.66	4
Business A	retail		50	7,667	100	7,667				
Business B	retail		50	7,667	100	7,667				
Office Park	office		75	5,111	100	5,111			2.9634	22,719
Industrial	office		75	5,111	30	1,533			41.9835	214,579
	warehouse		25.4	15,092	15	2,284			6.0904	9,338
	manufacturing		36	10,648	15	1,597				13,787
	retail		50	7,667	40	3,067				9,728
	office		75	5,111	30	1,533			221.7055	339,944
Industrial Park	warehouse		25.4	15,092	15	2,284				501,885
	manufacturing		36	10,648	15	1,597				354,108
	retail		50	7,667	40	3,067				679,887
Limited Industrial Park	office		75	5,111	50	2,556			1.6468	4,208
	manufacturing		36	10,648	50	5,324				8,768
Source:			(1000/C)*(110/12,500)	D*43560	Market Assumption	E*G	(4*12,500)	H/43560		(E or I)*J
	Section III-A, III-E	DHCD	B.O.H. Regulation				B.O.H. Regulation			2,177,629

Notes:

1. Board of Health regulations allow a maximum of 110 gallons of wastewater flow per day per 12,500 s.f. of lot area.
2. All single family homes are assumed to have 4 bedrooms. Smaller homes may be built at a higher density.

**Appendix 1-2
Comparison with Recent MAPC Analysis**

South Hingham Study

MAPC prepared a buildout analysis for the South Hingham Area in June, 1999. The methodology used in the MAPC analysis was different from the present analysis both in determining the buildout parameters and in determining the amount of land that can be developed. The scope of the present town-wide study did not permit the completion of a parcel-based land use inventory, as was done by MAPC for its small project area, hence some accuracy may be lost. However, the methodology used for the Master Plan more easily identifies where properties may be underdeveloped - that is, where significant expansion of existing facilities can take place. The MAPC study utilized the National Wetlands Inventory of the U.S. Fish and Wildlife Survey as its source for wetlands data, while the present study used more accurate wetlands data provided by MassGIS.

The MAPC study covered land in the IP, RA, and RC zoning districts. (It is understood that the MAPC study is using the requirements of the South Hingham Overlay District, although this is not explicitly stated.) This analysis applied a greater level of detail in determining the buildout parameters, but the results did not substantially differ for residential development. In the case of commercial development there is uncertainty regarding the correct interpretation of the constraining regulations which needs to be addressed.

For the Residence District A, MAPC subtracted 22.5% of the buildable area, resulting in 1.69 units/acre. This took into consideration the road area, frontage requirement, and a 10% factor for irregular lots.

For the Residence District C, MAPC subtracted 18% of the buildable area, resulting in 0.89 units/acre. This took into consideration the road area, frontage requirement, and a 10% factor for irregular lots.

For the Industrial District it was assumed that half of the development would take place with a special permit and half without. The FAR was found to be the constraining factor for manufacturing use, resulting in an average effective FAR of 0.4. This does not substantially differ from the parameters defined in the enclosed Table 2.

For office use MAPC found the average effective FAR to be 0.3, based on the interpretation that the maximum FAR allowable by right is 0.25 and by special permit, 0.45. The language of the zoning by-law is ambiguous regarding office use in the Industrial Park district within the South Hingham Overlay District (Section III-E), thus Table 2 reports office development only taking place by special permit at the higher FAR. MAPC assumes that 67% of the land will be developed for manufacturing use and 33% for office use reflecting existing conditions. No retail use is considered in the MAPC analysis, although it is included in the buildout parameters on Table 2.

The differences between the results of the two studies are minor. The MAPC study found 281.9 acres of vacant land within this district (excluding the area north of Route 3), of which an unspecified portion was wetlands. It does not appear that wetlands were subtracted from the developable area in the MAPC study, although 12.9 acres was subtracted to account for roads. MAPC used two methods for determining the potential buildout based upon Zoning regulations and Board of Health regulations (see Appendix 1-2). According to Zoning regulations, the Industrial District in South Hingham was found to yield approximately 1.3 million square feet of office space and approximately 2.7 square feet of industrial space. Retail use was not included in the potential buildout. The total commercial space that can be developed in the project area was found to be just under 4.0 million square feet. If Board of Health regulations are applied, the industrial buildout would be reduced by about 30%, while potential office space would be reduced by about 60%. It is predicted that these regulations may have an impact on the likely mix of development that will take place, favoring manufacturing and warehousing uses over offices.

The present analysis indicates that 221.7 acres is developable, excluding wetlands. This includes 1.3 square feet of office space, approximately 0.9 million square feet of industrial space, and approximately 1.4 million

square feet of retail space. The total buildout for commercial space in the South Hingham Industrial Zoning District is estimated at approximately 3.7 million square feet.

An alternative buildout analysis was prepared based on the Supplemental Rules for the Disposal of Sanitary Sewage passed by the Board of Health. MAPC predicted a lower buildout in RA based on the lower marketability of homes small enough to meet the requirements for 20,000 square foot lots, but did not quantify the expected impact of the regulation. No impact was expected for RC.

For the industrial district it is assumed that office uses will generate 75 gallons per day (gpd) per 1,000 square foot of building area, manufacturing uses will generate 36 gpd/1,000 square feet and warehousing uses will generate 25.4 gpd/1,000 square feet. An effective FAR of 0.24 was determined for manufacturing use, and 0.12 for office use. In addition, warehousing could be developed with an effective FAR of 0.35. The average effective FAR for the district was taken to be 0.24.

