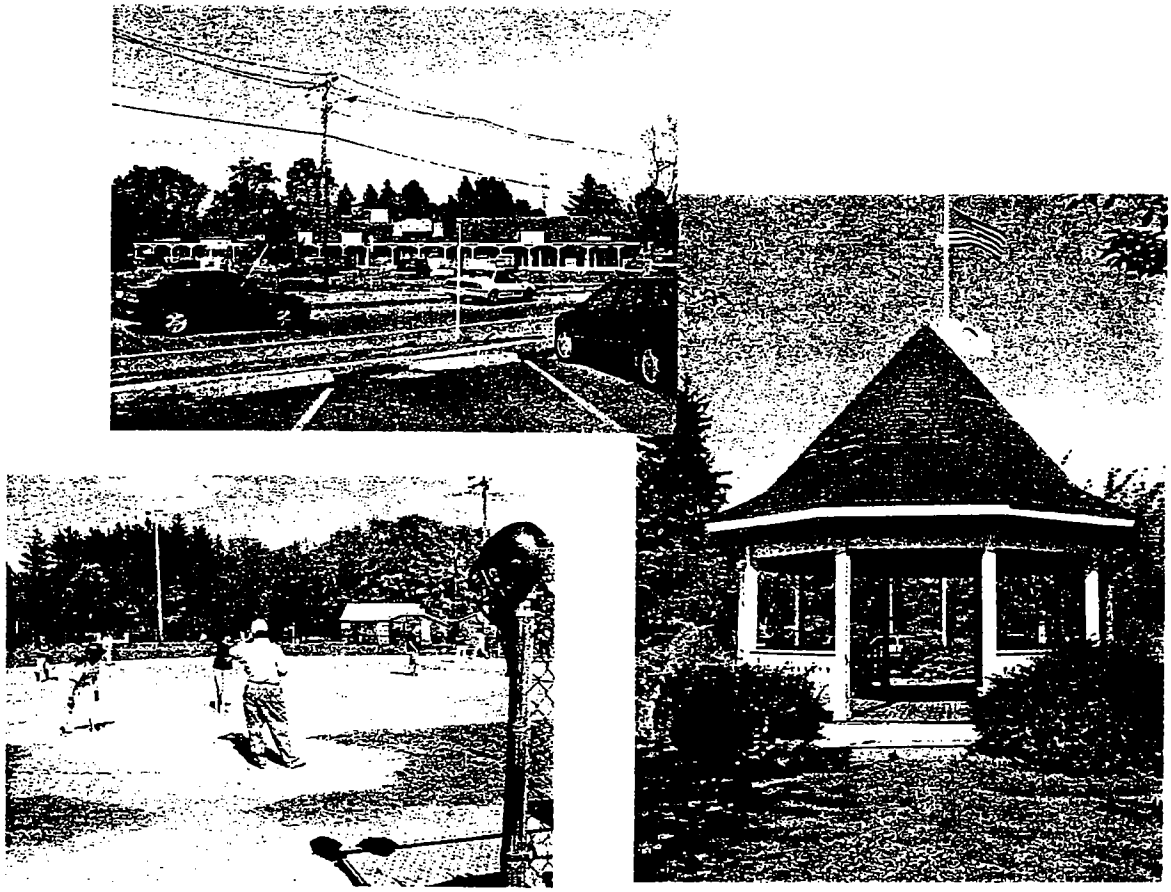
FINAL 1/15/01

COMPREHENSIVE PLAN
TOWN OF WEST BRIDGEWATER, MASSACHUSETTS



August 27, 2001

Preparing for the Future: A Proposal for Establishing a Master Plan to Guide Public and Private Investment and Protect Local Resources

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Acknowledgements

October, 2001

Master Plan Advisory Committee

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William Turner, Chairman, Master Plan Committee
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Robert Smith, Finance Committee

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Accounting and Information Systems
Assessor
Board of Health
Building Department
Buildings & Grounds
Treasurer
Conservation Commission
Computer Advisory Committee
Council On Aging
Historical Society
Historical Commission
Fire Department
Parks and Forestry Superintendent
Police Department
School Committee
Town Clerk
Highway Department
Library Director
Water Commission

Assisted by:
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Open Space Committee

Elizabeth D. Faricy,
Administrator

TOWN OF WEST BRIDGEWATER
MASTER PLAN 2001

Protecting Our Town Character While Responding to the Challenge of Growth

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WEST BRIDGEWATER MASTER PLAN

EXECUTIVE SUMMARY

Traffic congestion and the physical deterioration in the town center is the major problem.

The Master Plan Committee was organized by the Board of Selectmen and held its first meeting on August 29, 2000. Twelve members were appointed to the Committee including representatives of major boards and committees in town. William Turner was elected Chairman. Issues and opportunities were identified. A consensus quickly emerged that problems in Central Square should first be addressed and from there issues along the major transportation corridors; Routes 106 and 28 and Manley Street, should be considered, followed by an assessment of the Town's role in housing, historic preservation, and protecting the wetlands and river corridors, water and other natural resources.

The Executive Summary which follows highlights the priority issues, presents a vision statement of goals for the town to pursue, and proposes a series of recommended strategies. Your response to the attached questionnaire will assist the Committee in finalizing a proposed Action Plan. Your participation on one of the many Committees needed to carry out the plan is encouraged.

Priority Issues:

The Master Plan Committee asked the following key questions:

Central Square and the other commercial and industrial areas: *How do we improve their physical appearance, minimize traffic congestion, protect the environment, and increase the town's tax base?*

Housing: *Can the town's Boards and committees work together to provide a broader mix of housing to serve the elderly and young families?*

Open Space, recreation, and historic preservation: *Our town is named after its rural heritage—bridges and water. Are we protecting our natural character, i.e., our streams, wetlands, water, and historic resources?*

Public Facilities: *How can the Town obtain the staffing, improved facilities, financial resources, and increased citizen participation needed to manage growth?*

Managing Change: *Can we increase public awareness and build support for change?*

Proposing a Vision for the Future

If the citizens of West Bridgewater addressed the preceding issues, what would be the character of the Town? The Master Plan Committee has met monthly since August to identify and analyze how we might respond to change while protecting community character. The theme of West Bridgewater's Master Plan, ***a Town Center Greenbelt Plan,*** is represented in the following vision statements.

VISION STATEMENT

*The revitalization of Central Square as a **New England town center** with improved traffic flow, pedestrian circulation, a mix of residential and commercial uses in multi story buildings, safe pedestrian circulation and a larger tax base will be carried out.*

The Town's leadership will build on this success by managing commercial growth along the major arterials. Traffic impacts and the loss of views and open spaces will be mitigated by improved corridor planning, the development of a village center of higher quality destination and mixed uses at Route 106 and 24, as well as planned industrial parks along Manley Street.

Adjacent to the revitalized town center will be the expansion of the municipal campus of up-graded school facilities, an elderly center, a modernized town hall, playfields, pedestrian pathways, bikeways and recreation trails..

Quality schools and public safety will be maintained while staffing for planning, resource protection, finance, and management will be improved so as to protect the town from being overwhelmed by the impacts of new growth.

The public spirit evidenced amongst parents and children on the sports fields of West Bridgewater will spread to the interest of students in local affairs and the participation of its citizen in the boards and committees needed to manage local government.

*Local citizens will become aware of the meandering **open space greenbelt** of natural open river corridors, wetlands, adjacent uplands, and protected open spaces including West Bridgewater State Forest, the Hockomock Swamp, and public water supply areas, and the various Boards will work together to protect these resources.*

*The **greenbelt** will be recognized for the role it plays in protecting water quality, public water supplies and natural resources, promoting wildlife, preserving farmland, scenic views, and connections with regional trail systems.*

Opportunities for local residents, in particular the elderly and young families, to reside in West Bridgewater, will be increased by fostering the town center revitalization with mixed residential commercial buildings, the development of cluster subdivisions and mixed use developments in appropriate locations.

Five strategies which will enable the Town to achieve these vision goals have been identified.

1. To foster higher quality commercial uses with reduced environmental impacts, along Manley Street and Route 24, establish new commercial, industrial, and resource sensitive zoning districts
2. To meet the needs of the elderly and young families, allow for new residential uses such as in-law apartments and assisted living as well as cluster open space housing
3. To manage growth, regulate the pace of new residential permits, traffic and resource impacts, and ensure a New England style of development, update and adopt zoning and resource protection strategies
4. To foster transportation improvements at Central Square, Route 106, and Manley Street, work with the Massachusetts Highway Department
5. To promote economic development, resource and historic preservation planning, and affordable housing, undertake studies, organization and staffing improvements, and pursue grants

SECTION 1
LAND USE

LAND USE

1.1 EXISTING LAND USE

The Existing Land Use Inventory (Map 1-1) shows the distribution of various land uses throughout the Town of West Bridgewater. The map was prepared using 1991 land use coverage from MassGIS updated to account for recent development. Information about recent development was obtained from aerial photos, Planning Department records, and field surveys. The following table shows the area of land in the town in each land use category.

Table 1-1 Existing Land use

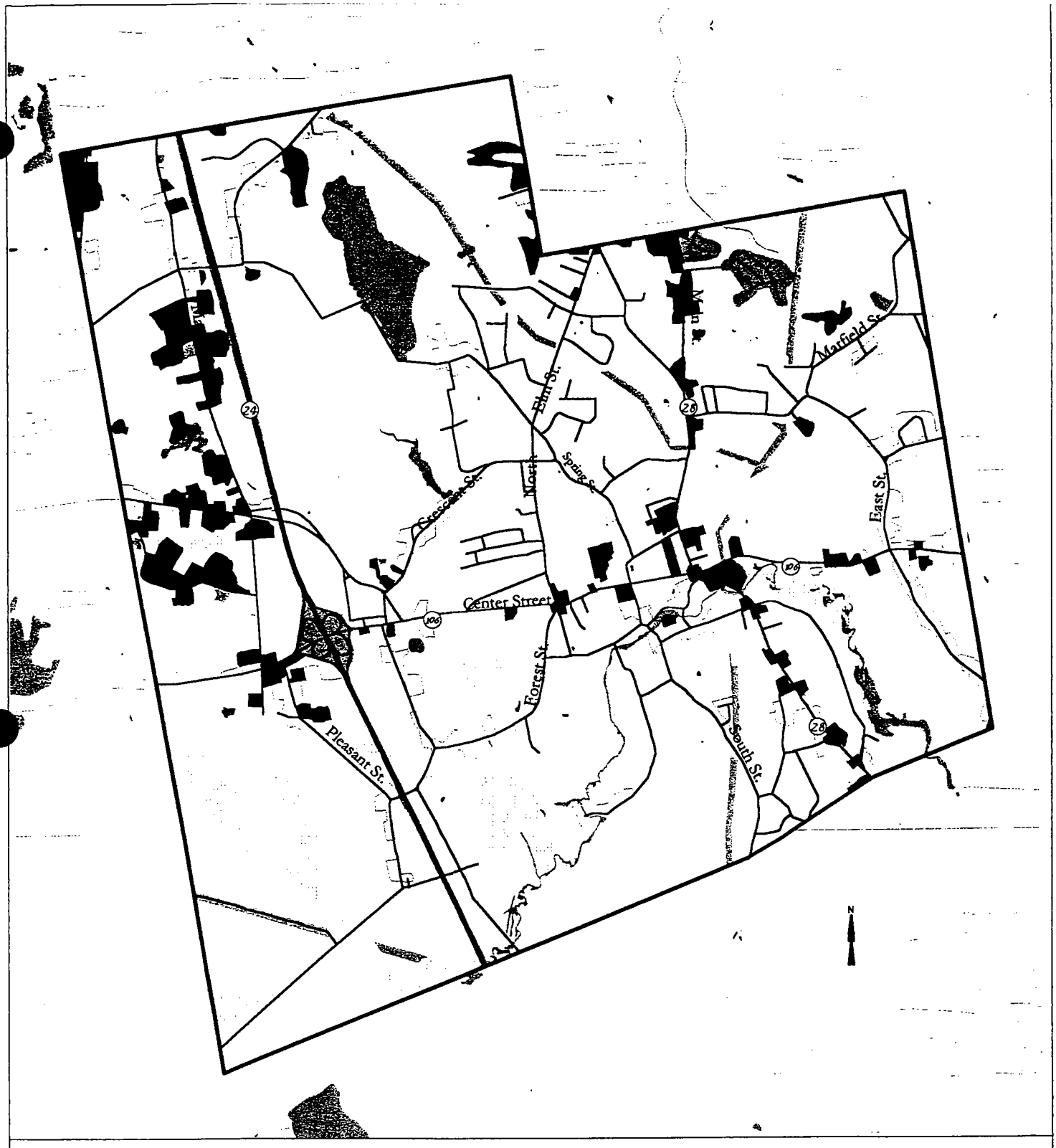
Land Use Category	Area (Acres)	% of Town Area	% of Developed Area
Residential (Single Family)	1,560.2	16.2	65.7
(Multi-Family)	4.2	0.04	0.2
Commercial	169.8	1.8	7.2
Industrial	250.8	2.6	10.6
Public/Recreation	248.6	2.6	10.5
Transp./Utilities	138.2	1.4	5.8
Total Developed	**2,371.8**	**24.6**	**100.1**
Agriculture	1,652.7	17.2	
Vacant	5,460.7	56.7	
Total Undeveloped	**7,113.4**	**73.9**	
Water	147.0	1.5	
Total Town Area	**9,632.2**	**100.0**	

Source: MassGIS, Planning Department, 1997 aerial photos, Larry Koff & Associates

There are approximately 9,632 acres in the town of West Bridgewater, of which about 25% are developed. Developed land includes private residential and non-residential uses, as well as public uses and utilities. About 75% of the land in West Bridgewater is undeveloped, although much of this land cannot be developed because of wetlands or other constraints. (A summary of development constraints will at a later point be provided under the Buildout Analysis which follows.)

- Private Residential - About 1,564 acres, or 66% of the developed area is in residential use. This includes single family residences as well as multifamily or other types of residences. Most of the residential development is of moderate density, with an average lot size of 1.07 acres per single family home (Town of West Bridgewater Assessor, 1999). Some of the more densely developed areas are concentrated in the northern part of the town off of Main Street and North Elm street. Low to moderate density single family housing is prevalent throughout the rest of the town, especially in the central and eastern portions. The only multifamily development in the town is the public housing off of Matfield Street.

- Private Non-Residential - About 421 acres, or 18% of the developed area is in private non-residential use. This includes all commercial and industrial uses. Land in industrial use, comprising about 251 acres, is located primarily within the Manly Street area. Commercial



Map 1-1

Existing Land Use

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

- Multifamily residential
- High density residential
- Moderate density residential
- Low density residential
- Commercial
- Industrial
- Public/Institutional
- Recreation
- Transportation
- Waste Disposal
- utility lines
- Pasture
- Wetland
- Mining
- Water

development, comprising about 170 acres, is located along the entire lengths of Routes 28 and 106, and to a smaller extent along Manley Street.

- Developed Land in Public Use - This category includes land occupied by public facilities, public and private recreation facilities, and lands owned by public agencies (other than for conservation purposes). Land in this category consists of about 249 acres, or 10.5% of the developed area in the town. Public facilities include public buildings, storage facilities, cemeteries, and waste disposal facilities. Recreation facilities include parks, playgrounds, ball fields, and public beaches.

  About 138 acres of land in the town are occupied by Route 24 and utility transmission lines which cross the town. The area of local and state roads is not accounted for separately, but is included in the area of abutting land uses.

- Undeveloped Land - Undeveloped land includes forested uplands, wetlands, agricultural land, and other open lands. The extensive open space in West Bridgewater including Hockomock Swamp and West Bridgewater State Forest, conservation lands, as well as unprotected open land is one of the most distinguishing features of the town's landscape. Agriculture, which covers over 1,600 acres, or 17% of the town, also helps to define the town's character. Land that is set aside as permanently protected open space in these areas occupies about 2,445 acres, or 25% of the town's total area. Undeveloped, forested land comprises just over half of the town's total area. The dominance of undeveloped open space in the town may not be immediately apparent because of development along the roadways.

Land Use Changes Since 1951

A significant amount of growth has taken place in West Bridgewater over the past half century. The most current land use inventory was compared with inventories for 1951, 1971, 1985 and 1991, which were also taken from the MacConnell land use surveys. As stated previously, the 1998 land use is based on the MacConnell survey for 1991, but is updated using more recent aerial photography and Planning Department records.

The following table shows a summary of land use changes over the time period, highlighting changes in the total amount of developed land, and changes in the amount of land devoted to residential and commercial/industrial use.

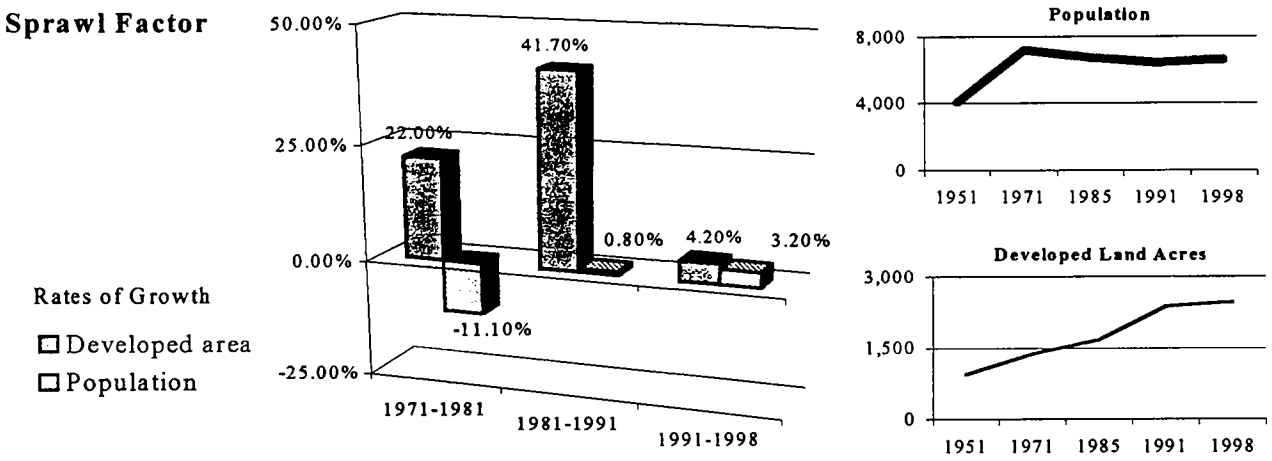
Table 1-2 Land Use Changes from 1971 to 1998[1]

	1951	1971	% change	1985	% change	1991	% change	1998	% change
Total Developed Area	940	1,367	45.4	1,668	22.0	2,364	41.7	2,463	4.2
Residential	877	1,121	27.8	1,294	14.4	1,584	22.4	1,730	9.2
Commercial & Industrial	22	108	390.9	229	12.0	363	58.5	367	1.1
Population[2]	4,059	7,152	76.2	6,700	-6.3	6,411	-4.3	6,614	3.2

(1) Some improvements in measurement techniques took place between the dates of observation. The total town area was computed at 9,893 acres in 1951, 10,031 acres in 1971 and 1985, while it was computed at 9,632 in 1991 and 1998. In order to be comparable with the later data, the acreages reported for 1951, 1971 and 1985 are adjusted proportionately.

(2) Source: US Census 1950, 1970, 1990, Town Census 1985, 1998.

- Sprawl - Over the past several decades, the population growth has stagnated or declined, while the amount of developed land has continued to increase. This is caused by commercial development along Route 106 and Manley Street, as well as the trend toward smaller household size and new residences occupying larger lots. Consumption of land reached a peak in the 1980s but slowed in the last decade due to the lack of availability of developable land. The rapid consumption of land relative to population growth indicates an increase in suburban sprawl, impacting the rural character of the community. This trend was particularly notable in the decade between 1981 and 1991.



1.2 DEVELOPMENT CAPACITY UNDER EXISTING ZONING

A buildout analysis was completed for the Town of West Bridgewater in April, 2000 by Applied Geographics according to the methodology set forward by the Executive Office of Environmental Affairs (EOEA). This analysis was found to be inaccurate because it did not take into account soil conditions in many areas of West Bridgewater that limit development capacity. In the absence of sewers, (which are unlikely to be installed at any point in the future), the soils in many areas cannot sustain septic systems, and may also be subject to seasonal high water tables or other conditions which make them unsuitable for development. See Appendix 1-1 for the results of EOEA's analysis.

A buildout analysis is intended to indicate the total amount of development that could potentially take place throughout the town under existing zoning. The following limitations to this methodology should be taken into consideration:

- Market forces will determine the pace at which development takes place. Where soil conditions limit septic capacity, the availability and cost of alternative systems will also affect the rate of development. The preceding analysis does not provide a time-frame for reaching this level of development.
- It is not possible to determine the potential redevelopment capacity of parcels which are presently developed but under-utilized.
- The analysis assumes that all new development takes place at maximum density, which may not reflect the actual outcome of future development, thus the development capacity shown above may not be reached if and when all remaining land is developed.
- The extent of developable land is an approximation, since detailed parcel-level data is not available. Nevertheless, it is unlikely that a more precise measure of developable land would yield substantially different results.
- Wetlands and areas with septic limitations may still be included as a portion of the minimum lot requirements of developable parcels, allowing a greater buildout capacity.

A revised buildout analysis was prepared by Larry Koff & Associates to account for soil conditions. The area of developable land within each zoning district was determined by subtracting protected open space, water, and land which is already developed. Four categories of soil types are described in the Natural Resources section of the Master Plan. Category "A" soils have the highest development potential. Category "B" soils may require alternative septic systems, and would be developable given favorable market conditions. Soils in categories "C" and "D" are unlikely to be developed without sewers, and are thus subtracted from the area of developable land. Soils are provided by the NRCS 1969 Plymouth County Soil Survey. Land that is already developed is taken from the MassGIS 1991 land use layer, and updated to account for recent development using Planning Board records and recent aerial photography. Map 1-3 shows the constraints on development and the remaining developable land.

The developable area was determined by zoning district, shown in Table 1-4, and then density regulations under the Zoning By-law were applied to determine the development capacity. Table 1-5 provides an estimate of the town-wide buildout capacity. Categories of land use include two types of residential development and business and industrial development. Other types of uses are assumed to fit within these general categories, for instance, a hotel would be a type of retail/service use.

Map 1-2

Zoning Map

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

- Business
- Business / Mobile Home
- Industrial
- Residential

Map 1-3

Constraints on Development

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan
Prepared by Larry Koff & Associates

- Protected Open Space
- Existing Development
- Wetland
- Water
- Land with Severe Soil Constraints
- Developable Land

Table 1-4 Summary of Buildout Results

District	Total Developable Acres		Development Capacity*			
	Highest Potential	Moderate Potential	Highest Potential	Moderate Potential	Total	
General Residence/Farm District (GR/F)	596.1	264.0	736	326	1,062	1-2 family units
Business/Mobile Home	8.2	0.0	38	0	38	Mobile homes
Business	40.7	42.1	531,900	550,200	1,082,100	Retail/Service/ Office
Industrial District	116.0	84.5	1,515,900	1,104,200	2,620,100	Industrial

Impacts from Development

Map 1-4 shows how the town would appear at full buildout under existing zoning. Under full buildout, assuming no sewers and the existing soil constraints, this development capacity can result in an estimated 3,166 additional residents, or a 48% increase over the existing population of 6,614 persons. The number of school children may increase by about 758 persons.

Table 1-6 Residences at Full Buildout

	Existing	Potential Additional	Total at Full Buildout
Single Family	1,858	1,062	2,920
Multifamily	345	0	345
Mobile Homes	227	38	265
Other	49	0	49
Total	**2,430**	**1,100**	**3,579**

Table 1-7 Commercial Space at Full Buildout

	Existing Space (1998)	Potential Additional Space	Total At Full Buildout
Retail/Service	1,162,400 square feet	1,082,100 square feet	2,244,500 square feet
Manufacturing	2,276,900	2,620,100	4,897,000
Multiple Use	297,900	0	297,900
Total	**3,737,216 square feet**	**3,702,200 square feet**	**7,439,400 square feet**

Table 1-8 Total Population at Full Buildout

	Existing Population(2000)	Potential Additional Population	Total At Full Buildout
Total	**6,614 persons**	**3166**	***9780 persons**

*Based upon revised buildout analysis prepared for town by Larry Koff & Associates

Map 1-4

Future Land Use Under Existing Zoning

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

- Multifamily Residential
- High Density Residential
- Moderate Density Residential
- Low Density Residential
- Commercial
- Industrial
- Public/Institutional
- Protected Open Space
- Recreation
- Transportation
- Waste Disposal
- Water
- Existing Development

Table 1-9 Summary Build-Out Impacts

New Development and Associated Impacts	Highest Potential	Moderate Potential	Total
Residential Water Use (gallons per day)	166,563	70,868	**237,431**
Commercial/Industrial Water Use (gallons per day)	153,582	124,081	**277,662**
Municipal Solid Waste, Non-Recycled (tons)	1,910	813	**2,723**
Municipal Solid Waste, Recycled (tons)	511	217	**728**
New Residents	2,221	945	**3,166**
New Students	530	228	**758**
New Residential Subdivision Roads (miles)	10.5	4.5	**15**

Notes:
1. "Residential Water Use" is based on 75 gallons per day per person.
2. "Comm.Ind. Water Use" is based on 75 gallons per 1,000 square feet of floor space.
3. "Recycled Municipal Solid Waste" is based on 460 lbs per person per year. All waste estimates are for residential uses only.
4. "Non-Recylcled Municipal Solid Waste" is based on 1,720 lbs per person per year.
5. The number of "Residents" at buildout is based on the persons per household figure derived from the 1990 US Census.
6. The number of "Students" at buildout is based on a student per household ratio taken from 1990 US Census data.
7. "New Residential Subdivision Roads" are based on the assumption that 60% of the new residential lots will have required frontage on new subdivision roads.
8. "New Roads in the Industrial Districts" are based on the assumption that 60% of the new industrial lots will have required frontage on new roads within the Industrial Districts.

1.3 LAND USE STRATEGY

Map 8-1, Action Plan, shows the land use strategy that has been proposed for the Town of West Bridgewater. Map 1-5 provides an illustration of future land use in the town if the Action Plan is fully implemented.

Residential Development
The Residential/Agricultural district presently allows only one type of residential development throughout the town, limiting the variety of housing types and establishing a monotonous pattern of uniform subdivisions throughout the town. Changes to residential zoning are recommended to address these concerns.

Flexible zoning and cluster subdivision bylaws would allow residential subdivisions that preserve natural landscape features. These provisions would allow the same number of units as under conventional subdivision design, but with flexible lot dimensions and/or a portion of land preserved as open space. A density bonus might be given for development that provides defined benefits to the town. This type of development can be beneficial to homeowners, developers, and the town alike, as studies have shown that homes neighboring protected open space increase in value faster than homes in traditional subdivisions, despite having slightly smaller lots. Meanwhile there may be substantial cost savings because of reducing the length of roads required to serve the same number of homes. For densities higher than allowed under current zoning, collective septic treatment systems may be necessary.

Mixed residential and commercial zoning in the town center would allow residential uses that follow historical patterns of development, while providing more variety of housing options. Pedestrian-friendly neighborhood commercial uses would be located in walking distance to homes. Apartments would be located upstairs from commercial uses.

Housing options should also be expanded by permitting additional residential uses such as assisted living, age restricted housing, in-law apartments, special needs housing, and affordable housing. These uses might be permitted throughout the town or in specific areas.

Commercial Development
Presently West Bridgewater has only one commercial and one industrial district, which means that the same kinds of uses are permitted wherever these districts are located throughout the town. Several new zoning districts are recommended in order to establish a hierarchy of uses and dimensional requirements. This strategy would limit certain types of uses to the most appropriate areas in order to alleviate traffic congestion and promote neighborhood differentiation.

Proposed commercial districts include Limited Business, Highway Commercial and Mixed Use, in addition to the existing general business district. In areas with heavy congestion and nearby residences, commercial uses such as drive-in restaurants or auto sales should be prohibited, curb cuts limited, and parking consigned to the rear of the building. In contrast, areas that have exceptionally good highway access should

Map 1-5

Future Land Use Under Recommended Plan

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

- Multifamily Residential
- High Density Residential
- Moderate Density Residential
- Low Density Residential
- Mixed Use
- Commercial
- Industrial
- Public/Institutional
- Protected Open Space
- Recreation
- Transportation
- Waste Disposal
- Water
- Existing Development

encourage larger more intensive commercial uses such as mixed office, destination retail, and hotels. This should be undertaken in a manner to limit site coverage, protect resources, and minimize traffic impacts. In the town center, a pedestrian-friendly mixed use village is proposed. See Figures in Economic Development Section for illustration of this concept.

A Light Industrial district and an Office/Research Park district is proposed in addition to the existing General Industrial district. The light industrial district would be limited to low impact uses appropriate for a town center and Huckomuck swamp. Likewise the office/research park concept would allow for a higher level of commercial activity while minimizing environmental impacts.

Open Space

Open space protection through acquisition or regulation is an important strategy for preserving natural resources and limiting the town's vulnerability from the costs of future development. The town needs to protect its water supply, wetlands and flood zones in order to prevent the escalation of infrastructure costs if too much development or contamination occurs in these areas. In addition, open space provides recreation opportunities and enhances the quality of life in the community. Section 4, Natural Resources contains detailed recommendations pertaining to the protection of open space.

Table 1-8 Land Use Policies

Policy	Housing Availability Impact	Open Space Impact	Long Run Fiscal Impact
Acquire open space[1]	- -	+ +	= or +
Resource Protection			
• Change district designations from Industrial to Limited Commercial or Residential	= or +	=	- -
• Up-date stormwater regulations, etc.	=	=	=
Encourage cluster residential development	=	+	+
Adopt Highway Commercial/create mixed use center	+	=	+ +
Expand Mixed Use Town Center	+	=	+ +
Planned Unit Development	+	+	+
Adopt roadway Improvements:			
• Smaller roads for open space sub-divisions	=	+	+
• Adopt town plan for bike paths and sidewalks	=	+	=
• Proposed widenings: Route 106 and Manley Street	=	=	=
Agricultural Preservation Zoning	= or -	= or +	+
Nutrient Limiting Regulation	-	+	+
Design Guidelines/Performance Standards	=	=	+
Inspection Department to enforce zoning	=	=	=

Key:
- `-` Moderate reduction
- `- -` Substantial reduction
- `+` Moderate increase
- `+ +` Substantial increase
- `=` No significant impact

Appendix 1-1

EOEA/Applied Geographics Buildout Analysis

The Executive Office of Environmental Affairs (EOEA) recently prepared buildout analysis in all towns in Massachusetts as a means of encouraging towns to undertake planning for growth management, and as a starting point for the preparation of Community Development Plans under Executive Order 418. The following buildout analysis was completed for the Town of West Bridgewater in April, 2000 by Applied Geographics according to the methodology set forward by EOEA.

This analysis was found to be inaccurate because it did not take into account soil conditions in many areas of West Bridgewater that limit development capacity. In the absence of sewers, (which are unlikely to be installed at any point in the future), the soils in many areas cannot sustain septic systems, and may also be subject to seasonal high water tables or other conditions which make them unsuitable for development. Although it is unlikely that West Bridgewater will see development in such marginal areas in the foreseeable future, it is nonetheless important to recognize how buildout capacity might change if technology and market conditions allow developers to overcome soil limitations. Hence, the results of EOEA buildout analysis is included here for contrast.

The area of developable land within each zoning district was determined by subtracting protected open space, water and river front areas, and land which is already developed. Wetlands and 100-year floodplains were assumed to be partial constraints on development, allowing 50% of the development capacity allowed by zoning. Land within the 200 year floodplain was also considered to be a partial constraint, allowing 75% of potential development to take place. For land where more than one constraining condition occurred, it was assumed that only 25% of potential development could take place.

Summary of Buildout Results

District	Total Developable Acres	Development Capacity*	
General Residence/Farm District (GR/F)	2,788.9	Single family Two family	1,620 units 2,430 units
Business/Mobile Home	27.6	Mobile home	150 units
Business	281.2	Retail/Service/Office	3,675,200 s.f.
Industrial District	996.7	Industrial Retail/Service/Office	6,512,250 s.f. 6,512,250 s.f.

* The maximum height is assumed to be 1 story for manufacturing use and 2 stories for retail and office uses, based on market realities rather than zoning regulations, which allow 3 stories for all buildings.

Impacts from Development

Under full buildout based upon assumptions which the Town does not accept, this development capacity would result in an estimated 10,600 additional residents, or a 165% increase over the existing population of 6,614 persons. The number of school children may increase by about 2,100 persons.

Summary of Buildout Impacts

New Development and Associated Impacts	**Totals**
Developable Land (sqft.)	211,542,630
Developable Land (acres)	4,856
Total Residential Units	4,200
Commercial/Industrial Buildable Floor Area (sqft.)	16,699,700
Residential Water Use (gallons per day)	797,400
Commercial/Industrial Water Use (gallons per day)	1,252,500
Municipal Solid Waste, Non-Recycled (tons)	9,143
Municipal Solid Waste, Recycled (tons)	2,445
New Residents	10,632
New Students	2,166
New Residential Subdivision Roads (miles)	56

Notes:
1. "Residential Water Use" is based on 75 gallons per day per person.
2. "Comm.Ind. Water Use" is based on 75 gallons per 1,000 square feet of floor space.
3. "Recycled Municipal Solid Waste" is based on 460 lbs per person per year. All waste estimates are for residential uses only.
4. "Non-Recylcled Municipal Solid Waste" is based on 1,720 lbs per person per year.
5. The number of "Residents" at buildout is assumed to be 2.9 for single family homes and 2.3 for two family and mobile homes.
6. The number of "Students" at buildout is assumed to be 0.7 for single family homes and 0.4 for two family and mobile homes.
7. "New Residential Subudivision Roads" are based on the assumption that 60% of the new residential lots will have required frontage on new subdivision roads.
8. "New Roads in the Industrial Districts" are based on the assumption that 60% of the new industrial lots will have required frontage on new roads within the Industrial Districts.

SECTION 2
HOUSING

HOUSING

EXECUTIVE SUMMARY

West Bridgewater has managed to stay small even as the growth of suburban Boston has begun to envelop all the surrounding towns. The extension of new office development along highway corridors like Interstate 495 and Route 24, which runs through West Bridgewater, will eventually bring greater interest in the town's residential areas, despite the town's historically small housing stock, agriculture areas and poor soils. This trend, along with regional economic pressures, is already affecting the housing market, causing prices to rise beyond the means of many residents who want to rent or own a home. The town has the opportunity to manage new residential growth to meet local needs and foster the protection of community character.

Inventory Highlights

In contrast to its neighbors, West Bridgewater's residential growth has been relatively static in spite of considerable growth in its commercial and industrial areas. Some of the highlights include:

- Only a 4% growth in population between 1980 and 2000.
- The smallest number of building permits/year (20) in contrast to the town's neighbors such as Bridgewater (141) and Raynham (60).
- An aging population with relatively fewer younger people between the ages 18 and 44
- A moderate income community; two-thirds of the households are either low or middle income; only 11% of the residents are upper income.
- Three fourths of the housing units are single family homes.

Needs Assessment

The population characteristics and income levels of West Bridgewater's residents suggest that the town consider a greater variety of housing to meet the household types and income levels of the existing residents. Of the neighboring communities, only in Easton is the housing more expensive than that of West Bridgewater. The average price of homes has increased by over 45% from 1990 to 1997 while incomes in Massachusetts grew by about 12%. The gap between the more affordable values and the higher end values has growth significantly in the past year. Furthermore, rents in the region have increased faster than home values or income. There are few condominiums, mixed use, or apartment units, or elderly housing units.

Vision & Goals

The Town's vision is to expand the housing opportunities for the elderly and young families to reside in town. By promoting cluster housing and town center development, the Town will be able to retain its character at the same time that it is meeting its housing needs.

Recommendations & Action Plan

An Action Plan for housing has been recommended. This plan proposes zoning changes, support of Housing Authority efforts to build elderly and affordable single family homes, and the active participation of the Master Plan Committee in addressing housing needs.

2.1 INVENTORY HIGHLIGHTS

- In contrast to its neighbors, the projections of Old Colony Planning Council, and the impacts of substantial regional economic growth, West Bridgewater, as well as Brockton, have experienced little population growth in the past 20 years. West Bridgewater's population grew 3.5% or 225 persons to 6,614 residents.

Table 2-1, Actual Population Growth: West Bridgewater and its Neighbors, 1980 - 2000

Municipality	Population			1980 - 2000	
	1980	1990	2000	Population Increase	% Change
Brockton	95,172	92,788	96,533	1,361	1.4%
Bridgewater	17,202	21,249	24,240	7,038	40.9
East Bridgewater	9,945	11,104	13,063	3,118	31.4
Easton	16,623	19,807	23,123	6,500	39.1
Raynham	9,085	9,867	10,500	1,415	15.6
Taunton	45,001	49,832	51,000	5,999	13.3
West Bridgewater	**6,359**	**6,411**	**6,614**	**255**	**4.0**

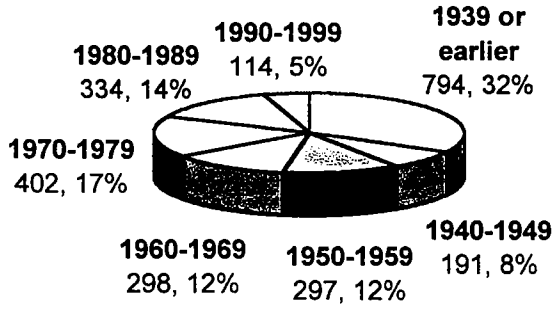
Source: 1980 and 1990 U.S. Census 2000 based on Town Census from each community.

- Only a small number of new housing units are being built in West Bridgewater
- The vast majority of the housing units are owner occupied. In 1990 only 313 units (13.5%) were rental.

Table 2-2, Population and Housing Growth: West Bridgewater and its Neighbors, 1990-2000

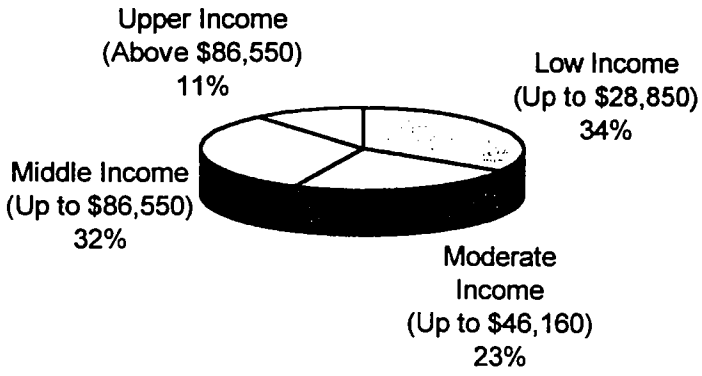
Municipality	1990	Bldg.Permits/Year ('95-'99)
Brockton	92,788	40
Bridgewater	21,249	141
East Bridgewater	11,104	63
Easton	19,807	83
Raynham	9,867	60
Taunton	49,832	238
West Bridgewater	**6,411**	**20**

Figure 2-1, Homes in West Bridgewater by Year Built



- The town's housing stock is relatively young; half of the homes were built between 1940 and 1980.

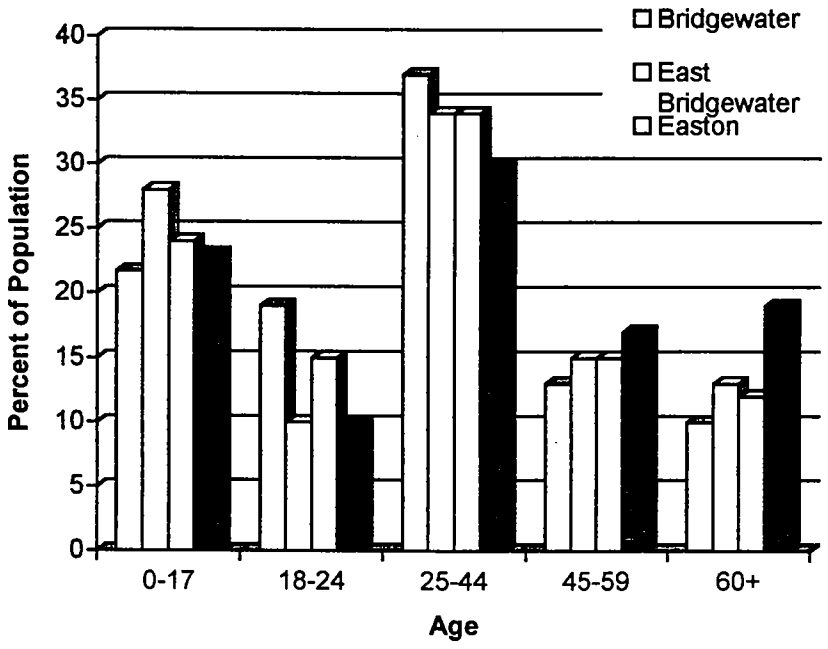
Figure 2-2, West Bridgewater Residents by Income Level



* Income data is from 1990 U.S. Census updated to 1997 based upon a 1997 Census study that estimated a 12% increase in Massachusetts household incomes since 1990.

◆ West Bridgewater residents are as likely to be low as middle income. A small percentage are upper income

Figure 2-3, Age Comparison: West Bridgewater and Neighboring Towns, 1990



◆ In comparison to its neighbors, West Bridgewater has a larger aging population and fewer young people between the ages of 18 and 24.

Costs and Affordability

A Housing Certification process was recently announced as part of Executive Order 418. Supporting documentation has provided a benchmark of affordability for all communities in Massachusetts which is higher than the earlier standard. For purposes of this analysis, West Bridgewater is considered part of the Brockton Metropolitan Area which had a median family income in FY 2000 of $61,300.

Rentals:

- According to the traditional standard, rental units should be affordable to low/moderate income households earning up to 80% of the median family income, or $49,040 (in 2001); households earning this income could afford to spend $14,712 on rent, or 30% of their income, for a monthly rent of $1,226.

Executive Order 418 now states that rental units are also considered affordable if they cost a middle-income household earning 100% of median family income no more than 30% of the household income or $1,533/month (in 2001).

- Rents in the region have increased faster than home values or income.
- The median rent price in 1990 was $547. Today, based on average prices for one, two, and three-bedroom apartments provided by a local realtor, the median rent is $825. While this represents an increase of 51%, rents continue to be affordable.
- In 1990 a total of 127 renters, or about 41% of renting households paid more than 30% of their income for rent. This compared to the county average of 42%.
- The income distribution of renters in the town parallels that of Plymouth County as a whole, with the largest groups of renters making less than $10,000 or between $20,000 and $35,000.

Table 2-3, Household Income of Residents Over the Age of 65

Household Income	Households 65 and Over	% of Elderly Households
Under $15,000	267	41.6%
$15,000 to $24,999	128	19.9
$25,000 to $49,999	154	24.0
$50,000 and over	93	14.5
Total	642	

1990 US Census

Residents Living in Poverty

5.2% of all West Bridgewater residents had incomes below the poverty line in 1990. The majority of these are seniors.

Homeownership

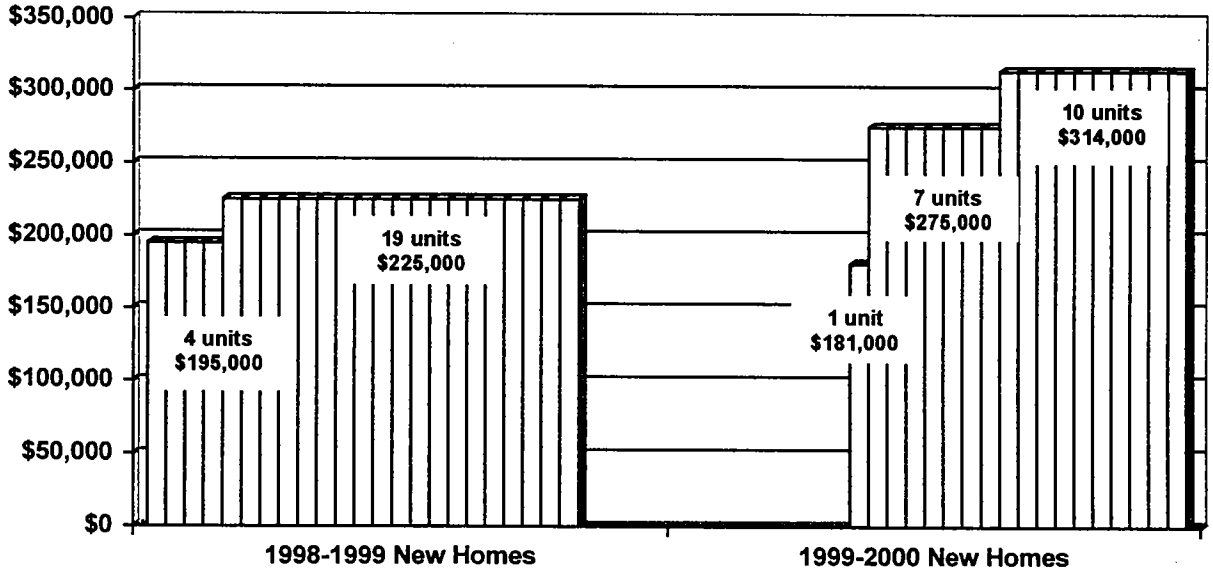
- Affordable ownership units should be available to low/moderate income households earning 80% of median family income.
- The average sales price of homes in West Bridgewater has increased by over 45% from $135,000 to $196,000. (Banker & Tradesman) while incomes in Massachusetts grew by about 12% between 1990 and 1997. (US Census)

Under Executive Order 418, Housing units have also now been defined as affordable if they can be purchased by middle-income households earning up to 150% of the median income, or $91,950 (in 2001). An affordable purchase price is set at $321,000.*

*(Assumes 10% down, 8.5% loan for 30 years, 33% of income for principal, interest, taxes, and insurance, rounded to the nearest $1,000.)

- In 1990 West Bridgewater homeowners with mortgages spent an average of about 23% of their incomes on housing.
- It costs somewhat more to buy a home in West Bridgewater than in all neighboring communities, except Easton, where the average sales price is now $249,000.
- A substantial number of new homes in West Bridgewater in 1999-2000 were assessed at an average value of $275,000 to $314,000, a large increase over the previous year's highest values. The gap between the more affordable values and the higher-end values has grown significantly. In 2000, only one home was sold within the range of affordability (i.e., under $261,000), in contrast to the prior year where 23 homes were developed within the range of affordability.

Figure 2-5, Assessed Values of Recent Sales: Single Family Homes



Explain why the cap or moratorium was in place and why it was changed or eliminated:

34. Have a phased growth or other development bylaw that provides exemptions and/or incentives for affordable housing that has been utilized within the past two years?

- *One point possible if such a provision has been utilized within two years.*

Describe the provision. If it is a zoning provision, include the title of the provision and its location with chapter and section. Describe how it has been used in the past two years, indicate date and number of units developed.

35. Dealt with Comprehensive Permit applications and/or achieved 8% on the Subsidized Housing Inventory?

- *Multiple points are possiblefor question #35.*
- *Details of the housing inventory are available at* **www.state.ma.us/dhcd/components/hac/subhous.htm**

a. If, within the past twelve months, a comprehensive permit(s) was/were issued by the ZBA, describe the total number of units, the number of units affordable to low- and moderate-income households, the type of units (rental or ownership), and the term of affordability.

b. Attained a high percentage (at least 8%) of subsidized housing listed through the Chapter 40B subsidized housing inventory. Provide current percentage: _____%. If the comprehensive permits described above will increase the percentage to 8% or more, indicate here what the new percentage will be:_____%

Other activities undertaken for planning, removing barriers, and creating a positive atmosphere for housing development not listed elsewhere in this request for certification

36. Describe other activities that promote planning, remove barriers, and create a positive atmosphere for housing development affordable to individuals and families across a broad range of incomes

- *Multiple points are possible for question #36*
- *This question is provided to cover items not previously addressed by specific questions in the checklist*

SECTION III
ECONOMIC DEVELOPMENT

◆ ECONOMIC DEVELOPMENT

EXECUTIVE SUMMARY

The Town of West Bridgewater 's commercial areas were laid out when the Town first established its zoning by-law. The major arterials, Routes 106 and 28, were zoned for commercial uses at a depth of 500 feet. The wetlands in the Manley Street and Pleasant Street area were zoned for industrial uses. Little attention was focused at creating a hierarchy of commercial and industrial districts which responded to the need to attract resource sensitive uses, create a town center, or more auto orientated uses. The town now has an opportunity to both enhance the town's special identity as well as shape growth to attract a range of commercial uses which will add to the local tax base and protect important resources such as the public water supply.

This section provides:

1) Profile of the town's economic base
2) Assessment of issues and opportunities to address the pressures of growth
3) Vision and Goal statement to guide commercial and industrial growth
4) Recommended strategies and funding sources.

Inventory
West Bridgewater, of seven neighboring towns, has the largest and most diverse economic base. The town benefits by having the largest percentage of its valuation based on commercial, industrial, and personal property and by attracting more than double the number of jobs as exists in the resident labor force. These assets are contrasted by a relatively stagnant level of growth and an insufficient tax base to finance the staffing and capital needs identified in the Public Facilities section.

Needs/Issues
Four issues have been identified. First priority is the upgrading of the commercial districts , in particular at the Town Center and at Lincoln Street/Route 24, in order to facilitate a highway orientated commercial development and a more traditional New England Village mixed use Town Center. The industrial areas, likewise need to be upgraded with new infrastructure and zoning to facilitate appropriate growth in various locations. Third, the town's resources areas need to be protected from the impacts of industrial development. Fourth, agriculture is an important economic and natural resource in the town. Without aggressive action, this resource will fast disappear.

Vision
An economic growth strategy for the Town will lead to the revitalization of Central Square as a New England town center, the management of commercial growth along the major arterials to minimize traffic impacts and the loss of views and open spaces, the development of higher quality destination commercial uses at Route 106 and 24, and an improved mix of industrial uses along Manley Street. In all cases, environmental resources will be protected and the town will strive to retain businesses which will provide higher paying wages, protect environmental resources, minimize traffic impacts, and improve the local tax base.

Goals/Objectives
To Revitalize the Town Center
To improve the mix of businesses and traffic flow along the major boulevards
To encourage an improved mix of industrial uses
To protect the Town from the unwanted impacts of commercial and industrial growth

Recommendations

The six major recommendations have been ranked in order of importance by the Master Plan Committee.

1. Revitalize the Town Center

- Work with the Massachusetts Highway Department on an intersection design for Route 106 and a taking plan for roadway widening
- Establish a planning sub-committee of property owners and community representatives to develop a Town Center plan
- Obtain funding to carry out this plan
- Working with MHD and the abutters, refine the Town Center New England Village concept plan
- Establish new zoning to carry out the plan

2. Improve the mix of businesses and traffic flow along the major boulevards

- Modify the commercial district zoning to encourage a hierarchy of commercial districts including neighborhood, general business, town center, and highway business.
- Consider zoning changes which will require shared curb cuts, protection of views, shared parking, landscaping of parking lots, stormwater management, lower site coverage in resource areas, and design review in designated areas.

3. Facilitate the retention and attraction of quality industrial users

- Organize the local business community to work with the Town on a broad range of recommendations which will modify the industrial zoning including: establish a planned commercial/office park district at Route 106 and Manley Street and a limited manufacturing industrial park as recommended in the Coweeset Brook Study, changing the North Main Street industrial area to limited industrial or commercial, and changing industrial zoning East of Route 24 and along Pleasant Street to a Resource Protection district.
- Plan the development of infrastructure to serve the industrial areas (Water, Wastewater, stormwater, roads)
- Prepare a resource protection plan for the Manley Street area
- Modify various local regulations: Zoning Act, Wetlands by-law, Sub-division Control Act
- Adopt new regulations: Stormwater management for parking areas

4. Improve the development review process and existing enforcement

- Up-dating the existing by-law and sub-division regulations will enable the town boards to more effective regulate development. Joint scoping of projects will also assist in improving the quality of development.

5. Protect Agriculture

- A number of strategies will be needed to protect local agriculture. The Federal and State Departments of Agriculture are working with numerous communities to assist in this process. Forming an Agriculture Commission, providing incentives in local zoning, purchasing easements are possible strategies to pursue

3.1 ECONOMIC PROFILE: HIGHLIGHTS

Regional access is good

- 25 miles south of Boston, 30 miles northeast of Providence
- North/south access from Route 24, Route 28
- East/West access from Route 106
- A commuter rail line traverses the town parallel to Route 28 with stations to the north and south in Brockton and Bridgewater

Local employment is double the resident labor force

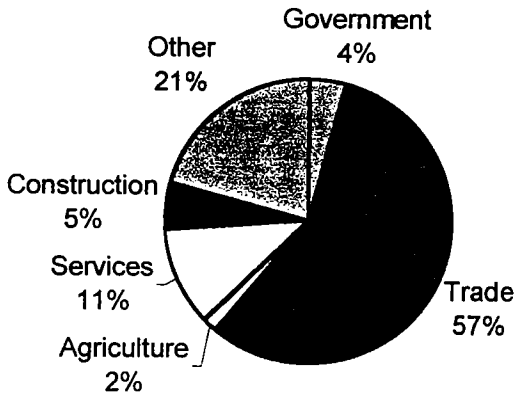
There are more than double the number of jobs in the town than the number of working residents. As a result, the town's ratio of jobs to labor force is greater than two.

Table 3-1 Jobs to Labor Force Ratio

	1990	1998
West Bridgewater jobs	4,673	7,812
West Bridgewater resident labor force	3,547	3,737
Jobs/Labor Force Ratio	1.39	2.09

- In the last decade and a half, West Bridgewater has seen tremendous growth in new jobs – 4,557 new jobs were created between 1986 and 1995, a 148% increase. A large percentage of the new retail jobs in town are accounted for by Chadwick's of Boston, a catalog-distribution business that employs some 3,000 people. Employment in West Bridgewater is heavily geared toward the trade sector, which accounts for over 57% of all jobs in the town. Nearly all the trade jobs are in the low-paying retail industry.
- Between 1986-1995, 66 new businesses opened in the town, raising the total from 239 to 305.

Figure 3-1
Employment in West Bridgewater



Retail Trade with it s low wage rates is the driving engine of the town's job growth

- Surprisingly, considering the general sharp decline in manufacturing in this region, manufacturing also expanded significantly in recent years. In 1995 there were 1,025 manufacturing jobs in West Bridgewater, almost double the number in 1986.
- The town's wage rates compare with or are higher than statewide rates in at least three areas: construction, transportation and utilities, and retail trade.
- In other areas, such as services and finance, insurance and real estate, the jobs available in West Bridgewater still fall behind the state average. For example, someone working in a services position in the town would find they could earn almost $8,000 more in another community.

Table 3-2 Employment and Average Wage by Industry in West Bridgewater, 1998

Industry	# of Employees	Avg. Annual Wage
Retail Trade	3,644	$21,449
Services	855	$28,811
Wholesale Trade	829	$40,518
Manufacturing	804	$35,814
FIRE*	102	$43,467
Construction	413	$39,112
Transp./Utilities	704	$50,172
Agriculture	135	$28,223

Source: Massachusetts Division of Employment and Training (DET) and 1997 U.S. Census of Retail Trade
* FIRE = Finance, Insurance, Real Estate

Table 3-3 Average Annual Wages, West Bridgewater and Massachusetts

Industry	Average Annual Wage in West Bridgewater, 1998	Average Annual Wage, Statewide, 1998
Retail Trade	$21,449	$18,580
Services	$28,811	$36,600
Wholesale Trade	$40,518	$51,845
Manufacturing	$35,814	$47,603
FIRE	$43,467	$59,989
Construction	$39,112	$41,863
Transp./Utilities	$50,172	$40,214

Do West Bridgewater residents have access to the jobs and wage rates they want?

- Journey to work: West Bridgewater is more of a sub-economic area for Brockton than a traditional residential suburb of Boston. About 23% of residents work in Brockton, while 4.3% find work in neighboring Easton and 3.4% in East Bridgewater. By contrast, only 5.3% of residents work in Boston, which for many suburban communities is a much more important destination for job-seekers
- A comparison of the overall average annual wage in the town to the median household income indicated in 1989 that the median household income in the town was $40,440 while the

Table 3-4 Largest Employers in West Bridgewater

Employer	# of Employees
Chadwick's of Boston	988
United Liquors	500+
Shawmut Mills	153
J.P. Noonan Transportation	120
Shaw's Supermarket	500

Source: Metro South Chamber of Commerce; 1996 Massachusetts Manufacturing Directory

average annual wage in West Bridgewater was $24,961. This shows that while a fair number of well-paying jobs were available at that time, a large percentage of residents either commuted to other communities to find better wages or has more than one household member in the workforce.

- West Bridgewater's median income in 1989 was almost $4,000 higher than the statewide median household income of $36,952.

Growth Projections

- Old Colony Planning Council projects an employment growth rate of approximately 15-20% by 2020, reaching a total of 9,353 jobs.
- Some large commercial development projects have been proposed in the Manley street area, totaling nearly 1 million square feet of industrial/warehouse space which could potentially be developed within the next 5 years. If this rate of growth continues, then employment in the town could easily double by 2020.

Tax Base is well balanced between residential and commercial uses
Commercial, industrial, and personal property uses now represent 38% of the total assessed valuation.

Table 3-5 West Bridgewater Tax Base (FY 00)

Tax Classification	Assessed Valuation	% of Total Valuation
Residential	$375,557,338	62%
Commercial	$103,009,318	17%
Industrial	$95,877,027	15%
Personal Property	39,436,920	6%
Total Taxable Property	$613,880,603	100%
Exempt	$60,978,800	

Note: Chapter 61 lands, included under the commercial classification, are primarily used for agricultural purposes, and are taxed at less than full value; these properties comprise $1,696,730 or about 3% of the total valuation.

Total tax revenue from commercial/industrial/personal property uses comprises 46% of the tax levy which is raised by local property taxes. West Bridgewater is able to tax its commercial/industrial properties at a higher rate, reducing some of the tax burden for homeowners.

Table 3-6 West Bridgewater Tax Revenue (FY 00)

Tax Classification	Tax Rate	Tax Levy	% of Total Tax Levy
Residential	13.52	5,077,535	54%
Commercial	18.29	1,884,040	20%
Industrial	18.29	1,753,590	19%
Personal Property	18.29	721,301	7%
Total		9,436,468	100%

Competitive Regional Position – Relatively High Commercial Tax Rate

- In 1999, West Bridgewater ranked first out of the seven towns and cities in the region in the percentage of commercial/industrial/property (CIP) valuation. In spite of this high percentage, West Bridgewater is not generating sufficient revenue from these uses.
- West Bridgewater is one of four neighboring communities, including Taunton, Raynham and Brockton, which have tax classification, i.e., they tax their commercial property at a higher rate than residential.
- This shift above the residential tax levy rate is the third highest among its neighbors after Taunton and Brockton and their commercial tax rate of $20.61 is the third highest in the region.

Table 3-7 Valuation, Tax Rates and Shifts for Commercial, Industrial, and Personal (CIP) Property (FY2000)

	CIP as % of Total Valuation	Actual CIP Shift	Actual CIP Tax Rate
Brockton	26.3	1.37	28.51
Bridgewater	10.9	-	14.03
East Bridgewater	14.1	-	17.98
Easton	12.0	-	16.24
Taunton	25.3	1.52	24.62
Raynham	26.9	1.09	16.18
West Bridgewater	**38.8**	**1.19**	**18.29**

The table below shows that total tax revenues represent 60% of municipal revenues.

- Compared to 6 neighboring towns, West Bridgewater receives the third lowest percentage of state aid: just under 19% in contrast to a low of 9.18 for Raynham and a high of 50% for Brockton.

Table 3-8 Municipal Revenues By Source FY00

	Tax Revenue as % of Tax Levy	State Aid	Local Receipts	All Other
Brockton	27.59	49.80	16.48	6.13
West Bridgewater	**60.00**	**18.75**	**14.97**	**6.28**
Bridgewater	55.42	14.98	23.17	6.44
East Bridgewater	44.11	38.11	10.06	7.72
Easton	55.40	23.62	15.44	5.55
Raynham	65.22	9.18	14.68	10.92
Taunton	31.97	37.74	18.09	12.19
State Averages	**50.18**	**27.31**	**17.52**	**4.98**

Source: Massachusetts Department Of Revenue Division Of Local Services Municipal Data Bank

It is essential that a community maintain both a balanced mix of land uses as well as ensure the highest reasonable revenue to ensure sufficient taxes to cover the expense of municipal services and education. Warehousing, in particular, a dominant use in West Bridgewater, is not a high tax generator.

3.2 NEEDS ASSESSMENT

Topic 1: West Bridgewater Commercial Business Establishments

- *Service* related business dominate: auto, beautician, sit-down restaurant (30%)
- *Specialty retail shopping (shopping goods):* Antique, auto sales (20%)
- *Professional/office* related businesses including doctors, lawyers, accountants, engineers, finance, insurance (14%)
- *Convenience goods:* Take-out restaurant, liquor, convenience grocery (13%)
- *Large scale comparison shopping* currently does not take place in West Bridgewater given the rural nature of surrounding towns, the limited access, and sites for large scale retailing

Table 3-9 Businesses in West Bridgewater

Location / Types of Businesses	Service	Con-venience	Shopping Goods	Office	Manu-facturing	Total
Routes 106 and 28	16	6	8	6	2	**47**
Howard/North Elm/Prospect Streets	17	6	9	26	0	**64**
West/Crescent/ Lincoln Streets/Route 24	2	8	5	2	0	**18**
Manley Street/Route 138	6	1	2	14	1	**25**
East Center Street	9	6	1	8	0	**29**
South Main Street (Rt. 28)	9	0	14	5	0	**32**
North Main Street (Rt. 28)	13	5	9	2	1	**36**
Totals	**72**	**32**	**48**	**63**	**4**	**251**

Windshield Survey, Larry Koff & Associates November, 2000

Table 3-10 Business District Characteristics: Vacancy and Building Condition

	Location	District type	Vacancy Rate	Condition
1	Manley Street N. of Rt. 106 S. of Rt. 106	Industrial/GB General Business	4%	Good-Poor Good
2	Route 24	Convenience	6%	Fair-Good
3	Howard/N. Elm	Service/Office	9%	Good
4	Central Sq. 106/28	Mixed	19%	Fair-Poor
5	North Main Street	Service/shopping	17%	Fair-Poor
6	East Center Street	Office/Service/ Convenience	17%	Fair
7	South Main Street	Shopping/Service	13%	Fair-Poor

Best Management Practices For Commercial Areas

A. *Vision a hierarchy of commercial uses: Neighborhood, community (limited retail, highway strip, supermarket), Town Center, regional shopping/entertainment*

B. *Clarify local/regional market strategies*

C. *Concentrate growth in areas with good access, mix of uses, infrastructure*

D. *Make shopping centers and business parks all-purpose activity centers*

E. *Cluster commercial uses, manage parking and curb cuts*

F *Mitigate impacts on adjacent residential and resource areas*

Table 3-11 Business District Visions

Location	District type	Vision
1 Manley Street North of Rt. 106 South of Rt. 106	Vacant, blighted, under-utilized General Business	Limited Commercial: Office/Hotel, 250' Frontage. Remediate "Brownfields" site, Protect wellhead area General Business
2 Route 24 West Street Lincoln Street	Convenience Undeveloped Partially zoned "B"	General Business: Restrict convenience and curb cuts, Add 3rd lane Limited Commercial: Office/Hotel, 1000' Parcel depth
3 Howard/N. Elm	Service/Office	Limited commercial: Protect views
4 Central Sq. 106/28	Mixed	New England village Town Center mixed use: Restrict auto & convenience uses, Allow residences above commercial, Encourage professional office, Historic preservation, Encourage pedestrian circulation and building scale
5 North Main St.	Service/Shopping	General Business: Larger lot size
6 East Center Street	Office/Service/ Convenience	Limited Commercial: Specialty shopping, office. Protect open space, Exclude golf course/farm from Business District, Reduce depth of lot, Allow cluster residential at rear lot; keep frontage open.
7 South Main Street	Shopping/Service	Specialty shopping/office, No convenience

Town Center

Alternative I: Convenience Retail
This scenario suggests that priority should be given to solving the traffic problem while providing sites for convenience retail uses. A typical strip mall is shown; parking in the front with the building in the rear, multiple curb cuts, single story commercial buildings of varying designs promoted by national chains. The right of way would be widened as much as necessary. Minor provision would be made for pedestrian circulation.

Alternative II: New England Village
This scenario suggests that a balance must be achieved between solving the intersection's traffic problem and providing pedestrian-scaled development reflective of a New England Village. The diagram suggests that new development should take place at the street edge with parking in the rear. Buildings should be at least two stories in height with pitched roofs and dormers. Uses would contain retail at the ground floor and residential above. Shared curb cuts should be located as far as possible from the intersection. Landscaping should take place at the street edge. Drive-in uses should be strictly limited so as to limit traffic congestion.

OPTION 1: STRIP COMMERCIAL

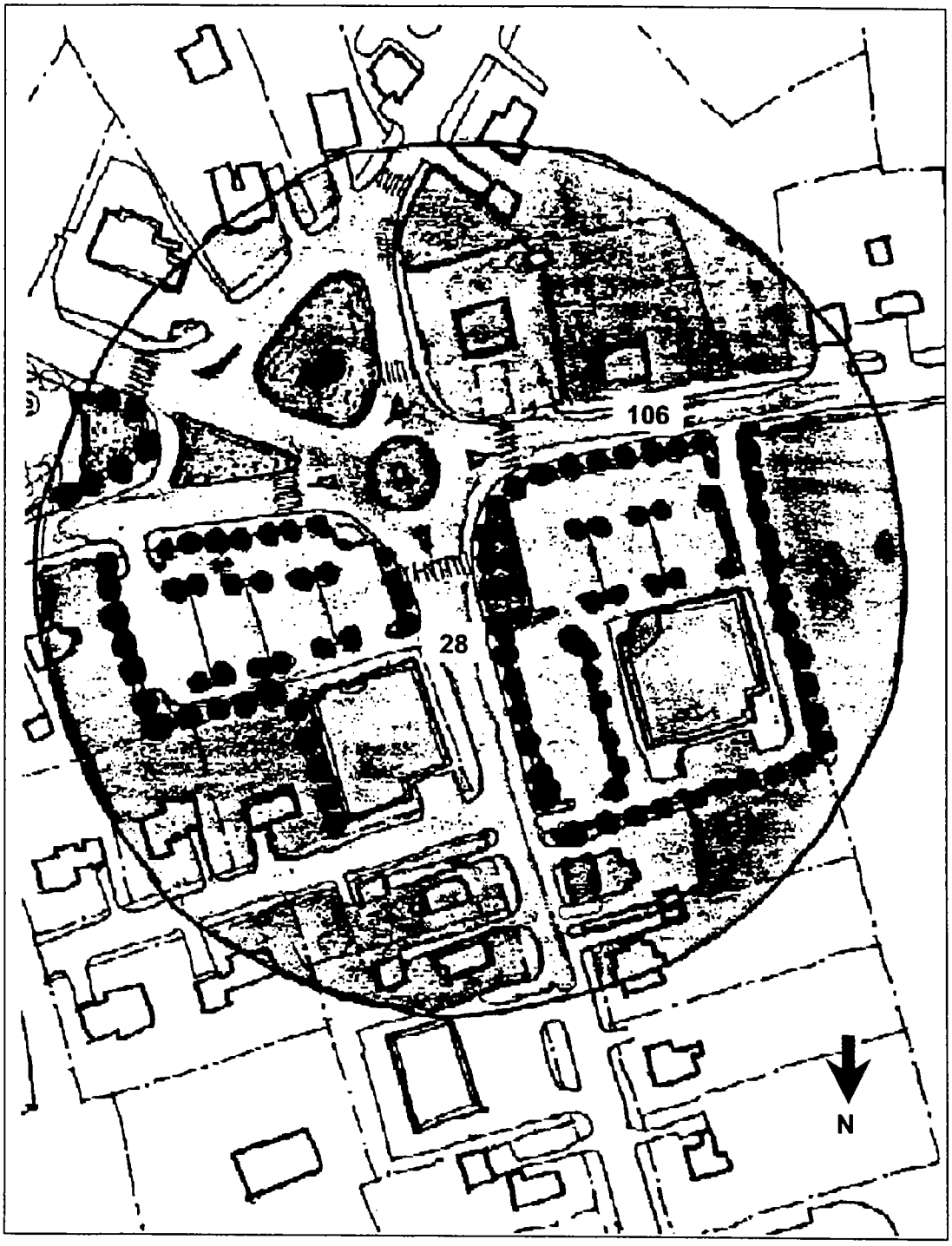


Figure 3-2

OPTION 2: NEW ENGLAND VILLAGE (PREFERRED)

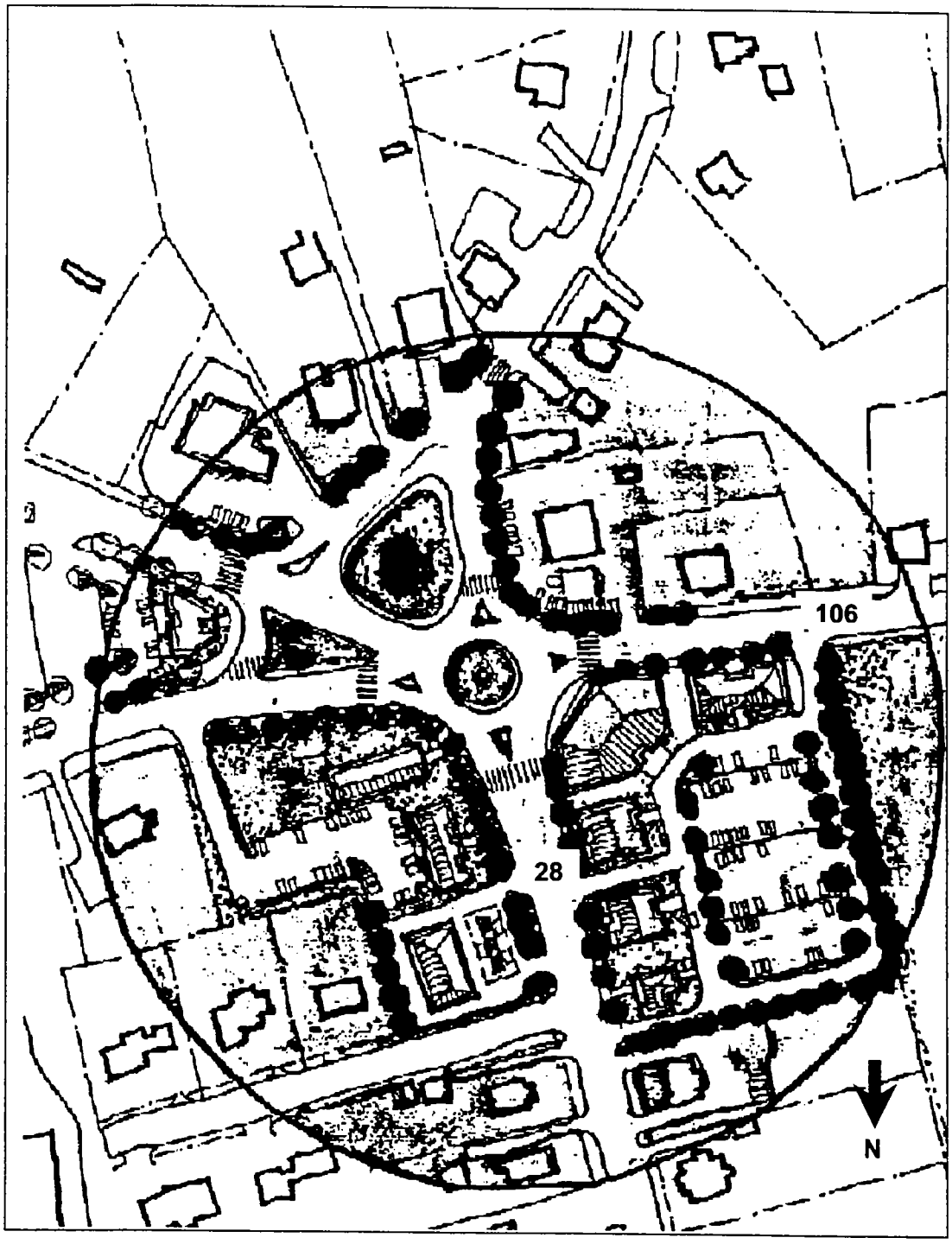


Figure 3-3

Topic 2: Manley Street and the Coweeset Brook Industrial Area

- Manley Street Industrial uses (53 businesses)
  - Warehouse storage associated with a manufacturing operation. Chadwicks, United Liquors, Jordan's Furniture, Mediterranean Custom Cabinets, Jerman Assembly & Packaging are examples of the 22 firms involved in this activity.
  - Industrial manufacturing accounts for some 15 businesses including Shawmut Mills, Heritage Manufacturing Vinyl Windows, Arcadia Press, Ranco Foods.
  - There are an equal number (three) of such diverse businesses as auto repair, office, and trucking terminal.

- Regional assets to attract industry include:
  - Large, experienced labor force
  - Proximity to Eastern Massachusetts regional markets,
  - Financial-professional services infrastructure,
  - Vacant space (1.1 million square feet) in regional industrial parks

- Limitations on retaining existing firms as well as on further economic development relate to infrastructure (water and sewer), and economic development staff and funding.

  A windshield survey of building conditions confirmed this finding. A significant number of properties are in fair or poor condition indicating the need to invest in a district revitalization program.

- The three communities, Brockton, West Bridgewater, and Easton could benefit by working together to address the planning, funding, infrastructure improvements, and marketing of this sub-area for a higher mix of businesses.

- There is a potential market for attracting science and technology firms to this area provided the infrastructure was in place and the sites were developed with quality landscaping which preserved and protected the views and natural settings that currently exist.

- Two vacant sites have been identified as having the potential to attract new industry.
  - A 90 acres parcel off Walnut Street has approximately 70 acres which could be developed with industry. Some 20 acres would be needed for buffers and roads. This property is zoned for industry.
  - A 55 acre parcel located off Manley Street on the Brockton town line is currently zoned for residential use and is utilized as meadow and farm land. This parcel is bisected by the Coweeset Brook floodplain which constrains development in this area. Some 40+ acres might be developed with a cluster research/development use.

- A third site consisting of a mix of commercial and industrial land uses off Turnpike Street would be up-graded if the adjacent sites were developed with high quality commercial uses.

Figure 3-4

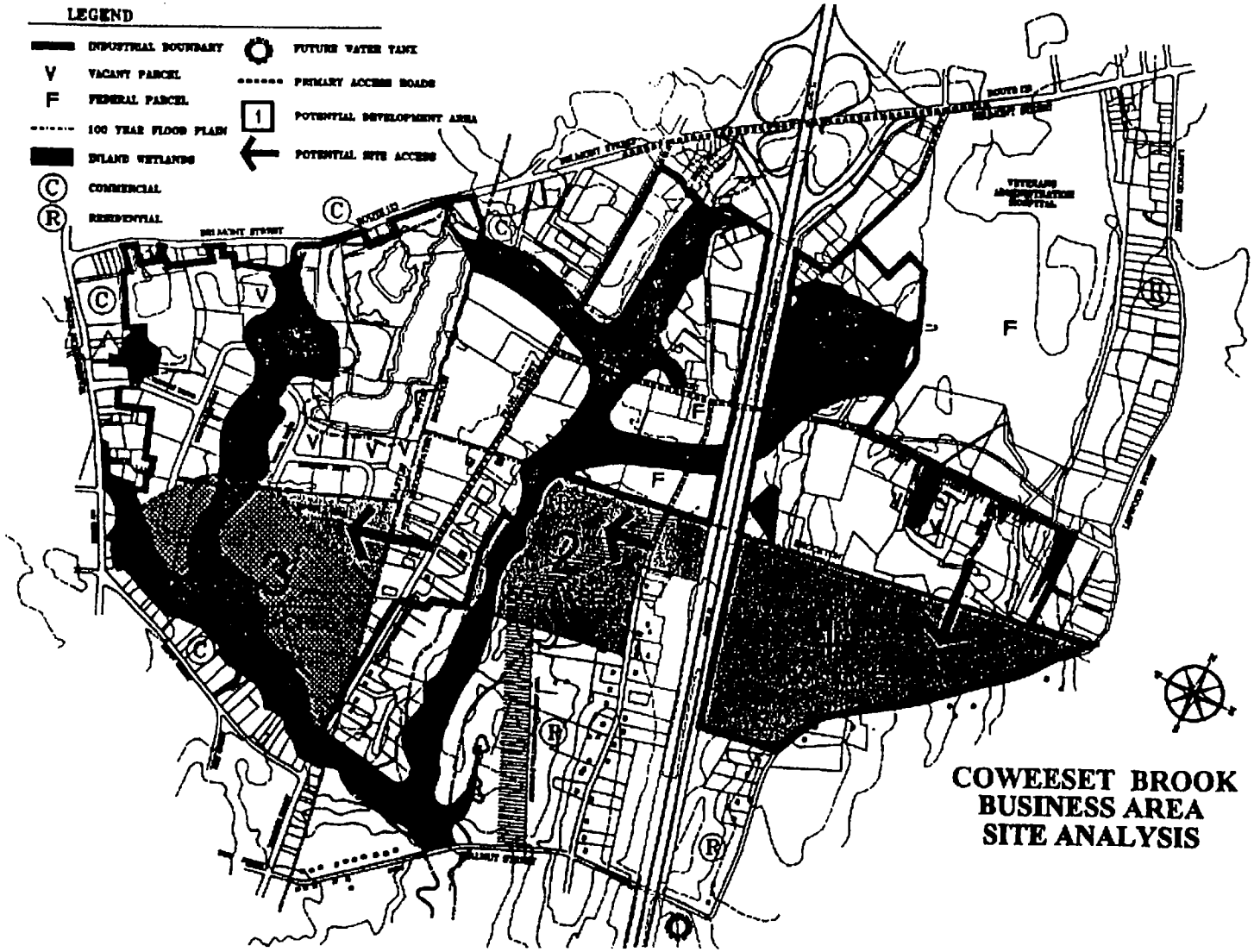

LEGEND
INDUSTRIAL BOUNDARY
V VACANT PARCEL
F FEDERAL PARCEL
100 YEAR FLOOD PLAIN
INLAND WETLANDS
C COMMERCIAL
R RESIDENTIAL
FUTURE WATER TANK
PRIMARY ACCESS ROADS
1 POTENTIAL DEVELOPMENT AREA
POTENTIAL SITE ACCESS
COWEESET BROOK
BUSINESS AREA
SITE ANALYSIS

Table 3-12 West Bridgewater Sub Region-Indices of Competitiveness for Commercial and Industrial Zoned Land

	INFRASTRUCTURE					INCENTIVES					
Towns	Direct Rail Connection	Interstate Highway Connection	Public Water	Public Sewer	Telecom.	Tax Increment Financing	Staff Econ. Dev. Planner	Econ. Dev./ Indust. Commission	Streamlined Permitting	Training/ Labor Retention	Public Industrial Park
East Bridgewater	No	No	Yes	No	No	No	No	No	No	No	No
Bridgewater	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Easton	No	No	Yes	No	No	No	Part-time	No	No	No	No
Brockton	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Mansfield	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No
Middleborough	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No
Raynham	No	Yes	Yes	Yes	No	No	No	No	No	No	No
Taunton	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
West Bridgewater	**No**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Source: Larry Koff & Associates

Topic 3: Resource Protection

The areas zoned for industry are located on the east and west side of Route 24 extending almost the entire length of the town. With the exception of the industrially zoned parcels east of Route 24, this district overlaps with a series of resources areas including:

- State boundaries of an Area of Critical Environmental Concern (the Hockomock Swamp), Habitats of Rare Wildlife and Certified Vernal Pools (Department of Environmental Management)
- A public water supply protection area and wellhead (State Department of Environmental Protection)
- The Coweeset Brook, Hockomock River, the Town Rivers and 200'river corridors under the jurisdiction of the State Rivers Protection Act
- Federal boundaries of FEMA (Federal Emergency Management Agency) National Flood Insurance Program
- Delineated Wetlands
- Town and State Protected conservation land including West Bridgewater State Forest

Two priority issues have been identified:

- *Drinking water supply and quality protection within the industrial district*
- *Developing a resource and floodplain protection plan for Sensitive Ecosystems*

Best Management Practices for Industrial Areas

A. *Vision a hierarchy of Industrial uses:*
B. *Concentrate growth in areas with good access, mix of uses, infrastructure*
C. *Cluster commercial uses, manage parking, curb cuts, and stormwater runoff.*
D. *Mitigate impacts on adjacent residential and resource areas*
E. *Consider development of sewers or a decentralized system to serve the Manley Street area so as to protect local water supply*

Topic 4: Agriculture: Is It An Economic Resource?

Traditionally the town's farms have produced dairy products, corn, vegetables, strawberries, blueberries, and apples. Recent decades have seen a loss of large-scale farming, especially dairy farming operations. Contrary to a declining amount of farmland in town, agricultural employment has actually increased in the past decade from 78 to 136 individuals or 2% of the town's resident labor force. Average wages were reported in 1998 to be $28,223.

While many of the farms in town are owned by small family farmers who own less than 50 acres, the largest acreage is owned by commercial developers.

According to the State Land Use survey of 1991, there were approximately 1,650 acres of land in active agricultural use, or about 17% of the total town area (See map of Agricultural Land, Protected and Unprotected Open Space). A review of this information indicated that the vast majority of this acreage was no longer owned by individuals with a long term interest in farming. Furthermore, the amount of acreage in agriculture is estimated by the assessor to now be around 1,100 acres.

In FY2000, there were approximately 815 acres enrolled in Chapter 61A. Participation in this program by West Bridgewater farmers is rapidly declining; in 1999 there were approximately 1,243 acres of Chapter 61A land, declining from a total of 1,668 acres in 1988 (1999 Open Space and Recreation Plan).

Chapter 61A allows agricultural uses to be assessed at a fraction of their full value for as long as they remain in agricultural use. Landowners participate in this program for a fixed period of time, after which it is taxed at the full value. Should the property be developed or sold within that period, the landowner would owe the full amount of taxes that would have been paid up to that time. Also, if the property is to be sold, the town would have the first right of refusal to acquire the property at market value.

Does development pay? An analysis was undertaken (Open Space Section) of the fiscal costs to the town of a 100 acre parcel in the Residential zoning district if the land was developed for single-family residential use or if the land is acquired for open space. This analysis indicates that the costs to service residential use exceed its value if it was kept as open space.

Table 3-13 Comparison of the Tax Rate Impacts After Development/Acquisition of Land

Land Use Scenario	Tax Rate Increase	Annual Tax Increase for Average Homeowner
Development of 100-acre parcel	$0.32/1000[1]	$54.31
Acquisition for open space of 100-acre parcel under Chapter 61A land	$0.04/1000[1][2]	$6.59
Acquisition for open space of 100-acre parcel taxed at full assessed value	$0.04/1000[2]	$6.59

[1] This does not include the fiscal impact of the repayment of back taxes in the case of the sale of Chapter 61 land.
[2] The fiscal impacts from the purchase of open space vary dramatically with the sale value of the land being purchased and the terms of a bond used to finance the purchase.

3.3 VISION/GOALS

VISION

An economic growth strategy for the Town will lead to the revitalization of Central Square as a New England town center, the management of commercial growth along the major arterials to minimize traffic impacts and the loss of views and open spaces, the development of higher quality destination commercial uses at Route 106 and 24, and an improved mix of industrial uses along Manley Street. In all cases, environmental resources will be protected and the town will strive to retain businesses which will provide higher paying wages, protect environmental resources, minimize traffic impacts, and improve the local tax base.

GOALS/OBJECTIVES

To Revitalize the Town Center

- Carry out the proposed plan to establish a New England style town center which balances new commercial development with the needs for pedestrian circulation, resource protection, and historic preservation
- Establish new zoning permitting a mix of residential and commercial land uses, controlling curb cuts and drive-in uses, locating the buildings at the street front with no set-backs, modifying the dimensional and use requirements, and adopting design standards to ensure a consistent New England village theme to development.
- Work with the Massachusetts Highway Department to carry out a plan to improve traffic flow on Route 106.

To improve the mix of businesses and traffic flow along the major boulevards

- Consider modifying the commercial district zoning to encourage a hierarchy of commercial districts including **neighborhood, general business, town center**, and **highway business**.
- Encourage the development of environmentally sensitive commercial development, i.e., shared curb cuts, protection of views, shared parking, landscaping of parking lots, stormwater protection, lower site coverage in resource areas.

To encourage an improved mix of industrial uses

- Consider modifying the industrial zoning to encourage the development of **planned office parks and limited manufacturing uses**
- Pursue, in concert with Easton and Brockton, the planning of the Coweeset Brook Business Area
- In concert with local business owners and adjacent communities, plan the development of infrastructure(water, wastewater, stormwater, roads) to serve the Manley Street industrial area.
- Encourage higher quality industry to locate in town within the industrial district while protecting natural resources

To protect the Town from the unwanted impacts of commercial and industrial growth

- Consider modifying the industrial zoning where it will impact resource areas
- Prepare a resource protection plan for the Manley Street area
- Modify various local regulations: Zoning Act, Wetlands by-law, Sub-division Control Act
- Adopt new regulations: Stormwater
- Require joint scoping of major projects by all Boards
- Increase fees/retain necessary staff to carry out project review
- Consider strategies to protect Agriculture

3.4 RECOMMENDATIONS

1. Revitalize the Town Center

This project continues to be the primary objective of the Committee. The following steps need to be pursued.

A. Work with the Massachusetts Highway Department on an intersection design for Route 106 and a taking plan for roadway widening
B. Establish a planning sub-committee of property owners and community representatives to develop a Town Center plan
C. Obtain funding to carry out this plan
D. Working with MHD and the abutters, refine the Town Center New England Village concept plan
E. Establish new zoning to carry out the plan

2. Improve the mix of businesses and traffic flow along the major boulevards.

This priority can be accomplished through the work of the Zoning by-Law Review Committee

A. Request that the By-law review sub-committee, working with representatives of the business community, modify the commercial district zoning to encourage a hierarchy of commercial districts including neighborhood, general business, town center, and highway business.
B. Consider zoning changes which will require shared curb cuts, protection of views, shared parking, landscaping of parking lots, stormwater protection, lower site coverage in resource areas, and design review in designated areas.
C. Develop new zoning for the Lincoln Street area to encourage the location of a destination, mixed use shopping mall developed in a manner to protect local resources and enhance the town's tax base

3. Improve the development review process and existing enforcement

Again, as priority # 2 above, this activity can be pursued by the By-law Review Committee

A. Require joint scoping of major projects by all Boards
B. Increase fees/retain necessary staff to carry out project review
C. Improve enforcement of existing by-laws

4. Facilitate the retention and attraction of quality industrial users

There is broad support for addressing this concern; again this is the responsibility of the By-law Review Committee.

A. Organize the local business community to work with the Town on carrying out the following recommendations
B. Direct the Zoning By-law Review Committee to modify the industrial zoning:
   - Establish a planned commercial/office park district at Route 106 and Manley Street
   - Consider the establishment of a limited manufacturing industrial park as recommended in the Coweeset Brook Study for the area currently located at Manley Street and the Brockton town line and currently zoned residential
   - Establish height limits for the industrial area
C. Pursue, in concert with Easton and Brockton, the planning of the Coweeset Brook Business Area
   - Plan the development of infrastructure to serve the industrial areas
   - Identify funding sources
   - Prepare a marketing plan

D. Prepare a resource protection plan for the Manley Street area
   - Modify various local regulations: Zoning Act, Wetlands By-law, Sub-division Control Act
   - Adopt new regulations regarding stormwater drainage for parking areas

5. **Change the zoning of areas no longer considered appropriate for industrial activity**

   A. Consider modifying the industrial zoning along West Street on the east side of Route 24 and Pleasant Street

6. **Protect Agriculture**

While this priority is not opposed, there was limited support from the Master Plan for promoting the economic viability of farming and protecting agricultural lands from development pressures. West Bridgewater farmers lack organization and visibility, however agriculture continues to have an economic presence in the town, and is an important element of the town's unique character. The survey results from the questionnaire indicated broad support for protecting this use.

A. Change zoning to allow for ancillary uses that will support the economic viability of farms
B. Facilitate coordination within the farming community
C. Protect prime agricultural land through land acquisition, purchase by land trust or by encouraging land owners to place conservation restrictions
D. Form a local Agricultural Commission, as in the town of Dartmouth, to work with the farmers and the town to identify incentives which will foster protection and enhancement of local agriculture. Obtain assistance from the U.S. as well as the Massachusetts Department of Agriculture

SECTION 4
NATURAL RESOURCES/OPEN SPACE

NATURAL RESOURCES/OPEN SPACE

EXECUTIVE SUMMARY

The natural environment in West Bridgewater is essential to the quality of life in the town. The agricultural lands and wide expanses of open space define the town's scenic rural character. Tremendous natural resources abound which are of regional importance, most notably the Hockomock Swamp, the largest continuous wetland in New England. Development pressures are mounting, and as land values rise, West Bridgewater stands to loose much of the open space and farm land which define its rural character. The Town has the opportunity to protect its important natural and open space resources from adverse impacts if active steps are taken prior to the encroachment of land use changes which threaten them.

Inventory

The Town of West Bridgewater is characterized by wetlands, woodlands, and flat, gently rolling farm fields and soils which are generally poorly drained and unsuitable for development. This ecology supports a special riverine as well as complementary forested environment of swamps and uplands which provide for the filtering and recharge of the groundwater and the maintenance of habitats for birds, animals and plants, of which several endangered species can be found in the town. This ecosystem is underlain and maintained by a single large, highly productive aquifer. The groundwater from this aquifer feeds three major ponds, six brooks, and numerous wetlands and small ponds, as well as providing drinking water to the town's residents and businesses. Together these natural resources contribute to the economy, natural setting, scenic rural setting and quality of life in West Bridgewater.

Issues

Many of the town's important natural resources are not permanently protected, and are likely be threatened by development in the future. While poor soils have constrained development, enhanced septic systems and continued development pressures could expand the areas with development potential, leading to a substantial increase in the town's population. Under a projected build-out, valuable resource areas would easily be lost or become overwhelmed by the pressures of development.

As one might expect in a rural area with limited public resources, the natural environment is not adequately protected by the existing set of regulations. One third of the 9,354 acres which comprise West Bridgewater are unprotected developable land. A significant percentage are actively farmed agricultural lands, which help to define the town's character. Ponds, riverine and upland habitats, vernal pools, wetlands, and other sensitive and scenic environmental areas are likewise not sufficiently protected. Possibly of greatest concern is the protection of the Town's water resources. Without appropriate development controls, these will become increasingly at risk from pollutants as increased traffic and developed land uses contribute contaminants through runoff and septic systems.

Goals

Six goals have been established to address the Town's concerns with conservation, resource protection, preservation of the town's rural character, and providing improved recreational facilities. Specific objectives relating to these goals become the basis for the open space plan.

Recommended Natural Resource, Open Space, & Recreation Plan

The Town needs to pursue the following three broad strategies ranked in order of importance in order to achieve the plan's goals. There was broad consensus amongst the Master Plan and Open Space Committees as well as the Conservation Commission that public awareness and the development of knowledge about environmental issues was the key to developing support for enforcement and acquisition.

1. PUBLIC AWARENESS AND COALITION BUILDING:

CRITICAL RESOURCES WHICH NEED PROTECTION

The Sensitive Natural Resource Diagram (Map 4-7) identifies the river corridors, related wetland, habitat, and public water supplies as the critical resource areas needing protection. Public awareness must be built around the important functions performed by these resources.

VISION PLAN

The West Bridgewater River Resource and Recreation Protection Vision Plan (Map 4-6) has been prepared to serve as a guide for the protection and expansion of open space and recreation resources. This Plan establishes priorities first, for resource protection, second for acquisition of open space and recreation areas, and third, for retaining important agricultural resources. This vision must be refined so as to build support for open space, recreation, and resource protection.

COALITION BUILDING AND COMMUNICATION: OPEN SPACE COMMITTEES

There is broad agreement that the Conservation Commission and Open Space Committee need to build coalitions with other town interests such as are represented on the Master Plan Committee. More opportunities to work together must be fostered.

2. PROTECTION OF RESOURCE AREAS

A number of regulatory strategies have been proposed to protect critical resources. These include both amendments to existing as well as new bylaws and regulations:

- Joint scoping of projects by various Boards.
- Protect water quality:
- Reform stormwater regulations (Zoning, Subdivision Regulations, BOH, CC)
- Address wastewater issues
- Nitrogen/Phosphorous Loading: Zoning and/or Board of Health
- Protect habitat areas: Establish a Resource Protection District, reform CC and Planning regulations
- Development of strategies to preserve farmland and open spaces: cluster subdivisions
- Prepare a resource protection plan for the Manley Street Industrial area
- Increase buffers to protect uplands related to resource areas

3. ACQUISITION OF OPEN SPACE PRIORITY PARCELS

Third, the town needs to establish priorities for open space protection, e.g., resource areas, agricultural areas, future sites for recreation, historic and scenic resources. Appendix 4-7 includes a list of 13 critical open space/resource sub areas identified which cover some 1,000 acres as priorities in the Open Space Plan. An evaluation should be undertaken to establish parcel priority. A matrix has been included to assist in this process. Given other priorities, (agriculture, recreation, scenic and historic, this list might need to be expanded.) Due to projected population growth, the Town may need to acquire 100 acres for active recreation purposes. In terms of protecting farmland, some percentage of the remaining 815 acres which are still in Chapter 61A protection, might receive additional consideration for protection.

Table 4-1
Regulations Impacting Natural Resource Areas

	Zoning	Subdivision Regulations	Conservation Commission Bylaw		State Regulations	Federal Regulations
Wetlands		-	100' buffer (flexible) 50' (firm)	150' buffer for septic systems	Wetlands Protection Act: 100' buffer (flexible)	Clean Water Act: Devel. subject to EPA review
	ACEC regulation to minimize impervious surface, require cluster, buffers		200' buffer (flexible) 100' buffer (firm)	Increase buffer to 200'	Stronger enforcement by Con.Comm.	
Rivers	-	-	100' buffer (flexible) No alteration of resource (firm)	150' buffer for septic systems	River Protection Act: 200' buffer (flexible)	CWA: Development subject to EPA review
			300' buffer (flexible) 100' buffer (firm)	Increase buffer to 200'		
Ponds	-	-	100' buffer (flexible) No alteration of resource (firm)	150' buffer for septic systems		CWA: Development subject to EPA review
			200' buffer (flexible) 100' buffer (firm)	Increase buffer to 200'		
Banks			100' buffer (flexible) 50' (firm)			
Habitats & Ecosystems	-	Aavoid disturbing habitats & natural features	-	-	Sensitive resources designations (development with state/federal funding subject to agency review)	
			Vernal pools protection, habitat protection		Certify vernal pools, designate ACEC	
Flood Areas	Within FEMA Zone A, no development that results in increased flood level.	-	Land subject to flooding in 100 year storm (firm)	-		FEMA: Flood Insurance Program, standards for minimum local regulation
Groundwater	Overlay districts, regulates development near public well sites and in contributing areas.	Drainage (storm-water) and sewerage regulations		Septic system design standards, min. 200' from wellhead for septic	Title 5: Buffer and performance requirements for septic systems. Aquifer Protection: Zone 2., limited protection	Safe Drinking Water Act: Regulates drinking water contaminants, review of federally funded projects in Sole Source Aquifer
	Stormwater performance standards	Stormwater performance standards	Stormwater performance standards	Max nutrient loading and Stormwater standards	Use actual recharge zones instead of radius for wellhead protection.	
Other		Req. for trees	-	-		

Existing
Recommended

Other: Recommended: Major Site Plan review, Improved cluster, Reduce boundaries of Industrial Districts

Firm = No development permitted, Flexible = Subject to review of regulating agency

4.1 INVENTORY[1]

NATURAL RESOURCES

Situated in the low-point of the regional watershed with elevations rising towards the northeast in the range of 80 to 100 feet above sea level, West Bridgewater is characterized by low flatlands, separated by gentle hills and spotted with wetlands throughout the town.

Soils and Elevations

- Erosion from the natural meander of rivers is much more of a factor than erosion from steep slopes, which are virtually absent in West Bridgewater.
- Due to West Bridgewater's glacial history, the soil composition tends to be erratic and can vary tremendously in short distances. The variations require on-site sampling to obtain accurate identification of soil suitability.
- The soils are well suited for agriculture, but in many places are unsuitable for septic systems because they are poorly drained. Despite limitations, however, development may still take place in many areas if property values are sufficient to make feasible the use of alternative technologies or shared treatment systems.

Surficial geology and soils analysis provide two methods for classifying soil quality, resulting in similar conclusions regarding the capacity for development in areas throughout the town.

Surficial Geology

Unsorted glacial till, a mixture of silt, sand, clay, and gravel comprise up to 45% of the surficial deposits. Till is typically unpermeable, with seasonally high water tables that can cause septic systems to fail, and an abundance of rocks, stones and boulders which make construction of playing fields and structures difficult.

S*tratified beds of fine sand, silt and clay* cover approximately 25% of the town. Slow permeability often causes water to stand over silt and clay deposits, making them extremely poor for development and better suited for conservation land.

Fine to coarse sand deposits cover another 25% of the town. These soils are well drained, and typically form level terrain. Much of this land has been developed for residential or commercial uses because of its minimal limitations. Approximately 5% of the town, an area surrounding the intersection of Routes 24 and 106, contains coarse sand and gravel deposits, which are ineffective at filtering out pollutants before reaching the aquifer.

Bedrock: Up to 100 feet of glacial till and outwash cover the vast majority of bedrock in West Bridgewater. Outcrops of bedrock are extremely rare, posing few development constraints.

Soils

West Bridgewater contains a varying pattern of soil types as classified by the Natural Resources Conservation Service (NRCS). These have been placed into four hydrologic groupings based on permeability. (Hydrologic groups are used in equations that estimate runoff from rainfall.) The soils in these groupings also have similar development potential. See Map 4-1.

[1] The Town's 1999 Open Space and Recreation Plan provides an extensive description of the town's natural environment, from which much of the following inventory is derived.

"A" Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well drained to excessively well-drained sands or gravels. Soils are most closely associated with aquifer recharge. These soils have high potential for development.

"B" Soils having moderate infiltration rates, consisting chiefly of moderately deep to deep, moderately well drained to well drained soils with moderately fine to moderately coarse textures. Good development potential if mounding or other septic treatment alternatives employed.

"C" Soils having slow infiltration rates, consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine textures. Seasonally high water tables and septic constraints limit development capability.

"D" Soils having very slow infiltration rates, consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. Very severe constraints for development.

Water Resources

The higher elevations to the north drain into West Bridgewater, creating a river system that is part of the Taunton River watershed. See Map 4-2, Water Resources.

West Bridgewater's ponds, rivers and wetlands are a treasure and account for much of the appeal of the area. Besides providing a plentiful supply of drinking water and opportunities for hunting, swimming, boating, water-skiing, skating and fishing, these resources are the primary habitat for a rich array of plants and animals.

Rivers

West Bridgewater is in the Taunton River Basin; all rivers eventually empty into the Taunton River in Bridgewater. Rivers and brooks in West Bridgewater generally have gently sloping banks and large floodplains.

The *Town River* begins at Lake Nippenicket in the Bridgewater portion of the Hockomock Swamp and flows northeasterly through West Bridgwater. It drains most of the town, and its adjacent meadows provide some of West Bridgewater's most handsome and characteristic landscape. The Town River also provides West Bridgewater with a link to the Wampanoag Canoe Passage.

Coweeset Brook runs parallel to the town's western boundary and flows into the Hockomock River in the southwestern part of the town.

Hockomock River and *West Meadow Brook* flow into the Town River along the town's southern boundary at separate points.

Salisbury Plain River flows through the northeastern corner of town.

Willow Brook, One-Mile Brook, Black Betty Brook and *Bragas Brook* are intermittent streams that begin in Brockton and flow through the northern part of town into the state forest.

- According to the 1978 Old Colony Region Section 208 Regional Wastewater Management Plan, surface water quality in West Meadow Brook meets the goals of fishable/swimmable waters.

- Water quality problems were observed in other streams caused by agricultural runoff in the Hockomock River, failing septic systems and agricultural runoff along the Town River and Coweeset Brook, and effluent from the Brockton Sewage Treatment plant, which historically

Map 4-1

Soil Quality

Plymouth County NRCS

"A" - Soils with high development potential

"B" - Soils with potential for development if septic constraints overcome

"C" - Soils with severe development constraints

"D" - Soils with very severe development constraints

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

caused significant odor problems in the summer months. These threats still exist, although the problem of effluent from the Brockton sewage treatment plant has been alleviated by expanded treatment and cleanup programs.

Ponds

Of the numerous small ponds in West Bridgewater, the three largest are Mill Pond, West Meadow Pond, and Town River Pond. These three ponds lie within dammed river systems. Access is limited to most of West Bridgewater's ponds.

Mill Pond is north of Crescent Street and south of West Meadow Pond. Its elevation is 75feet, maximum depth is 7 feet, and the pond covers 8 acres. Much of the pond is town-owned but the spillway and dam area at the base of the pond is privately owned. Access is limited to one location near the southern tip of the pond.

West Meadow Pond, which lies within the state forest directly north and upstream of Mill Pond, is at an elevation of 85 feet, with a maximum depth of 5 feet and comprises 25 acres. It is used for boating, fishing, ice fishing, and skating. It is buffered by the state forest and an extensive wetland system, providing filtration from agricultural or road runoff. Access is limited to two poorly marked entrances to the southwest.

Town River Pond is located in the southeastern section of town. Its elevation is 45 feet and covers 18 acres, with a town-owned canoe ramp on the western side of the pond (Reynolds Landing). The proximity to the commercial center of town, Routes 28 and 106, and a new 18-hole golf course with virtually no buffer area between the golf course and the wildlife puts the Town River Pond in danger of contamination from pesticide, herbicide, and fertilizer runoff.

Wetlands

Approximately 30% of West Bridgewater is composed of wetlands which are found throughout low-lying areas and in many locations with poorly drained soils. These wetlands are important to the town as wildlife habitat, for water recharge, and to reduce flooding in developed areas downstream.

- There are many wetlands of varying sizes throughout the town, but the largest are concentrated in the southwestern part of the town, comprising part of the Hockomock Swamp, and the West Meadow Wildlife Area in the north.

Hockomock Swamp is the largest swamp in New England

- Covers some 16,900 acres and extends into Raynham, Easton, and Bridgewater.
- Recharges the underlying aquifer and drains into the Town River, which flows through the center of West Bridgewater.
- Was designated am "Area of Critical Environmental Concern" (ACEC) by the Department of Environmental Management.. Approximately 1,189 acres lie in the southwest quadrant of West Bridgewater, of which 889 acres is owned either by the State or the Town.
- Much of the area has been zoned for industrial use. Although protected under the Massachusetts Wetlands Protection Act and by its ACEC designation, outlying parts of the wetland could potentially be impacted by future development.

Vernal pools are isolated wetlands that fill with water only during the west test times of the year. These pools are critical habitat for frogs, salamanders, and other amphibians. Although many are estimated to exist in West Bridgewater, only two have been certified by the Massachusetts Division of Fisheries and Wildlife.

Map 4-2

Water Resources

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan
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- Water Resource Protection District (Zones II and III)
- DEP Zone IIs (Wellhead Protection Areas)
- Wetland
- Flood Zone (FEMA)
- Surface Water
- Public Water Supply Points
- Site of Potential Water Source (Unprotected)

Floodplains

Areas subject to flooding in West Bridgewater are typically found along the rivers and brooks in town. These areas are defined by the Federal Emergency Management Agency (FEMA). Protecting the floodplains, including wetlands, is integral to protecting West Bridgewater from serious flood damage. These areas serve to retain storm water during and after precipitation and snow melt, and often coincide with wetlands.

Any development within the floodplain that causes a loss in flood storage must be compensated with flood storage elsewhere within the flood plain so the water retaining capacity is not lost.

Groundwater

The town's high-quality groundwater is one of the most important elements of West Bridgewater's infrastructure.

The citizens of West Bridgewater depend solely on groundwater as a town water source. A single aquifer lies beneath approximately 65% of the town. Residences and farms threaten the aquifer through the use of garden and lawn herbicides, pesticides, and fertilizers that can contaminate the water supply. Road salt and effluent from septic systems containing nitrogen and heavy metals could also be serious threats to the aquifer.

- In 1996, Zone II overlay districts were created around the cluster of 5 well sites in the northeastern part of town and the Manley Street Well located west of Route 24. The Zone II overlay districts protect the well recharge portions of the aquifer by not allowing commercial enterprises that are potential sources of groundwater contamination such as car wash, dry cleaning business, or any type of outside fuel storage.
- Reliance on the Manley Street Well has decreased significantly due to the proximity of its recharge area to Route 24 and the industrial-zoned portion of town. The recharge area for the five well sites in the northeastern portion of the town includes densely populated areas.
- The Roberi farm site was purchased by the town for use as a new well site. A Zone II overlay area has not yet been delineated for this new well. High density housing is located around this new well site, which emphasizes the need for heightened protection within this recharge area.

Habitats

Open fields, woodlands, forested wetlands, and emergent wetlands comprise approximately 65% of the town of West Bridgewater today.

The town's waters, wetlands and uplands provide homes to numerous species of animals, which in turn are the basis of recreational opportunities for West Bridgewater's residents. The 1999 Open Space and Recreation Plan provides a detailed description of vegetative and animal habitats throughout the town. Map 4-3, Habitats and Ecosystems, depicts areas in West Bridgewater which have been identified as sensitive natural habitats, as well as sites which are thought to be home to vernal pools or rare and endangered wildlife species.

With the exception of some wetlands, most of the present vegetation is second growth. The various kinds of vegetation offer high quality recreational opportunities, scenic value, soil stability, as well as ideal habitats for wildlife which can be a benefit to recreational hunters.

Much of West Bridgewater is privately owned woodland, which provides a habitat for numerous species of animals and birds, as well as recreational opportunities for those who have access. This woodland consists of dry upland sites, mesic sites, and wooded swamp.

Rare and endangered plants include the Long's bulrush and Atlantic White Cedar swamp community. Long's bulrush depends on fire and seasonal low moisture for flowering, but is threatened by changes in hydrology, lack of natural fires, and competition from the invasive exotic purple loosestrife. Atlantic white cedars provide valuable habitat to many threatened animal species. The Massachusetts Division of Fish and Wildlife recommends no clearing or filling of Atlantic white cedar swamps.

- West Bridgewater retains a significant amount of productive wildlife habitat, largely because of the pockets of forested, shrub, and emergent wetland habitats found in proximity to the streams scattered throughout the town. The mixture of wetlands, mature second-growth forest, farmland, and abandoned farmland in various stages of regrowth results in a large amount of critically important "edge" habitat.

Edge habitat is where two habitat types meet and encourage larger wildlife populations of greater species variety.

Four rare and endangered animal species that have been identified in West Bridgewater include the king rail bird, the blue spotted salamander, spotted turtle, and Hessel's hairstreak butterfly. These species inhabit wetland habitats for part or all of their life cycles.

Habitat fragmentation, which is the leading source of plant and animal species extinction, has occurred in West Bridgewater where development such as housing, industry, and agriculture create isolated islands of wildlife habitat. Wildlife corridors prevent habitat fragmentation by connecting habitat areas along natural connections such as river ways or fields. Wildlife corridors also create important recreational opportunities for humans.

The Hockomock Swamp and other wetlands are home to several endangered species, and serves as critical habitat and vital water resource for wildlife. Vernal pools and "Riparian Corridors" along rivers and streams provide habitats for many rare species of plants and animals. Other rare endangered species which have not yet been identified may also inhabit the town.

OPEN SPACE & RECREATION

See Map 4-4, Open Space and Recreation Facilities.

Protected Open Space

Approximately 2,445 acres of land in West Bridgewater are held by town or state agencies for open space, recreation, wildlife habitat, water supply protection, or educational purposes. Another 941 acres enrolled under the state's Chapter 61, 61A, and 61B programs is discouraged from development, but not protected. Property owned or managed by the Executive Office of Environmental Affairs is the most well protected land, and is not at risk of a change in use. Land owned or managed by town agencies or municipalities is only moderately protected and can more easily undergo a change of use.

Map 4-3

Habitats and Ecosystems (Regulated Areas)

2000 0 2000 4000 Feet

NHESP 1999-2001 Massachusetts Certified Vernal Pools

Areas of Critical Environmental Concern

NHESP 1999-2001 Estimated Habitats of Rare Wildlife: Use with Wetlands Protection Act
NHESP 1999-2001 Priority Habitats of State-Listed Rare Species: NOT equivalent to 'Significant Habitat' as designated under the Massachusetts Endangered Species Act

Town of West Bridgewater Master Plan

Prepared by Larry Koff & Associates

Table 4-2
Permanently and Partially Protected Open Space

Land	Area	Protection Level	Ownership
West Meadow State Forest	266.7	Protected	State
Hockomock Swamp	1,024.9	Protected	State
Other State Owned Land	200.5	Protected	State
Conservation Land	105.1	Protected	Town
Water Department	540.0	Protected	Town
Subtotal Permanently Protected	**2,137.2**	**22.8% of Total Town Area**	
School Department	76.4	Moderate	Town
Park & Forestry Department	26.4	Moderate	Town
61A Agricultural Land	814.7	Temporary	Private
61B Recreation Land	82.7	Temporary	Private
61 Forest Land	43.9	Temporary	Private
Other Privately Owned Land	2,085.8	Unprotected	
Subtotal Not Permanently Protected	**3,129.9**	**33.5% of Total Town Area**	
Total	**5,261.1**	**56.3% of Total Town Area**	

State-Owned Land

The Commonwealth owns two major areas in West Bridgewater, including the State Forest in the north (442 acres), the Hockomock Swamp in the southwest and south central sections (1,030 acres). Two additional sites in the eastern part of the town total 21 acres. These areas are used for hiking, cross-country skiing, wildlife habitat, wetlands, and flood water retention.

Town-Owned Land

The Town of West Bridgewater owns approximately 105 acres of conservation land, much of which is located in or near Hockomock Swamp and the State Forest. The Water Department manages 320 acres around the town's wells, including the Matfield Street Well area, the recently acquired Roberi Farm area, and 200 plus acres surrounding the Cyr Street Well. The Cyr Street land is used for recreational purposes such as hiking and cross country skiing.

Unprotected Open Space

Approximately 34% of the total land in West Bridgewater is unprotected open space most of which is threatened by development.

Much of the unprotected open space is simply vacant, undeveloped land. Although wetlands and soil quality pose constraints in some areas, the development in unprotected areas could have a tremendous impact on the town.

See Map 4-5, Developable Open Space.

A community survey conducted for the 1999 Open Space and Recreation Plan noted that *agricultural lands form some of the most cherished scenic views, contributing significantly to the overall character of the town.* There are approximately 1,650 acres of land in active agricultural use, or about 17% of the

Land used for agriculture represents a significant portion of unprotected open space. A recent survey of the owners of agricultural land indicated that, with the exception of a few family farmers, the vast majority of these owners have NO long term commitment to farming.

Map 4-4

Open Space & Recreation Facilities

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

Protected Open Space

- Town of West Bridgewater
- Private, Nonprofit
- Private, For Profit
- Commonwealth of Massachusetts
- Bay circuit trail.shp

total town area. Traditionally the town's farms have produced dairy products, corn, vegetables, strawberries, blueberries, flowers,and apples. Recent decades have seen a loss of large-scale farming, especially dairy farming operations. While most of the agriculture land is owned by over 50 corporations and individuals who view agriculture as an interim activity, there still remains a core group of individuals who consider themselves farmers. See Appendix 4-1.

In FY2000, there were approximately 815 acres enrolled in Chapter 61A. This statute allows agricultural uses to be assessed at a fraction of their full value for as long as they remain in agricultural use. Landowners participate in this program for a fixed period of time, after which it is taxed at the full value. Should the property be developed or sold within that period, the landowner would owe the full amount of taxes that would have been paid up to that time. Also, if the property is to be sold, the town would have the first right of refusal to acquire the property at market value. Participation in this program by West Bridgewater farmers is rapidly declining; in 1999 there were approximately 1,243 acres of Chapter 61A land, declining from a total of 1,668 acres in 1988 (1999 Open Space and Recreation Plan).

Chapters 61 and 61B are similar programs to protect forestry and recreational uses. In FY2000 there were about 44 acres and 83 acres enrolled in these programs, respectively. Most of these areas could potentially be developable.

An additional 2,086 acres of open space and agricultural land are not protected under any program. Out of these, about 1,568 acres is classified by the assessor as developable or potentially developable land.

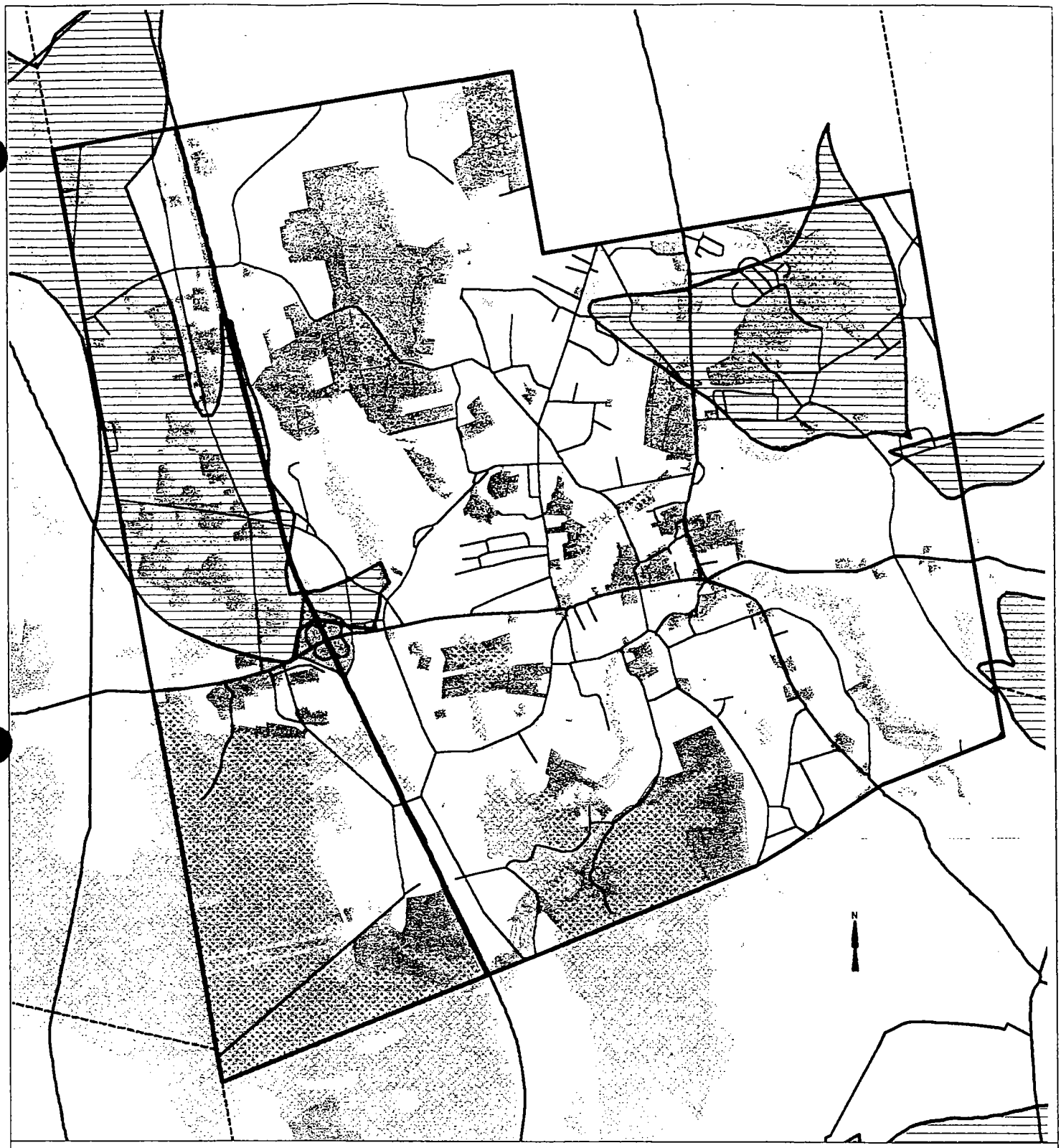
Recreation Facilities

The 1999 Open Space and Recreation Plan includes an inventory of publicly-owned lands in West Bridgewater that are of recreation interest. In addition to passive recreation opportunities on many of the protected open space parcels described above, the Town Forestry and Parks Department manages a total of 28.4 acres of land with active recreational facilities. These include the Town Hall area Ballfield and Gazebo, War Memorial Park, the Friendship Park playground, and the Lions Club Ice Skating Rink. In addition, the School Department manages 76.4 acres of land used for organized sports and playgrounds at the town's four school complexes. See Map 4-4, Open Space and Recreation Facilities.

The National Recreation and Park Association suggests that a town like West Bridgewater, with a population of about 6,600, should have somewhere between 40 and 70 acres of developed park land, divided into units of varying sizes and distances from residences, equipped with playgrounds, playing fields, trails, beaches, etc. The town currently has about 105 acres for this purpose.

Bay Circuit Trail

The Bay Curcuit Trail was conceived in 1929 by Charles Eliot, Jr., an apprentice to Frederick Law Olmsted. The concept was to have a series of parks and conservation land linked by continuous trails, waterways, and scenic drives from the North Shore to Duxbury Bay. These trails would provide access to the heritage and character of the New England countryside. Over 50 communities, including West Bridgewater, are intersected by the Bay Circuit Trail, which is over 100 miles long. *However, there is a 16-mile break in the Bay Circuit trail in the Bridgewaters due to a lack of continuous, designated, year round trails.* The completed trail in Easton needs to be connected to a trail through West Bridgwater and into East Bridgewater to begin to close the gap and complete this portion of the circuit.



Map 4-5

Developable Open Space

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

Development Constraints

- Existing Development
- Intensive Development
- Protected Open Space
- Wetland
- Water

Potentially Developable Land

- Agriculture
- Vacant Land
- Groundwater Resource Area

Wampanoag Canoe Passage
The Pilgrim Resource Conservation and Development Area Council has identified this passage as an inland waterway route used by the native Americans. The canoe passage is 72 miles long, beginning at the North River in Scituate, and ending in Narragansett Bay near Fall River. The Taunton, Matfield, and Satucket Rivers compose a major portion of the canoe passage.

REGULATORY AND ORGANIZATIONAL FRAMEWORK

Table 4-1 in the Executive Summary provides a summary of local, state and federal regulations pertaining to natural resource protection. Many protections are overlapping, while some natural resources receive very little protection at all. In addition to government oversight, West Bridgewater is fortunate to benefit from the work of private organizations which contribute to conservation efforts within the region. Some of the following regulations are explained at greater length in Appendix 4-2

Federal Regulations

Safe Drinking Water Act
Under the Safe Drinking Water Act, the Environmental Protection Agency (EPA) regulates contaminants in the nation's drinking water.

Clean Water Act
The Federal Clean Water Act protects all wetlands and surface water bodies from degradation through development or other activities. Activities which trigger the need for a site-specific permit include those which involve the loss of at least 5,000 square feet of wetlands or which impact Outstanding Resource Waters or Rare and Endangered Species Habitat. The EPA reviews all permit applications and investigates cases where proper permits have not been obtained. Those found in violation of the Act are subject to fines.

State Regulations

Aquifer Protection
Aquifers identified by USGS hydrological survey are defined under the Massachusetts Contingency Plan (MCP) as Potential Water Supply Areas. Under DEP regulations, hazardous waste sites must be cleaned up to meet drinking water standards. See Map 4-6 for the location of these areas in West Bridgewater.

- The DEP has established *Zones I and II* to protect from contamination public water supply sites throughout the state. Within these zones are located public water supply points of cities and towns, and the boundaries of the aquifer and recharge areas which supply public water

Rivers Protection Act
The Rivers Protection Act, effective in August, 1999, protects perennial rivers and streams from inappropriate development. Applicants proposing work in *a riverfront area* (the area of land within 200 feet of the river's annual high-water line) must obtain a permit from the local conservation commission or from DEP. Projects must meet performance standards which require that there are *no significant adverse impacts* on the riverfront area and that there are *no substantially equivalent economic alternatives* to the proposed work with less adverse effects.

The current method of determining between perennial and intermittent streams is by referencing USGS maps, which have proven to be inaccurate in many instances. More careful observation and mapping should be completed to better understand the flow of rivers and brooks in West Bridgewater.

Intermittent streams are not protected under the River Protection Act unless connected to a delineated wetland.

Wetland Protection Act

The Wetland Protection Act requires that a notification of intent be submitted to the local Conservation Commission before dredging or filling activities may take place in any wetland or riverfront area. A public hearing is then held, after which the Conservation Commission may grant approval for the proposed activity, or may impose conditions in order to protect the wetland resource.

Sensitive Environmental Areas

Several state programs offer varying levels of protection to sensitive environmental resource areas. Some of these types of resources have been identified in West Bridgewater, as shown on Map 4-3.

- *Areas of Critical Environmental Concern (ACEC)* have been designated by the Secretary of Environmental Affairs of Massachusetts. ACECs are administered by the Massachusetts Department of Environmental Management (DEM), which coordinates with private citizens, communities, environmental organizations and other state agencies.

ACECs are used to protect surface and groundwater quality, habitat values, storm damage prevention or flood control, historic and archeological resources, scenic and recreational resources, and other natural resources.

All federal, state, and local agencies, as well as private parties involved in any development or permitting activity other than a single family home must file an Environmental Impact Assessment with DEM to ensure that activities which would impact the ACEC are carried out as to protect the natural resources.[2]

Municipal boards and commissions are encouraged to implement local regulations and actions to further protect and sustain ACEC areas.

- *Priority Sites of Rare Species Habitats (PSRH)* are based on rare species population records maintained by the Natural Heritage & Endangered Species Program (NHESP).

PSRH represent estimations of the most important natural communities and state-listed rare species habitats in Massachusetts.

Habitat sites are selected for

- Biodiversity significance,
- Global and state rarity of the species or communities present
- Quality of those species populations or communities.

There are five levels of significance: outstanding, very high, high, moderate, and of general biodiversity interest. Priority sites are not afforded any protection by the state government,

[2] Procedures for ACEC designation and the general policies governing the effects of designation are contained in 301 CMR 12.00. For more information on the ACEC datalayer, contact the ACEC program at 617-727-3160 ext. 552 or 554.

but the rare species that reside in these habitats are protected by the Massachusetts Endangered Species Act.

- *Vernal Pools* are wetland areas that are intermittently submerged at certain times of the year. These sites can be certified through NHESP. Although only two vernal pool sites have been certified in West Bridgewater to date, a substantial number of potential sites have been identified (see Map 4-3). Certified vernal pools are protected under the Massachusetts Wetlands Protection Act.

Local Regulations

Watershed Resource Protection District

Three local zoning overlay districts are defined:

- Zone I, the area within 400 feet of an existing public well,
- Zone II, the area that contributes water to a public well
- Zone III, the recharge area for the public well.

The regulation prohibits the storage and disposal of hazardous wastes within Zones I and II, and limits such activities in Zone III. Most other uses are permitted by right or by special permit in Zones II and III, but are prohibited in Zone I. Special permits may be granted by the Planning Board or the Board of Health, depending on the use. Within Zone II, most commercial uses require a special permit from the Planning Board. In Zones II and III there is no restriction of residential uses or densities beyond what is permitted in the underlying district.

Flood Plain District

Section 4.5 of the Zoning Bylaw pertains to the Flood Plain District. This district is defined as all areas of special flood hazard identified as Zone A on FEMA maps. Within the flood plain, no uses are permitted which would result in an increase in flood level during the occurrence of a 100 year flood. Mobile homes and trailers are prohibited.

Conservation Commission Bylaw

West Bridgewater's Conservation Commission Bylaw/Rules and Regulations is intended to protect wetlands, water resources, and adjoining land from adverse impacts. No alteration is permitted within ponds, rivers and streams, 100 year flood plain, or within 50 feet of a wetland or bank (firm). Activity upon adjoining land within 100 feet of these areas, including removing, filling, dredging, building upon, or otherwise altering the land, requires approval by the Conservation Commission (flexibile). The definition and the requirements for protected buffer areas are not clearly stated within the bylaw. To date, these resources have not been adequately mapped. See Appendix 4-3 for a discussion of the role of buffers.

Buffer requirements are described as "firm", meaning that development is prohibited within the defined area, or "flexible", meaning that development is subject to review by some

Organization

Local Government

The Open Space Committee and various town boards and staff are charged with protecting resources.

- The Open Space Committee was responsible for working with consultants in developing the town's Open Space Plan. This committee is now working on identifying priority actions to implement.

- Recreation Activities are the responsibility of two volunteer organizations and the School Department.. Youth Athletics and Youth Football provide coaches, funding, and organizational support for Soccer, Little League, and Football. The Booster's Committee assists the School Department with fund raising and volunteers to assist with the school sport program.
- The following town staff are charged with enforcing the local regulations which are in place to protect the natural resources: Board of Health Agent, Building Inspector, Conservation Commission Agent, Water Department.
- The following additional Staff have a role in issues which impact the use and quality of the town's resources: Water Department, Highway Department, Forestry Department.

Private Institutions

The Natural Resources Trust of Bridgewater (NRTB) is dedicated to the preservation of natural resources in Bridgewater and neighboring communities. This organization promotes a regional approach to natural resources and open space planning through the participating communities focused upon the protection of water resources. A key function of the NRTB is grassroots education to inform the public of the value of protecting the local environment. As a land trust, NRTB is a private not-for-profit organization which can accept tax-deductible donations.

Bridgewater State College is another regional resource which provides technical expertise and volunteers to support environmental protection. Faculty have collected data on water quality in local rivers and streams, and other natural resources.

4.2 NEEDS/ISSUES ANALYSIS

The following issues were identified in the 1999 Town of West Bridgewater Open Space and Recreation Plan as well as in the analysis of the various elements of the master plan including economic development and public facilities. The major concerns relate to protection of critical resources including water, agricultural land, rivers and ponds, habitats and wetlands and the provision of protected open space and recreation areas.

Priority Issues:

1. Resource protection:
   - Water
   - Wetlands
   - Rivers, ponds
   - Habitats
   - Agricultural Land
2. Provision of :
   - Protected open space
   - Recreation facilities

Water Resources Protection

Surface water and groundwater resources are closely related, and both are threatened by the same potential sources of pollutants. Water flows between groundwater and surface water bodies, while wetlands provide a filter that helps to protect the purity of surface and ground waters. Additionally, flood storage in flood plains and wetlands is an irreplaceable natural flood control system and should be protected.

In addressing issues of future growth, protection of the Town's water supply is of utmost importance.

Contamination of local water supplies is an ongoing problem in communities such as West Bridgewater with poor soils, no public sewer system and on-going development which may contaminate or disrupt the flow of water that feeds resource areas. The Town has experienced problems from both "point sources", i.e, specific sites where polluting land uses have occurred and "non-point sources" such as stormwater run-off. As West Bridgewater is in the Taunton River Basin, any water contamination that happens in West Bridgewater not only affects the local water supply, but the supplies down stream as well.

Point Source Contamination

The Town of West Bridgewater, with the assistance of DEP, has or is in the process of addressing the known point sources of contamination. These include:

- Ten significant contaminated sites, four rated as "Default Tier 1B", one rated "Tier 1C", and five rated as "Tier 2"[3].
- The town landfill is located above which (?), the aquifer that supplies West Bridgewater with drinking water. It has been capped and lined.
- The Brockton Sewage Treatment facility has been expanded and upgraded to prevent pollution downstream in Coweeset Brook.

Non-Point Source Contamination

The two greatest non-point source threats to groundwater and surface waters are septic treatment facilities and stormwater. Contamination from these sources might include solid particles, bacteria and viruses, metals, volatile organic compounds, and nutrients. These contaminants may leach through the soils or they may be deposited into surface water through runoff or discharge pipes. Such pollutants can affect drinking water quality and the ecological function of wetlands, ponds and streams.

[3] Tier classification is assigned based upon factors such as a site's complexity, type of contamination, and potential for human or environmental exposure. Some sites are automatically classified as Tier 1 sites if they pose an immediate hazard, affect public water supplies, or miss regulatory deadlines.

- Title V septic systems, even if operating properly, do not remove nitrogen or heavy metals from the sewage effluent that goes into the ground. Excess nitrogen can cause eutrophication and lower the amount of dissolved oxygen in rivers and ponds, having a detrimental effect on aquatic plants and animals. Malfunctioning septic systems have proved to be a source of surface water contamination in the past, as wastes enter the ground and aquifer without filtration.

> The 1999 Open Space and Recreation study reported that 32% of recently tested septic systems failed to meet Title V requirements.

- Stormwater run-off which includes pesticides, fertilizers, herbicides, and other chemicals used by homeowners and farmers are another non-point source of contamination. The nutrients and heavy metal compounds from these chemicals are hazardous to aquatic plant and animal species and contribute to eutrophication of surface water. When these materials reach the ground water supply they can pose serious health risks to humans. Additionally, the use of road salts to melt snow and ice in winter can increase the salinity levels of surface and subsurface water bodies, which can adversely affect plants and animals in freshwater environments.

The town's Subdivision, Zoning, Conservation Commission, and Board of Health regulations need up-grading to adequately address these concerns. Best management practices (BMPs) and model bylaws should be considered.

Alternative Wastewater Treatment Strategies

The Town currently relies on DEP's Title 5 regulations to protect groundwater contamination. Due to the difficult soils and large percentage of older homes with antiquated systems, the Town will need to undertake additional studies to identify alternative strategies for addressing current and projected needs. Consideration should be given to the town adopting a Septic Management Program. The Town would establish an inspection program and up-grade systems which needed replacement. Homeowners would be charged a betterment fee with a 10-20 year payback.

> One of West Bridgewater's challenges in the future will be to figure out how to provide a town-wide septic management program as well as to provide in limited areas needed wastewater infrastructure.

Stormwater Regulations

The Federal Government is requiring states and municipalities to update their stormwater regulations starting in FY 2003. In order to meet this deadline, the Town needs to establish a working committee of various departments concerned with storm water run-off. These departments include Highway, Water, Planning, Conservation, and Health. Issues have to be identified, surveys undertaken of existing conditions, and a plan developed which will correct illegal drains and connections. The Planning Board, Conservation Commission, and Board of Health, furthermore, need to adopt a similar Model By-law to ensure a consistent regulatory strategy.

Protection of Resource Areas

Resource areas include Wetlands, Vernal Pools, Habitats of Endangered Species, Ponds, Rivers, and the Huckomock Swamp. These resources are offered limited protections by the current regulations of the Planning Board and Conservation Commission. Substantial changes, as identified in Table 4-1 will need to be considered in order to protect these resource areas.

Rivers: Given the importance of these corridor areas for resource and habitat protection as well as recreation, the Conservation Commission should consider extending the buffer area to 300'

and having the first 100' firm, i.e., a no disturb zone. The Board of Health buffer for septic systems should be increased from 150 to 200 feet.
Ponds: There are no firm buffer requirements around ponds. Consideration should be given to establishing a 100' firm buffer and a 200'flexible buffer under Conservation Commission oversight.
Wetlands: the conservation commission currently has a 50' firm buffer. This should be extended to 100'. The Board of Health buffer should be increased from 150 to 200 feet.
Vernal Pools: these should be listed as protected areas under the Conservation Commission regulations.

Habitat Protection
The Town's major rivers and wetlands provide a framework for establishing a system of habitat corridors. These corridors were identified in the town's Open Space plan. Two north/south corridors could be created, paralleling Route 24 and connecting under Route 24 near the Bridegewater town line as it runs east and south along the Town River. These corridors would follow the Coweeset Brook to the west and Meadow Brook on the East.

By establishing wildlife corridors the town will both protect its water resources, prevent habitat fragmentation by connecting habitat areas along natural connections such as river ways or fields, and provide for important recreational opportunities.

Wildlife corridors are essential to preventing a decline in wildlife habitat due to fragmentation. Unfortunately many wildlife corridors are cut off by major roads and dense housing development, making it difficult for wildlife to thrive. Specifically, Routes 106 and 24 are barriers for movement between the West Bridgewater State Forest and the Hockomock Swamp. The development of unprotected land in many sensitive areas (shown on Map 7-5 in the 1999 Open Space Plan) will further fragment wildlife habitats.

West Bridgewater's native vegetation is threatened by invasive plant species such as purple loosestrife. Introduced as decorative landscaping, many of these species can be found for example in War Memorial Park. These invasive exotic plants provide a seed bank that threatens the native vegetation in West Bridgewater's wilderness area. If unchecked, invasive exotic species out-compete native vegetation, reduce wildlife habitat, and dominate the landscape. The invasive exotic species in West Bridgewater will require ongoing management since they are already well established.

- The Planning Board should consider establishing a Resource Protection Overlay district that includes the river corridors and the Hockomock Swamp. Within these areas, property owners would be required through a site plan review process to observe best management practices with respect to resource protection.

Protection of Agriculture and Open Land
Much of the forested and agricultural land is potentially developable, despite the presence of soil types that limit septic capacity. As shown on Map 4-1, areas with the greatest development potential are located in the northeast quadrant of the town, and along Manley Street. In the center of the town along Route 106, soil conditions would allow development with alternative septic treatment. Increasing land values and a growing market for development in the region will enable development in these areas. With sewers or shared septic systems, all of the unprotected uplands in the town could potentially be developed.

Agricultural lands are particularly vulnerable to future development because farms are generally flat and cleared lands which make for easy development and lower development costs. Current strip zoning potentially hides views of farmland behind strips of commercial development along Route 106 and Route 28. Ultimately, the rural character of West Bridgewater will be irreversibly lost to development. This raises several issues of concern:

Protection of Agriculture
While the number of family farms is limited, steps could be undertaken to provide incentives to encourage the continuation of agricultural activities. Agricultural uses might be clustered in order to ensure that the impacts of agricultural activities on abutting residential neighbors is limited.

Protection of rural character and natural resources:
A survey conducted for the 1999 Open Space and Recreation Plan indicated strong support among residents for the acquisition of land to protect West Bridgewater's natural resources and rural character.

- Land can be purchased either in fee or limited to the development rights so that agricultural activities can continue.
- Cluster zoning of residential and commercial uses should be encouraged. The local by-law should be amended to protect views of farmland along major routes and encourage the preservation of open space while allowing for clustered development on rear lot parcels.

Fiscal Impacts
Open space, even more so than commercial uses is helping to keep down West Bridgewater's tax rates. For each $1.00 of revenue raised from privately owned undeveloped land, it costs the town $0.22 to provide services, compared with $1.14 to provide services to residences. Privately owned open space currently comprises about 43% of all privately owned land, and 5% of the town's assessed valuation, while commercial uses comprise about 19% of all privately owned land, and 32% of the town's assessed valuation. (See Appendix 4-4, Open Space Fiscal Impacts Analysis.)

Recreation
The 1999 Open Space Plan identified the need for additional conservation and recreation areas to connect existing open spaces together in a network of trails and accessible areas. Many of these connecting points could occur along river corridors and double as wildlife corridors.

While the prior plan focused on what is required to meet the existing population, there will be a great need to provide facilities for the town's future population. Projections estimate that the population could grow by 50% by 2020 (see Housing Section for details), and could double at full buildout. A balanced plan needs to be developed so that different parts of the town are each well served by recreational facilities.

Open Space Planning
Open space protection will provide economic, environmental, and recreational benefits to the town, as well as helping to preserve the town's rural character. Land can be protected through regulatory means such as cluster development or wetlands protection bylaws, private donation or purchase by a land trust organization, or acquisition by the town. None of these methods alone can succeed in achieving all of the town's open space protection goals. A combined strategy can effectively target limited funding to the sites of greatest open space value, while taking advantage of opportunities to protect as much land as feasible.

Zoning regulations in West Bridgewater could go much further towards encouraging the protection of open space and natural resources than they currently do. There are a variety of zoning alternatives that can be used to promote open space preservation, including density controls, critical resource protection, and incentive zoning. Following are some options that might be appropriate for West Bridgewater. See Appendix 4-5 for graphic illustrations of some of these concepts:

- Large Lot Critical Resource District - increase minimum lot sizes to 3 acres in areas where warranted by sensitive environmental conditions.
- Transfer of Development Rights - designate "sending areas" and "receiving areas", and allow the sale of development rights from parcels in sensitive areas to increase the allowable density elsewhere.
- Conservation Subdivision - provide incentives for developers to set aside more open space or higher value open space through cluster subdivision design.
- Increase base lot size and require costly infrastructure so that cluster becomes more attractive than traditional subdivision design.
- Require submission of cluster site plan along with traditional site plan.
- Mandatory cluster in critical resource areas.
- Offer bonuses for proposals which provide greater benefit to the town.
- Allow cluster subdivision by right.
- Flexible Development - allow flexible lot sizes and shared driveways for small development projects on existing roadways in exchange for preserving views or natural landscapes.

Even with innovative zoning tools, the possibility of protecting targeted open space parcels through regulatory means is quite limited. The Town needs to develop a methodology by which individual parcels can be evaluated for their open space value. The table in Appendix 4-6 provides a preliminary scheme for prioritizing parcels developed for the 1999 Open Space and Recreation Plan. This listing needs to be honed to accurately reflect the town's goals and concerns. Potential parcels then need to be identified and can be contrasted using this weighting system. Priority parcels may be acquired by the Town or targeted for donation or purchase by a nonprofit land trust organization.

A listing of 13 parcels identified for acquisition and or protection in the Open Space Plan is included in Appendix 4-7.

Acquisition of open space may be more economical to taxpayers than allowing land to be developed, as demonstrated in the Cost/Benefit Analysis of Open Space Acquisition in Appendix 4-4. The tax increase due to the cost of providing services to new residents exceeds the fiscal cost of the Town purchasing the same parcel.

4.3 VISION / GOALS AND OBJECTIVES

VISION

Existing natural open river corridors following the wetlands, related uplands, and meandering paths of the Coweeset, West Meadow, Town and Salisbury rivers are linked with already protected open spaces including public water supplies, West Bridgewater State forest, the Hockomock Swamp,and conservation lands to form resource corridors and recreation opportunities which will protect water quality, public water supplies and natural resources, promote wildlife, preserve farmland, scenic views, and connect with regional trail systems.

GOALS AND OBJECTIVES

The following goals and objectives are based upon the 1999 Open Space and Recreation Plan.

1. To Link and connect major public open space holdings and resource areas

Objectives

a. Promote a ***West Bridgewater River Resource Open Space and Recreation Vision Plan (Map 4-6)***
b. Make the West Bridgewater connection to the Bay Circuit Trail.
c. Create safe connections specifically for pedestrian and bike traffic between organized recreation areas.
d. Maintain access to waterways for recreation.
e. Support the use of cluster zoning to permit both development and the linking of resource areas

2. To Protect West Bridgewater's water resources and natural environment

Objectives

a. **The Sensitive Natural Resource Diagram (Map 4-7)** identifies the river corridors, related wetlands,uplands, habitat, and public water supplies which should be recognized as the critical resource areas needing protection.
b. Use diagram to develop a resource protection plan for river corridors, wetlands, and habitats
c. Identify potential sources of contamination including stormwater, septic, point and non-point.
d. Have boards including Water Department, Planning, Conservation, Health, Building Inspector, Highway work together on this planning process
e. Seek outside funding to assist with study

3. To Conserve and/or acquire existing natural habitats, critical open spaces, and rural farmland

Objectives

a. Explore a variety of land conservation and acquisition strategies as a means to preserve the working farms and protect the natural resources of West Bridgewater.

b. Identify and target lands for conservation or acquisition which are critical for preserving rural character and for protecting natural resources.
c. Prioritize conservation of existing unprotected natural resources.
d. Prioritize conservation of farmland in Chapter 61A.
e. Establish a procedure for conserving and acquiring land.

4. To Improve open space and recreation facilities

Objectives
a. Identify needed recreation facilities
b. Prepare plan for locating new recreation facilities as buildout proceeds.
c. Provide adequate signs and parking in public lands to improve access and safety.

5. To have Open Space Committee become a town resource for conservation and recreation issues

Objectives
a. Create and maintain a clearinghouse of preservation/conservation information.
b. Educate citizens about open space and conservation issues.
c. Monitor need for ongoing management of open spaces.

4.4 RECOMMENDATIONS

The following three strategies provide a framework for addressing the towns' need to protect open space, natural resources, and provide for recreation.

1. PUBLIC AWARENESS AND POLITICAL ACTION

Vision/Open Space Concept

The West Bridgewater Riverway Resource and Recreation Protection Vision Plan (Map 4-6) establishes priorities first, for resource protection, second for acquisition of open space and recreation areas, and third, for retaining important agricultural resources. This vision plan needs to be reviewed and discussed more broadly by local residents.

Critical Resources which need protection

The ***Sensitive Natural Resource Area*** diagram Map 4-7. identifies areas corresponding to the resource protection priorities. A resource plan needs to be adopted.

First Priority:
Designation of critical resource river corridors. The corridors shown on the map 4-6 includes the Coweeset, Meadow, and Town Brooks and the Salisbury River. Associated wetlands, ponds, wildlife habitats, recreation corridors as well as the town Zone II water resource areas are included in these corridors.

Second priority:
Protect key open space and resource parcels and habitats many of which are located within or adjacent to these corridors. (See Appendix 4-7 for identification of priority open space parcels from Open Space Report.)

Third Priority:
Enhance protection within the resource corridors. A variety of regulations have been identified below to manage the protection of resource areas including wetlands, habitat areas, vernal pools, rivers, and ponds. A single protection district could be established to cover the areas shown on the map, or a system of different regulations could address specific concerns within this framework.

Open Space Committee

- Form a broader coalition in support of open space and resource protection, funding and recreation. This coalition will need to include citizens involved in school sports in order to advocate for the acquisition of additional recreation areas as well as citizen concerned with resource protection and agriculture. The immediate tasks of this broader coalition include:
  - Prioritizing Open Space, recreation, agriculture, and resource protection parcels
  - Establishing a local land trust (or a local chapter of an existing regional land trust) to pursue the donation of lands for open space protection
  - Organizing a Community Preservation Committee to make recommendations for local and State funding as well as the acquisition, creation and preservation of open space under the recently Community Preservation Act recently passed by the State.
- Continue to work with *The Natural Resources Trust of Bridgewater* for public education and coordinated open space planning. The Town should continue to work with the NRTB as well as the Trustees of Reservations, another land trust in the region to support its goals.
- Encourage West Bridgewater residents to form their own local chapter under the NRTB to pursue issues of special interest to their own community.

- Publicize West Bridgewater's open space, in terms of recreational opportunities and environmental and economic benefits. Tasks might include:
  - ♦ Publish a guide which maps and describes recreational opportunities available in West Bridgewater, directed to newcomers, visitors and townspeople.
  - ♦ Conduct seminars to inform farmers and landowners about land trusts, conservation programs and estate planning.

2. INVESTMENT IN OPEN SPACE

Acquisition of Priority Open Space Parcels

- Refine list of priority open space parcels identified in the 1999 Open Space and Recreation Plan by utilizing checklist for determining open space priorities.
- A complete inventory of the Town's protected/unprotected open space resources, agricultural parcels, and recreational facilities should also be prepared as a valuable tool for identifying open space protection opportunities.
- Pursue funding for the acquisition of land through the establishment of a local funding mechanism, as well as state and federal grants.

Open Space and Recreation Facilities

- Expand access to existing conservation lands for the enjoyment of hiking, boating, fishing, and other passive recreation activities.
- Recreational facilities for public land and waters, such as trails, picnic tables, fishing spots, and canoe passages should be developed.
- A trail system needs to be established throughout the town offering connections between the town's organized recreational areas like Friendship Park and the Town Hall sports fields, to more remote locales such as the Water Department land and the Hockomock Swamp.
- The Bay Circuit Trail connections through West Bridgewater should be developed and implemented.
- Implement the Community Preservation Act or create a local land bank that would provide ready funds for acquisition when priority parcels become available.
- Apply for a grant to bring recreational areas up to ADA standards.
- Increased funding and staff for the Parks Department may be necessary to manage open space and recreation areas, especially as improvements are made to areas outside of the town center.

3. PROTECTION OF RESOURCE AREAS

In addition to implementing the Open Space Concept Plan discussed above, steps should be taken to protect the town's valuable groundwater resources.

Rivers, Ponds, Wetlands:

- A single protection district could be established to cover the areas shown on the Sensitive Natural Resource Map or a system of different regulations could address specific concerns within this framework.

Water Quality

- Enact stricter oversight of storm runoff from development sites and agriculture. Appendix 4-8 provides a summary of some Best Management Practices, as well as nutrient loading standards that can be used to protect water quality.
- Flexible zoning and subdivision regulations can be targeted toward minimizing the impervious surface coverage and/or relating the extent of infrastructure requirements to development thresholds.
- Subdivision regulations can be changed to reduce required road widths on local service roads, and require drainage systems such as constructed wetlands which provide for stormwater treatment.

Habitat Resource Areas

- The Department of Environmental Management has identified boundaries of Rare Wildlife Habitat. These areas need to be protected by local zoning, sub-division, and conservation commission regulations rather than relying on State enforcement. Authority to manage the protection of Vernal Pools must be built into these regulations.

Potential Well Sites

- The Roberi Farm site near the center of the town was acquired as a future source of public water. If tapping into this resource is to remain a possibility, great care must be taken to protect it. A Zone II overlay area needs to be delineated for this new well.
- Other potential well sites for future public water supply need to be identified and steps taken to protect their contributing recharge areas as soon as possible.

Wastewater

- A strategy must be developed based on Town Zoning, Health and Conservation bylaws, and infrastructure planning to protect critical resource areas from development resulting in adverse impacts for the community.

Coordination

- Increased communication and coordination between committees involved in open space planning and protection. Committees involved with open space include the Conservation Commission, Parks and Recreation Department, Tree Warden, Open Space Committee, the Bay Circuit Trail Alliance, the Planning Board, the Board of Health, and the Board of Selectmen.
- The Open Space and Recreation Committee should also be responsible for monitoring and coordinating the activities of other town departments and boards with respect to implementing the Open Space and Recreation Plan.

Regulatory changes

Zoning :

- Consideration should be given to establishing a Resource Protection overlay district to address development impacts within sensitive natural resource areas.
- The Hockomock Swamp area should be removed from the industrial district.
- Strip commercial zoning should be reduced to encourage the preservation of scenic views.
- The use of cluster subdivisions should be encouraged, and other zoning tools developed that will enable the concentration of development in areas with infrastructure and the preservation of open space.

Conservation Commission:

- Consider increasing the buffers to protect wetlands and river resource areas.

Farmland.

- Assist and encourage farm owners to preserve farms through agricultural easements.
- Priority consideration for preservation of agricultural land should be those locations where the lands are invaluable to the community and ecosystem.

Appendix 4-1
Farms in West Bridgewater

Last Name	First Name	Mailing Address Line 1
HERRICK	EARL	91 THAYER AVE
HAYDEN	DAVID	230 COPELAND ST
GOUCHER	MR.	15 CHARLES ST
BERRY	WILLIAM	392 S ELM ST
BEMIS	ERNEST	121 E CENTER ST
ALEXANDER	H & J	325 S ELM ST
RUSSO'S GREENHOUSES, INC.		134 LINCOLN STREET
DEMOLLES	EDWARD	463 MANLEY ST
ANDERSON BROTHERS FARM		201 HOWARD ST
LEO'S LANDSCAPE NURSERY INC,		561 WALNUT ST
ROBERY	GILBERT	75 FOREST ST
VARNES &	ZENKUS	473 SPRING ST
SURGENS	DONALD	398 SPRING ST
ANDERSON	RICHARD	201 HOWARD ST
MAGEE	FREDERIC	148 TURNPIKE ST
CHUBBUCK	GEORGE	26 CROSS ST
HOLMES (Former Owner)	WILLIAM	308 SOUTH ELM ST
CARLSON	CLIFFORD	87 BROOKS PL
URBAN	STANLEY	60 LINCOLN ST
ASACK	DONALD	166 SOUTH ST
HAYWARD	HOWARD	147 E CENTER ST
SPADEA	JOSEPH	586 MANLEY ST
PARKER	KEVIN	120 EAST ST
LEONARD	CHARLES	11 WILLOW ST
DEMOLLES	EDWARD	463 MANLEY ST
FALZARAN0	JOSEPH	80 UNION ST
COPELAND FARM		SAMUEL AVENUE
HOWELL	JAMES	187 HOWARD ST
R.H. WYNER ASSOC., INC.		SHAWMUT MILLS DIVISION
SLATER	LESTER	375 ASH ST
HOWARD	JOHN	48 SOUTH ST
KAMINSKY	LOUISE	541 WALNUT ST
SWANSON	RONALD	323 MATFIELD ST
PARKER	FRANK	142 EAST ST
HOWARD	CLINTON	304 RIVER ST
ANDERSON	PHILIP	ESTATE OF H & E ANDERSON
SMITH	BOB	108 BELMONT ST
FORBES	ROBIN & RICHARD	107 MATFIELD ST
HASEOTES		SCOTLAND ST
COUITES		CUMBERLAND ST

Appendix 4-2

Regulatory And Organizational Framework

Clean Water Act

The Federal Clean Water Act protects all wetlands and surface water bodies from degradation through development or other activities. The EPA and the Army Corps of Engineers both take part in implementing and enforcing the provisions of this Act. Anyone undertaking development which takes place within a wetland area must first obtain a permit from the Army Corps of Engineers. The presence of wetlands is determined by soil and vegetation in the area, and must be determined by the developer. Development below a threshold can submit a general permit application, while development above the threshold must submit a site-specific permit, which has more stringent requirements. Activities which trigger the need for a site-specific permit include those which involve the loss of at least 5,000 square feet of wetlands or which impact Outstanding Resource Waters or Rare and Endangered Species Habitat. The EPA reviews all permit applications and investigates cases where proper permits have not been obtained. Those found in violation of the Act are subject to fines.

Aquifer Protection

Aquifers identified by USGS hydrological survey are defined under the Massachusetts Contingency Plan (MCP) as Potential Water Supply Areas. Under DEP regulations, hazardous waste sites must be cleaned up to meet drinking water standards. See Map 4-6 for the location of these areas in West Bridgewater.

- The DEP has established Zones I and II to protect from contamination public water supply sites throughout the state. Within these zones are located public water supply points of cities and towns, and the boundaries of the aquifer and recharge areas which supply public water. Zone I is a 400 foot radius around the public water supply well. Zone II is the zone of contribution that directly feeds a public water supply. Uses within these zones are regulated by the state. The uses that are prohibited under 310 CMR 22.21 2 (a) are required to be included in the Town's zoning by-laws. In compliance with the State regulations, the Town's Zoning By-law contains a Watershed Resource Protection Overlay District. All public water systems (defined by a volume threshold) must comply with the state's "Guidelines and Policies for Public Water Systems."

Regulation 310 CMR 12.00 governs the protection of groundwater sources of public drinking water supplies from non-point source pesticide contamination. This regulation states that pesticides may not be used within a Zone II without the adoption of an integrated pest management program approved by the DEP.

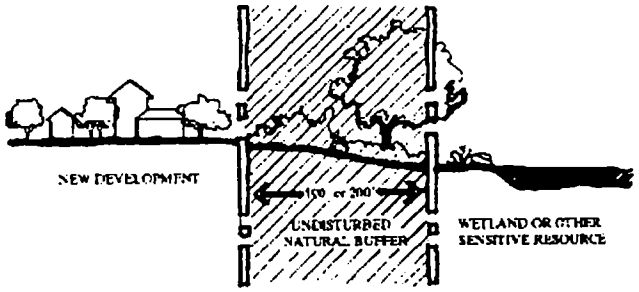
Appendix 4-3

Buffers

Specifically defining the critical natural resources for priority protection is a policy decision that will require further discussion. Various state and federal regulations restrict development within buffer areas around streams, ponds, and wetlands. The extent of buffer zones and the types of restrictions vary and are, in some cases, subject to interpretation. Improved mapping of regulated natural resources, especially wetlands and vernal pools, would help to clarify and extend protection status to all of the town's resource areas.

Buffers

There is no clear scientific guidance as to what constitutes a sufficient buffer to protect water resources. But without a stated purpose with the support of scientific evidence, local regulations have the likelihood of being overturned in court. Thus, to the extent possible, buffer requirements should address specific health and environmental concerns and they should be tailored to the type of land use and site conditions.



THE BUFFER CONCEPT

- The Massachusetts Resource Identification Project (MRIP) under the U.S. E.P.A. has identified "riparian corridors" encompassing land within 100 meters of all streams, rivers and ponds to protect ecological systems and provide corridors for wildlife migration. Like any arbitrary designation however, this may be insufficient or more than necessary for a specific site. Arbitrary buffer requirements frequently do not stand up when challenged in court.
- Many contaminants are not effectively filtered through soil, and will eventually seep into the groundwater below. The direction of groundwater flow, which can only be determined by site-specific analysis, will determine where the pollutants travel once reaching the water table. To protect water resources, a site specific analysis should be undertaken to determine the zone of contribution, rather than relying on arbitrary buffer zones. For some contaminants, such as nitrogen and phosphorous, maximum loading requirements would be more effective than buffers in protecting water resources.
- Viruses are one contaminant for which a scientifically-based buffer can be established. In the region's climate, viruses have been found to survive in soil for 120-200 days. In sandy soils such as Carver's, water typically travels at a rate of 1 foot/day, thus a sufficient buffer would be 200 feet from the water resource.

Strict enforcement of existing regulations by the town could represent a minimal standard for protecting water resources. Alternatively, the town could seek to protect a broader area through local regulation. Map 4-8 provides a composite sketch of the natural resource areas in West Bridgewater which need protection. These resources include ponds, streams, wetlands, riparian corridors, agricultural lands, wildlife habitats, and protected open space.

Appendix 4-4

Open Space Fiscal Analysis
Cost of Community Services Analysis

The following analysis compares the cost of providing services to each type of land user, compared to the revenues that category of land use generates. Residential land uses, which comprise about 29% of privately owned property in the town, cost the town $1.14 for every $1.00 revenue generated. Commercial land uses, comprising 14% of privately owned property, cost the town $0.42 for every $1.00 revenue generated, while open space and vacant land costs the town only $0.22 for every $1.00 revenue. Clearly, tax revenues from commercial, as well as open space land are helping to cover the cost of providing services to residents, and keep the tax rates as low as they are.

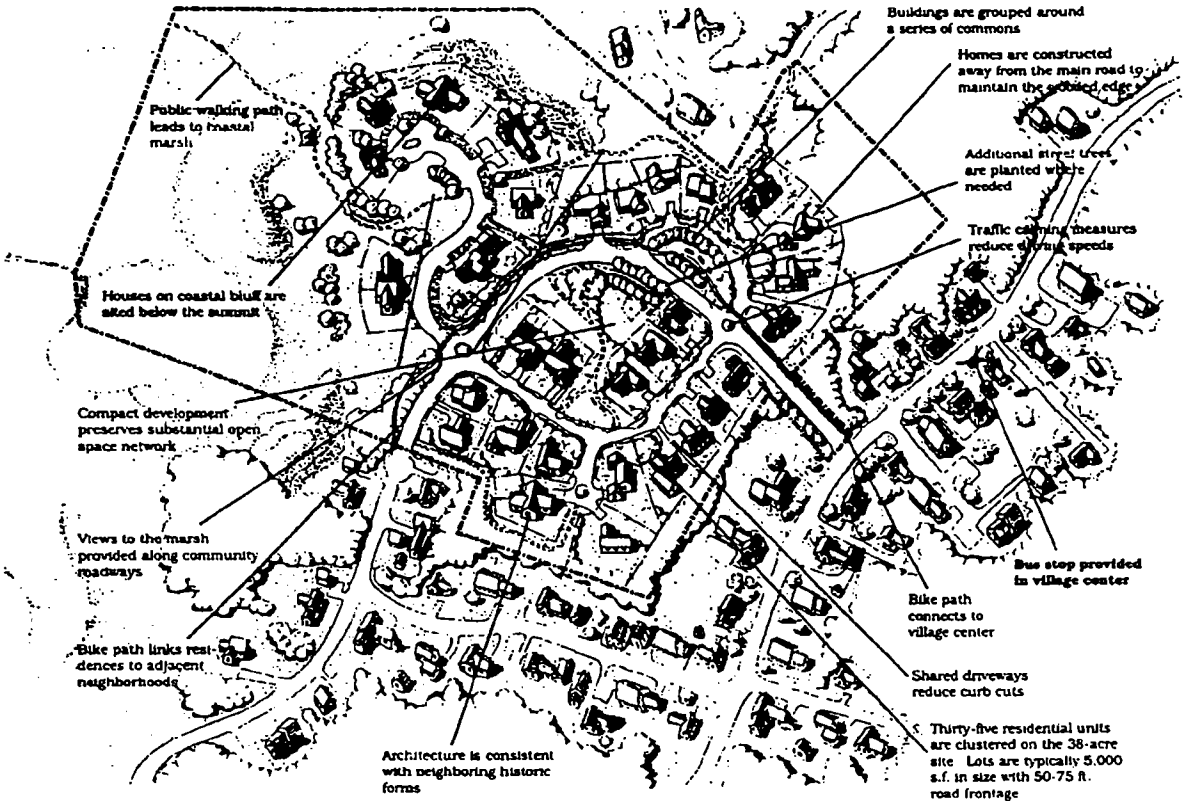
	Residential	Commercial	Open Space	Total	
				Based on FY2000 data	
Proportion of Total Real Property Assessment*	62.97%	31.95%	5.07%		
Proportion of Res./Com. Property Assessment	66.34%	33.66%			
Proportion of Com/Open Space Property Assessment		86.29%	13.71%		
Revenue					
Real Property Taxes	5,590,172.21	3,336,266.00	581,855.00	8,715,166.00	
Personal Property Taxes		622,444.88	98,856.12	721,301.00	
State Aid	2,684,835.00	54,991.00	15,068.00	2,754,894.00	
Local Receipts	1,482,595.74	752,275.55	119,475.71	2,354,347.00	
Other	621,678.40	315,442.34	50,098.26	987,219.00	
Total Revenue	**10,379,281.35**	**5,081,419.77**	**865,353.08**	15,725,485.00	
Expenditure					
General Government	546,465.71	277,279.09	44,037.21	867,782.00	6.14%
Safety	1,545,336.51	784,110.49	-	2,329,447.00	16.49%
School	7,012,716.00	-	-	7,012,716.00	49.64%
Public Works	370,809.67	188,150.45	29,881.88	588,842.00	4.17%
Human Services & Recreation	544,347.00	-	-	544,347.00	3.85%
Debt Service	659,349.93	334,557.03	53,134.04	1,047,041.00	7.41%
Benefits & Insurance	742,951.22	376,976.69	59,871.09	1,179,799.00	8.35%
Water	370,253.67	187,868.33	-	558,122.00	3.95%
Total Expenditure	**11,792,229.71**	**2,148,942.08**	**186,924.21**	14,128,096.00	
Expenditure/Revenue	**1.14**	**0.42**	**0.22**		

Real Property	value	acres	**% value**	**% area**	val Res+Com	val Com+Open
Residential	363747701	2,690.77	**62.97%**	**28.77%**	66.34%	
Commercial	184567172	1,313.08	**31.95%**	**14.04%**	33.66%	86.29%
Open Space	29312787	5,350.31	**5.07%**	**57.20%**		13.71%
Total	577627660	9,354.16				
Res+Com	548314873					
Com+Open	213879959					

Appendix 4-5

Zoning Illustrations

CLUSTERED DEVELOPMENT

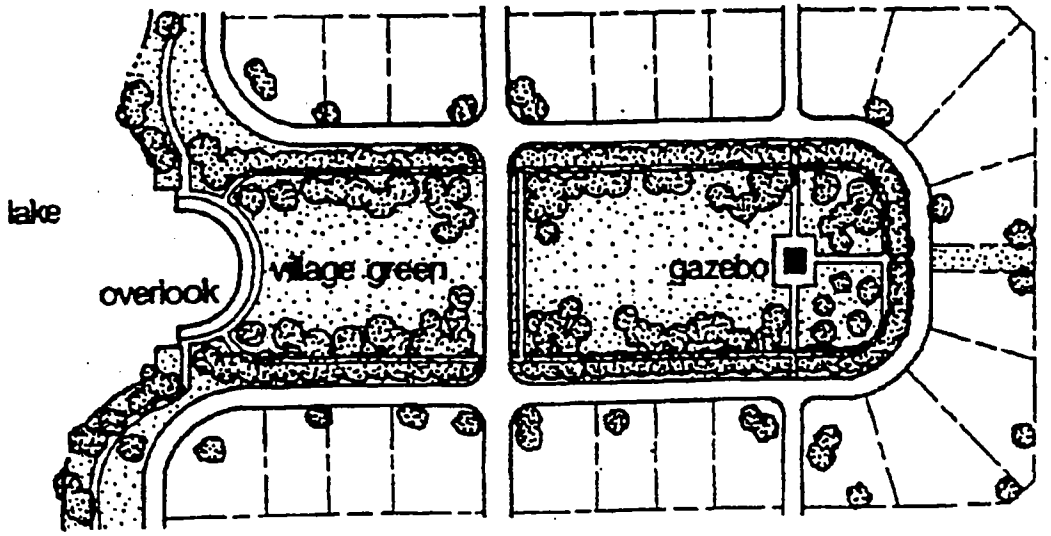


ENCOURAGES:

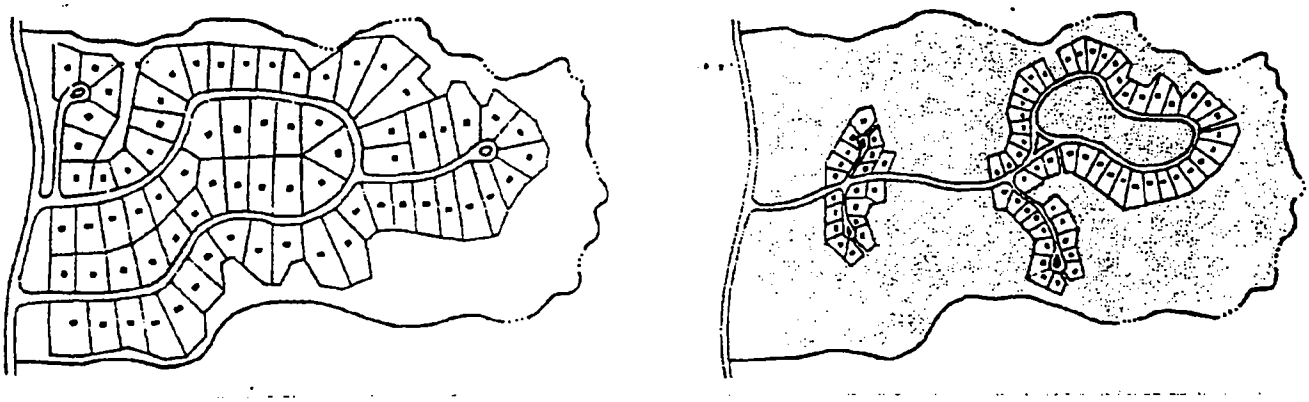
* natural resource and open space protection

* a variety of housing types

* reduced infrastructure costs



A formal central green provides a refreshing counterpoint in more rural developments.



Clustering makes the greatest sense when the difference in built form from conventional lotting is greatest.

Growth Strategy and Design
Clustered Residential Design Guidelines Workbook
Walter Cudnohufsky & Associates

Appendix 4-6

Land Protection Priorities

A Methodology for Rating Priority Parcels for Open Space Protection

Comparing Open Space Values	Priority Open Space Parcels						
Protect/Enhance Town Character							
Historically significant							
Enhance scenic vistas on streets or trails							
Protect familiar, valued open parcels							
Provide active/passive recreation							
Protect Natural/Agricultural Resources							
River, lake or stream frontage							
Well site recharge areas							
Unique ecosystem (rare/endangered species habitat)							
Other habitats: vernal pools, pine barons							
Agricultural protection							
Multiple use areas							
Connect New and Existing Open Space							
Links to existing and future open space							
Improve public access to existing open space							
Make regional trail connections							
Riparian corridor connections							
Make local trail /sidewalk connections							
Economic Impact							
High risk liability or contamination							
High build-out potential							

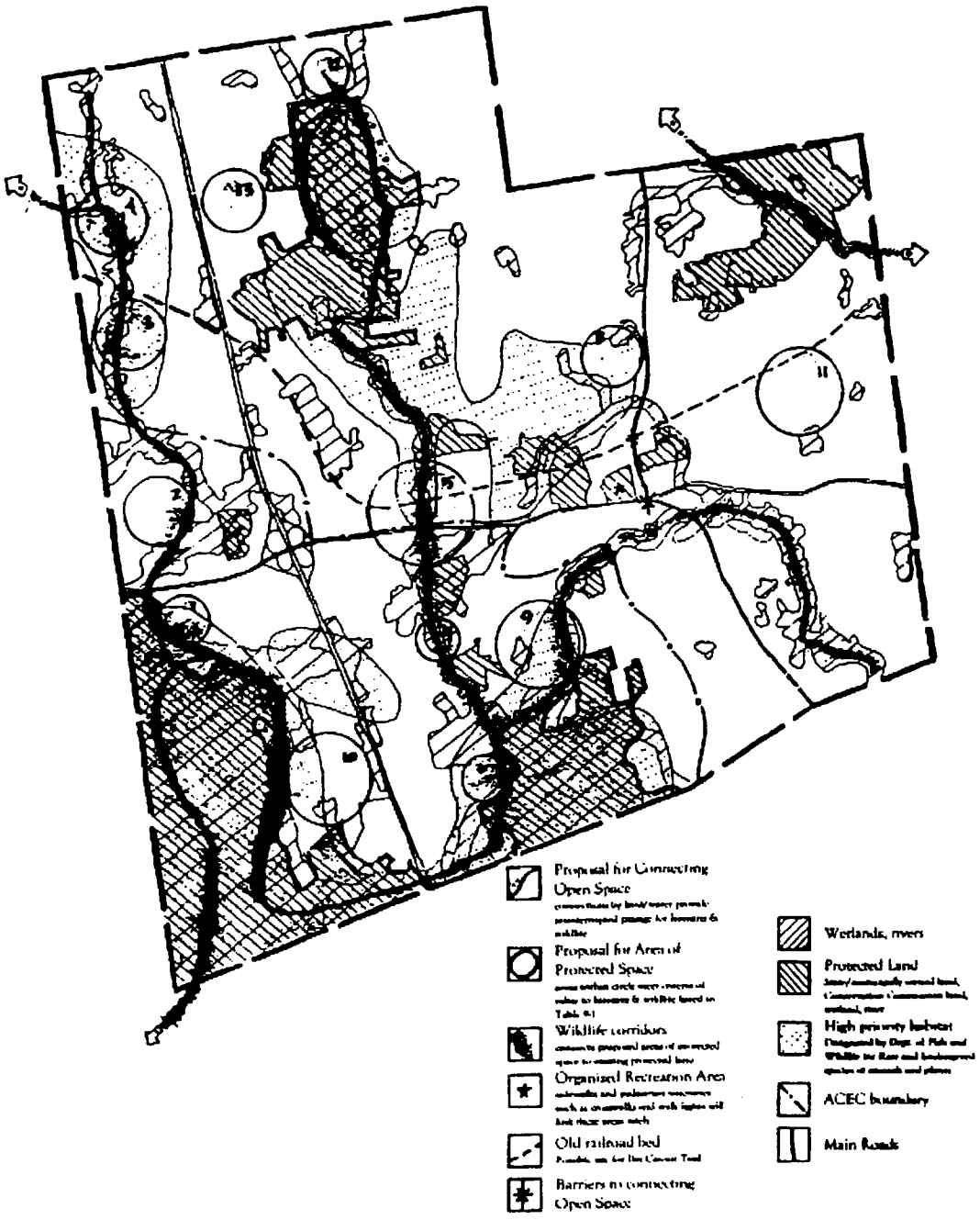
Appendix 4-7

Town of West Bridgewater 1999 Open Space Plan: Target Areas and Land Owner Identification (Estimated)

Target Areas

	Possible owner(s)	Parcel ID	Street address	LUC	Definition	Acres	Comments
1	EUA Service Corp.	49 009	750 W. Center	340	Office	83.17	
	Commonwealth of Mass.	49 011	West Center	901	State-owned	24.24	
2	Ronald Snell	42 008	24 Manley St.	410	Sand & gravel	24.78	
	Chadwick's of Boston Ltd.	35 024	15 United Drive	401	Warehouse storage	108.63	
	AMB Property LP	35 025	1 United Drive	401	Warehouse storage	29.87	
3	Bertarelli Brothers	21 012	Manley Street	047	Industrial/agricultural	11.49	
	Manuel Soares	21 022	Manley Street	132	Undevelopable residential	23.23	
	Manuel Soares	21 009	Manley Street	716	Agriculture	51.83	
	Wyner Association Inc.	21 010	208 Manley St.	046	Industrial/forest	56.06	
4	Edward & Dorothy Olecki	14 021	80 Walnut St.	101	Single family	6.06	
	John & Cynthia Turpin	14 020	72 Walnut St.	101	"	4.41	
	Frederick & Cari Davenport	14 059	171 Turnpike St.	101	"	4.47	
	Edward & Maryln DeMolles	07 031	Manley Street	713	Agriculture	36.14	
5	H&R Construction Corp.	44 047	352 W. Center	104	Two-family	7.60	
	Allied Properties & Mortgages	44 046	320 W. Center	323	Shopping center	29.50	
	Cynthia Asack	44 066	385 W. Center	390	Developable commercial	3.45	
	Donald & Christine Newman	44 022	135 Prospect St.	101	Single family	2.57	
	Cynthia Asack	44 074	West Center	390	Developable commercial	6.09	
6	V.S. Haseotes and Sons	66 003	Maple Street	131	Potentially develop. residential	7.85	
	V.S. Haseotes and Sons	66 004	Maple Street	131	"	7.77	
7	Robert & Janet Fowler	58 029	271 South Elm	104	Two-family	2.00	
	Joseph & Cheryl Kennedy	58 026	260 South Elm	101	Single family	0.55	
	Lynda Cavallaro Trustee	51 019	South Elm St.	719	Agriculture	24.35	
8	Gladys Johnson`	32 014	222 North Main	013	Residential/commercial	10.45	
	Pine Hill Cemetery Assn.	25 043	North Main St.	903	Town-owned	36.50	
	Bertarelli Brothers	25 041	Rear Harvestwood Dr.	717	Agriculture	42.10	
9	Howard & Carolyn Anderson	59 008	South Elm St.	713	Agriculture	31.50	
	Harold & Edith Anderson	59 013	South Elm St.	601	Forest	5.39	
	Town of West Bridgewater	59 009	South Elm St.	903	Town-owned	8.44	
	Harold & Edith Anderson	59 014	South Elm St.	601	Forest	11.24	
10	Kyriebrook Farm Ltd.	64 013	320 Pleasant Street	0713	Agric./residential/commercial	30.04	
	Clarence & Moniria Whynot	64 015	354 Pleasant St.	101	Single family	7.01	
	Alfred & Kathleen Rohnstrom	64 016	278 Pleasant St.	101	Single family	3.45	
	Byron & Joyce Haseotes	65 009	359 Pleasant St.	316	Storage/warehouse/distribution	4.99	
	V.S. Haseotes and Sons	70 003	Maple Street	442	Undevelopable industrial land	4.23	
	State of Massachusetts	70 002	Maple Street	901	State-owned	7.92	
11	Harold & David Sigren	33 019	East St.	717	Agricultural	14.59	
	William & Paul Bertarelli	33 020	East St.	713	Agricultural	20.74	
	William & Paul Bertarelli	33 021	East St.	712	Agricultural	19.84	
12	Louise Kaminsky	04 015	Walnut Street	718	Agriculture	71.15	
	Edward & Rachael Crowley	01 006	Walnut Street	131	Potentially develop. residential	26.80	
13	J.L.K. Properties Realty Trust	08 018	Walnut Street	131	Potentially develop. residential	21.83	

Open Space Concept



From 1999 Open Space and Recreation Plan

Appendix 4-8
Best Management Practices and Nutrient Loading Standards

BEST MANAGEMENT PRACTICES FOR NITROGEN REDUCTION

(from Nitrogen Concentrations in Well Water: A Handbook for Protecting Community Resources, Pioneer Valley Planning Commission, June, 1996)

BMP # 1: Drainage

Introduction:
Construction activities should minimize disruption of natural drainage systems. This can be accomplished by requiring a site design and grading plan, created by a landscape architect or environmental engineer, for new development projects or projects with substantial improvements. Site and grading plan requirements should minimize the amount of earth moving and vegetation removal and avoid disruption of streams, including seasonal or intermittent streams. In addition to interruptions to drainage systems, construction often results in sedimentation that can block drainage channels. Post-construction increases in runoff from newly constructed paved surfaces can increase the volume and velocity of stormwater into natural drainage systems as well as introduce contaminants into the runoff water. Please refer to the Stormwater Management BMP # 2.

Site DesignlGrading:
Layout of buildings and roads should work with topography and respect natural features. This approach minimizes the amount of earth moving and removal of native vegetation and therefore minimizes increases in stormwater runoff and sedimentation. Site design and grading is a complex subject and site specific.

Sedimentation Control:
Many techniques are available for preventing sediment accumulation in natural drainage systems during and after construction. An effective means of controlling erosion during construction is to follow a specific construction schedule, which carefully coordinates the timing of land disturbing activities with the installation of sedimentation control measures such as temporary seeding, mulching, temporary diversions, water bars, temporary slope drains, protective fabric, temporary sediment traps, sediment fences, and temporary stream crossings. In general, procedures which minimize land clearing, provide for timely installation of erosion and sediment controls and restore protective cover quickly reduces erosion and, therefore, sedimentation of natural drainage systems. Construction should be timed to avoid heavy seasonal rainfalls and provide a favorable climate for plant material to grow and restore protective cover. The Planning Board can work with developers to outline an acceptable Construction Sequence schedule and BMPs to minimize sedimentation. A complete listing of Construction BMPs can be found in the Massachusetts Department of Environmental Management's Nonpoint Source Pollution Management Manual known as the "MEGAMANUAL."

BMP # 2: Stormwater Management

Introduction:
Runoff from roads and parking lots is a by-product of development. Historically, stormwater management focused on flood control with systems designed to move large quantifies of water to the nearest stream, brook, lake or other water body. This management approach does not protect water quality because accumulated pollutants are deposited directly into the water body. For new development, stormwater must be disposed of on-site by requiring that post construction runoff from the site not exceed pre-construction conditions and amounts. Current stormwater management options include numerous techniques and devices to remove contaminants, sediments, organic nutrients, bacteria and heavy metals as well as manage flood control. Management approaches considered to be the most effective are listed below. Additional techniques can be found in DEP's MEGAMANUAL, the Massachusetts Nonpoint Source Management Manual. A copy of this manual should be available at the local town hall or directly from DEP by calling 508-792-7470. A stormwater management approach should be developed in conjunction with an overall drainage plan. Please refer to the Drainage BMP # 1.

Retention Ponds:
A retention pond is a man-made pond with the specific purpose of retaining storm water runoff. Retention ponds are extremely effective at removing pollutants. Well-designed ponds can be an attractive feature in a planned development. Retention ponds collect storm water runoff and allow the particulate pollutants to settle out in the pond rather than being transported to the surface water. Aquatic vegetation in retention ponds removes soluble nutrients. Sediment must then be removed and should be properly disposed of. Retention ponds need consistent maintenance including sediment removal, erosion control and weed removal to operate effectively.

Vegetated Swales:
A vegetated swale is a grassed area whose purpose is to slow down or retain runoff. This induces infiltration and decreases velocity of runoff. Vegetated swales can be used in place of curb and gutter drainage systems along highway medians. Swales reduce runoff velocity, act as additional infiltration devices, direct flow of runoff, and remove particulate pollutants during small storms. Vegetated swales can be attractive stormwater runoff containment measures in residential developments.

Water Quality Inlets:
A water quality inlet is a structure whose purpose is to separate oil and sediments from street and parking lot runoff. The structure is a large chambered container (usually 400 cubic feet of storage per contributing acre and 4 feet deep). Stormwater flows into the basin through storm drain inlets. The runoff then flows through two chambers, the first designed to catch and retain sediment and the second to filter and trap oil. Water quality inlets are effective in areas that receive a great deal of vehicular traffic like parking lots or gas stations. Water quality inlets have a limited capacity and require maintenance to remove trapped pollutants (which then must be disposed of properly). Additionally, because water moves quickly through the inlets, only coarse sediment, debris and oil is collected.

BMP# 3: Septic Systems

Introduction:
Many homes and small businesses in Massachusetts have substandard septic systems and illegal cesspools to dispose of sewage. It is very important that these substandard systems be replaced in water supply recharge areas (Zones I and 11) to protect public health from exposure to pathogens present in wastewater. Existing systems require regular maintenance to prevent failure and the release of pathogens to surface and groundwater. New systems must be constructed according to Massachusetts Title 5, the State Environmental Code for Subsurface Disposal for Sanitary Waste (310 CMR 15.00) and pursuant to local Board of Health regulations, which can be more restrictive if warranted,

Upgrading:
Septic systems in Zones I and 11 should be pumped and inspected every I to 3 years, and upgraded when inspection indicates problems. Alternative wastewater systems which treat effluent to higher quality levels than standard Title V systems should be considered for remediation purposes where small lot sizes and high densities present concerns about excessive nutrient loading, where there are shallow depths to water table or where soil conditions cannot be met according to the Title V regulations.

Maintenance:
Periodic pumping of septic tanks to remove accumulated solids should be required to prevent failure of septic systems and discharge of solids to the leach field.

Use:
Septic system additives should not be used. These additives often contain chemicals which will destroy the leach field clogging mat. They have not proved to benefit, in any way, the functioning of septic systems. These additives are now illegal to use in Massachusetts. Hazardous material such as paint thinner, bug sprays, furniture and metal polishes, antifreeze and other petroleum products should never be disposed of down drains and sinks. The Best Management Practice is to dispose of material at household hazardous waste collection days.

BMP# 5: Fertilizer and Pesticide Application

Introduction:
Nutrient management involves careful planning of soil fertility so that crop needs are met but leaching of fertilizer to surface water bodies and groundwater is minimized. This requires applying fertilizer in the proper amount and place at the right time to maximize uptake by plants. Integrated Pest Management (IPM) is a pest management approach which, in addition to chemical pesticides, utilizes a number of methods to control crop pests. IPM practices can reduce pesticide use up to 40%. This results in significant cost savings to the user as well as reduces the risk of contaminating ground and surface water.

Species Selection:
Plants and shrubs selected for home and commercial landscaping should be native species that are known to be lawn maintenance and pest-free, thus minimizing the need for on-site application of pesticides and fertilizers. Use of drought-resistant plants will reduce the need for supplemental watering, reducing the likelihood that any contaminants on the leaves will become non-point pollutants in runoff water from irrigation.

Fertilizer Application:
A soil test to determine nutrient levels is recommended. An accurate soil test is crucial to determine application rates of different types of fertilizer for maximum plant utilization. The Massachusetts Cooperative Extension (Located at University of Massachusetts, Amherst (413-545-4800) or the Soil Conservation Service (Northampton Office: 413-586-5440) can assist with information on soil testing and recommended application rates. Using proper rates, placement and timing of fertilizer can reduce nitrogen and phosphorus losses from leaching or wind transport by 50% - 90% . Irrigation practices should be managed to avoid over-watering, as excess water can cause soil erosion and leaching of nutrients beyond the root zone. Slow release granular fertilizers leach more slowly into the groundwater than liquid fertilizers, allowing more of the nitrogen to be absorbed by plants, and less to migrate into the groundwater resource.

Pesticide Application:
Minimizing or eliminating use of pesticides is the Best Management Practice for water resource protection areas. Integrated Pest Management (IPM) involves identifying the specific pest, monitoring the pest population, determining which pest(s) will cause economic, medical or physical damage, selecting control measures with the least ecological impact and applying them at the right time and place based on the pest's life cycle. When applying pesticides, label directions should be closely followed. Increasing the concentration or application does not do a better job of killing pests but simply increases the costs of pest control and as well as the chance of pesticides reaching surface and ground water. Pesticides should be mixed in an area away from wells and surface water bodies. Pesticides should only be applied under favorable climate conditions in terms of wind, rain and temperature to avoid leaching or air-borne transport of pesticides. Calibrate pesticide equipment regularly to insure proper application rates and to prevent leftover tank mixes. Prepare used pesticides containers for disposal by pressure rinsing and returning rinse water to the spray tank for application.

Organic farming is based upon a management system that seeks to emulate natural ecosystems by building soil humus through crop rotations, recycling organic wastes and applying balanced mineral amendments. Organic farming is done without the use of synthetic, chemical fertilizers, pesticides and herbicides; therefore the use of organic farming practice is considered a Best Management Practice. The elimination or reduction of the use of fertilizers, pesticides and herbicides in organic farming is recommended to protect water quality.

BMP# 6: Improving Lawn Care

Introduction: What you do in your yard can affect water resources ?
A clean, well maintained yard looks good. Those who pass by may comment on how beautiful your yard looks, how the neighborhood seems like a great place to live, how property values are actually enhanced by appearance.

What you do with our yard, however, can end up outside your yard - in your neighbors' yards, in the storm drain and eventually in the lake. If you multiply what you do in your yard by the number of people on your block or in your neighborhood, the impact from yards starts to look significant.

Ground covers and other plants hold your soil in place. The soil doesn't wash away , flowing into your neighbor's yard, clogging storm drains, and carrying along pesticides and nutrients that pollute the water.

The benefits of better yard care.
You can save time, money, and the environment by following the tips in this flyer. Time can be saved by adopting certain practices and by installing landscaping that requires less maintenance. Money can be saved by reducing the need for fertilizer and pesticides. Finally, the environment can be saved by reducing sources of runoff pollution.

Tips *for better yard care.*

- **Don't bag your lawn clippings**
  Bagging your grass clippings is a time-consuming and wasteful practice. Extensive research on lawn care has shown that grass clippings actually help you to maintain a vigorous, more durable lawn. It is not true that grass clippings cause excessive thatch build up.

- **Pay attention to lawn maintenance**
  - Don't let your lawn become a hay field (unless you want a hayfield) before mowing. The clippings should be no more than one inch long in order to fall through the grass and into the soil.
  - Use a sharp mower blade, (a mulching mower if you have one). The sharper the blade, the finer the clippings, the faster they decompose.
  - Avoid over-fertilizing your lawn. If it becomes too dense with growth, your clippings won't be able to reach the soil to decompose.
  - Remove excessive thatch before leaving your clippings on the lawn. Although 1/2 inch of thatch is ideal, a thick layer will keep clippings from reaching the soil.
  - Always mow your lawn when it's dry. If the grass is wet, the clippings will clump under the mower and won't be able to filter down to the soil.

- **Start a Backyard Compost Pile**
  Backyard composting of leaves and brush is advantageous to you, your community and our environment. A few of the benefits of composting are:
  - keeps valuable natural resources from being treated as waste and filling up landfills;
  - improves soil quality by increasing water retention, drainage and aeration; conserves water.

- **Other Tips**
  - Attract birds to your yard- birds eat insects, flies, and mosquitoes- by installing bird feeders, bird baths, and bird houses. Plant trees, shrubs, and other plants that encourage birds to visit your yard.
  - Reduce high-maintenance areas of sod, and increase low-maintenance landscaped areas. Some plants that don't need fertilizer or pesticides are ferns, myrtle, pachysandra, lily-turf, forsythia, barberry.
  - Know your soil, its characteristics, and its needs. Clay soils are very different from sandy soils. Your decisions for landscaping and maintenance should be based in part on the type of soil in your yard. Have your soil tested so you know how much fertilizer to apply.
  - Think of the surfaces you use in and around your yard and the way water flows off or through them. Divert water from paved surfaces onto grass to let water soak into the soil. Install gravel trenches along driveways or patios to collect water and let it filter into the soil.

For Further Information Contact.,
USDA Natural Resource Conservation Service (413) 586-5440

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NUTRIENT LOADING STANDARDS

Many towns in Massachusetts have implemented performance requirements for nutrient loading in surface water bodies and aquifers. Following are examples of methodology and loading standards that have been applied in the towns of Sandwich, Falmouth, and Gloucester:

SANDWICH:

5130. ANALYSIS OF DEVELOPMENT IMPACT. The applicant under Section 5110 shall provide an analysis of development impact, which, at a minimum, includes the following:

a. The existing condition of water body or water supply, including physical characteristics and water chemistry;

b. The expected change in the condition of the water body or water supply as a result of the proposed development;

c. The comparison, on a per acre basis, of the total nutrient loading from the proposed development with:

1. The existing and potential loading from all other developments and acreage within the recharge area of the water supply or water body; and

2. The loading rate which would be expected to produce critical eutrophic levels in the water body.

d. In determining the impact of nutrient loading from a development, the following standards and definitions shall be used (unless the applicant demonstrates to the Appeals Board that, given the nature of the proposed project and/or receiving waters, other standards are appropriate):

1. Loading per person: .25 lbs. phosphorus per person per year for sewage disposal systems within three hundred (300) feet of the shoreline;

2. Loading from road runoff: .25 lbs. phosphorous per curb mile per day;

3. Critical eutrophic levels - fresh water concentration: total phosphorous = .02 mg/liter.

FALMOUTH
Special Permit Requirements in Recharge zones — Zoning bylaw, Adopted: 1984
Contact: Jon D. Witten, (508)362-5570

5340. Special Permit Requirements in Recharge Zones for Transient Residential Facilities. The Special Permit Granting Authority may withhold approval of a special permit for the construction of any new structure or structures or portion thereof intended for transient residential use, requiring a special permit as defined by the Zoning By-law, which are located on a lot or lots that lie within a zoned water recharge area (See Section 5341), if, after weighing all the pertinent facts and evidence the Special Permit Granting Authority finds that:

a) The existing condition of the receiving waters is at or above critical eutrophic levels (see definition: Section 5342 (d-4)1 or in the case of well recharge areas, nitrate nitrogen concentrations in the groundwater exceed five (5) parts per million; and
b) The nutrient contribution from the proposed development, when added to the existing and potential nutrient level of developments within the specific recharge area, will generate on a pounds per acre basis, nutrient levels that exceed the receiving waters critical eutrophic level or, in the case of well recharge areas, nitrate-nitrogen concentrations in the groundwater in excess of five (5) parts per million. However, the Special Permit Granting Authority shall not withhold approval of an application for a special permit if the applicant provides measures for the reduction of the nutrient loading rate, on a pounds per acre basis, to a rate below that which would produce critical eutrophic levels in the water body or, if in a well recharge area, nitrate-nitrogen concentrations less than five (5) parts per million. It shall be the responsibility of the applicant to demonstrate to the Special Permit Granting Authority that the proposed mitigating measures will work as designed and the Special permit Granting Authority may require the applicant to demonstrate on an annual basis that said mitigating measures are operating satisfactorily.

5341. Recharge Areas. Recharge areas for freshwater ponds, coastal ponds and existing or proposed public (municipal) water supply well as shown on the Zoning Map, shall be considered superimposed over a other districts established in this By-law.

5342. Analysis of Development Impact. The applicant, under Section 5340, shall provide an analysis of development impact which at a minimum includes the following:

a) The existing condition of the water body or water supply, including physical characteristics and water chemistry;
b) The expected change in the condition of the water body or water supply as a result of the proposed development;
c) The comparison, on a per acre basis, of the total nutrient loading from the proposed development with:
    1) The existing and potential loading from all other developments and acreage within the recharge area of the water supply or water body; and
    2) The loading rate which would be expected to produce critical eutrophic levels in a water body or in the case of water supply, the loading rate which would produce nitrate-nitrogen levels in excess of five (5) parts per million in the groundwater.
d) In determining the impact of nutrient loading from a development, the following standards and definitions shall be used:*
    1) Loading per person: 5 lbs. Nitrogen per person per year; .25 lbs. Phosphorous per person per year for sewage disposal systems within 300 feet of the shoreline;
    2) Loading from lawn fertilizers: 3 lbs. Nitrogen per 1,000 square feet per year;
    3) Loading from road run-off. .19 lbs. Nitrogen per curb mile per day; .15 lbs. Phosphorous per curb mile per day;
    4) Critical eutrophic levels: Fresh water concentration, total Phosphorous -- .02 mg./litre; salt water concentration, total Nitrogen - .75 mg./litre

*Unless the applicant demonstrates to the Special Permit Granting Authority that given the nature of the proposed project and/or receiving waters other standards are appropriate.

5343. Exemptions. The Special Permit Granting Authority may exempt an application from the requirements of Section 5340 provided that the applicant can demonstrate that:

a) Nutrients from the development will not in fact be recharged to the designated water body or public water supply well; or
b) that the development will not result in any increase in loading of the relevant nutrient.

5344. Relation To Other Requirements Of The Zoning By-law. Approval of a Special permit as noted in Section 5340 shall not substitute for compliance with any other requirements of the Zoning Act or Falmouth Zoning By-law.

GLOUCESTER

RULES AND REGULATIONS GOVERNING THE SUBDIVISION OF LAND: Appendix A, Environmental Impact Evaluation

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Nitrogen and/or Phosphorus Loading Report:

For review of water quality impact, an applicant shall submit calculations of anticipated nitrogen and/or phosphorus contributions from roads, lawns, and septic systems. Applicant must determine the "carrying load" or ability to absorb nitrogen and phosphorus loading of all receiving water system on site.

Appendix B Methodology and Standards for Determination of Nutrient Loading

Methodology

1. Determination of nutrient loading shall be done using available loading estimates from county, state or federal performance standards and shall include, at a minimum:
   (a) The existing condition of the water body or water supply, including physical characteristics and water chemistry;
   (b) The expected change in the condition of the water body or water supply as a result of the proposed development;
2. When comparing the nutrient loading of the proposed subdivision to the carrying capacity of receiving waters, the probable effect of the subdivision on the receiving waters (ground or surface) over a period of time shall be set forth, assuming total buildout of the subdivision.
3. All comparisons of the nutrient loading from the proposed development with loading from other developments shall be done on a per acre basis.

Standards

In determining total nutrient loading of a development and critical eutrophic levels, the following standards shall be used:*

a). Loading per person: 5 lbs Nitrogen per person per year; .25 lbs Phosphorus per person per year for sewage disposal systems within 300 feet of the shoreline. Persons per dwelling unit = 5.0.

b). Loading from lawn fertilizers: 3 lb Nitrogen per 1000 square feet per year.

c). Loading from road run-off: .19 lbs Nitrogen per curb mile per day; .15 lbs Phosphorus per curb mile per day.

d). Critical eutrophic levels: Fresh water concentration, total Phosphorus = .02 mg/litre; salt water concentration, total Nitrogen - .75 mg/litre.

e). Critical level for ground water used for drinking water = 5 parts per million nitrate Nitrogen in well recharge areas.

*Unless the applicant demonstrates to the Planning Board that given the nature of the proposed project and/or receiving waters, other standards are appropriate.

SECTION 5
HISTORICAL AND CULTURAL RESOURCES

HISTORICAL AND CULTURAL RESOURCES

EXECUTIVE SUMMARY

Historical and cultural resources are an important element in the town's fabric. These resources include structures, archeological sites, historic sites, cemeteries, and scenic roads. They form a framework, providing a hedge against rapid change, so as to preserve the town's quality of life. In most cases, on the other hand, these resources are hidden from the public. The citizens of West Bridgewater need to support a public effort to protect and enhance their historic and cultural resources. A number of simple actions identified in the recommendations would leverage substantial benefits to the town.

Historical Context

What are those assets which provide an important sense of quality to life in West Bridgewater? While these might differ for each individual, one can be certain that the list of 22 historic assets are important symbols of local pride. These sites tell the town's history by marking important time periods, events, and traditions. A beginning point in community planning is the task of identifying the town's historic resources and subsequently carrying out surveys of important sites and facilities followed by developing strategies to protect and publicize these sites. Historic resources in West Bridgewater include homes dating from the 17th Century, side entrance, hip roof, and early colonial, industrial properties and facilities such as War Memorial Park, and institutional buildings; churches and schools. Cemeteries, roads, and bridges as well as scenic and archeological sites, in addition, represent the major historic elements.

Opportunities

Unlike adjacent towns such as East Bridgewater, the local Historic Commission is only now getting more focused on surveying and prioritizing local assets and developing appropriate preservation strategies. Four key opportunities exist:

1. Identify and survey town's historic assets, especially those such as the Town Center, which impact future development
2. Clarify the role of the Historic Commission which should be actively involved in planning and regulation and the Historic Society whose role is research and education
3. Identify priority strategies to be supported by the Town
4. Build public support

Vision and Goals

The incorporation of preservation strategies into town planning initiatives is a major goal of the master plan. The recommended strategies will enable the Town to achieve a number of important policies to address preservation issues.

Recommendations

Five recommendations are identified. Of primary importance is the need to consider new zoning by-law amendments which would begin to involve the Commission in local planning issues. Public education, promotion of historic preservation, collaboration with local historic societies and pursuit of grants are some of the recommended strategies.

5.1 INTRODUCTION/HISTORICAL CONTEXT

Historical Context
West Bridgewater was originally inhabited by a people affiliated with the Wampanoags or Pokanokets, a Native American people that populated much of Southeastern Massachusetts. There may have been a large village on the Hockomock River, which probably provided good fishing and navigable transportation. However, this area did not have the wide variety of freshwater sources enjoyed in other parts of the region, such as Middleborough. The local people probably had a relationship with the Titicut settlement in southwestern Bridgewater. Regional trails used by Native Americans may have included what are now Ash, South, Matfield, Copeland, Prospect, Center and West streets. North Elm, also historical, River, Arch, Howard, Center, Main, Walnut, South Elm, Pleasant, Ash, Matfield, Manley Streets.

The population in this area was very low for a long period after other parts of Plymouth Colony had been more thickly settled. At the time King Philip's War began in the 1660s, there were just 64 white males listed as living in what was then part of "Old Bridgewater," although there were many fewer people living in what are now Brockton, East Bridgewater and Bridgewater. The first grist mill was built in 1662 by Deacon Samuel Edson, but additional industry was discouraged until after the war by fears of Native American attacks. White settlement received a boost when the Plymouth Colony Court granted land "about Satucket," centered in what is now East Bridgewater, to the town of Duxbury in 1645. Ousamequin (Massasoit), the Native American sachem in this region, agreed to sell the area to the whites in 1649. Early settlers chose land on or near Town River close to the East Bridgewater line; in later years, new residents moved to areas closer to West Meadows Pond where land was still available.

The first meeting house was built in 1661 on South Elm Street or Howard Street. It served people from the neighboring towns as well as West Bridgewater. While the structure of the church parishes changed, West Bridgewater remained the site of Old Bridgewater's town meetings. Yet after the 1740s, the community's population declined as its neighbors grew in economic importance. The last meeting house was built in 1801; it still stands.

The town's early economy included a number of lumber mills, which harnessed the hydropower of the Town River and West Meadow Brook. The mills supplied wood to build houses locally and also supplied the needs of the Union in the Civil War. The center of the community developed around what is now Central Square, first as a residential area and then as host to a variety of manufacturing mills. Some of the lumber mills were replaced in the 19th century by factories, including that of the Ames family, which made shovels and other farming tools here. Another producer in the area was Forbes, Reed & Company, which operated a nail factory. The first iron furnace in the town was probably built in the 1820s on Belmont Street at Salisbury Plain Brook. The major industry in the 1830s and 1840s was boot and shoe-making; by 1855 there were 300 people in the town who did this work in their homes. During this period the town saw a sizable immigrant population arrive from Ireland.

The town remained largely agricultural into the 20th century, although new industries brought newcomers to the community. The population fell and rose with the coming and going of large firms; a new steam foundry built early in the 1900s may have played a role in the growth of the Portuguese immigrant population, for example. By the early 20th century, many mills had been abandoned and farms began to have a less critical place in the economy.

After World War II the town saw little of the rapid growth common to areas closer to Boston. Many farms dating from the previous century continued to operate on East Street and in the southern half of the town. The town saw an expansion in automobile traffic as growth occurred along major highways, including Routes 24 and 495, located in the area. In recent years, new subdivisions have appeared in parts of the town long appreciated for their rural qualities. The growth of Boston is beginning to have a larger impact on the community.

West Bridgewater History Timeline

From prehistoric times to 1660s	- Settlements of Native people
1645	- Land granted to white settlers in area
1656	- Town incorporated as "Bridgewater"
1661	- First meeting house built
1662	- First grist mill built by Deacon Samuel Edson
1664	- James Keith named first minister of town
1774	- Ames Ironworks
1785	- Baptist Church organized in West Bridgewater
1801	- First Congregational Church built on Howard Street
1820s	- Iron furnaces and wool mill launch industrial age in town
1823	- West Bridgewater, formerly the West Parish of Bridgewater, is incorporated as a separate town
1844	- Methodist Church built in Cochesett
1845	- Copeland and Hartwells Shoe Manufactory established, employing 50; joins other towns in Southeastern Mass. shoe trade
1875	- Howard Seminary, first high school in West Bridgewater, is completed
1879	- Public Library organized
1910	- Water Commission established
1910	- Board of Health established
1933	- St. Ann's Catholic Church built
1952	- New junior-senior high school replaces Howard Seminary
1954	- Union of Congregational and Unitarian churches
1956	- Spring Street School built
1957	- Route 24 construction initiated
1957	- Zoning By-law adopted
1965	- Conservation Commission established

5.2 HISTORIC RESOURCES

Recognizing the importance that historic and cultural resources can have on retaining the town's identity and shaping new growth, has led to the identification of important cemeteries, historic sites, and scenic areas.

Historic Sites

Historic sites consist of a mix of houses, former industrial sites, churches, dams, bridges, farms, and cemetaries. These are located on Map 5-1. These sites mark important time periods, events, natural areas, and cultural traditions which have shaped the character of the town and the quality of life experienced by the residents. The preservation of these sites allows residents to maintain a local identity and to shape new growth which will preserve important traditions and values.

One of the most important historic sites in West Bridgewater is the War Memorial Park on River Street, close to Central Square. This site is located in the area of the town's earliest white settlements. Many houses built in the 18th century in this area still stand. The park itself commemorates the town's industrial heritage; it is regarded as the country's first "industrial park," where shovels, nails and other farming tools were produced in the late 18th century. Weirs and dams along the Town River that were used by mills and factories in the area are intact. The park is open to the public and provides access to the Triple Arch Bridge, a historic bridge which connects to Arch Street on the opposite side of the Town River.

Among the homes in the area of the park is one built in 1654 and inhabited by the Rev. James Keith; the house served as his parsonage. In addition, during King Philip's War in the 1660s, the house operated as a garrison for white settlers, and King Philip's wife and son were held captive there.

Howard Street, on the north side of Route 106 across from War Memorial Park , is the location of structures from the town's early days, including the First Congregational Church, which was probably built about 1810. Howard Street has continued to evolve as the town's civic center with the location of the public library, two schools, the police and fire stations, and a proposed new senior center. Town Hall, which is over 100 years old, stands just east of Howard Street on North Main Street.

The Brick Kiln, located on Ash Street, is a significant early industrial site. Pottery was made here in the early 1800s.

There are four one or two-room schoolhouses located on South Elm, North Elm, South Main and East streets, which have been converted into homes.

A survey by the West Bridgewater Historical society identified some 400 homes that are at least 75 years old. Approximately 130 are of historical significance; with a number of structures dating from the 17th and 18th century. Approximately 185 side entrance homes and 100 homes of hip roof style were also identified.

As the Town is known for its wetlands and high water table, bridges have been an important part of the town's history. In addition to the Triple Arch Bridge, other historic bridges in the town include the Forest Street bridge and the Skim Milk Bridge on Scotland Street.

Key Historic Sites (numbers correspond with historic sites map)

1) Howard Hill
2) Manley Farm
3) Salt Works Copper Site
4) Howard Mill site
5) Mill Pond Dam
6) Quaking Bog in Pine Hill Cemetery
7) Matfield Street Cemetery
8) First Congregational Church
9) Drury Bell
10) Town Hall
11) Porter Farm
12) Forge Site
13) Forest Street Bridge
14) Rev. Keith Parsonage
15) War Memorial Park
16) Triple Arch Stone Bridge
17) Brick Kiln
18) Pete Cook's Place
19) Skim Milk Bridge
20) Solitude Stone
21) South Street Cemetery
22) Pleasant Hill Cemetary

Scenic/Historic Roads and Bridges

The earliest roads in the town include many roads that are well-traveled today. Regional trails used by Native Americans may have included what are now Ash, South, Matfield, Copeland, Prospect, Center and West streets. The first white settlers built homes on streets close to Central Square, including River, Arch, North Elm and South Elm, Howard, Center, Main and Ash streets. Houses and other historical sites dating from the 18th century can also be found on Walnut and Manley streets in the northwestern part of the town, as well as on Pleasant and Matfield streets. In addition a number of bridges in the Town are historic. The Arch Street Bridge and the Triple Arch Stone Bridge are both located in Memorial Park. Vehicular traffic has been prohibited. The bridges need to be maintained. The Forest Street bridge on River Street is also noted as historic.

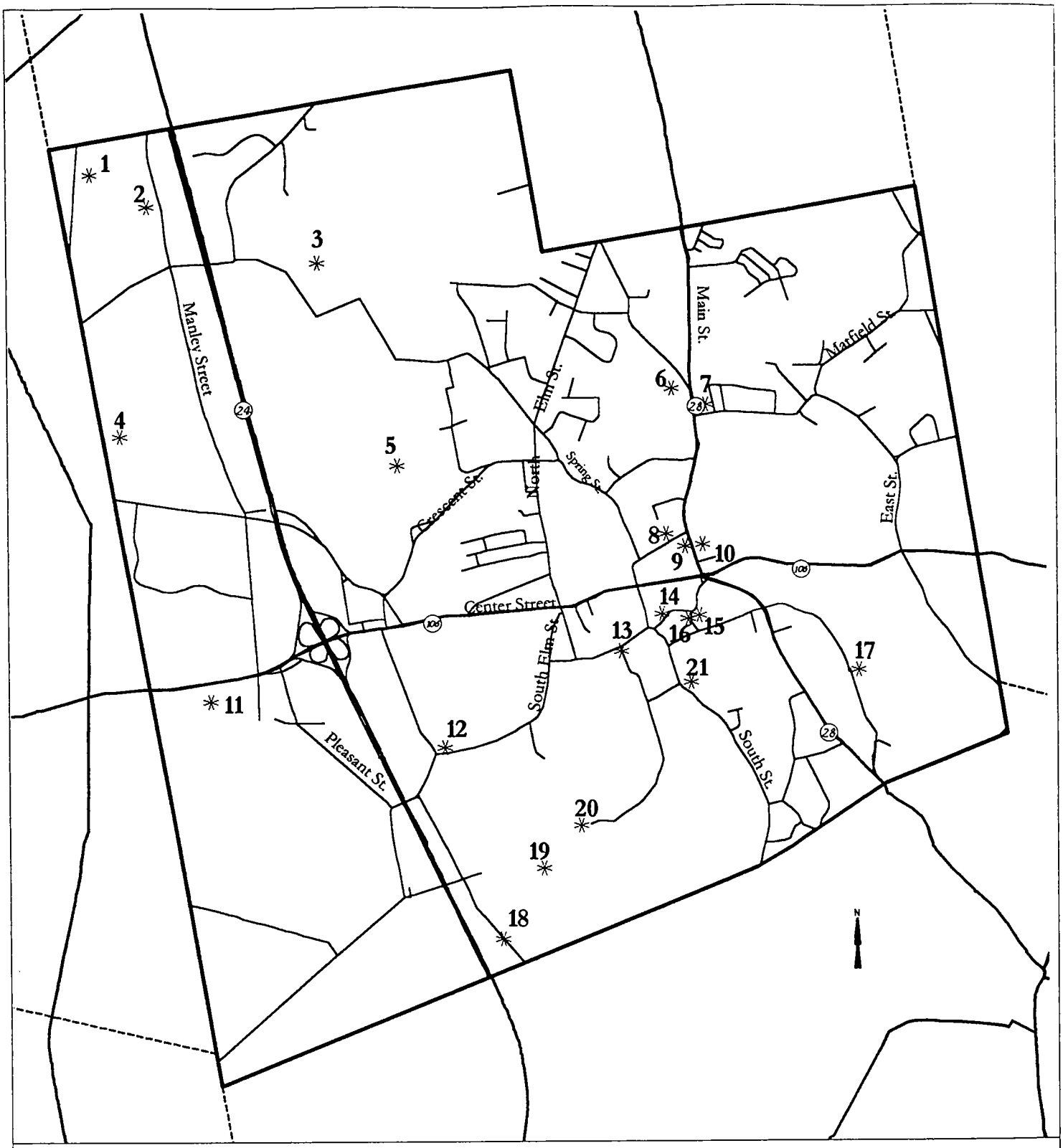
Historic Homes

The most historic properties consist of early farm houses, residences including in particular an unusually large number of side entrance (approximately 185) and hip roof (approximately 100) homes, and approximately 130 early colonial, commercial and institutional buildings. They are located throughout the town. Major concentrations are found on the following streets: Matfield, North and South Main, West Center Street, North Elm, River, Spring, Pleasant, Walnut and Crescent the Historical society is presently survey ing and locating these properties.

Cemeteries

Historic cemeteries are located in several parts of West Bridgewater including:

- West Center Street, close to the interchange with Route 24
- Powder House at the corner of North Main Street and Matfield Street
- Pine Hill, is across the road on North Main Street. There are some recent gravestones as well as others from early in the century
- Jerusalem Graveyard on Manley Street
- The Old Graveyard on South Street
- Dunbar Family Cemetery on Walnut Street
- Pleasant Hill Cemetery on Pleasant Street near Route 106.



Map 5-1

Legend

1) Howard Hill
2) Manley Farm
3) Salt Works Copper Site
4) Howard Mill Site
5) Mill Pond Dam
6) Quaking Bog/Pine Hill Cemetery
7) Matfield Street Cemetery
8) First Congregational Church
9) Drury Bell
10) Town Hall
11) Porter Farm
12) Forge Site
13) Forest Street Bridge
14) Rev. Keith Parsonage
15) War Memorial Park
16) Triple Arch Stone Bridge
17) Brick Kiln
18) Pete Cook's Place
19) Skim Milk Bridge
20) Solitude Stone
21) South Street Cemetery

Historic Sites

Town of West Bridgewater Master Plan

Prepared by Larry Koff & Associates

5.3 OPPORTUNITIES/ANALYSIS

The historical heritage of West Bridgewater provides the town with an opportunity to shape new development in a manner which will reinforce its evolution form a collection of small villages, to a mill town, a center of agriculture, and a suburban town with substantial industry and a dispersed pattern of single family residences. The Town's historic resources can provide a context for shaping future development. Numerous studies have shown the economic benefits of promoting historic preservation.

Identifying the town's historic assets as they impact future development

Town Center
Central Square and its environs is the major location of the Town's historic sites. The preferred design concept for this center is that of a New England Village. Proposed traffic improvements and commercial development should build on the rich history which has existed in this area. Historic buildings and artifacts should be retained wherever possible. The civic importance and mix of uses should continue to be themes which shape the development of this district. A pedestrian scale should be retained and not overwhelmed by cars and traffic.

Villages
In addition to Central Square, the convenience oriented commercial area near Route 106 and 24 near Crescent and West Street was a village center. With recent transportation and commercial development, this memory has been mostly lost. It might, on the other hand, be possible, with new commercial development in this location, to re-create more of a sense of place. The current mix of uses are primarily of national chains and convenience oriented uses. No distinct identity has been fostered.

Historic properties and Districts
The local Historical Society has located historic properties by address. While a number are clustered around the Town Center on Ash, River, South Main and Bryant, they are also concentrated in other parts of town along Matfield North Main, Copeland, North Elm, Crescent, and Walnut Street. There properties might be identified by a plaque and a historic walk and guide book developed to highlight these areas. The designation of a protection district would take considerable additional work and broad support by the community.

Scenic Roads and Bike Routes
The Transportation element of the Master Plan has identified scenic roads and bike routes. These routes could provide a foundation for organizing a protection strategy for the town. Roads, views, historic sites would all be identified and located within a series of historic and recreation walks and rides. Old roads and stone walls would be preserved.

Bridges and Natural Landscapes
The Town's natural environment along with its historic resources provides a context for shaping future growth. Wetlands, bogs, and bridges have been a significant part of the Town's fabric. How can the town preserve this fabric as well as adjust to changes brought about by the continued development of the Town?

Role of the Historic Commission and the Historical Society

The Historical Society is charged with the responsibility of building the town's inventory of historic resources. A summary of some of this inventory was discussed previously. A second

responsibility of the Society is to publicize and educate the public about the town's history. This is a time consuming effort. The Historical Society has been active in town for over 30 years. They have their own building which contains a library, a portrait collection of early town leaders, and artifacts of importance to the area and the settling of West Bridgewater.

The Historical Commission has recently been re-activated. The Selectmen appointed 6 members, and the Commission has been expanded to include 7 members. The role of the Commission is to work towards the preservation of the town's historic assets. The Commission achieves this goal by "planning for and implementing programs for the identification, evaluation, and protection of its community's historic resources".[1]

- To be effective, local historical commissions must be active participants in local planning efforts.
- The first step is to develop an effective local preservation program, i.e., identify resources, threats, a vision, and priorities.
- Local commissions must work in cooperation with other municipal boards and agencies to ensure that the goals of historic preservation are considered in planning the town's growth. Important boards include:
- The Selectmen, Planning Board, Conservation Commission, and, of course, the Historical Society.

What is the Town's historic preservation vision?
Should the Town be concerned with preservation of sites, structure, or areas? The Commission, working with the Society, needs to establish a vision and set of priorities. At present the town has no historic districts. Nor does it have a means to recognize historic structures.

How much public oversight is appropriate for West Bridgewater?
In order for the Town to truly protect its resources and allow development which will be consistent with the town's rural heritage and character, there needs to be more of a consensus as to what preservation strategies should be preserved.

- What type and degree of architectural control is appropriate for the town's scenic areas as well as the commercial districts?
- Should the Commission provide the Planning Board input during the Site Plan review process with issues of historic and cultural importance?
- Should architectural districts be organized which would give oversight authority directly to the District Commission? Most towns, especially when there is a shortage of volunteers, have avoided granting the District independent review authority.

Role of Town Historic Committee in Site Plan and Subdivision Review
The Site Plan Review Bylaw, which allows the town some oversight on new commercial and industrial projects, could be modified to include the review of historic preservation issues in site plan review. Sub-division review could also include, where historic resources are involved, the input from the Commission. Would the town want and would the Historic commission be interested in participating in development review of historic issues?

[1] Preservation Planning Manual, Local Historical Commissions: Their Role in Local Government, Massachusetts Historical Commission, 1992, p. 1.

Design Guidelines for Protection of Scenic Areas

As development continues along the major arterials, the Town needs to consider its vision for the future and how to best protect it. Views along the roads to a rural scenic landscape in the rear will be obliterated under the current pattern of development. The Historic commission has the opportunity to support new zoning tools which will protect the town's historic and scenic resources.

Should the Commission consider establishing protection districts?

First a survey would need to document the location and importance of a district. Second, the Commission, with the concurrence of the Selectmen, would have to be prepared to develop design guidelines for reviewing projects within the district.. The Commission would then need to be involved in design review. Without substantial volunteer support for taking on new responsibilities, it is not recommended that towns adopt district designation.

Or should the Commission concentrate on providing information and support to other Boards?

The Planning Board and Conservation Commission, as well as the Building Department, could utilize support in providing information on the background and importance of various sites and buildings. By cooperating in this manner and working towards a common vision for managing future growth, all boards will benefit.

Will the creation of historic districts discourage investment in the designated properties?

A number of studies have been undertaken to assess the economic impacts of undertaking preservation strategies. These strategies usually include district designation, organization of a public review process to monitor change, and the adoption of programs to encourage both public and private investment. These studies have shown that "Historic Districts are Good for Your Pocketbook"[2] One of these articles noted twenty lessons learned from historic district Designation.[3] These lessons include the following points:

- *No evidence that local historic district have any adverse effect on property values.* In fact, studies noted above, have shown that values within the designated districts have 20% to 27% higher values and appreciate at an annual rate that is 50% higher than similar homes that are not in an area with preservation restrictions.[4]
- *Historic districts do not deny the right of a property owner to fully enjoy the appreciation of a property in the overall market conditions*
- *Local Historic Districts do not discourage reinvestment in existing buildings.*
- *The stability of residential historic districts was paralleled by businesses downtown-historic downtown s provide the location of choice for businesses*
- *Historic Districts do allow for new construction*
- *Local Historic Districts have come to mean for more than what color the shutters are painted; they have emerged as a central vehicle for reestablishing a sense of community in towns and cities of all sizes.*

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[2] A collectioin of articles was provided by the Massachusetts Historical Commission including: The Impact of Local Historic Districts on House Prices in South Carolina, Economic Impacts of Preservation in New Jersey and Texas, Forum Journal,, Spring 2000, The Economic and Fiscal Impacts of Local Historic Districts in Maryland, Maryland Association of Historic District Commissions, May, 1999.

[3] Twenty Lessons Learned: Economic Benefits of Local Historic District Designation in Indiana, Adrian Scott Fine and Karen L. Kiemnec,

[4] Boston globe, November 1, 1998

5.4 GOALS AND POLICIES

VISION

Identify and protect the Town Center and other historical areas, sites, and scenic places of importance to maintaining the character and identity of West Bridgewtaer.

POLICIES

1. Have the Historic Society and the Commission confirm the list of unique environments, scenic views, and historic places and build consensus around a unified protection strategy

2. Identify appropriate protection strategies for village centers, sites, and scenic areas.

3. Get support of relevant town Boards and State agencies for pursuing appropriate preservation strategies.

4. Have the Historical Commission work with Planning Board, the Conservation Commission, and the Building Inspector to assist in the review of activities which would impact landmarks, scenic roads, historic sites and buildings.

5. Incorporate historical/cultural resource education into the public schools and Town Boards.

5.5 RECOMMENDATIONS

1. Publicize list of scenic, historic and special places

2. Promote Historic preservation by:

- Placing markers on historic properties which are consistent with a uniform system and theme of town signage (shape, material, size of signs, color).
- Protecting scenic views and entry-ways into the community
- Protecting historic resources by seeking grant funding
- Undertaking a program of public education

3. Formalize role of Historic Commission in review of impacts on local historic, cultural and scenic resources:

- Site Plan review
- Subdivision review
- Conservation Commission review

4. Consider new zoning by-law amendments

- ***Demolition by-law***
  A demolition delay ordinance is just that: A mechanism whereby demolition permits for certain buildings are delayed for a specified period of time in order to allow for consideration of preservation options. The Historic Commission should have an informal or formal agreement with the town Building Inspector to review and comment on demolition permits for properties listed in the inventory of historical sites. The delay allows the Commission time to contact owners who may not be aware of their property's significance or of the potential benefits of preservation (including, in some cases, federal tax credits and state grants).

- ***Protection of scenic roads, views, natural features, historical and archeological sites***
  West Bridgewater has a wealth of scenic roads, particularly south of West Center Street. The town has the option of designating any road as scenic, which would mean the consent of the Planning Board would be required before any construction, tree removal, or demolition along the roadway. Scenic road designation does not prevent development along a road, but it gives the town another way to influence that development in a manner that causes the least harm to a road's historic character. This designation can be recommended by the Planning Board, Conservation Commission or Historical Commission. This strategy will require more consideration and public awareness.

- ***Historic District Protection***
  The Historic Commission would like to identify and subsequently designate a town Center Historic District as well as several sub-area districts. The Master Plan Committee has suggested that the Commission complete its inventory and undertake a process of public information and awareness. There is substantial concern on the Committee that private property rights not be limited by this initiative.

5. Collaborate with the historical societies and commissions in East Bridgewater, Brockton, and Bridgewater to identify shared history.

The history of West Bridgewater is intertwined with that of its neighbors, the communities that together made up "Old Bridgewater." The historical organizations should collaborate as much as possible to share ideas about historical trails and other methods of preservation that cross town and city boundaries.

SECTION 6
PUBLIC FACILITIES AND SERVICES

PUBLIC FACILITIES AND SERVICES

EXECUTIVE SUMMARY

The Town of West Bridgewater has managed over the years to build facilities and infrastructure and provide the staff to support the public service needs of a rural community. Continued growth, in particular of commercial and industrial land uses, and the challenges of living in a more complex, suburban environment, have led to greater demands for staff and facilities to support local government. New accounting standards required by the State, stormwater protection mandated by the Federal Government, maintenance of schools and roads all require a larger allocation of public resources and greater participation by the citizens in order to support local government. Building support for change in order to maintain the Town's character is a challenge which will require thoughtful and persuasive public leadership.

Inventory

For a Town the size of West Bridgewater, one finds a number of well funded departments in addition to a variety of regional agencies which provide support. The Town has its own high school, unusual for a community of this size, and a well staffed police and fire department as well as public library. The Water Department has been wisely acquiring land and a site for a potential future public water source. There are adequate fields for public recreation. Sports are an important activity in town.

Needs/Issues

In stark contrast to the adequately funded status of the primary municipal departments, is the lack of staff and facilities to address a range of growth management issues. There is no town planner to address economic development and planning issues, the Conservation Commission and Board of Health have limited staff, there is no town engineer, and the Highway and Parks Department have long term deferred staff and infrastructure maintenance needs. Five priority issues have been identified concerning (1)funding short-fall, (2)capital facility impacts of population growth, (3) resource protection, in particular public water, (4) the adoption of fees, staffing, and organizational strategies to manage growth, and (5) the need to identify new sources of revenue to fund facility, infrastructure, and staffing needs.

Vision/Goals

The Town's vision is to respond to the growth management challenges by addressing over time the current facility and staffing needs. The current town character and quality of life is not to be sacrificed. Identifying new revenue sources and building consensus around new staffing and organizational changes will take continued leadership by the elected and volunteer citizens who work on the town's behalf.

Recommendations:

Four broad strategies have been proposed:

1. Undertake fiscal planning and adopt new funding strategies
   The rate of growth will need to be increased, fee structures increased to be in line with costs.
2. Initiate infrastructure/growth management planning activities
   A Comprehensive Water Resources Management Plan must be undertaken to address water supply, stormwater, and wastewater issues.
3. Improve Interdepartmental coordination on growth management issues including project development review and initiate public education of natural resource protection
4. Fund and undertake networking information systems improvements

6.1 INVENTORY OF EXISTING PUBLIC FACILITIES

Government Structure

The Town of West Bridgewater operates on a decentralized basis under the direction of a three-member Board of Selectmen.

- Elected positions include School, Water, Health, Planning, Library, Assessing, Housing, and Town Clerk.
- Appointed boards and administrative positions under the direction of the Board of Selectmen include the areas of Public Safety: Police, Fire, Building, Conservation, Public Works (Highway, Forestry, Vehicle Maintenance), Board of Appeals, Finances (including Treasurer/Collector, Town Accountant, Information Systems; Human Services (including Elder Services and Veterans' Services) and the Legal Department.
- The three-member Board of Selectmen have managed to operate with a consensus. Many towns operate under a five-member Board of Selectmen in order to reduce the work load for the individual selectmen and facilitate Town operations by not requiring the presence of all three Selectmen in order to guarantee a majority vote.
- The Town's government and fiscal operation, like about half of the towns in the Commonwealth, operate their local governments without a Town Charter utilizing MGL and by-laws adopted at Town Meetings.

Table 6-1 Government Structure

Board, Commission, Authority	Number Of Members	Term	Vacancy	Elected (E) or Appointed (A)	Appointing Authority
Executive- Board of Selectmen	3	3 Yrs		E	
Legislative Body	No quorum				
Open Town Meeting					
Town Clerk	1	3 Yrs		E	
Town Moderator	1	3 Yrs		E	
Treasurer/Collector	1		None	A	Selectmen
Town Accountant	1			A	Selectmen
Assessors	3	3 Yrs		E	
Finance Committee	9	3	2	A	Mod./Com
Public Health and Safety					
Board of Health Health Agent	3 1	3 Yrs	 1	E A	 BOH
Police Chief	1		None	A	Selectmen
Fire Chief	1		None	A	Selectmen
Brockton Area Mental Health Representative	1		1	A	Selectmen
Brockton Area Retardation Representative	1		1	A	Selectmen
Recycling Committee	2		1	A	Selectmen
Inspectional Services					
Building Inspector	1			A	Selectmen
Plumbing/gas Electrical	1 1			A A	Selectmen Selectmen
Commission/Boards					
Planning Board	5	5		E	
Water Commissioners	3	3 Yrs		E	
Board of Appeals	7	5 Yrs	None	A	Selectmen
Conservation Commission	5	3Yrs	1	A	Selectmen
Housing Authority Industrial Development Commission	5	5 Yrs	None 3	4 (E) 1 (A) A	Governor Selectmen
Council on Aging	9	3 Yrs	None	A	Selectmen
Recreation Commission			Inactive	A	Selectmen
Veterans Agent Trustees of Public Library	1 6	3 Yrs	None 2	A E	Selectmen
School Committee	6	3 Yrs		E	
Tree Warden	1	3 Yrs		E	
Constables	2	3 Yrs		E	
Street Lighting Committee	5		3	A	Selectmen
Board of Registrars	4	3 Yrs		A	Selectmen

Short-fall in staff to manage growth and change:

- West Bridgewater has relied upon its volunteer boards, committees and professional staff to produce an annual budget, put forward capital warrant articles and pass a balanced budget.
- A part -time replacement was recently retained to replace the Town's Board of Health Agent who recently retired.
- The Conservation Agent is part time (8 hours a month).
- There is no staff to carry out planning and economic development activities and coordinate the review of development projects presented to the town. (Site Plan is coordinated by a public hearing in front of the Planning Board.)
- The Asack Farm sub-division at West and West Center Streets is an example of piecemeal development providing neither optimum open space or economic development.
- Two open space parcels near the Brockton Country Club could, with proper staff support, represent open space and economic development opportunities for the town.
- Volunteers are also in short supply to staff many of the committees needed to operate a town. The Industrial Development Commission is supposed to have five members and two advisory members but had only two regular members in 1999. A number of positions on regional boards are also vacant. Tables 6-1 and 6-2 show some of the vacant positions.

Table 6-2 Growth Management Department Staff in Neighboring Towns

	West Bridgewater	East Bridgewater	Bridgewater	Easton	Raynham
Planning/ Community Development	None	None	Director, 1 Asst. Director, 1 Secretary	1 Secretary, 1 Planner	Director
Conservation	Agent:8 Hrs/Month Secretary: 8 Hrs/Wk	1 Staff, PT	1 Secretary, PT	1 Secretary, 1 Agent (In DPW)	1 Agent
Board of Health	Health Agent (Pt) 2 Pt Sec.		1 Agent, 2 Secretary	Director, 2 Secretary, 1 Asst. Inspector,	1 Agent
Forestry & Parks	Superintendent, Foreman, 2 Laborers	1 Tree Warden	(Part of Highway Dept. Staff)	3, Including Tree Warden (In DPW)	Director, 1 Secretary, PT, 2 Maintenance
Engineering	None			2	
Highway	Superintendent, Foreman, 5 Laborers		23 Staff, Plus Superintendent, Asst. Super, Foreman.	11 (Including Superintendent, Foremen, Laborers) (in DPW)	11 (Including Superintendent, Office Mgr., Foreman, Mechanic, 5 Maint, 2 Solid Waste Employees

Table 6-3 Public Facilities

Town Facilities	Location	Services
Town Hall	North Main Street	Contains 5,800sq. ft. (office space not counting hallways, bathrooms, etc.), offices for 22-32 government staff (FT/pt), 1 large room, 4 small meeting rooms.
Police Department	West Center Street	22 full-time officers, 9 part-time officers, 3 part-time dispatchers, 1 clerical, 4 part-time crossing guards, 5 cruisers and 3 unmarked cars, 2 animal control officers and their vehicle.
Fire Department/EMS	West Center Street	13 firefighters and 12 on-call staff, with 3 engines, 1 ladder, 2 breakers, and 2 ambulances.
Education West Bridgewater School District	Howard School Spring Street Early Learning Center PK-5 Rose L. MacDonald School 1-3 Middle/Junior High School (1989) 6-12	4 schools (PK-12).
Highway Department (Highway, Forestry, Vehicle Maintenance)	North Main Street	Maintenance of @ 80 miles of Town roads; Maintenance of Town vehicles and equipment; transfer station
Water Department	The Town has four locations for public water: Manley Street Wells (2) 12.9 acres Cyr Street Wells (4) 195 acres Norman Avenue Well (1) (proposed) Robery Farm well (proposed)	Department 100% Enterprise; 4 laborers, 1 manager, 1 office manager 665,000 av. gpd consumed; pumping capacity of 2.3 mgpd. Proposed wells will provide 1.15 mgpd additional capacity
Library	Howard Street	53,000 volumes (1/4 children's)
Forestry and Parks Department	North Main Street	105 acres, including War Memorial Park (including the Town River with a Dam), school playfields, playground, skating rink; 6 cemeteries, traffic islands and squares not included in acreage.
Housing Authority	Matfield Street	48 Elderly/Disabled Units on Matfield Street
Council on Aging	2 Spring St.	Offices, social and educational activities, nutritional services

- As with most towns, there are no clear records on facility ownership and maintenance.
- The State is now requiring beginning in 2003 that Towns identify all their fixed assets and set up depreciation accounts by the year 2007. This will be a major undertaking.
- The Municipal Building Needs Repair Account overseen by a 9-member board appointed annually by the Selectmen reviews major and unforeseen maintenance projects. Each Department is responsible for maintaining their facility within their yearly budget.

Regional organizations provide key services and supplement the work of Town Boards in the areas of transportation, solid waste disposal, public safety, mosquito control, joint purchasing, vocational education, and planning. Important services on a regional basis are noted below.

Table 6-4 Regional Service Groups

Name	Services	Members
Southeast Regional Services Group (SRSG)	Joint purchasing, training, problem solving by municipal administrators, highway superintendents, others	16 cities and towns Abington, Avon, Bridgewater, Canton, Carver, East Bridgewater, Easton, Foxborough, Mansfield, Norfolk, Plainville, Sharon, Stoughton, Taunton, West Bridgewater, Wrentham
Tobacco Control Program	Education, enforcement of regulations for boards of health	8 members and towns Carver, Halifax, Hanson, Middleboro, Pembroke, Plympton, West Bridgewater, Whitman
Mutual Aid Agreements	Fire/public safety	All towns adjacent to West Bridgewater, as well as agreement with all towns in Plymouth County
Southeastern Regional School	Vocational education	8 cities and towns Brockton, East Bridgewater, Easton, Foxboro, Mansfield, Norton, Sharon, West Bridgewater
SEMASS	Solid waste disposal, Rochester Ma.	51 Communities
South Shore Community Action Council	Fuel assistance, weatherization, consumer mediation	Avon
Women's Place Crisis Center	Battered Women's Services	Brockton
Old Colony Elderly Services, Inc.	In-home assistance, homemakers/ personal care, Meals on Wheels, transport	30 towns and cities in Southeastern Massachusetts
Department of Social Services, Transitional Assistance, Employment and Training, Welfare	Regional Office in Brockkton	14 Cities and towns including the Bridgewaters, Easton, Brockton
Old Colony Planning Council	Land use, transportation, economic development, open space planning, environmental protection, business retention and expansion, grant application, regional information systems	15 cities and towns Stoughton on the North, Kingston on the East, Plympton on the South, Easton on the West
BAT	Regional transportation agency operates Handicap Van/Dial-A-Ride	Regional transit authority serves Greater Brockton area
Plymouth County Mosquito Control Project	Management of a range of mosquito control programs	Plymouth County
U Mass Extension/ Plymouth County	Provides research-based agricultural and nutritional information	Serves all towns in the county from office in Hanson and satellite office in Brockton
Bridgewater Land Trust	Assists CC with land acquisition	Bridgewaters

Public and non-profit service organizations are located in West Bridgewater as well as Plymouth, Brockton, Taunton, and Quincy. These agencies provide a broad range of social, welfare, employment, and health care services for the region's low income and disabled population as noted in Tables 6-5 and 6-6 below. While a needs assessment of the local population has not been carried out, the data below indicates that West Bridgewater has the lowest number of residents on Public Assistance of the neighboring communities.

Table 6-5 Residents on Public and Transitional Assistance, December 2000

	SSI Aged	TAFDC	SSI Disabled	EAEDC *	Food Stamps	Total
West Bridgewater	8	18	67	5	58	**156**
East Bridgewater	19	27	105	15	93	**259**
Bridgewater	29	48	189	24	166	**456**
Easton	36	22	141	7	134	**340**

* Emergency Assistance to elderly, disabled, and children

Source: Massachusetts Department of Transitional Assistance

Table 6-6 Town and Regional Planning/Service Organizations

Name	Service	Type Public Or Non Profit
Council on Aging	Develop, implement, and coordinate programs and services to meet the needs of West Bridgewater Elders, age 60 yrs and over	Public
Veterans Services	Provision of veterans services	Public
Self-Help, Inc., Avon	Provision of information and referral to low income individuals and families	Non-profit
Old Colony United Way Brockton	Provide funding to over 30 social service agencies in area	Non-profit
Cultural Council	Review/recommend grant applications for M.C.C. funding	Public
Industrial Development Commission	Promote business in West Bridgewater	Public
Recycling Committee	Promote Recycling in Town	Public
Handicapped Access Committee	Advise town on upgrading accessibility of municipal facilities	Public
Moderators Committee for School Restoration	School Public Facility Planning	Public

While the Town is well managed, there is little room for aggressively tackling any significant long-term capital projects to address maintenance of aging buildings and infrastructure.

- In FY93, the Selectmen established a Capital Budget Committee. Based upon annual department reviews and 5 year projections, the Committee has seen more than $4.5 million dollars worth of its recommended projects subsequently funded by Town Meeting.

- In FY93, the Selectmen established a Capital Budget Committee. Based upon annual department reviews and 5 year projections, the Committee has seen more than $4.5 million dollars worth of its recommended projects subsequently funded by Town Meeting.
- Prudently, the Town has ended every fiscal year since FY94 with a surplus (or positive Free Cash balance), spending this on capital purchases or the maintenance of a Town Stabilization fund which now maintains a balance of $550,000.

Expenditures

In FY 1999, total operating expenditures were approximately $12,900,384.

- Education accounted for 53% of the total budget. Of 4 adjacent communities, Bridgewater (which has a regional high school) and Easton allocate a smaller proportion of their budget for education, but Brockton and East Bridgewater allocate more.
- Other services, on the other hand, such as Fire, Recreation, Public Works, receive substantially less funding. As growth takes place in the town, these are services that will need additional funding.

Table 6-7 FY 1999 Budgets in West Bridgewater and Neighboring Towns

	West Bridgewater	Easton	Bridgewater	East Bridgewater	Brockton	Raynham
Education	52.8%	52.4%	47.4%	58.9%	53.5%	47.9%
Public Safety						
Police	*10.2*	*7.0*	*9.3*	*6.2*	*7.0*	*14.4*
Fire	*3.9*	*6.1*	*7.7*	*3.6*	*7.2*	*8.4*
Other Public Safety	*3.7*	*1.4*	*3.2*	*1.2*	*0.3*	*1.1*
Public Safety Subtotal	17.8	14.5	20.2	11.0	14.5	23.9
Debt Service	7.7	7.7	6.7	8.0	2.5	2.4
Fixed Costs	6.5	10.2	8.2	10.5	17.2	8.0
General Expenditures	6.1	7.8	5.7	5.0	4.4	5.4
Public Works						
Public Works/Highway	*3.2*	*3.6*	*4.4*	*2.8*	*2.2*	*4.4*
Other Public Works	*1.1*	*0.4*	*0.0*	*0.2*	*2.7*	*3.6*
Public Works Subtotal	4.3	4.0	4.4	3.0	4.9	8.0
Inter-governmental	2.0	0.8	0.8	0.4	1.2	1.1
Culture/Recreation	1.7	1.2	4.4	2.0	1.0	2.0
Health/Welfare	1.1	1.0	1.8	1.0	0.6	1.1
Other	0.0	0.3	0.4	0.2	0.2	0.0
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

- The Town's debt service costs are just under 8%, which is more than the median of adjacent communities but in line with what is considered a reasonable percentage of municipal expenditures.

Table 6-8 FY 99 Debt Service as % of FY 99 Expenditure

Municipality	Debt Service %
East Bridgewater	8.0%
West Bridgewater	**7.7**
Easton	7.7
Middleboro	6.8
Bridgewater	6.7
Taunton	4.4
Brockton	2.5
Raynham	2.4

- During the last bond review, done in 1999, the Town maintained its excellent A-2 bond rating. Under the old rating system that is equivalent to an "A" rating which the Town has held for several decades. Only Easton had a higher bond rating among neighboring Towns, with a rating of "A-1."

Revenues

Total revenues in FY 1999 were $14,257,588, providing the Town a slight operating surplus.

- Total valuations in West Bridgewater are relatively high given neighboring towns but over-all below the state-wide average. Equalized valuation per capita (EVPC), a measure of the amount of valuation available to finance local property taxes, was the highest of six towns in the surrounding area in fiscal year 1998, but somewhat less than the average EVPC for the state ($74,220 vs. $90,618).
- Residential tax rates are average for adjacent towns

Table 6-9 Equalized Valuation Per Capita in FY 1998: Six Town Comparison

West Bridgewater	**$74,220**
Raynham	$70,360
Easton	$64,046
East Bridgewater	$51,535
Bridgewater	$43,837
Brockton	$31,068

Table 6-10 Residential Tax Rates in West Bridgewater Area

Brockton	**18.06**
East Bridgewater	17.98
Easton	16.24
West Bridgewater	15.43
Raynham	14.35
Bridgewater	14.03

- The Town benefits from a large commercial base and a split tax rate; 43% of the taxes are paid by commercial property owners.

Table 6-11 West Bridgewater Tax Revenue (FY 99)

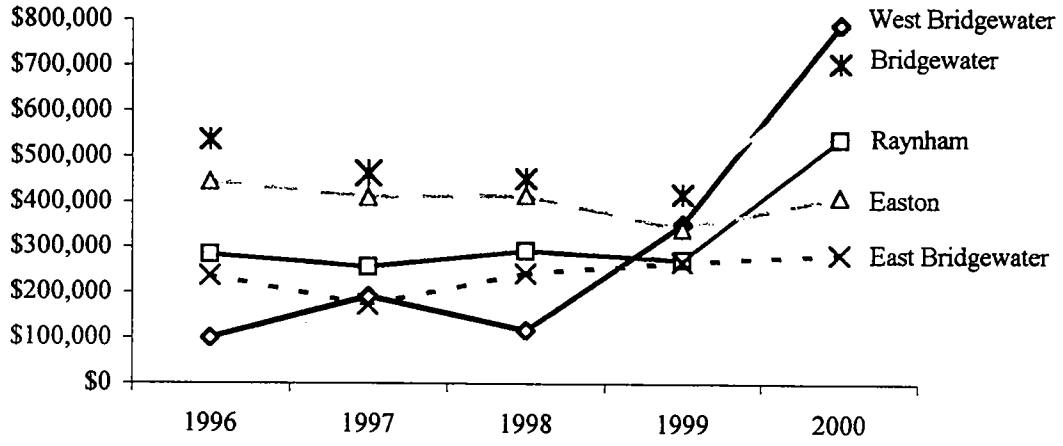
Tax Classification	Tax Rate	Tax Levy	Percentage of Total Tax Levy
Residential	15.43	4,922,519	57%
Commercial	20.61	1,856,287	21%
Industrial	20.61	1,492,830	17%
Personal Property	20.61	419,956	5%

- The availability of State Aid is average for the state. Generally State Aid represents less than one quarter of a municipality's revenue; it made up 19% of West Bridgewater's revenue in FY 1999.
- In the past two years, new growth has increased sharply in West Bridgewater as a direct result of bringing the Assessment function in house and hiring a professional to implement and manage a computer assisted mass appraisal system. This brings to the Town the skills necessary to focus on the discovery of taxable property, defend the values, and be more accountable to taxpayers. The position was created and filled in early 1998, the results of which, in part, can be measured on the growth revenue chart.

Still, another factor contributing to growth in revenues may be the continuing hot housing market, as other towns have experienced recent growth as well.

- This recent rate of growth is not expected to continue; in fact it might decrease due to changes in the organizational structure and taxable values of particular industrial properties.

Figure 6-1 New Growth, 1996-2000



6.2 Public Facilities Needs/Issues

The following is a summary of general needs and issues concerning public facilities and growth management.

Issues Summary

Table 6-12 highlights the concerns of individual town departments. Many of these issues have been identified by prior reports and will be further stressed by the demands of projected additional development. They are organized into five major areas of concern:

1. Funding short-fall to address current town department needs
2. Projected residential growth impacts on Town's fiscal balance, staffing, and facility needs
3. Protecting public water
4. Insufficient growth to address current service and capital needs
5. Possible strategies to address growth management and staffing needs

1. Funding short-fall to address current computer, facility, and staffing deficiencies.

While the town's budget has been balanced, there are substantial needs that should be addressed:

- Computerization: While the town departments are being networked, additional funding will be needed to equip and train the staff to facilitate data storage and sharing of information. These upgrades will lead to substantial long term savings and service efficiencies.
- Staff: A number of existing departments lack sufficient staff:
  - Conservation Commission Agent has been retained for only 8 hours/month
  - Health Department has no agent
  - The Public Works Department has half the staff it had during the 1980's
  - The Assessing Department is in need of qualified support staff and/or adequate training. A new position is needed to assist Town Appraiser with routine management, maintenance, and appraisal functions so as to carry out interim year updates.
- Salaries: Other Departments are unable to retain key staff due to low salary schedules at both the management and field levels.
  - The Town has lost the following key staff recently because of low salaries: Council on Aging, Building Inspector, Town Accountant/Information Technology
  - There is substantial turnover in the labor staff because of low salary levels
- Capital Projects: A number of Capital projects need to be undertaken including a standpipe for Walnut Street to provide water pressure for the Manley Street area, an addition to the Fire Department, the renovation of the Middle-High School, and accessibility and building renovation improvements to Town Hall. These projects are estimated to cost between $4-$6.8 m.

- Maintenance: Additional funding for deferred maintenance is needed in a number of other areas
  - Public Roads. The State has cut Chapter 90 monies for roadway maintenance by 40%
  - Cemetery and Memorial Park maintenance
  - Traffic congestion and building deterioration at Central Square

Table 6-12 Information, Facility, and Capital Needs Planning Concerns of Town Departments

Town Departments	Departmental Concerns			
	Information [1] Systems/Coordination	Growth Management/ [2] Organization/staffing	Facilities and Equipment [3][4] Need More Space, Larger Facility	Facility/Vehicle Maintenance
Town Hall	Information Technology specialist	Full-time engineer; building inspector; H.R. director (or Wage & Personnel Board)	Elevator, conference rooms, storage, offices	
Police Department				
Fire Department	Need GIS and training		2nd Station, or Enlarge existing station	No
School Committee	Need to update computers, network 2 schools	Staffing and facilities will be needed if additional population growth	Middle/High School	
Highway Department	Need training on GIS	Need engineer for roadway and stormwater planning; Need more maintenance staff; Issue of laborer wage rates; Roadway standards for cluster Need to study curb-side pick-up, higher fees	Need parcel to rear of barn to facilitate future building expansion	Need to begin aggressive $200K/yr road rebuilding program
Water Commissioners	Need training on GIS	Laborer wage rates	Build Standpipe at Manley/Walnut; Purchase land around wellheads; Long term new wellfield	Design and construct an4 iron removal plant for Manley St. well (underway)
Library		More staff hours needed, plan for growth beyond 2010		
Forestry and Parks Department	Need training on GIS	Need additional laborer	Cemeteries,	Improve maintenance for Memorial Park
Housing Authority			New housing sites	
Treasurer/ Tax Collector				
Assessing Department	Need GIS coordination with assessing functions	Need increased P.T. staff and qualified position to replace current full time staff	Additional space, equipment, and ADA compliance	Need additional software and hardware
Town Accountant/ Information Systems	Additional assistance to meet GASB-34	Additional Software to integrate GASB-34 for all departments		
Conservation Commission	Need training on GIS	Full time Conservation Agent		
Council on Aging			Elderly Center to be built in 2001 w/ CDBG grant	
Planning Board	Need training on GIS	Planner/Economic Development staff		
Board of Appeals	Need training on GIS			
Building Department	Need training and upgrades to GIS	FT Building Inspector		
Board of Health	Need training on GIS	Health Agent		

2. *Projected Residential Growth will further impact the Town's fiscal balance, staffing, and facility needs*

The following table shows the projected need for various municipal facilities by 2020 and at full buildout. The population, as estimated by Old Colony, is expected **by the year 2020** to increase by close to 800 persons, to **a total of 7,400 residents**. As shown in Section 1, Land Use, the population **at full buildout** is expected to increase by 3,166 persons to **a total of 9,780 residents** including an estimated **758 additional school children (K-12)**. Over the next twenty years, the number of households is expected to increase from 2430 to 2,750 households. At full buildout the total number of households is expected to be 3,580 households assuming there are no public sewers or Title V systems available to permit development on currently constrained soils. There is no projected timetable as to when this full build out could occur. Furthermore, these facilities will not need to be constructed all at once, but rather in a planned, orderly fashion.

Table 6-13 Projected Growth Impacts[1]

	Existing Level of Service (2000)	Projected Total Demand (2020) 7,400 res.	Projected Total Demand Full Buildout 9,780 res.	Existing Capacity	New Facilities Needed? (2020)	New Facilities Needed? Full Buildout
Water	0.664 mgd	0.723 mgd	0.96 mgpd	2.3[2]	Yes Stand-pipe	New well site if growth exceeds projections
Police[3]	22 full-time officers (3.6 off./1,000 pop)	24 officers	35 officers	22 officers	Yes	Yes
Fire	13 firefighters, 12 on call (6/1,000 homes)	14 firemen	21 firemen	13 firemen	Station renovation $1M	New station @$1M
Library	8 books/person[4]	59,200 books	76,800 books	53,000 books	renovation	expansion
School	1,012 students	1,000 students	1,490 students	1,012 students	$1M Middle/High	1 new school
Recreation	104.7acres[5]	77 acres	101 acres	10,500 residents	No	No
Roads	Major arterials heavily congested	Rte 106	Intersections, road widening		Yes	Yes

Notes:
[1] Existing population (2000) =6,641, Existing households (2000) = 2,430
[2] New Robery Farms and Norman Avenue well sites will add 1.1 mgpd capacity; a total of 3.45 capacity at full buildout. This should be sufficient water to accommodate projected build-out. Pumping capacity on peak day must be 2.5 times peak day usage.
[3] Minimum standard police officers per population (federal government standard) = 1.8 officers/1,000 pop.
[4] The state average of library holdings is 5 volumes per capita.
[5] The total park/recreation standard set for towns by the National Recreation and Park Association is 6.25 to 10.5 acres of developed "close-to-home" open space per 1,000 population. By this measure, West Bridgewater has sufficient recreation land, given it has over 15 acres of open space per 1,000 residents.

$4-$6.8 million in capital expenditures, given the projected build-out, will be required by 2020, excluding Town Center and roadway improvements. Full buildout would require substantial additional funding to cover the costs of possibly one new school, an additional well, roads, and staffing.

Table 6-14 Projected Capital Improvements Needs

Department	2020		Full build-out	
Town Hall	Elevator, offices, storage, *public hearing and meeting rooms*	$0.5-$0.8M		
Water	Standpipe	$1.5-$2M	New well area	
Police			Addition	
Fire	Expanded and new station for Manley St.	$1-$2M		
Library	Renovations		Addition	
School	High School and 3 elementary school renovations	$1-$2.5M	One new elementary school	
Recreation			Playfields	
Roads	Route 106 Widening and Central Square acquisition/Improvements	Estimate not available		
Total		**$4-$6.8M plus road improvements**		**Cost estimates not available**

Staffing salaries and deficiencies will be exacerbated by additional growth requiring some $300,000 in salaries for the following staffing priorities:

- Planner/grant-writer and secretary
- Full-time Management Information Systems/Information Technology Director (shared by the Town and the School)
- Full-time Town Engineer
- Half-time Conservation Agent
- Human Resource Director (or Wage and Personnel Board) to regulate all management positions so that salaries among various elected boards bear relationship to other department head salaries.
- Staff support for Assessing to undertake interim year updates

3. *Protecting Public Water will require coordination among Water, Highway, and Health Departments, the Conservation Commission, and Planning Board*

The Water Department is currently addressing a major short-term water quality issue. Following the recommendations of their consultant, Dufrane Henry, the Water Department received Town Meeting approval to design and construct an iron removal and corrosion control plant for the Manley Street well. This well is now off-line and final plans are being completed in anticipation of undertaking the construction of this $1.8 million facility.

Longer term water quality issues are more complex as identified below.

- The quality of the town's groundwater is threatened by stormwater run-off and failed septic systems, inappropriate development, and lack of inspection and enforcement.
- West Bridgewater residents continue under Title V regulations to develop and maintain their own septic systems[1].

A 1999 study carried out by an outside consultant for the Town found that 27% of the 753 residential respondents had problems with their septic system, 63% were interested in exploring alternative systems.

- The Department of Environmental Protection is urging the town to undertake a Comprehensive Water Resources Management Plan. The purpose of this plan is to look at the current problems and develop localized solutions to these problems.

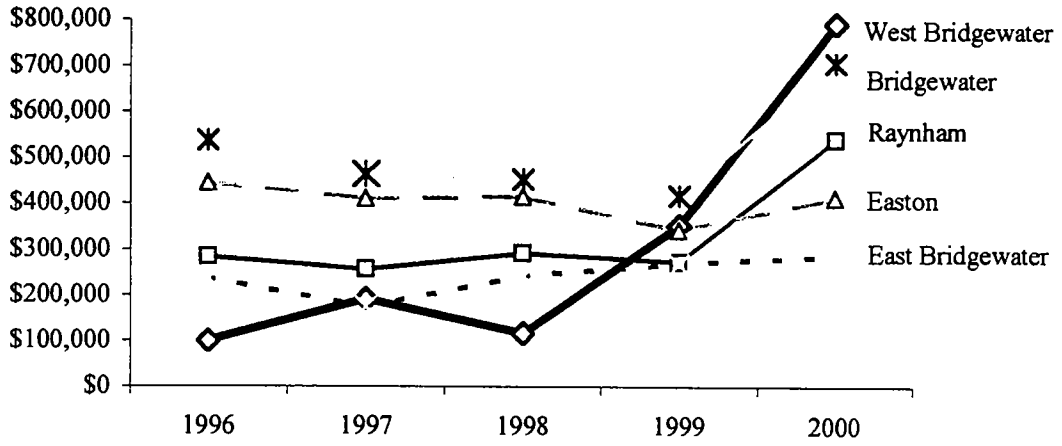
The Highway Department will need to work with the Water and Health Departments, the Conservation Commission and Planning Board and the Board of Selectmen on developing a stormwater protection plan as required by the EPA for West Bridgewater by 2003. Stormwater runoff is one of the major sources of groundwater contamination.

4. *Insufficient growth to address current critical municipal service and capital needs without adopting a range of new strategies.*

- Between 1996 and the Year 2000, total annual tax increase fluctuated from less than 1% to as much as 14% and remained until 1999 below the revenue increase of neighboring communities.
- In the past two years, growth in valuation has increased sharply in West Bridgewater. Revenue growth has been more steady in neighboring towns.
- While FY 2000 saw a significant rise in new growth revenue, over $790,000, this was due in large part to new growth as well as to a specific corporation which is now in the process of restructuring itself to reduce its valuation and resulting tax burden.
- No major projects are on the horizon in West Bridgewater which will continue to positively impact the tax rate.

[1] The majority of houses have septic tanks, except for the town's two manufactured home parks and a few businesses near the Brockton city line. In 1990, some 87% of homes had septic tanks while about 13% were tied to a public sewer system. Just 2.4% of homes have private wells; in 1990 about 96% of homes obtained water from a public source or a private company.

Figure 6-2 New Growth, 1996-2000



- In FY 2000, the Town's budget was set very close to the maximum it could tax without necessitating an override. The town had an excess capacity of just over $237,543. By contrast, Bridgewater has over $300,000 in excess capacity; Brockton has over $2 million.
- The tax bill for the average homeowner in 2001 will go up about 8.5% with the residential tax rate now set at $14.70 per $1,000 of valuation. The median single-family tax bill was $2,146.97 in FY 2000, with a residential tax rate of $13.52 per $1,000 of valuation. In FY2001, that median went to $2,363.76. The median house value was $158,800 in FY2000 and $160,800 in FY 2001.
- Given the relatively moderate income of the average household, West Bridgewater tax payers have limited means to increase their taxes. There is little support for an override of Proposition 2½.

5. *Possible strategies to provide additional growth management funding and staffing*

A. Increase the fees for various services,
B. Pursue additional grants,
C. Promote appropriate new development
D. Obtain the support of regional planning agencies to provide needed town revenue and professional staff support. Regionalize some town services to reduce costs and eliminate redundancy
E. Coordinate Town departments concerned with water resource protection
F. Establish growth management Stabilization Fund
G. Bring sewers to industrially zoned areas to attract high quality industries

A. Increase Fees:

A comprehensive study could be undertaken to assess how the Town might bring its fee structure in line with current and projected costs. The examples below indicate the current deficiencies.

- Water: The Town has the lowest water rates in the region. Could higher rates support needed improvements and possibly the use of an engineer to carry out stormwater planning?

Table 6-15 Average Water Consumption Per Household

Town	Average Consumption
Easton	$237/year/household
East Bridgewater	$226/year/household
Bridgewater	$208/year/household
West Bridgewater	**$180/year/household**
Raynham	$280/year/household

Based on 90,000 gallons per year in West Bridgewater
*Including annual water tax assessed on all property

- Waste disposal: The Town generates some $80,000 in revenue for a transfer station that costs some $200,000 annually. While home-owners are paying $35 annually for a sticker, adjacent towns charge substantially more for this service. Furthermore, when the Town's contract with SEMASS ends in 2015, tipping fees could increase from $40 to $150/ton.

Table 6-16 Solid Waste Disposal Fees

Town	Fee
Easton	$ /household (private disposal)
East Bridgewater	$1.25/bag
Bridgewater	$/year/household
West Bridgewater	**$35/year/household**
Raynham	$/year/household

- Conservation Commission: The commission should establish a new fee structure so that it can support all of its staffing needs. At present Conservation Fund fees support about $4,200 worth of each annual budget but more professional services are needed as the Town begins to see proposals that include more complicated wetland issues. It is estimated that some $10,000 could be raised annually if the commission had a better fee structure and enforcement capabilities.

B. Pursue additional grants

Grants and low interest loans are available to address certain issues. The Town needs to fund a grant writer to take advantage of these opportunities.

C. Promote appropriate new development

The Town Appraiser has indicated that a warehouse building is valued at about one half the value of a new office building and therefore in tax payments pays per square foot about one half the rate of a new office building or hotel. In addition, a hotel generates a local room tax. In some communities some of this funding is dedicated to the local Chamber of Commerce to promote economic development.

Table 6-17 Valuation/square feet of alternative development types

Use	Valuation/Sq. Ft. ($)
Warehouse	50
R& D	65
Class A Office	90
Restaurant/Fast Food	200
Hotel	$90,000/rm

The addition of two or three research and development buildings totaling some 500,000 square feet would generate, based upon the current commercial tax rate of $19.79, some $500,000 in new tax revenue, more than enough to pay for the additional salaries needed to improve growth management planning in town.

The town should be encouraging revenue positive alternative land uses as indicated in Table 6-18 below.

Table 6-18 Fiscal Impacts of Development

Type of Development	Revenue/General Govt.	Revenue/Education
Positive Revenue Benefits		
Research Office Parks	+	+
Office Parks	+	+
Industrial Development	+	+
High-Rise Garden Apartments (Studio/1BR)	+	+
Age-restricted Housing	+	+
Garden Condominiums (One/Two BR)	+	+
Open Space	+	+
Neutral Revenue Benefits		
Retail Facilities	-	+
Townhouses (2/3 Bedrooms)	-	+
Expensive Single-Family Homes (3-4 BR)	-	+
Negative Revenue Benefits		
Townhouses (3-4 BR)	-	-
Inexpensive Single-Family (3-4 BR)	-	-
Garden Apartments (3+ BR)	-	-
Mobile Homes (Unrestricted Occupancy)	-	-

Source: The Growth Impact Handbook, DHCD, p.10

D. Obtaining the support of regional planning agencies and Bridgewater State College will provide needed professional staff support.

The Old Colony Planning Council, the Executive Office of Environmental Affairs Watershed Initiative, Bridgewater State College are three regional Agencies which can support the Town's staffing needs.

- Regionalization of some town services
- The town currently shares a sealer of weights and measures with four other towns. The same arrangement might enable the town to create a number of positions which cannot be funded within West Bridgewater's budget alone.
- Activities which should be considered for regionalization include:
  - **High School**: The senior class only has 35 students. Should the Town consider working with other neighbors on a regional educational plan? A recent study by Bridgewater/Raynham concluded that the regional high school was currently saving the towns some $2.9 million annually as well as providing students with substantial curricular offerings which would not be available under separate high schools.[2]
  - **Growth Management Services**: The staffing needs of a Planner, Conservation Agent, Board of Health Agent, Grant writer might best be met by sharing these services with an adjacent town.
  - **Fire Station**: Could the town work with Easton and Brockton on fire protection for Manley Street?

E. *Coordinate Town departments concerned with water resource protection*

The Town needs to undertake the development of a comprehensive water resources management program in order to address stormwater, septic, and resource protection issues. The planning for this initiative should include a broad range of departments including Water, Highway, Public Health, Conservation and Planning.

- Funding might come from a variety of sources including the Water Department, the Town, and the Department of Environmental Protection State Revolving Fund.
- Establish stabilization fund to support new infrastructure and programs.

F. *Establish a Stabilization Fund for growth management services*

The town needs to identify a set of capital and staffing activities which will require local funding. Provision must be made to budget for these expenditures.

An alternative strategy which would provide some State grant support would be to utilize the Community Preservation Act as a vehicle for dedicating up to 3% of local funds for housing, economic development, and open space purposes. Under the provisions of this act, a Community Preservation Committee approved by Town Meeting would be established made up of representatives of various Town boards and commissions, including the Conservation Commission, Historical Commission, Planning Board, Housing Authority, and Recreation. This Committee would study the needs of the Town relating to historic resources, open space, recreation, and affordable housing. A surcharge of up to 3% of the real estate tax levy may be collected each year and placed in a fund to support the needs identified by the Community

[2] Report, The NESCED Team for Bridgewater-Raynham Regional School District, January 2001

Preservation Committee. A minimum of 10% of the fund must be allocated to each of the four issues.

G. *Sewer service to industrial areas*

Additional analysis such as the Coweeset Brook study are needed to address this need.

6.3 Vision and Goals

VISION

A vision and set of goals will be established for the town's public facilities based upon a review of the inventory and needs sections of this report. A draft vision follows along with a set of goals for discussion purposes.

The Town of West Bridgewater envisions itself in the year 2020 as having:

- *Upgraded its Town Hall to meet the staffing and public meeting needs of contemporary municipal government*
- *Created a campus setting for municipal facilities bounded by a re-vitalized New England Town Center and an improved Route 106*
- *Maintained quality schools and public safety*
- *Expanded local government in order to avoid being overwhelmed by new growth which would negatively impact town by providing the diverse management, regulatory, economic development and environmental protection needs its citizens and businesses requested.*
- *Enhanced the quality of its municipal facilities and services through the adoption of improved management and technical efficiencies, improved coordination between boards and Departments, additional staffing, regional relationships, and increased citizen involvement while minimizing the costs to local citizens*
- *Fostered the growth of a historic town spirit to increase the involvement of students in local affairs and of its citizens in managing local government*

GOALS / POLICIES

The following goals and policies have been suggested in order to achieve this vision,

1. ***Ensure that town government is able to address growth management issues***
   a. Identify recommended department staffing levels
   b. Provide required funding/fee structure to support staff
   c. Pursue State and regional agency grants, funding, and technical assistance

2. ***Increase the level of citizen participation in Town government***
   a. Utilize volunteers to support various growth management initiatives
   b. Undertake public education initiatives regarding stormwater, resource protection, Title V, government organization

3. ***Improve the efficiency of town government***
   a. Provided needed staffing which will have most impact on improving cost/efficiency of Town government

b. Provide needed computers and staff training
c. Prepare capital plan for upgrading facilities, equipment, and maintenance
d. Consider various strategies to regionalize specific Town services
e. Adopt cost based policy with respect to fee structure of Town services
f. Institute department organizational changes and coordinated development review

4. *Protect the public water supply*

a. Undertake comprehensive water resources planning initiatives
b. Adopt organizational, staffing, and funding reforms to facilitate planning and implementation
c. Protect surface and ground water quality through appropriate regulation and enforcement

5. *Increase fiscal rate of growth*

a. Establish priorities for residential/commercial growth
b. Maintain favorable 40/60 split between commercial/residential tax base
c. Provide more opportunities for fiscal positive residential and commercial growth
d. Consider sewer extensions to industrial areas

6.4 RECOMMENDATIONS

How can the Town of West Bridgewater best manage its growth to achieve its vision for the future? The following recommendations have been proposed as strategies for consideration by the town. They are organized under four key headings concerned with 1) fiscal planning, 2) growth management 3) interdepartmental coordination, and 4) networking information systems improvements.

1. Undertake fiscal planning and adopt new funding strategies:

The Selectmen, working with the Finance, Building Needs, and Master Plan Committees need to review and adopt a set of goals and policies leading to additional funding as has been suggested to address the Town's fiscal, growth management, and capital budgeting needs. Specific concerns include:

Ensure that town government is able to address growth management issues

a. Identify recommended department staffing levels
b. Provide required funding/fee structure to support staff
c. Pursue State and regional agency grants and technical assistance

Improve the efficiency of town government

a. Provide needed staffing which will have most impact on improving cost/efficiency of town government
b. Provide needed computers and staff training
c. Consider various strategies to regionalize specific town services
d. Adopt cost-based policy with respect to fee structure of town services

Review present Capital Budget process to ensure that it considers upgrading facilities and equipment as outlined in this Master Plan review

a. Fund maintenance
b. Establish an open space fund and/or utilize Community Preservation Act to fund needed improvements

Increase rate of growth

a. Establish priorities for residential/commercial growth;
b. Maintain favorable 43/57 % split between commercial/residential tax revenue
c. Provide more opportunities for appropriate residential and commercial growth

2. Initiate Infrastructure/Growth Management Planning Activities

The protection of future water supplies should be part of the Town's land use planning program. As the Town is contemplating adjustments in their zoning to accommodate future growth, the Town should be careful to protect those areas that will serve as current or future sources of water supply.

Undertake preparation of a Comprehensive Water Resources Management Plan

This study could analyze and recommend **strategies to address the town's need for town-wide strategies to address Title V as well as stormwater issues.** A range of options need to be developed based upon an understanding of the priority threats to the town's water supply and alternative funding strategies.

Update mapping of water resource zones

Identify locations with high nitrogen loading. (See Natural, Open Space and Recreation Resources section.)

Adopt an enforcement and conservation program

Potentially hazardous land uses near water resource areas should be monitored for conformance to the Zoning By-law. This program should be undertaken by the Board of Health as the Town currently does not have staff for such a monitoring program.

a. Hazardous land use: The Town must craft a plan with a zoning enforcement officer, including the Board of Health, to regulate floor drains and hazardous land use.
b. Regulation of private wells: The Town should adopt regulations to monitor septic systems and water wells and a Board of Health monitoring program.
c. Water conservation: Homeowners should be encouraged to conserve water.
d. Septic management plan: The Town should consider adopting a program similar to the Town of Yarmouth. Locations of high nitrogen in the ground water would be monitored. Septic systems would be pumped and treated on a regular basis. The remainder of town would be monitored on a less frequent basis. Septic system replacement, if needed, would be carried out by the Town with the home-owner charged a betterment fee requiring a payback over a period of 10-20 years.

Water Districts to purchase critical water resource areas

The Water Districts should make land purchases to develop future water supplies.

a. Review Coweeset Brook Study
b. Undertake additional studies with support of commercial property owners

3. Improve Interdepartmental Coordination on Growth Management Issues

Establish an inter-departmental scoping process for development projects

including representatives of the Planning, Conservation Commission, Water, Highway, Health, Building, and Fire Departments.

Establish an inter-departmental Task Force to work on the Comprehensive Water Resource Management Plan

Representatives of the Water, Highway, Conservation Commission, Health, and Planning should be established to brainstorm solutions to development of a *Comprehensive Water Resources Management Plan*

Adopt a public education program to promote resource protection and growth management

(See Natural, Open Space and Recreation Resources section.)

Establish a committee on organization to explore issues of charter reform

Should some positions that are elected be changed to appointed? Should there be fewer elected boards? Should the Town consolidate its finance department, creating a Finance Director and encompass the operations of Town Accountant, Treasurer/Collector and Town Appraiser under the auspices of the Selectmen and do away with the elected Board of Assessors? Should the Town move towards a Town Manager/Administrator type of government?

4. Fund and Undertake Networking Information Systems Improvements

a. Prepare a plan which will guide information technology development.
b. Expand on the current well funded and installed networking computer system to include badly needed training and program enhancements so all employees will be able to fully utilize the current capabilities of the networked system.
c. Set up a community web site.

TRANSPORTATION

EXECUTIVE SUMMARY

The West Bridgewater town-wide transportation study was initiated as part of the Town's Master Plan process. Transportation issues in West Bridgewater will evolve directly in proportion to the extent to which the town manages its growth. Major constraints on the roadway system include Route 106's limited right of way and an insufficient budget for roadway maintenance and improvement. Given these constraints, the town will need to coordinate all new development in order to minimize both the public infrastructure costs as well as its impacts on the quiet, suburban life style desired by the residents. New growth should be directed to those areas where there is sufficient infrastructure capacity. Short, mid and long term improvements are suggested.

Transportation System Conditions
Some roadways currently have congestion problems, particularly Route 106. Several intersections with geometric deficiencies or a high number of accidents are poorly designed and in need of redesign for safety. The only public transit services currently offered are the bus service to the Manley Street industrial area and the Dial-A-Bat service for travel within West Bridgewater and to the surrounding towns; the latter service is for the elderly and physically-challenged residents. Pedestrian and bicycle facilities are limited and lacking connectivity, since many roadways lack sidewalks and safety lanes. Furthermore, state funding and the town's budget for the Highway Department limit maintenance and the upgrading of roads, intersections, and drainage.

Projected Buildout And Implications Of Buildout
The current transportation system, which consists of approximately 70 miles of roadways, cannot fully meet the projected growth in traffic if the buildout based upon existing zoning is achieved. The arterials, collectors, and local roads are not wide enough to accommodate a potential 45% increase in residential units and a projected doubling of commercial and industrial development. Furthermore, the zoning regulations and subdivision by-laws do not address many of the issues needed to ensure that a projected 15 miles of new roadways will be built according to standards which will protect the environment and ensure a more efficient system of circulation.

Goals And Objectives
The major transportation goals and objectives relate to creating a transportation system which is responsive to the needs for economic development and resource protection. The existing street pattern was developed in response to the needs of a rural, agricultural community which, because of a large number of wetlands and streams, was relatively isolated from the neighboring towns. With the development of Route 24, commercial growth on Manley Street, and increased suburbanization, the transportation system must be refined so as to accommodate additional growth while mitigating the impacts upon natural resources.

The Recommended Transportation Plan
The ultimate plan (Map 7-1) requires the adoption of new guidelines, enhancement strategies, and funding. Table 7-1 lists the recommended actions designed to improve a rural road system, alleviate the existing traffic flow constraints as well as better accommodate future travel conditions. The following map graphically summarizes the major recommended improvement actions.

- Defining a Route 106 cross-section and plan to accommodate new growth
- Resolving Design and infrastructure issues for Manley Street
- Defining a Street Hierarchy to guide development and street improvements
- Creating a network of bikeways and walkways for both local and regional access
- Developing a local and regional transit plan

- Recommending various bylaw and sub-division amendments to manage new roadway designs and minimize the impacts of numerous curb-cuts on resource areas and traffic flow
- Identifying additional revenue sources for road maintenance and construction

Although some of the long term actions can be divided into separate phases, the whole plan is expected to be implemented within the long term (20 years). Costs were estimated as *Low* (less than $10,000), *Medium* ($10,000 to $50,000), and *High* (greater than $50,000). Costs for local and regional transit plans are difficult to estimate, yet these items may be fundable through a local Transportation Management Association (TMA), the MBTA, and other private employer programs.

Table 7-1 Summary Of Recommended Plan

Recommended Action	Implementation Time Frame	Cost Estimate	First Step Towards Implementation
TRANSPORTATION DEMAND MANAGEMENT			
Concentrated Development			
Promote open space cluster zoning	Short Term	Low	Zoning By-law Change
Promote mixed-use developments	Long Term	Low	Zoning By-law Change
Local and Regional Transit Plan			
Proposed local circulator bus	Long Term	Varies	Feasibility Study, Local Coordination
Proposed shuttles to rail stations	Long Term		
Improved Dial-a-BAT service for the elderly and physically-challenged	Short Term		
Network of Bikeways/Walkways Throughout Town			
Recreational/Commuter Network in Agreement with Local Plans	Long Term	Medium	Local Approvals, Preliminary Engineering
TRANSPORTATION SAFETY MANAGEMENT			
Isolated Intersections			
Upgrade safety	Short Term	Med. – High	Coordination of Agencies
Improve traffic flow	Short Term	Med. – High	Preliminary Engineering
Access Management			
Curb-cut guidelines	Short Term	Low	Zoning By-law Change
Subdivision roadway standards revision	Short Term	Low	Sub-Division regulations
MAJOR NETWORK IMPROVEMENTS			
Route 106 Corridor			MHD
Three-four lanes with shoulders	Long Term	High	Preliminary Engineering
Traffic circulation and control improvements at Central Square	Short Term	High	Preliminary Engineering
Route 28 Corridor			
From Brockton Town line to Route 106: Traffic circulation and control	Short Term	High	MHD
Manley Street	Short Term	High	MHD
Local Network			
Widening of local roads, acquisition of additional right of way	Mid Term	High	Local Approvals, Preliminary Engineering
Bridge Repairs : Scotland, South, Belmont, West	Short-mid	Varies	Local/MHD

Map 7-1

Transportation Improvement Plan

2000 0 2000 4000 Feet

Intersection Improvement

Road Widening

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

7.1 EXISTING CONDITIONS

Street Hierarchy/Major Roadways

West Bridgewater's street hierarchy is defined below starting with the most important routes to the least important beginning with urban extensions, then urban minor arterials, urban collectors, and ending with a network of local roads. See Map 7-2.

- *Urban Extensions (UE)* include Routes 106 and 28. This type of road is defined by the U.S. Department of Transportation as providing a high level of mobility but a low level of access. That is, motorists can move at higher speeds for a longer period of time than they could on lesser roads.
- *The Urban Minor Arterials (UMA)* include Manley, North Elm, South Crescent and Matfield streets. Like Routes 106 and 28, these streets connect West Bridgewater to neighboring communities, but they are not as important for carrying through traffic as the urban extensions.
- *Urban Collectors (UC)* are relatively minor roads in size and level of traffic, yet they are still critical in the town's overall traffic pattern because they collect traffic from other local streets and feed it into the urban extensions and arterials. The Urban Collectors in West Bridgewater include Pleasant, Scotland, and South Elm streets.

Town and State Jurisdiction

- The Town maintains two major arteries: Route 106 and Manley Street.
- The State maintains Route 28, another major artery in the town that feeds heavy traffic onto Route 106.

Table 7-2 General Characteristics of Major Town Roadways

Roadway	Jurisdiction	Functional Class	R.O.W. (Ft)	Paved Width	# of Lanes	Sidewalks	Struct. Cond.
Route 106 (West Center St.)	Town	UE	50'-55'	33'-36'	2	Yes, from Central Sq. to Route 24	Poor
Route 28	MHD	UE		26'-28'	2	Yes	Poor
Route 106 (East Center St.)	Town	UMA	50'-55'	33'-36'	2	No	Poor
Matfield Street	Town	UMA	40'	26'-28'	2	Yes, in part	Good
North Elm Street	Town	UMA	50	30'	2	Yes	Fair
East Street	Town	UMA	40'	28'	2	No	Good
Crescent Street	Town	Local road	40'	26'-28'	2	Yes	Fair
Manley Street	Town	UMA	60'	24'	2	No	Fair

Functional Class Abbreviations:

UE – Urban Extensions, UMA - Urban Minor Arterial, UC – Urban Collector

Map 7-2

Street Heirarchy

- Urban Extension
- Urban Minor Arterial
- Urban Collector

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

Variable Rights Of Way
Many of the town's busiest roads, including Route 106, have some additional right of way which is not paved at present. This right of way could be used for sidewalks or road widening. Table 7-2 identifies the right of way (ROW) as well as the travel width which is often a variable dimension.

Major Accident Locations
See Map 7-3.

- *Route 106*
  - *Central Square:* This is one of the highest accident location in town averaging 6.4 accidents/year. Major issues include inadequate intersection capacity and traffic volumes.
  - *West Center Street*
  - *Prospect, Church,Crescent, Lincoln and Manley Streets:* Other than at Manley Street, most of the accidents at these intersections are rear end collisions indicating congestion.
  - *East Center Street*
- *East Street:* Most of accidents are caused when a vehicle hits a second vehicle from an angle rather than a rear-end collision indicating the need for improved visibility and/or widening.
- *Plain and Belmont Streets:* 4 accidents occur annually, more than anywhere else in the town other than Central Square. Again issues of visibility and roadway capacity need to be addressed.
- *Route 28*
- *North Main and Matfield Street*

Traffic Volumes (16 locations between 1996 and 2000)
- The data below show clearly that Route 106 is a key thoroughfare for commuters heading for jobs closer to Boston.
  - Route 106 traffic flow is heaviest just west of Route 28, with over 32,000 vehicles per day in 1999. Traffic is much lighter east of Route 28.
  - There is much more traffic headed west on Route 106 and turning north on Route 24 than traffic heading in the opposite direction. Over 7,700 vehicles travel from West Bridgewater toward Boston each day, while 6,300 vehicles are going in the other direction.
- Route 106 is also a key thoroughfare for traffic bound to the Manley Street area.
  - Most vehicles turning onto Manley Street do not use West Street.
- Traffic data along Route 28 show less variation at different points than along Route 106. The number of cars at the Brockton city line is similar to the number at the Bridgewater town line.
  - Some vehicles turn onto Harvestwood Drive to avoid traffic and the traffic signal where Routes 28 and 106 meet.

Map 7-3

2000 0 2000 4000 Feet

Town of West Bridgewater
Master Plan

Prepared by Larry Koff & Associates

**Accidents Per Year,
1996-2000**

Table 7-3 Average Daily Traffic Volumes

LOCATION	VEHICLES PER DAY			
	Year 1999	Year 1998	Year 1997	Year 1996
Route 24				
At Bridgewater Town Line	75,851	69,500		47,300
At Route 106, southbound traffic leaving Route 24 to head east on Route 106		6,332	6,179	
At Route 106, Westbound traffic leaving Route 106 to head north on Route 24		7,756	6,875	
At Route 106, northbound traffic leaving Route 24 to head east on Route 106		4,546	3,905	
At Route 106, Eastbound traffic leaving Route 106 to head south on Route 24		4,358	4,055	
Route 106 (West Center Street)				
Wast of Elm Street		28,100		30,702
West of Route 28	32,405	23,260		
East of Manley Street			27,679	
West of Howard Street			31,766	
Route 106 (East Center Street)				
At East Bridgewater Town Line	16,869		16,537	
East of Route 28		16,826		
Route 28 (North Main Street)				
North of Harvestwood Drive		18,400		
North of Route 106	16,632	13,773		
Route 28 (South Main Street)				
South of Route 106	16,801	16,734		
South of Route 106 (Turn lane)		2,940		
At Bridgewater Town Line			16,470	

Public Transit

- There is currently limited public bus service in West Bridgewater, despite the town's proximity to Brockton, which has extensive services provided by Brockton Area Transit (BAT). Many town residents, including the elderly but also other age groups, would take advantage of such a service if it were available.
- A commuter bus service to downtown Boston stops once each morning at the intersections of Main and River streets and Central and Elm streets in the center of West Bridgewater and five times every morning in the commuter lot at the intersection of Routes 106 and 24. The same service runs in reverse in late afternoon. The service is run by Interstate Coach, Inc. under contract to the Massachusetts Bay Transportation Authority.
- A van service, Dial-A-Bat, is provided by Brockton Area Transit for the elderly and physically challenged who need to travel outside of West Bridgewater. The person in need of transit must call the West Bridgewater Council on Aging ahead of time to schedule a pick-up. Persons with medical appointments/needs take priority for service. The Council on

Aging also has a van service of its own, transporting seniors to and from their homes to grocery stores and the pharmacy, errands, hairdressing or barber appointments, and to the senior center.

- Brockton Area Transit also provides bus service from the BAT Center at the Brockton Commuter Rail Station to the office and industrial area along Manley Street. The bus runs as far as United Drive, then reverses course back into Brockton along West Chestnut Street.
- Commuter rail service bisects West Bridgewater with stations located in both Brockton and Bridgewater. No commuter rail station is planned in West Bridgewater.

Pedestrians/Bicyclists

- The town currently has a sidewalk on one side of most significant roads north of Center Street. One notable exception is Copeland Street, a significant byway that connects North Elm Street and North Main Street. South of West Center Street, sidewalks are rare; this is the more historical and arguably the most scenic part of town and there has been less recent development.
- The town does not currently have any marked bicycle lanes or paths.

7.2 ISSUES/OPPORTUNITIES

Traffic Congestion and the Need for Improvements
The Police Department's Safety Officer and the Highway Department Director identified a number of problem locations as identified on map 7-4. Both Department heads agreed that Route 106 poses particular problems for traffic because it is narrow and poorly designed at key intersections. Both suggest a widening of the roadway as a solution.

Comments of Police Department Safety Officer	
Routes 106 and 28	Traffic coming from Bridgewater on Route 28 causes problems for vehicles traveling on Route 106 and those trying to turn onto 28.
Route 106 and Crescent Street	A left turn lane is needed for cars turning onto Crescent Street from 106 eastbound; currently traffic backs up as far as Route 24.
Route 106 and North Elm Street	Though there is not a high accident rate here, there is significant congestion.

Comments of Highway Department Director	
Manley Street	Reconstruction of roadway needs to be completed.
Route 106	Road should be widened to at least 3 lanes.
Routes 106 and 28	Entire intersection needs to be re-designed.
Intersections on 106 and 28	Traffic lights may be needed at East Street and Route 106, Crescent Street and 106, Matfield Street and Route 28, Howard Street and 28, and Manley and West streets.
Various locations	Bridge replacement needed on Scotland Street, South Street, Belmont Street and West Street.

Central Square
This intersection has been identified by the Master Plan Committee as the highest priority planning problem. For the past 15-20 years, the town has been discussing this problem with representatives of the Massachusetts Highway Department as well as local property owners. Average daily traffic flows for one of the five crossroads in this intersection was reported by OCPC to be 34,782 vehicles. Air quality could be reduced by two thirds with improved traffic control. Large trucks are unable to negotiate the turn from Route 28 southbound to Route 106 westbound causing large back-ups. In fact, the OCPC has stated that "the intersection is plagued by queuing on all approaches".

Because of the increase in vehicular and truck traffic as well as the deterioration of land uses in the Square, it is now imperative that a traffic and land use plan be developed which will facilitate traffic flow, pedestrian circulation and the development of a mixed use town center. Land takings will be required to provide sufficient right of way for let turn movements. Additional right of way will be needed for pedestrian lighting, landscaping, sidewalks and bikeways. A great deal of community planning by property owners and the town's leadership will be needed in support of the intersection re-design

Widening The Route 106 Corridor

Route 106 serves as the Town's commercial corridor as well as the primary interregional roadway. With a significant increase in development already in process, Route 106 will need to accommodate more traffic while offering access to all of the current and future corridor developments. Therefore, it is essential that the corridor be carefully planned to address these needs.

Traffic congestion on West Center Street between Route 24 and Central Square has become almost intolerable, leading to proposals to widen the road from two to three or even four lanes. The comments of the Police Department's Safety Officer and the head of the Highway Department, which are included below, speak to the issue of Route 106. The Old Colony Planning Council, with the support of East Bridgewater and Easton, plan to undertake a study of this area. Key issues identified by the Massachusetts Highway Department to be addressed in this study include:

- Limiting curb cuts to reduce congestion
- Widening Route 106 to provide for turning lanes and a consistent road dimension
- Requiring deeper set-backs on parcels so that long term, as needed, the roadway could be widened to four lanes
- Providing for sidewalks, pedestrian lighting, a greenbelt, and possibly a designated bikeway

Improvements to other unsafe locations

- *Plain and Belmont Streets:* A traffic light is needed at Plain and Belmont streets, the intersection with the highest average number of accidents per year in the town.
- *Matfield Street:* A traffic light could help make it easier for drivers turning off Matfield Street onto North Main Street (Route 28); the traffic flow is probably not so heavy here that a traffic light would cause more problems.
- *Manley Street:* the design of Improvements to this street are currently underway .
  - Existing right of way: 24 ' i.e. two 12' lanes
  - Proposed right of way: 29-34' of pavement, plus another 10' of shoulder, sidewalk and burm.

    The right of way would include two 11.5' moving lanes. A sidewalk would be planned on the west side extending south to Shawmut Mills and would include an 8'shoulder, a 6" granite curb and a 5' sidewalk (no trees). The East side would include an 8 ' strip of paved shoulder, a Cape Cod burm (18") and a 3.5 ' grass area.
  - Issues to be addressed:
    - The installation of which utilities (sewer, stormwater, water tower, retention basins) would best protect the environment of wetlands, rivers, and a public water source and Zone II while permitting the expansion of industry?
    - The need for sidewalks and bike paths should also be addressed?

Bridge Maintenance

The following bridges may need to be replaced:

- South Street
- Belmont Street
- West Street
- Scotland Street

The Old Bridgewater Historical Society identified the Scotland Street Bridge as being of historical significance. It is important for the town to address both safety and historical concerns in the design and funding of infrastructure improvements.

Why A Hierarchy of Subdivision Roadway Standards
The standards identified below are from the Towns sub-division by-law. The standards are larger than the existing rights of way, they are difficult to relate to the standard street hierarchy terminology, and no alternatives are indicated for local roads below 24 feet.

Route 28, for example, is noted by the Massachusetts Highway Department, as an Urban Extension. It has a right of way varying from 33 to 36 feet. Manley Street, an Urban Minor Arterial, has a right of way varying from 26 to 28 feet. And no smaller rights of way for clustered subdivisions or rural residential lanes below 24 feet are permitted as of right.

The town's sub-division regulations establish the following minimum widths of roadway pavement; possible alternative standards are shown in the table below for some of these road types.

Table 7-4 Roadway Standards

Road Type	West Bridgewater	Alternative Standards
Special Collector Street	44'	40'
Collector Street	38'	36'
Minor Street	30'	24-26'
Cluster Sub-division Road	-	20-24'
Lane	24'	12-18'

Site Plan and Sub-division review standards; are they adequate to Manage Development Project Review?

- *Traffic Impact Assessments:* Given the need to assess the impacts of large scale residential and commercial projects, the town needs to be able to require, when appropriate, a through traffic and environmental impact analysis and require appropriate mitigation. The current bylaws and subdivision regulations do not give the town enough specific authority to require the developer to address these concerns.
- *Stormwater Regulations:* The Federal Government is requiring that state work with municipalities in developing stormwater guidelines which will ensure that run-off is not contaminating wetlands and local water supplies. The existing regulations need to incorporate the current guidelines relating to managing stormwater run-off on site with treatment. The Board of Health, Planning Board, and Conservation Commission need to up-grade their by-laws.
- *Design Guidelines:* The Zoning by-law in general, and subdivision regulations in particular, make no reference to the review of design features to assure consistency with the surroundings and adjacent structures. Furthermore, there are no design standards to show developers. Municipalities often have handouts with pictures to show preferred design site plans, building features, signage, and landscaping. The concept of design review should be enhanced in an update of these regulations.

7.3 PROJECTED BUILDOUT IMPLICATIONS

In analyzing the transportation impacts of potential development in West Bridgewater, it was necessary to estimate the amount of traffic that various land uses can be expected to generate. If developed to its full potential under current zoning, the town of West Bridgewater could grow by as much as 4,200 dwelling units, 16,699,700 square feet of gross leasable retail and industrial space. As soil conditions in West Bridgewater would not allow development in many areas without sewers, a more realistic revised buildout analysis estimates a potential increase of 1,137 homes and 3,702,200 square feet of commercial space. The following sections summarize the procedures used in estimating the traffic to be generated by the potential development of West Bridgewater and the expected distribution of this traffic on study area roadways.

Trip Generation
Traffic generated by the various land uses normally follows well-established patterns with respect to magnitude, duration, and temporal distribution. Measurements of numerous such developments conducted by various organizations including the Institute of Transportation Engineers (ITE) have established trip generation rates which have been compiled and used for guidelines for transportation analysis. For many land uses, measurements have been conducted by ITE which have been compiled for analysis purposes and provide analysts with guidelines in forecasting travel associated with new land uses. The daily and peak hour trip generation forecasts for West Bridgewater's potential increases in development were based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual*[1]. Under the full development case, West Bridgewater's growth will consist of the land uses as listed in Table 7-8, categorized by town section. Forecasts were completed for average season conditions for both year 2020 and full development cases.

The forecasted traffic is the total number of trips that could be added to West Bridgewater's transportation network over and above the current traffic levels. Although these numbers may seem quite high, it should be stressed that they represent the worst case scenario of developing all currently developable land to the highest degree possible according to the current zoning regulations. Several factors may reduce these traffic projections:

- The developable land may be developed at lower densities than the maximum allowable by the current zoning regulations.
- The current zoning regulations may be substantially changed.
- Several types of development such as fast food establishments and gas stations gain most of their customers from traffic already on the roads and happening to pass-by the facilities. Hence, the more pass-by trips, the less new trips.
- Alternative modes of travel will potentially be increased by the addition of public transit, bikeways, and walkways, thereby reducing driving trips.
- An increase in the employment base of West Bridgewater, linked with development of appropriate housing types can reduce the amount and length of several work trips by increasing the number of people who both live and work in town.

[1] Institute of Transportation Engineers, Trip Generation Manual, 6th Edition, Washington, D.C., 1997.

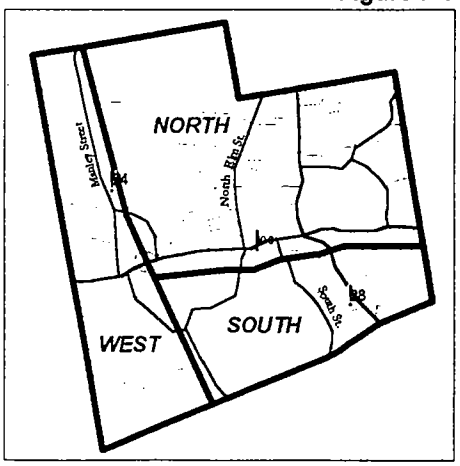
Table 7-8 West Bridgewater's Potential Development

Land Use	Year 2020 Potential Development	Year 2020 Average Daily VPD	Year 2020 Pm Peak Hour VPH	Full Buildout Potential Development	Full Buildout Average Daily VPD	Full Buildout Pm Peak Hour VPH
West Section						
Single Family Detached Housing	28 du	267	28	143 du	1,366	144
Mobile Home	0 du	0	0	0 du	0	0
Shopping Centers	0.0 ksf	0	0	0.0 ksf	0	0
Manufacturing	1,500.0 ksf	5,730	1,110	2,621.4 ksf	10,014	1,940
North Section Subtotals:		**5,997**	**1,138**		**11,380**	**2,084**
North Section						
Single Family Detached Housing	80 du	764	81	550 du	5,253	556
Mobile Home	38 du	182	21	38 du	182	21
Shopping Centers	400.0 ksf	17,164	1,492	900.4 ksf	38,636	3,358
Manufacturing	0.0 ksf	0	0	0.0 ksf	0	0
Central Section Subtotals:		**18,110**	**1,594**		**44,071**	**3,935**
South Section						
Single Family Detached Housing	74 du	707	75	369 du	3,524	373
Mobile Homes	0 du	0	0	0 du	0	0
Shopping Centers	100.0 ksf	4,291	373	181.6 ksf	7,792	677
Manufacturing	0.0 ksf	0	0	0.0 ksf	0	0
South Section Subtotals:		**4,998**	**448**		**11,316**	**1,040**
TOWN TOTALS:		**29,105**	**3,180**		**66,767**	**7,059**

du = dwelling unit, ksf = thousand square feet, vpd = vehicles per day, vph = vehicles per hour

If West Bridgewater is fully developed at a more limited denisty as discussed in the Land Use Section, assuming no sewers, then approximately 67,000 new trips per day could occur. Within a 20-year time frame, it is projected that approximately 20% of this residential development would occur, resulting in approximately 2,000 new trips per day and about 54% of the commercial and industrial development could occur, generating 26,825 trips per day. If this development occurs at a constant rate over the 20 years (5% per year), then approximately 1,340 trips per day would be added to the network each year.

Figure 7-1



Trip Distribution & Assignment

- Directional distribution of generated trips to and from the developable sites typically are expected to follow existing traffic patterns which, in turn, are a function of population densities, shopping opportunities, areas of employment, and recreational activities. By the very nature of this analysis, projecting West Bridgewater's year 2020 buildout, there would be a significant increase in newly developed virgin land (which is zoned for various levels of development) resulting in new traffic patterns. To develop the traffic patterns of new trips, the Town of West Bridgewater was divided into three broad sections. The

West section includes the entire area west of Route 24, in which the Manley Street industrial area is the predominant development opportunity. The North section includes commercial development on both sides of Route 106, as well as residential development areas in the northeastern quadrant of the town. The South section includes primarily residential development potential to the south of Route 106.

Implication of Growth

From the above analysis, we find the following problems:

- Traffic volumes along all major roadways could potentially double over existing conditions.
- Projected growth is anticipated to exacerbate accident levels at already dangerous locations.
- Route 106 would be severely congested and could not handle all of the projected traffic without improvements.
- Increases in both commercial and residential traffic are expected on Route 28.
- Northern West Bridgewater, which includes Route 106, would have the most difficult time adjusting to the projected increase given the limited road network for both north/south and east/west traffic.
- Plans for upgrading Manley Street should take into account a potential doubling in the amount of traffic.

7.4 GOALS AND OBJECTIVES

The goals and objectives of the long range transportation component of the West Bridgewater Master Plan flow from an understanding of the transportation needs identified in the master planning process.

Ultimately, the vision and goals are used to guide the Town in meeting its transportation needs and also allow the community to measure the achievement of the plan.

VISION

The towns transportation system should continue to serve the local residential areas while accommodating the need for regional access to Route 24 and the Manley Street Industrial area. Considerations of safety and design should take precedence over speed in meeting the needs of vehicular and truck traffic. In order to facilitate access and protect the environment, and quality of residential life, a variety of pedestrian, transit, and roadway improvements should be considered. A network of sidewalks and trails should be developed, roadways widened along the major arterials without sacrificing pedestrian safety, and a system of transit developed to serve the major commercial and institutional areas of town.

GOALS/OBJECTIVES

Develop a transportation plan which is responsive to the community's economic development, land use, and open space plans, and which is compatible with the plans of neighboring communities.

- Establish bikeways, greenways, and walkways which link together neighborhoods and open spaces.
- Provide continuous, adequate sidewalks along all major arterials and collectors and ensure that safe crossing areas are appropriately highlighted at the major demand locations, particularly for the safety of school children, the elderly, and those with disabilities.
- Create a safe, visible bicycle network between neighborhoods, schools, parks, community centers, and employment centers; provide adequate storage facilities in key public areas and work locations.
- Incorporate bicycle design and walkway features in all infrastructure projects in a manner that is consistent with the "Transportation", "Open Space" and "Historical/Cultural" components of the Master Plan.
- Implement traffic circulation and control improvements in support of controlled access and parking to serve local businesses along the Route 106 corridor.
- Explore the implementation of shuttle bus service for commuters to nearby commuter rail stations.
- Adopt new roadway design standards for open space cluster subdivisions including recommendations for sidewalks, roads, and bike lanes.

Create a transportation system that provides safe and efficient arterials to accommodate through movements and movement to major commercial and business centers while minimizing unnecessary traffic through neighborhoods.

- Plan improvements at intersections that have been recently identified as major problem areas through discussions with the Town's Police Chief and Highway Superintendent.
- Implement improvements along Route 106 to alleviate congestion and improve safety.

Implement actions that minimize the negative impact and enhance positive features related to the environment and Town resources.

- Adopt stormwater regulations ("Best Management Practices") in order to avoid significant impacts on the Town's water resources and wetland areas.
- Incorporate streetscaping and landscaping plans in all roadway improvement projects.
- Adopt new roadway standards for open space cluster sub-divisions including new sidewalks, street lighting standards, and maintenance agreements.
- Incorporate Transportation Environmental Impact Review in large scale development projects.
- Modify local zoning by-law to require off-site mitigation actions as part of site plan review.

Develop a transportation system that is cost-effective and affordable, maximizing the use of federal and state transportation funds, equitably incorporating private financing, and minimizing Town expenditures.

- Identify and pursue federal and state funding programs to support roadway and transit actions.
- Develop local funding mechanism for local public and private contributions to implement improvement plan.

7.5 THE RECOMMENDED PLAN

Introduction
The Recommended Plan includes sections on infrastructure improvements, organization and staffing, and adoption of Best Management Transportation Planning Practices. The strategies identified below will mitigate traffic congestion, improve safety, offer residents alternative modes of circulation while protecting the town's environmental resources. A concerted effort will be needed by the various boards in adopting these recommendations and obtaining the funding for staffing and capital improvements.

1. Infrastructure Improvements:

The transportation system in West Bridgewater will experience significant increases in traffic flows over the next twenty years. To accommodate these higher flows it is crucial that the road system be safe. Addressing this issue, we have suggested major network improvements for several roadways throughout the town.

Roadways
While the priority project is the up-grading of Central Square (Routes 106 and 26), planning also needs to proceed with improvements to the Route 106 Corridor as well as Manley Street.

Intersection Upgrades

- *Central Square: Route 106/Route 28 – Priority Project:* The Master Plan Committee has identified a design concept, New England Village, for improving this intersection. Mixed use residential/commercial buildings would be located at the street edge with parking to the rear. Convenience uses would be discouraged. Pedestrian details including street crossings, landscaping, and lighting, would be incorporated into the intersection improvement plans.

Route 106

- *The town needs to adopt some zoning changes in the near term in order to manage growth along this corridor.* The Massachusetts Highway Department, in a preliminary review of this project, recommends ***minimizing curb cuts and establishing substantial set-backs for future development along Route 106*** in anticipation of widening the road from two to as many as four lanes in the near future. Green space as a buffer between the road and new development should be required separately from set-backs; otherwise, it could disappear if the road is widened.
- The Old Colony Planning Council, working with the Town, intends to undertake planning for the Route 106 Corridor. Basic data on land use, right of way, and traffic counts would be gathered. This information would be submitted to the MHD in order to obtain funding to design and fund the proposed improvements.
- ***Crescent-West Street Street/Route 106:*** A left turn lane is needed for cars turning onto Crescent Street from Route 106 eastbound. The intersection may need to be re-designed prior to the improvement to the Route 106 Corridor

Manley Street Design

- While the Town and the State have allocated funding for this roadway, a number of issues concerning the provision of utilities and the right of way cross- section need to be resolved before the design work can be completed.
- A traffic signal is proposed at the intersection of West Street.

Bridges

A schedule for up-grading the following bridges needs to be established by the Town.

- South Street
- Belmont Street
- West Street
- Scotland Street

Stormwater Management

The Highway Department needs to work with various town departments to establish a stormwater management program. Most roadways do not have a stormwater system to ensure that water run-off is appropriately managed, i.e., trapped and cleaned, filtered, or released so as to minimize pollution and flood damage. A study needs to be undertaken of all drainage culverts and a remediation program developed.

Sidewalks

As more of the town is developed, it becomes increasingly important to develop a system of pedestrian sidewalks.

2. *Organization and Staffing*

The Public Facilities Section identified the need for additional Highway Department related staff and funding to facilitate road maintenance and improvement.

- A Highway Engineer would assist in designing a Stormwater management program as well as in reviewing sub-division roadway plans.
- Additional funding and staff is needed to maintain the existing roadway system.

3. *Best Management Practices to Guide Transportation Planning*

Transportation Planning

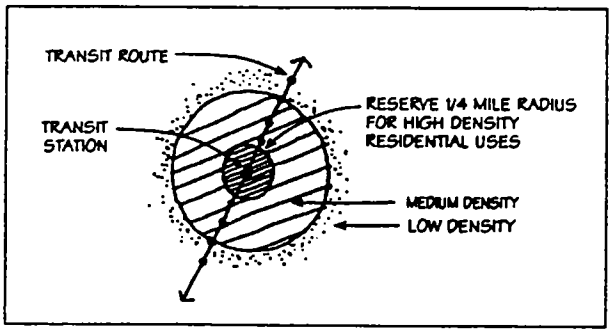
Encourage Mixed Use Development at Transportation Nodes

- It is recommended that new development be concentrated in centers to heighten the potential for alternate mode usage. The Town Center and Lincoln Street are two such nodes that have been identified.
- Allowing mixed-use development in a single area or zone enables people to live, work, and shop in that zone. Trip lengths are diminished. And, as trips shorten, the likelihood of switching to a mode other than a single occupant vehicle is increased – more people begin to walk and bicycle to satisfy their travel needs. To sustain a transit system concentrated development is also encouraged. An additional benefit of concentrated development is less consumption of open land than under current zoning regulations.

Plan for Public Transit Improvements

- A local circulator bus and shuttle system may be one affordable way for the town to ease people's commutes within the town and to nearby commuter rail connections. To be successful, a local circulator bus and shuttle system should limit walking distance for any resident to less than a quarter of a mile and should connect to both the BAT Center in downtown Brockton and the commuter rail station in the Campello section of Brockton. A local circulator can reasonably cover the Town of West Bridgewater with one route that travels on some of the major roadways but is also within the quarter mile maximum for most potential passengers.

Figure 7-2



◆ The local circulator could be subsidized by participating local employers whose employees would benefit from this service. Currently, Brockton Area Transit offers a shuttle between Brockton and the businesses along Manley Street; this service could be expanded.

◆ Several key land uses within the town that ought to be considered for servicing by the proposed route are defined as "Community Land Uses". In addition to the locations suggested for servicing, major employers and major shopping areas should be accessible by the route.

Community Land Uses:

1. Town Hall/Police Station
2. Fire Station
3. Library
4. Public Works Department
5. Other Town facilities
6. Senior Center
7. Schools
8. Parks
9. Major apartment complexes
10. Health centers

Incorporate Bicycle rights of way into new or renovated roadway planning

◆ The town should consider development of a map of bicycle lanes and trails to encourage people to commute by bicycle or to bus and commuter rail stations. The beginning of a town-wide network has been developed for recreational and commuting purposes. For commuters, direct connections and level bikeways are the key. For the recreational bicyclists, varied terrain, points of interest, and scenic views are of importance.

◆ Commuter routes and routes leading to the schools should be enhanced through widening, striping, or both. Signing along these routes can also serve to make motorists more aware of bicyclists and possibly reduce travel speeds.

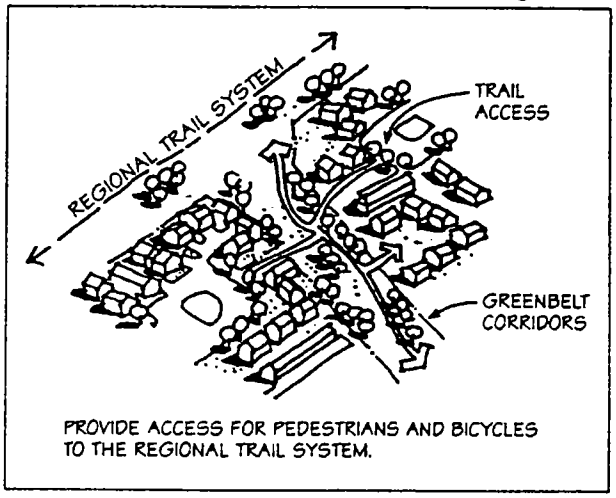
◆ Key routes to the Town's major recreation areas are also vital.

◆ Key destinations such as the Town Hall, the library, and the Central Square business district should provide adequate storage facilities: bike racks are an affordable method.

◆ The town should identify streets which pedestrians and bicyclists would be more likely to use if bike lanes were available. These are much more affordable than building separate bike paths.

◆ Pursue links with neighboring towns' bicycle networks, to create regional routes.

Figure 7-3



Source: Land Use, Transportation and Air Quality, The Planning Center, December 1993

Classification of proposed future roads is recommended to determine the level of lighting and the types of sidewalks required by the town to be installed by the developer.

Sidewalk Installation Guidelines

- More sidewalks would enhance the attraction of the area south of West Center Street to pedestrians; as it is now people must walk in the roads in this area and are vulnerable to speeding cars. Sidewalks may be feasible along these roads if natural buffers can be maintained between the sidewalks and the roads. South Elm Street is of particular concern, since it is an urban collector and handles more traffic.
- Actions to improve conditions would be to close the gaps, and provide sidewalks (one or two sides) along all major roadways in the community. Any local street within two blocks of a school site that would be on a walking route to school should have a sidewalk on at least one side.
- Footpaths, trails, or other walking facilities should be provided as a further action to access the recreation and conservation areas in town.
- Walking facilities are recommended along roadways which pass historic sites.

A potential priority system for addressing the sidewalk deficiencies in West Bridgewater is presented in the Table 7-5.

Table 7-5 Construction Priority Of New Sidewalks*

GAPS WITHIN ONE HALF MILE	ROADWAY CLASSIFICATION		
	Arterial	Collector	Local
Schools	1	2	3
Churches	1	2	3
Parks/Recreation Areas	2	3	4
Shopping	3	4	5

* Priority ratings range from 1 for the highest and 5 for the lowest.

The above priority plan can be used to assist in scheduling the construction of new sidewalks as funds become available, while the following recommended guidelines provide some design specification and standards to be followed during construction.

The recommended guidelines for replacement and installation of sidewalks were developed with the aid of two research publications[2,3]. Table 7-10 provides a set of guidelines that can be followed when new sidewalks are to be constructed or existing sidewalks are replaced. The information in the table may be used to determine where sidewalks should be provided based on the roadway classification and whether or not the sidewalk is being considered along an existing or new road.

[2] Transportation Research Board, National Cooperative Highway Research Program No. 139, *Pedestrian and Traffic-Control Measures*, Washington, DC, November 1988.

[3] Department of Transportation, Federal Highway Administration, *A Manual for Planning Pedestrian Facilities*, Washington DC, June 1974.

Table 7-6 Recommended Guidelines For Sidewalk Installation

Land Use / Roadway Classification	New Urban & Suburban Streets	Existing Urban & Suburban
Commercial & Industrial / All Streets	Both sides	Both sides. Every effort should be made to add sidewalks where they do not exist.
Residential / Major Arterials	Both sides	Same as above.
Residential / Collectors	Both sides	Multi-family – both sides. Single family dwellings – prefer both sides, require at least one side.
Residential / Local Streets – More than 4 units/acre	Both sides	Prefer both sides, require at least one side.
1 to 4 units/acre	Prefer both sides; require at least one side.	One side preferred.
Less than 1 unit/acre	One side preferred; require shoulder both sides.	Require at least 4 foot shoulder on both sides.

Source: Transportation Research Board, NCHRP 139, *Pedestrian and Traffic Control Measures.*

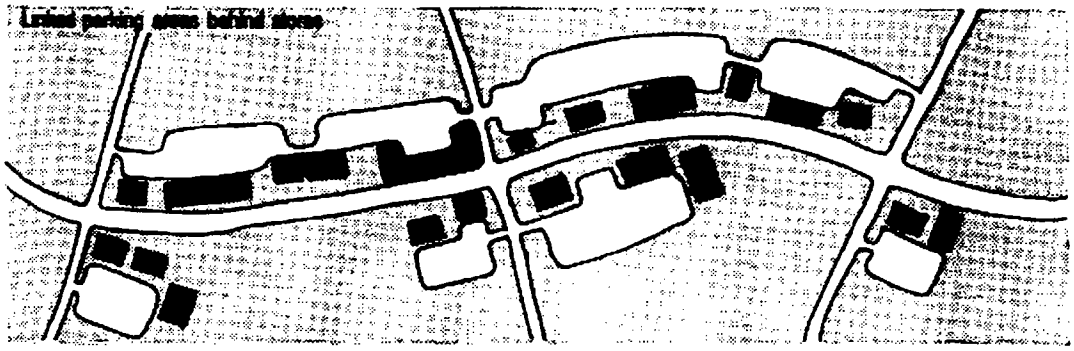
Require Impact Analysis for Sub-division and Site Plan Review of large Scale Projects
Commercial developments and residential sub-divisions are reviewed by the Planning Board on the basis of guidelines which are established to minimize a projects' impacts as well as conform to certain standards established by the town.

Incorporate site plan review and traffic impact study requirements for all proposed subdivisions and major commercial developments in the Zoning By-laws

Adopt specific curb-cut design and management guidelines to limit the number and frequency of curb-cuts.
In order to improve traffic flow, especially along Route 106, it is imperative that every effort be made to reduce the number of curb cuts. This can be achieved in a number of ways including:

- changing the zoning to minimize the type of commercial uses in certain areas
- approving a curb-cut by-law requiring the review and approval of curb cuts, both existing and new
- adopting a requirement for use of shared access.
- Increasing the minimum lot size to encourage larger parcels and fewer curb cuts.

Figure 7-4



Adopt roadway design standards for Route 106 and Central Square
Possible rights of way are indicated below which include sidewalk (5'), landscaping, trees and pedestrian lighting (7'), a shoulder to be used by bikes and cars (8'), and two or more moving lanes (12' each). These designs need to be refined with input from traffic and urban design analysis.

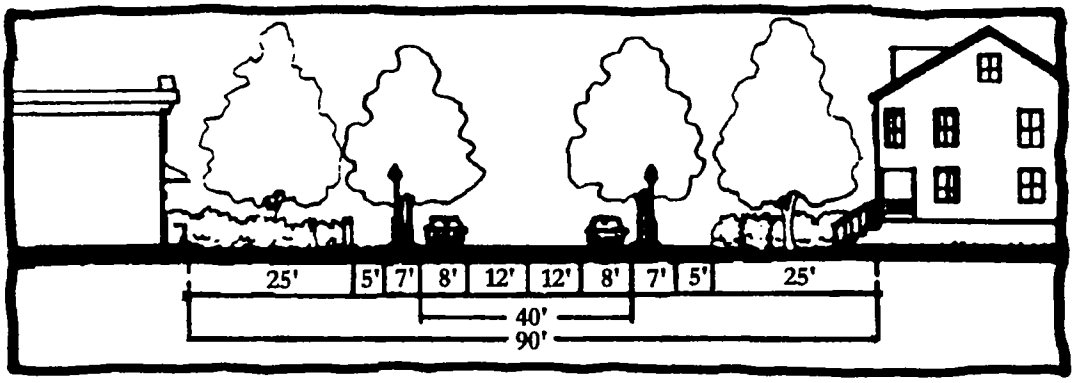


Figure 7-5: Route 106 Cross section: Commercial/Residential Arterial
Two lanes, shoulders, sidewalk and planting strip, and a 25 ft. front yard set-back with no parking

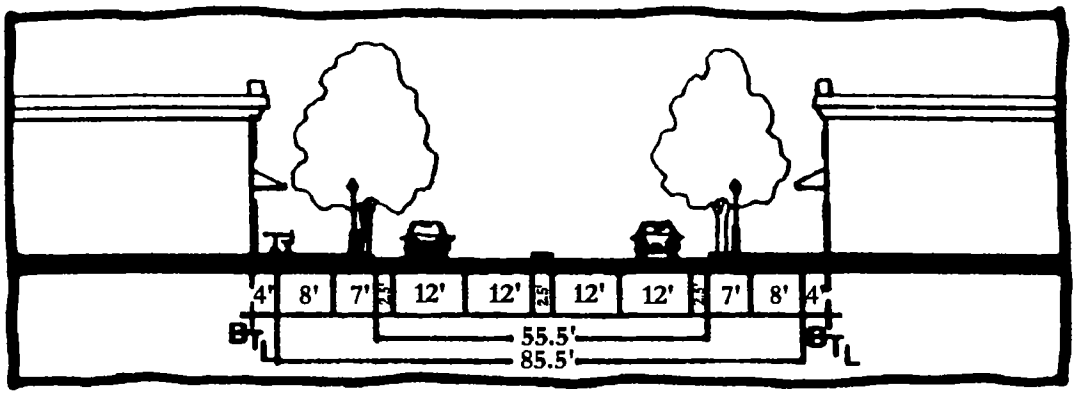


Figure 7-6: Central Square Cross section: A Village Center Option
Commercial/mixed use, four lanes (12' each), median island (2.5'), shoulders (2.5'), sidewalk (8') and pedestrian lighting and planting strip (7'). The Build To Line, i.e., storefront, would be 4 feet from the sidewalk.

Adopt a range of road standards for sub-divisions so that the Planning Board has greater flexibility in encouraging resource and open space protection.
A possible set of standards is indicated below:

Table 7-7 Suggested Street Standards

Characteristic	Arterial*	Type of Street Collector	Local	Open Space Subdivision
Width				
Right-of-way	64 ft.	60 ft.	40 ft.	40
Pavement - total	40 ft.*	36 ft.	24 or 26 ft.	20-26
Travel lanes	2 x 12 ft.	2 x 10 ft.	2 x 12 ft.	2 x 10 ft.
Shoulder & parking	2 x 8 ft.	2 x 8 ft.	1 x 8 ft.	?
Sidewalk/Bikeway	2 x 5 ft.	2 x 5 ft.	1 or 2 x 5 ft.	required
Berms	varies	required	required	required
Horizontal Radius				
Minimum	1000 ft.	500 ft.	200 ft. or less	
Grade				
Minimum	0.6%	0.6%	0.5%	0.5%
Maximum	6%	8%	12%	?
Intersection				
Minimum intersection angle	80%	75%	60%	45%
Minimum intersection offset	250 ft.	125 ft.	125 ft.	?
Sight stopping distance	400 ft.	250 ft.	200 ft.	200 ft.
Speed Permitted				
Maximum	50 mph	35 mph	25 mph	?

* Minimum, heavier volumes of traffic may require more travel lanes.
Source: Generally accepted standards - compiled and revised by SRPEDD for the Town of West Bridgewater

Hierarchy; paved surface widths
Streets shall be permitted with paved widths less than that required for conventional subdivisions, as follows:

- *Minor local street* - minimum paved surface width of 20 feet, if it will carry no more than 200 average daily trips, and prohibit on-street parking.
- *Major local street* - minimum paved surface width of 24 feet, if it will carry no more than 350 average daily trips and prohibit on-street parking.
- *Divided street* - with paved surface widths as appropriate to major or minor local streets with two street segments combined.

The following chart shall be used to determine the anticipated average daily traffic levels of proposed residential development:

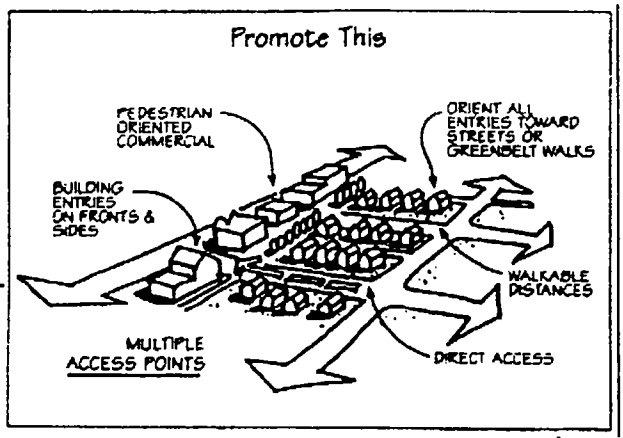
Table 7-8 Daily Traffic Levels for Residential Development

Housing Types	Average Weekday Trip Generation Rates
Single Family detached	10.0 Trips/Dwelling Unit (D.U.)
Duplex, Multiplex, Townhouse	8.1 Trips/D.U.
Apartments	0.4 Trips/D.U.
Mobile Home	5.38 Trips/D.U.
Retirement Village	3.3 Trips/D.U

Incorporate Design Guidelines into Site Plan Review

The Planning board has no set of design guidelines for developers to consider in preparing their plans.

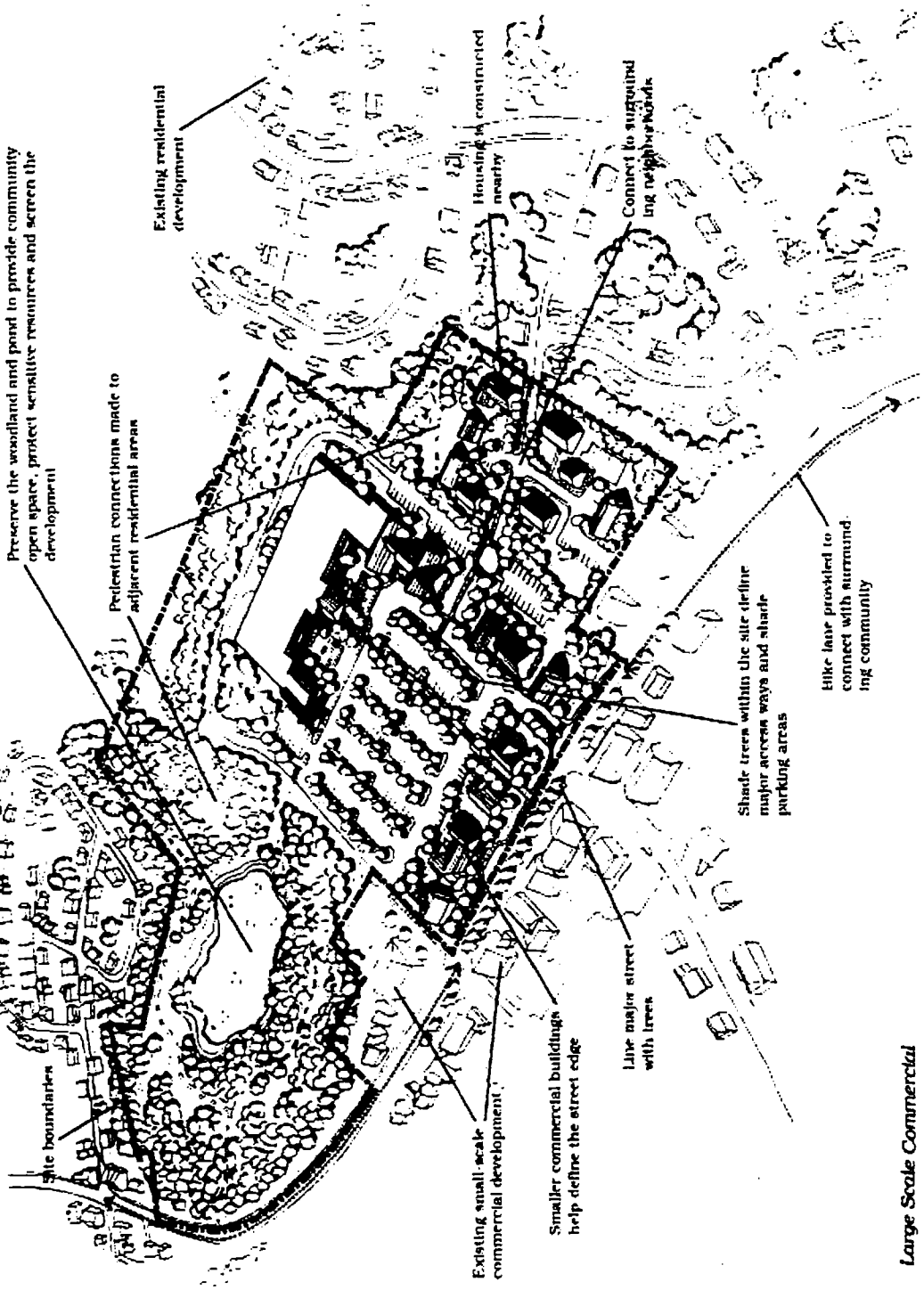
Figure 7-9



An initial set of principles are proposed below for discussion. These guidelines are needed especially if the town is going to encourage a town center and clustered commercial and residential development. Appropriate diagrams illustrate these concepts.

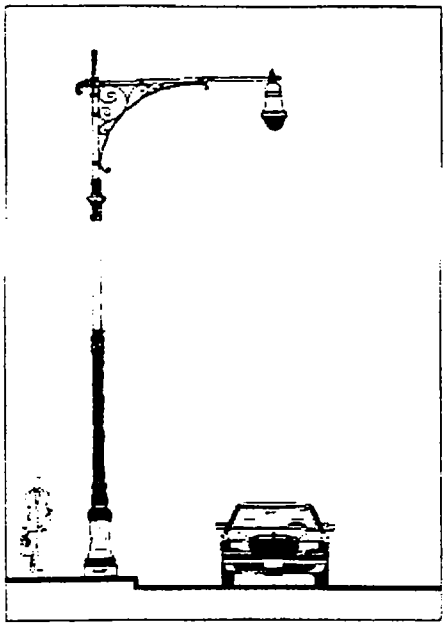
Design Guideline Concepts

- Group commercial and residential buildings in clusters
- Limit curb cuts and link parking areas behind stores
- Encourage a mix of land uses to foster sense of place, shared parking, and access efficiency
- Establish along the street line a buffer of trees and landscaping to screen development from the roadway; locate parking in the rear.
- Incorporate bus stops, if appropriate
- Consolidate parking and utilities including stormwater; minimize the amount of impervious surface
- Adopt a network for pedestrian and bicycles with short-cuts and alternative routes
- Retain appropriate open space and views
- Include diverse professional and public input into roadway planning initiatives including: Engineers, landscape architects, business interests, property owners, town hall boards, neighbors, historic association



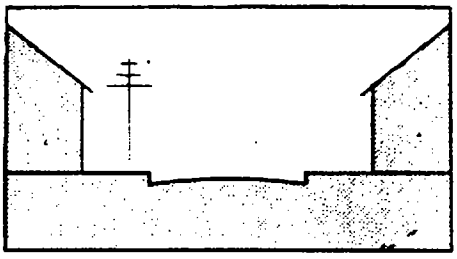
Large Scale Commercial

Figure 7-11

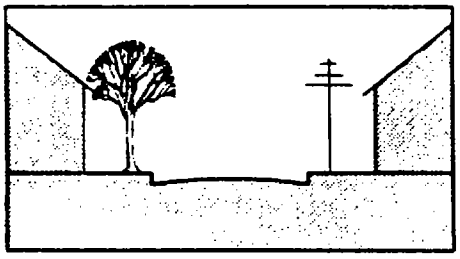


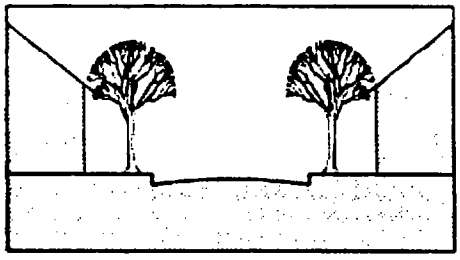
Unique street light design enhances aesthetics

Figure 7-12



Relatively minor differences in roadway cross section and the treatment of the roadway edge can have major effects on perceived width.





SECTION 8

IMPLEMENTATION

IMPLEMENTATION

Introduction

The Implementation section of the Master Plan presents an action plan of activities which will enable the town to reach the vision and achieve the goals identified in the Executive Summary. This vision is for a revitalized Town Center set within a rural greenbelt landscape of wetlands and river corridors. This vision represents a synthesis of the goals which have been established for each of the six elements of the Master Plan. The vision has been refined based upon a review of the residents' response to the draft action plan. The priority goals as indicated by the residents in responding to the questionnaire include:

- To provide a variety of housing opportunities for families and the elderly
- To improve the quality of the commercial and industrial areas and expand the tax base so as to maintain the level of municipal services desired by the residents.
- To protect the town's water supply, open spaces and natural resources.
- To identify and protect the town's historic buildings and landscapes
- To ensure that Town Hall is improved and that the staff is expanded to provide for growth management planning services.
- To improve roads, bikeways and walking paths, and public transit so as to encourage village like cluster developments

The following section presents the five part plan for the Town and identifies an Action Plan of the steps the Town must take in order to pursue the recommended strategy.

Map 8-1, Action Plan, illustrates some of the major recommendations of the Master Plan, including the revitalization of the Town Center, road signal, and pedestrian improvements along several of the major vehicular corridors, and the establishment of new commercial and industrial districts to manage growth and protect resources. For reference, existing zoning and natural resources are shown on the facing page, to provide a sense of the context over which the strategy was developed. The Action Plan map is intentionally diagrammatic.

ESTABLISHING THE TOWN CENTER-GREEN BELT PLAN FOR WEST BRIDGEWATER IN FIVE SIMPLE STEPS

1. Establish new zoning districts

The existing zoning districts were established almost 50 years ago when the town was a rural agricultural area. Route 24 was just being built and suburban residential and strip commercial development had not started in the region. Since that time much has changed in West Bridgewater. While residential growth has continued at a modest pace, the commercial and industrial areas, in particular, have seen tremendous growth. Manley Street has attracted a number of large warehouse distribution facilities. Employment along this corridor has been estimated to income some 7,000 persons. Route 106 has become extremely congested with the growth in commuter traffic as well as the development of a number of strip commercial plazas. Meanwhile the town center has deteriorated, traffic congestion has increased, and tax revenues and new growth have not kept pace with the increasing demands for managing municipal affairs in an increasingly complex regulatory environment.

A basic organizing principle in land use in order to limit sprawl is to provide for a hierarchy of zoning districts designed to reflect the mix of uses appropriate for a given location. The existing Business District allows a limited number of uses by right, forbids residential uses,

and requires a special permit for most other commercial uses. Likewise, the Industrial District permits warehousing distribution and an industrial park but makes manufacturing, for example, a special permit use.

A number of new commercial and industrial districts have been proposed in order for the town to retain its rural heritage, protect its water resources, revitalize its town center, improve the mix of business and municipal revenue, and minimize traffic congestion.

New Commercial Districts:

A *Limited Business District* is proposed but locations for its designation have not been mapped. This district would limit the types of commercial uses such as no drive-in or auto sales, would be permitted. The size of businesses would be limited. Parking would be forbidden in the front yard and curb-cuts would have to be shared with adjacent businesses. Possible locations for such districts might be along Route 28 and/or 106, to mitigate traffic congestion and promote a neighborhood atmosphere.

A *Highway Commercial District*, is also proposed. This district would be located along Lincoln Street as well as along Route 106 to the west of Route 24. Mixed office, hotel, destination retail, and large restaurants would be permitted. Site coverage and other environmental regulations would need to be adopted to prevent adverse impacts on Hockomock Swamp and the Manley Street well.

A *Mixed Use District* allowing residential and commercial uses is proposed for the Town Center. Curb cuts and parking would have to be regulated by design standards and drive-in uses might be forbidden.

New Industrial Districts

The existing Industrial district would be supplemented by two new districts.

A *Light Industrial District* would be limited to low impact uses appropriate for a town center and Hockomock Swamp.

An *Office/Research Park District* would be created at Coweeset Brook at Walnut Street. This use would be designed to encourage well planned commercial uses which would minimize environmental impacts and attract a higher level of commercial activity.

2. *Allow for new residential uses in the General Residential and Farming District*

The Master Plan Committee recognized that the existing zoning is limiting the development of homes to single family structures on uniform large lots. The needs of the elderly and families are not met by this type of residential construction. Other types of uses need to be encouraged. It is suggested that the by-law be amended to permit the following residential uses:

Cluster Open Space: This alternative would be allowed within the existing General Residential and Farming District. This type of zoning is being promoted to foster the protection of open space and to encourage a wider variety of housing development. Such use might require a minimum site area. Septic issues would need to be addressed with the provision of shared package treatment plants.

Assisted Living for the elderly: This type of housing provides, usually in 2-4 story townhouses, independent living facilities for the elderly. Meals are generally shared and limited nursing care is available.

Age Restricted Adult Retirement Community: This kind of townhouse community environment is developed for those over the age of 55.

In-law apartment: This kind of unit should be allowed by special permit. The building requirements need to be specified.

Special Needs Housing: The town might want to specify what kind of client, the disabled and handicapped, would be eligible for housing.

3. Update and adopt growth management and resource protection strategies

The Town's landscape is defined by the greenbelt of wetlands, ponds, and river corridors that lace through the town buffering the residential areas. These resource areas are the locus of the town's water supply, endangered habitat, public open spaces, agriculture, and recreation. A number of regulatory measures have been suggested for either by-law revision or new by-laws.

Resource Protection Overlay District: This district would protect streams, ponds, wetlands, and flood zones, and possibly sensitive ecosystems (ACEC area) and wildlife habitats. It would enhance the town's oversight of development that occurs within these resource areas.

Cluster Open Space: See above. This use would permit more concentrated development, to make efficient use of infrastructure and preserve open space. Incentives could be targeted to encourage the protection of priority resources.

Stormwater and wastewater management: Zoning and Subdivision regulations should be updated to reduce the impacts on water supply and other natural resources from development. Regulations could include increased oversight, minimizing paved areas and requiring adequate drainage and treatment systems.

Open Space Acquisition: Seek local or grant funding to acquire priority open space parcels. The cost of preserving open space is often lower - even in the short run - than the cost to the town resulting from development. A list of priority parcels should be developed by the Open Space Committee.

4. Work with the Massachusetts Highway Department (MHD) and the Old Colony Planning Council (OCPC) on needed Transportation Improvements

Traffic congestion on Route 106 is one of the town's major concerns. Both the MHD and the OCPC are aware of these issues and are working with the Town. Funding and design studies must be carried out both in Central Square at Route 28 and along Route 106 from the Easton to the East Bridgewater town lines. Balancing the need for more right of way is the need to minimize traffic speed, the volume of truck traffic, and accommodate the needs of the pedestrian and cyclist as well as that of the auto. A committee of town residents should be appointed to monitor, possibly with some outside professional assistance, these design studies to ensure that local priorities are taken into account. Furthermore, the town will want to modify existing zoning to monitor curb cuts, building set-backs and parking. Landscaping details such as pedestrian lighting, planting, pedestrian crossings, sidewalks, need to be integrated into the planning process.

The proposed widening of Manley Street is now in preliminary design. Many of the same issues which need to be addressed along the Route 106 corridor exist on Manley Street. A committee needs to be appointed of residents and local business leaders to address these concerns.

5. Undertake studies, organization and staffing improvements, and pursue grants

Managing growth will require staffing, organizational changes, studies and funding. A variety of activities have been identified to ensure that growth management planning takes place.

Of primary importance is the retention of a community development planner who would report to the Town's Executive Secretary and have the responsibility/ authority to work with a variety of boards including the Planning Board, Conservation Commission, Building, Highway, and Water Departments, EDIC, and Master Plan Committee. Without staff support, it will be difficult to carry out the recommendations identified in the Master Plan. The planner will be able to initiate and support planning for the proposed transportation and water resource planning studies, coordinate the proposed zoning changes, and work on zoning and sub-division reviews and various economic development planning initiatives including Central Square. Some limited grant writing should also be possible.

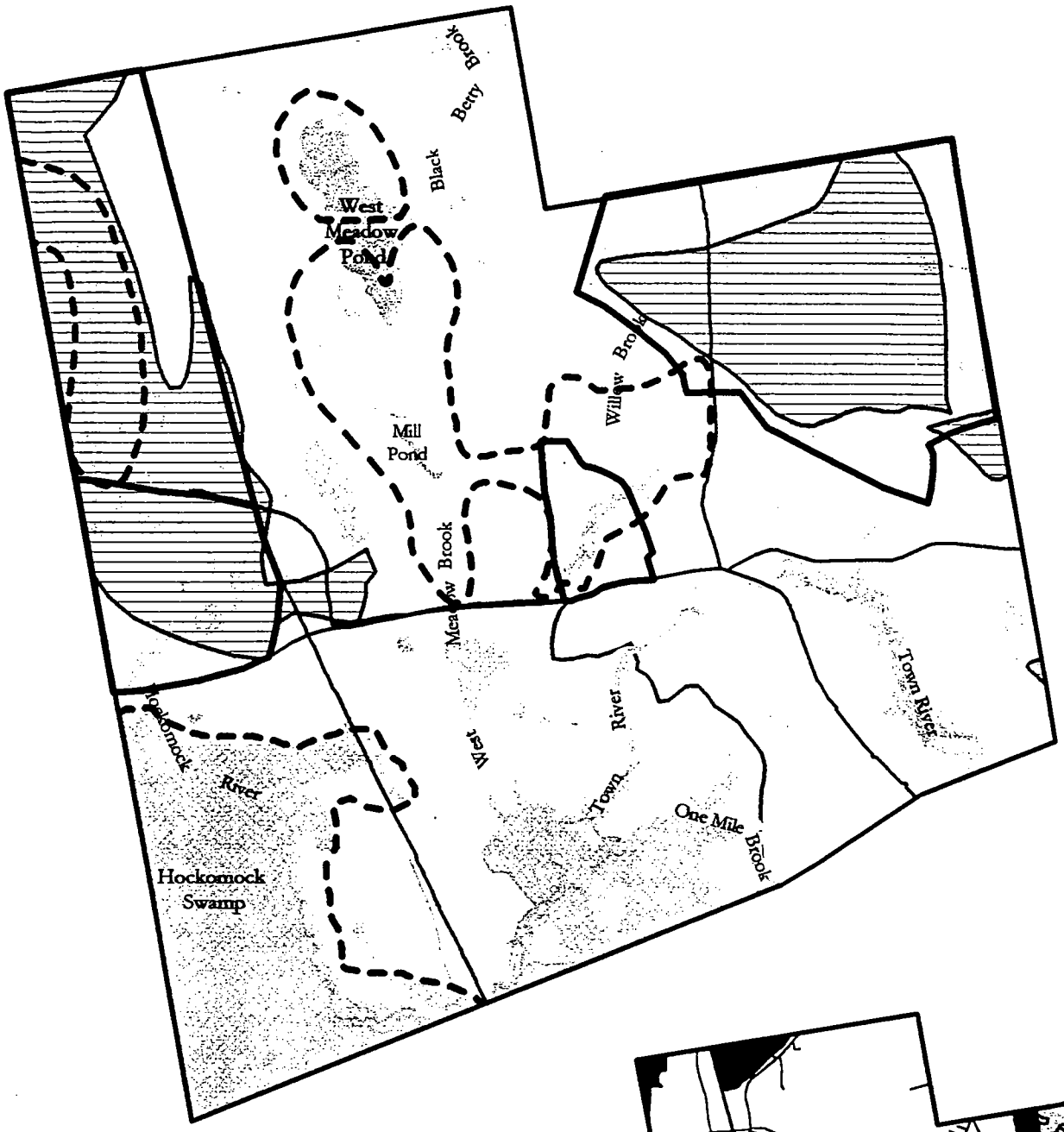
Staffing for a half time Conservation Agent is also warranted. Given the difficult soil conditions in town and the lack of sewers, it is essential that a Conservation Agent as well as a Board of Health Agent be available to address a range of regulatory issues.

In advance of the retention of a Town Planner the various Boards charged with development should agree to a process, under the coordination of the Building Inspector, for Joint Scoping of major development projects. All the responsible boards would meet to discuss the issues of concern. A coordinated development planning schedule for working with the various Boards would then be established.

A higher fee structures should be established so that the Planning Board, Board of Appeals, and Conservation Commission can generate additional revenue to underwrite some of the required staffing costs of project review.

It is essential that the Town establish a Housing Committee. This committee needs to prepare the Town for review of potential 40B projects which might see local/State approval. Another function of this committee would be to promote zoning changes, the adoption of other strategies such as a first time homebuyers program, and to work with the Housing Authority in the development of affordable housing.

Several studies have been suggested. Of primary importance is a water resource protection study. This effort would led to the adoption of stormwater guidelines, the protection and enhancement of public water supplies, and the development of alternative wastewater treatment strategies. A study of the possible establishment of a town center historic district should also be undertaken.

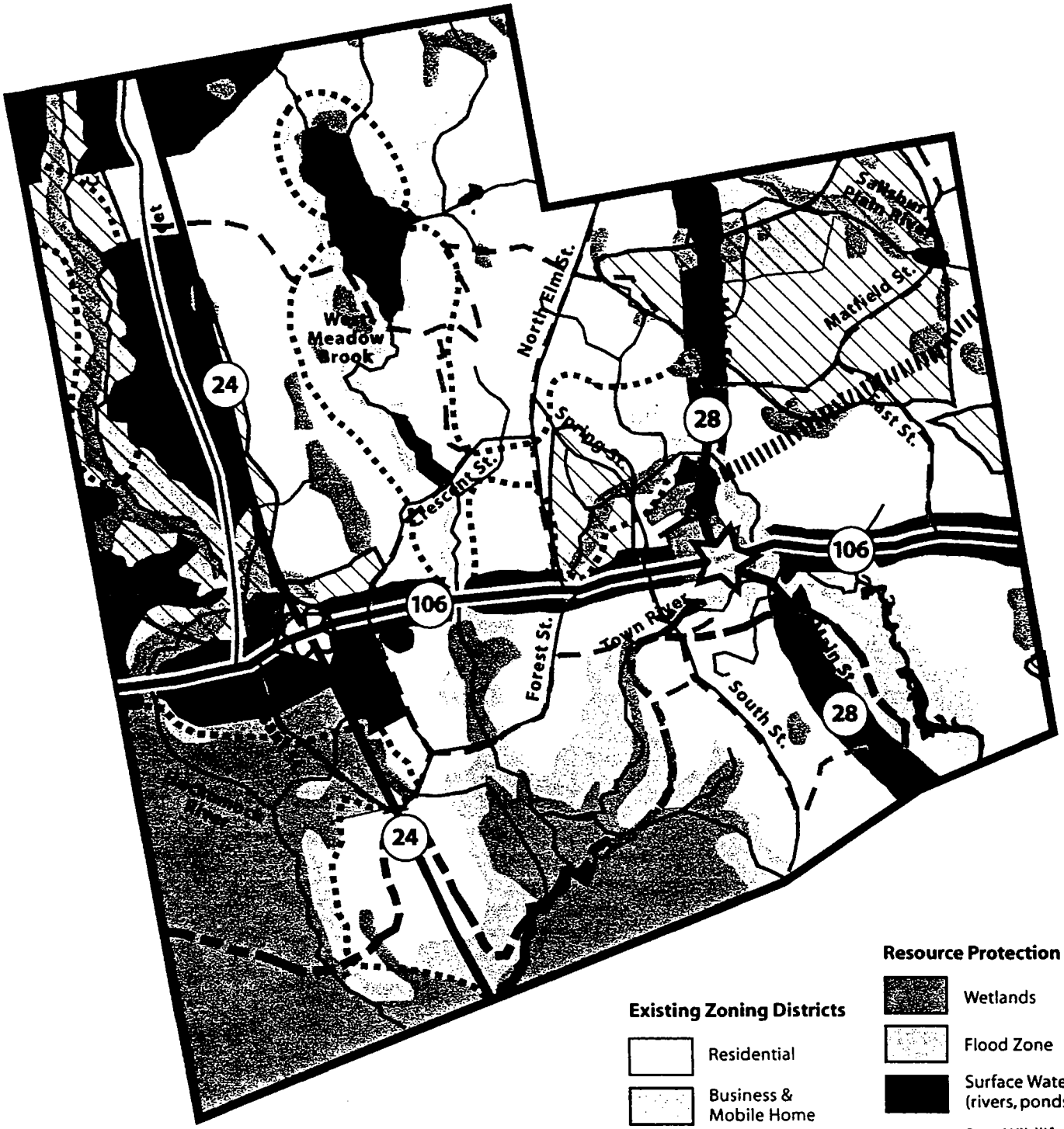


Combined Natural Resources

- Water resource protection district
- Zone IIs
- Estimated Habitats of Rare Wildlife
- Streams
- Wetlands
- Water
- Flood Zones
- ACEC

Existing Zoning

- Business
- Business/ Mobile Home
- Industrial
- Residential



Existing Zoning Districts

- Residential
- Business & Mobile Home
- Business
- Industrial

New Zoning Districts

- Limited Industrial
- Town Center Mixed Use
- Office/ Research
- Highway Commercial

Resource Protection

- Wetlands
- Flood Zone
- Surface Water (rivers, ponds)
- Rare Wildlife Habitat
- Zone II Public Water Supply

Transportation

- Road/Intersection Improvements
- Walk/Bike Routes
- Bay Circuit Trail
- Old Railroad Bed
- 106/28 Intersection

Town of West Bridgewater

Proposed Action Plan Map

West Bridgewater Master Plan

Prepared by Larry Koff & Associates

PRIORITIES

An Executive Summary describing the Greenbelt Town Center Plan was mailed to all 3,000 residents and business property owners in the town of West Bridgewater on September 27, 2001. A one page questionnaire (see Appendix 8-1) was included. Some 7% (193) of those receiving the information completed and returned the questionnaire. The results of the questionnaire were presented at a public hearing held on October 30th. Following is a summary of the highlights; the responses are noted in the attached table.

1. **Improvements to Central Square** are voted the **highest priority activity; 83%** of the respondents support road widening, signals, and landscaping improvements.

2. **Growth Management/Resource Protection** issues are voted the **second highest priority**. Included in this category was the support for a number of new by-laws, the recommended updating of some existing by-laws, and undertaking of a water resource protection study. Votes for these activities varied between 76% (Farmland Protection) and 51% (Update Subdivision Regulations) of the respondents.

   New by-laws include Farmland Protection. Scenic Views, Hockomock Swamp, River Protection, Demolition Delay, Curb Cut

   Update of existing by-laws include Site Plan Review, Watershed Resources, Special Permit requirements, Subdivision Regulations. Open Space Cluster housing is a useful tool for resource protection but did not receive outstanding support from respondents (37%).

   Water Resource Protection Study: this study would address storm water, wastewater, and public water supply issues.

3. **Establishing New Districts** was the third highest priority. The focus of this activity related to the previous issue, i.e., resource protection and growth management. Of highest priority was the desire to establish a Resource Sensitive District (63%). Almost half the respondents supported establishing Limited Business, Light Industrial and Office Research Park Districts. Proposal for establishing a Highway Commercial district at Route 106/24 received support of only 36% of the respondents. Support for establishing a Mixed use Town Center District as well as studying the establishment of a Historic District was slightly higher.
4. **Allow for New Residential Uses, particularly housing to meet the needs of the elderly,** was well received. In-law apartments, and Assisted Living had the support of the majority of the respondents, while Age Restricted Housing was supported by close to half.
5. **Organization/Staffing issues were not generally supported.** This included the suggestion to retain an Economic Development Planner and to extend the Conservation Agent to a half-time position as well as to establish a Housing Committee and higher fee structures for review boards, i.e., Planning ZBA, Conservation.

West Bridgewater Master Plan
Survey Results (10/30/2001)

Residents and Businesses	Responses 193	Percentages	Question
Transportation/Central Square			
Improve Central Square at Routes 106 and 28	***161***	*83%*	***4a***
Establish a Town Center Residential District	109	*56%*	1b
Study establishment of a town center historic district	91	*47%*	5f
Establish a Mixed Use District (Town Ctr)	84	*44%*	1g
Transportation: Improve Route 106	133	*69%*	4b
Transportation: Manley Street Improvements	88	*46%*	4c
Growth Management/Resource Protection			
Consider new bylaw: Farmland Protection	***147***	*76%*	***3i***
Consider new bylaw: Scenic Views	137	*71%*	3l
Update Watershed Resource Protection District	135	*70%*	3h
Adopt a Phased Growth by-law	***133***	*69%*	***3a***
Consider new bylaws: Hockomock Swamp	133	*69%*	3j
Consider new by-law: River Protection	133	*69%*	3k
Update Special Permit	128	*66%*	3b
Update Flood Plain District By-law	119	*62%*	3g
Adopt Curb Cut	116	*60%*	3e
Adopt Demolition Delay by-law	***115***	*60%*	***3d***
Update Site Plan Review	113	*59%*	3c
Undertake study of Strategies for stormwater management	***113***	*59%*	***5e***
Update Subdivision Regulations	99	*51%*	3f
Establish New Districts			
Establish a Resource Sensitive District	***121***	*63%*	***1h***
Down-Zone Industrial to Resource Sensitive District	107	*55%*	1l
General Residential Farming	111	*58%*	1a.
Establish a Limited Business District	92	*48%*	1d
Establish a Light Industrial District	90	*47%*	1i
Establish an Office/Research Park	90	*47%*	1k
Establish Residential Open Space Cluster District	71	*37%*	1c
Establish Highway Commercial District	70	*36%*	1f
General Business District	63	*33%*	1e
General Industrial District	47	*24%*	1J
Allow for New Residential Uses			
Allow for In-law or accessory apartment in existing home	***107***	*55%*	***2c***
Allow for Assisted Living	***103***	*53%*	***2a***
Allow for Age restricted adult retirement community	91	*47%*	2b
Allow for Special needs housing	77	*40%*	2d
Density Bonus for open space or affordable housing	***43***	*22%*	***2e***
Organizational/Staffing			
Establish higher fee structure for Planning Brd/BZA	75	*39%*	5c
Retain Economic Development Planner	***74***	*38%*	***5a***
Extend Conservation Agent to half-time	64	*33%*	5b
Establish Housing Committee and Guidelines	62	*32%*	5d

PROPOSED ACTION PLAN

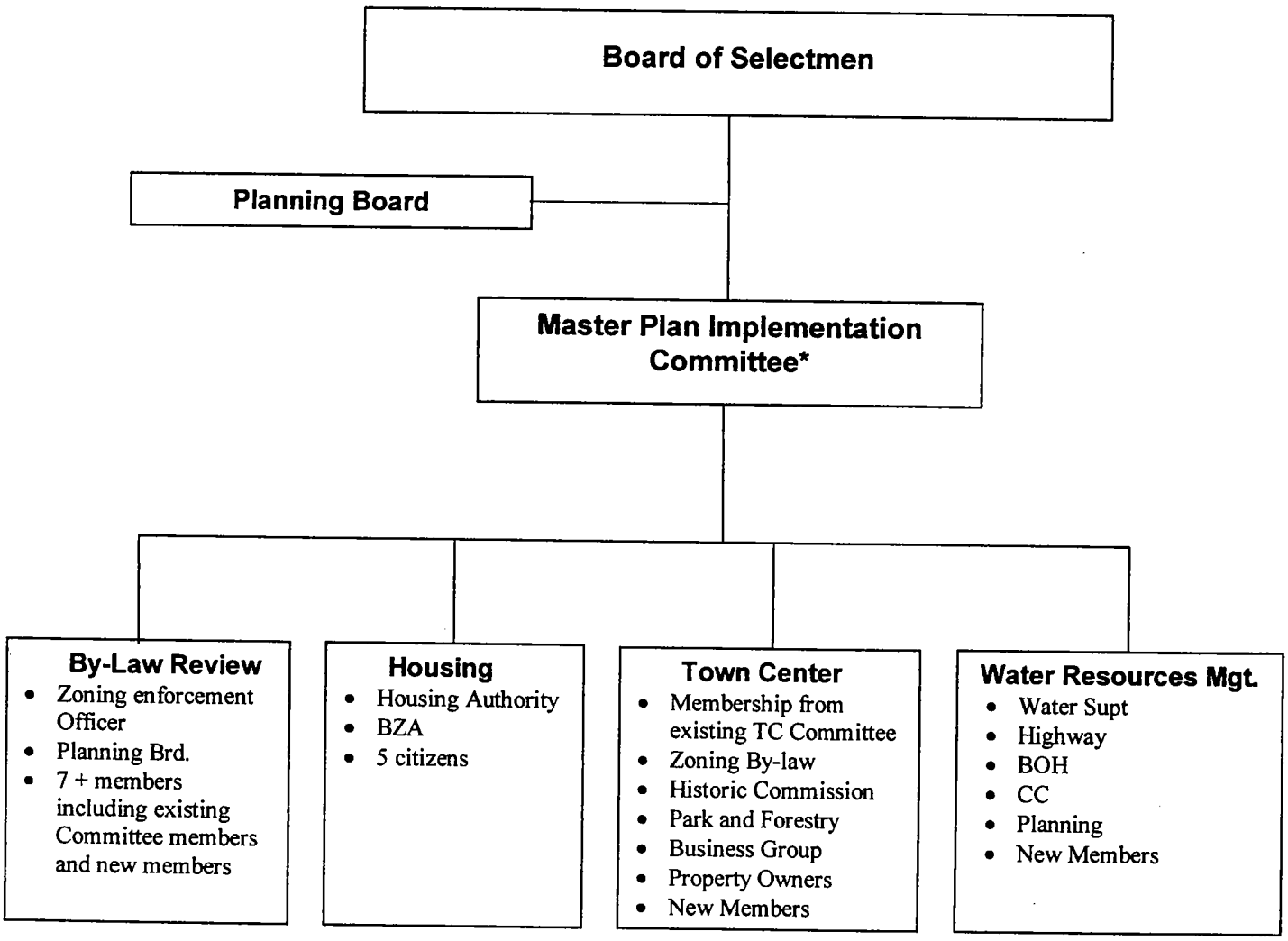
An Action Plan has been developed by the Master Plan Committee based in part upon responses to the Questionnaire. As a general principal, priority actions should begin where there is the greatest degree of consensus as well as the resources to carry out the proposed activities. The work plan is presented below with the responsible party identified.

Timing: Priority Ranking	Task	Lead Board
Phase I	**Public Awareness/Organizational Reforms/Funding**	
A.	Public Hearing on Master Plan	Planning Board
B.	Obtain Pre-Planning "418" funding	Selectmen
C.	Submit Master Plan for approval as an "Equivalent Plan" in order to obtain funding for plan implementation through the "418' CD Plan Program ($30,000)	Selectmen
D.	Seek Town Meeting funding approval for undertaking DEP Comprehensive Water Resources Mgt. Loan	Selectmen
E.	Public Workshop: Organize Master Plan Implementation Committee and Sub-committees	Selectmen
F.	Establish Sub- Committees: By-law, Housing, Town Ctr, Water Resources Mgt.	Selectmen
G.	Retain consultant to revise Zoning By-law	Selectmen/Town Mtg.
H.	Central Square Meeting: Draft Work Program; Build support for grant application. Coordinate with MHD	Town Center Comm./MHD
I.	Housing Committee Meeting: Undertake Preparation of Housing Certification Documents	Housing Committee
J.	Reorganize EDIC	Selectmen
Phase II	***Prepare Zoning Bylaw Revisions and carry out Master Plan Implementation sub-committee work plan:***	
A.	Prepare Scope of Work for "418" Implementation	Selectmen/M.P. Implementation Comm.
B.	Revise/amend existing zoning by-law • Adopt New Project Review Fee Structures • Phased Growth by-law • Special Permit: revisions • In-law or Accessory Apt. by-law • Site Plan Review- up-date • Watershed Protection District: up-date • Flood Plan District by-law: Up-date	By-law Review Committee/Planning Board
D.	Monitor Manley Street re-design	Planner/Selectmen
E.	Apply for Town Center Planning Grant	Planner/Selectmen
F.	Institute Inter-Board review process	Planner/Planning Board
G.	Monitor Water Resource Mgt. Planning Study	Sub-committee

Phase III	***Resource Protection***	
A.	Retain zoning consultant and planner to prepare new by-laws • Farmland Protection • Scenic views • Hockomock Swamp Protection • River Protection • Demolition Delay by-law • Curb-cut limitations • Up-date sub-division Regulations	Selectmen/by-Law Committee
B.	Establish Land Bank	Conservation Commission
C.	If recommended by Water Resource Management study, designate Roberi Farm as DEP Zone II	Planning Board
Phase IV	***Community Housing/Economic Development Planning***	
A.	New Zoning • Age Restricted Housing • Assisted Living • Resource Sensitive District • Limited Business District • Office Research • Highway Commercial	Selectmen/by-law Committee
B.	Reorganize EDIC	Selectmen
C.	Undertake Coweeset Brook Study; Phase II	Planner
D.	Manage Town Center Study	Planner
E.	Assist with Town Center Historic District study	Planner
F.	Manage planning for Route 106	Planner
G.	Work with Housing Committee on public sites for assisted housing.	Planner

ORGANIZATIONAL STRUCTURE

Five committees will carry out the work of the Master Plan. A suggested membership list has been prepared incorporating the eight names received by the Town as a follow-up to the October 30th public meeting. A suggested list of the responsibilities for each committee are identified below. The organization chart indicates the number of municipal representatives as well as citizens that should be included on each sub-committee. A new Master Plan Implementation Committee of no less than seven members will be formed. The work of the four sub-committees will be coordinated by the Implementation Committee.



Master Plan Committee and Sub-Committee Tasks

Master Plan Implementation Committee:

- To establish priorities, manage sub-committees, present specific recommendations to the Board of Selectmen
- To support the work of the Sub-Committees
- To ensure broad participation in the implementation of the Master Plan

By-Law Review:

- To review action plan recommendations for new zoning, i.e., updating existing by-laws, adopting new uses and districts
- To establish work program and communicate this to Implementation Committee and Selectmen
- To work with appropriate consultants and town staff to develop draft by-law changes
- To present proposed warrant articles to Town Meeting
- To coordinate tasks with Town Center, Housing, and Water Resources Committees

Housing

- To prepare "418" Housing Certification and Interim Housing Strategy documents for submission to State
- To work with Housing Authority and Zoning By-law review Committee on Housing Action Plan
- To prepare 40-B guidelines for town's Housing Committee
- To coordinate with Town Center Committee

Town Center

- To work with property owners, residents, representatives of the business community and appropriate town boards on a Town Center plan.
- To coordinate work with Massachusetts Highway Department
- To work with appropriate consultants to carry out planning
- To consider a grant application for seeking additional funding

Water Resources Management

- To review proposed zoning changes which will address environmental protection
- To support Town efforts to meet new Federal Stormwater regulations
- To provide citizen input into the preparation by an outside consultant of a Water Resources Management program.
- To coordinate with appropriate town boards.

PUBLIC COMMENTS/SUGGESTIONS

A number of citizens, in responding to the questionnaire, provided written comments and suggestions. These comments have been organized into four sections: 1) Vision Statements, 2) General Strategies, 3) Specific Suggestions 4) Central Square. The comments are preceded by a letter (R indicating a resident response, B for a Business response) and a number of the survey received. The written comments are in italic text. Sometimes the editor has made summary comments about the response, as noted in parentheses and plain text. For example, while many residents want to protect the environment, often they are unwilling to support the staff necessary to carry out this mission.

The Vision Statements provide a wonderful description of citizen responses to the proposed master plan vision diagram and text. They have often improved upon the recommended vision Statement provided in the Master Plan. The Suggested Strategies provide general comments. These set a certain tone and capture many of the feelings of the residents. Specific Suggestions highlight recommended solutions for traffic, pedestrian circulation, etc. Regarding Central Square, a number of suggested approaches to solving the traffic congestion have been made by local residents. These have been included.

WEST BRIDGEWATER MASTER PLAN QUESTIONNAIRE
Highlights of Written Comments

The Master Plan Committee has done a wonderful job. It has tried to preserve the history of the town and yet keep up with the changing times of today.

Vision Statements

R163[1]. *We the residents of this town deserve a satisfactory quality of life. Limiting or regulating growth and development would be a first start while we still have undeveloped land available*

Drive through town or better still, bicycle, walk or kayak through town and look at and understand the importance of open fields, farms, forests, trails, and the overall character that attracts people to our town. If we loose or callously allow the sale of these attractive places then you loose the very appeal that brought people here in the first place. The openness and small town New England feel is what brought us here.

My family and I came here from the north shore just three years ago and are avid bicyclists and outdoor enthusiasts. We are certainly disappointed that there is not one public bicycle path in West Bridgewater. Most of the roads don't even have suitable sidewalks restricting us from riding with our children. We must travel to other towns that have these recreational facilities that meet our needs.

We also regularly kayak local rivers throughout the region and my wife and I are appalled that West Bridgewater has for whatever reason allowed so much direct encroachment of development immediately next to our water resources (rivers, streams and wet areas). Is there a lack of communication between your boards or do you think it is appropriate to develop so close to water resources? Are you aware of the impacts of water pollution?

In summary:

A. Limit or regulate growth while we still have a chance

B. *Build the town around our sensitive water resources (but not next to) by protecting, purchasing wherever necessary, and preserving the appealing value and small town character of our town*
C. *Create recreational paths (bike, walking, etc.) throughout town.*

R158. *It is imperative that West Bridgewater retain and improve its rural heritage and residential feel. It was once common to see people out horseback riding-no more. Create our own "**Emerald Necklace**" for residents and young families to use and enjoy. Continuing connecting meandering park-like areas would be a welcome addition to the town. Incorporate our historic heritage areas where possible.*

Rt. 106 was never built to carry the load that it does. Improve what presently exists, but do not widen it to carry more. Walking along route 106 is dirty and deafening from the emissions and sheer volume of cars. Crossing it is dangerous, even on designated crosswalks, Please, no more donut shops and drive-thrus. Driving past parking lot after parking lot is not a great view.

The greatest and newest areas for commercial/Industrial use should be limited to west of Route 24.

Residential – Keep West Bridgewater primarily residential with one and two-family homes – no over-developed condo or apartment units.

*Town center – it's a mess, an embarrassment and impossible to walk through. It should be the heart of an **Emerald Necklace**. The amount of traffic needs to be better managed and directed. Choose the types of commercial businesses situated there carefully to reflect the feel we're going after. Get rid of the rug merchant-that's not the look we want to see.*

R172. *I am most concerned that the growth of the industrial/commercial interests along 106/28 have created the impression that West Bridgewater is a "drive-through" town with no character. Building styles no longer recall our rich past, rather they speak of quick prefab buildings which obstruct views of beautiful countryside. Also, traffic on North Elm Street seems to be heavy trucks, RV's and speeding cars often unchecked by police.*

B8. *This town should first focus on protecting our farmlands, and create walking/bicycling trails throughout town by connecting conservation land and appropriate land purchase.*

R51. *We moved to West Bridgewater two years ago and plan to stay forever; we love it. We were attracted because of the quaint, small-town feel, and small class-room sizes for our two young children. We hope there are always farms and deer, etc. Please keep 'small-town" feeling. Proud of historical aspects.*

(Supported new residential, commercial, and industrial districts, regulatory controls but no additional staff or higher fees)

R 157. *We need to improve the image of the town – beginning to look low-class, need to upgrade that image by regulating kinds of business and structure/style of businesses along major roads into, out of, and through our town. They present the face and image of our town to all who drive through and therefore will attract people who will be impressed by that. Attract the "best" not the worst. We could become a "class town."*

R 59. *I believe it is important to preserve the town of WB as we all know and love it to the greatest extent possible. It should not be overlooked that the town of WB is and always has been primarily*

a residential town. We owe it to ourselves and all the town's people that preceded us to retain the quaintness of this small and wonderful New England town as we plan for the future. (Harry Sawyer)

R88. *My main concern is the aesthetics of the town; especially business area of Route 106/28. Uniformity of signs are not imposed through the bylaws, landscape is close to null. Another issue is will the Master Plan really give us a true town center? Would it need to be relocated, possibly Howard Street, Route 28 Intersection? Historical districts, pursue what we still have before it is gone, pursue the "vistas". Through Town Hall Day, Historical Society, Historical Commissions and the Schools (as it was a program taught years ago).*

R20. *Whatever else you do, keep West Bridgewater beautiful. It is a wonderful small town whose personality must be maintained. While additional business is good for the tax base revenue, too much will turn our town into a "mini Brockton." I left Brockton for the quiet life in West Bridgewater. Let that remain a good decision.*

R140. *If we can control develop in this town we could have one of the most picturesque towns in New England*

General Strategies

R149. *Although we agree with the overall mission "to protect town character", most of the specific proposals will do just the opposite; especially "improvements of Route 106/28."*
(Opposed new residential and commercial districts and any improvements to Central Square and Route 106. Did support higher fees, half-time conservation agent, water resource study, historic district study, and all proposed resource protection measures)

R67. *Maintain rural look and protect environment but do not spend any of our money for studies; obtain grants and increase fees, fix intersection at Central Square and widen Route 106, adopt resource protection strategies, adopt Limited Business and Resource Sensitive Commercial districts, and allow for assisted living and age restricted housing.*

R 149. *We already have too many unenforced regulations. Keep the State out of my wallet and my privacy.*

Enact rules now to prevent sky-scrapers, malls, cell towers, etc. This is a wonderful little bedroom community. There's nothing to be ashamed of in that – I like it.
(Supported improvements to Central Square and Route 106, and growth management and resource protection strategies especially farmland and Hockomock Swamp protection, phased growth by-law, special permit, site plan review, sub-division reform, and curb cut regulations.)

R155. *Natural resource protection & farmland protection must be our most important goal & number one objective in order to realize a sustainable future in West Bridgewater. This includes open space acquisition & protection, i.e., open landscapes, wooded forests, scenic views, etc, and acquiring the funds to preserve our quality of living.*
(Supported growth management and resource protection strategies, most staffing and grants, no transportation improvements, and a limited number of new districts – town center and open space, limited business, mixed use, resource sensitive, light industrial and down zoning, assisted living and special needs housing).

R82. *Now is the time to take appropriate action in preserving the character of WB as a New England residential town. Effective planning in commercial and industrial development is needed to avoid circumstances such as the traffic congestion at Routes 106 and Crescent street and allowing rug merchant in the Town Center*
(Supported resource protection strategies but limited support for new districts; Residential – only town center; Commercial – limited business and resource sensitive; Industrial – light industrial, Down zoning; and only assisted living residence)

R148. *I have lived in this great town for ten years plus. I have been listening to the same stories for the same amount of time. When is the vision of the town going to turn into actions and reality. I enjoy the small, old town style but I don't like the old time, small time thinking. Get off the dime and move on.*

Specific Suggestions:

1. Protect environment
2. Demolish boarded up buildings in Central Square
3. All that you plan is impossible without a sewerage plan to protect water supply
4. Traffic
   - Minimize traffic congestion
   - Restrict truck traffic
   - Make study of Crescent Street traffic so it doesn't remain as a short-cut. Street has become a Route 106-A. Trucks and regional school buses use it all the time.
   - Elm and Copeland have too much traffic
   - Install traffic signals and crosswalk at Matfield street and Route 28 and East Street and Rt 106.
   - All main streets should have sidewalks on one side; Rt. 106, East Street, Matfield, Crescent, etc.
   - Use 1% of all road projects for sidewalks & bike trails
5. Relocate Transfer Station to Manley Street
6. Address repeated power outages suffered in Orchard Drive section
7. How about a web site where more detailed explanations of these questions can be found?
8. I am a senior citizen. I am interested in property tax cuts for senior citizens so they can stay in their own homes OR affordable housing for senior citizens that are larger than the units off Matfield Street.
9. Purchase open space
10. Require signs to be in wood, retain New England feel like on Cape (no plastic signs).
11. I believe cluster housing today will be the slums of tomorrow.
12. Opposed to proposed Highway Commercial zoning near Lincoln Street. This will accelerate traffic congestion on Route 106; will require that this be a four lane roadway.
13. Regulate signs
14. Prohibit auto and junk storage on front lawns
15. Purchase Copeland Farm and end of Samuel Avenue and land north of Route 106 to East Street to railroad bed.
16. Adopt one acre zoning
17. Establish a teen center
18. No more donut shops and gas stations
19. Fix roads and bridges
20. Inter-Board coordination in plan review

Central Square Improvements:

R 154: *Put either a green left arrow (west of 28) or a hesitated green light (east of 28) so the 106 back-up (to Route 24) would be eased.*

R99: *Make the center a rotary, purchase the property for sale, knock building down, have all traffic heading on Route 106 west go this way. The remaining flow of traffic on Route 28 would continue to the rotary at the center. In the meantime, the lights at the intersection of Routes 106 and 28 should be in the delay. This would avoid a back-up on Route 106 and less chances of accidents. (Please call J Correia if any questions 508-586-8217)*

R95: *Widen turn from Route 28 to 106, demolish beauty shop and adjacent buildings, use police in morning and evening to control traffic.*

R78: *Install a rotary like Foxboro Center or create a one way exit off of 106 (east) that would go around the service. Drivers would use this right hand exit to get back to the traffic signal to head north on 28 (no left turn allowed off 106 east)*

R32. *We are a young family in town and plan to stay here. We really hope that the New England Town Center Plan happens. We have spoken to many families. So many people would love to be able to walk to a town center to do their errands, eat, meet friends, etc. A Town center would thrive in our town and bring the people together. We are very excited about this.*

R17. *Please consider revitalizing the town square, tear down vacant buildings and allow business with ample parking to run to decrease homeowners taxes. Also, please consider alternatives to the congestion at 106 and 24 north and south. The current road system is outdated and useless. The problem runs all the way to the center causing people to seek alternative routes and bypassing businesses at and around the center.*

R142. *No need to widen route 106. Basically its simple, single lights with arrows and time delays for left and right turning.*

QUESTIONNAIRE

WHICH OF THE FOLLOWING ACTIONS WOULD YOU SUPPORT FOR IMPLEMENTING THE MASTER PLAN? Please fill this out and return to Town Hall.

In order to protect the town and respond to change, I support the following ***(check boxes)****:*

☐ I am a resident ☐ I am a business owner

1. *Establish new zoning districts (See Action Plan Map)*
   The current by-law establishes only three use districts; (1) General Residential-Farming, (2) Business, and (3) Industrial. It is suggested that additional districts, as identified by bold type below, be established within each of these categories in order to reflect different location characteristics, e.g., town center versus highway commercial, for example.

   - Residential:
     - ☐ General Residential-Farming: Existing district allows single and two family only
     - ☐ **Town Center**: To allow buildings with mixed residential/commercial uses
     - ☐ **Cluster Open Space:** To allow within the existing General Residential-Farming District single family and townhouse developments on smaller lots with balance of required lot area dedicated as open space.

   - Commercial: Vary range of uses and dimensional requirements by district type with Limited Business being the most restrictive and Highway Commercial requiring larger frontages and allowing larger businesses.
     - ☐ **Limited Business**: would limit types of commercial uses such as no drive-in or auto sales, could require shared driveways and restrict parking in front yard, and could limit floor area of businesses.
     - ☐ General Business (existing Business District) Allows most commercial uses by Special Permit from the Planning Board.)
     - ☐ **Highway Commercial**: To allow mixed uses, office, hotel, destination retail, large restaurant. Would require larger lot size and frontage, environmental impact planning, 30% maximum site coverage.
     - ☐ **Mixed Use:** (Town Center) To allow buildings with mixed residential/commercial uses
     - ☐ **Resource Sensitive:** To allow a limited number of uses re. golf course, nursery, estate residential to minimize environmental and traffic impacts.

   - **Industrial:**
     - ☐ **Light Industrial**: To limit type of industrial activity to light manufacturing, low environmental impact uses
     - ☐ General Industrial: (Existing Industrial) allows equipment repair and light manufacturing as of right
     - ☐ **Office/Research Park:** To permit office or light manufacturing with open space preserved. Proposed at Coweeset Brook site off Walnut Street.
     - ☐ Down-zoning: Change Industrial zoning east of Route 24 to Resource Sensitive

2. *Allow for new residential uses in the General Residential and Farming District*
   - ☐ Assisted living residence for the elderly
   - ☐ Age restricted adult retirement community; minimum age 55
   - ☐ In-law or accessory apartment in existing home
   - ☐ Special needs housing for the disabled and handicapped
   - ☐ Density Bonus provided if developer sets aside open space or affordable housing units

3. *Update and adopt growth management and resource protection strategies*

   - **Phased Growth by-law:** Cap number of building permits issued for new construction each year
   - **Special Permit:** Revise to provide Town more protection in denying a particular use
   - **Site Plan Review:** to be updated to include requirement for comprehensive traffic, environmental and fiscal impact analysis, inter-board coordination, and use of outside consultants to advise Planning Board
   - **Demolition Delay by-law:** Requires Historic Commission review of historic structure before demolition permit issued by Building Department.
   - **Curb Cut:** Limitations to be adopted to regulate location and number of driveways serving commercial uses along the major arterials
   - **Subdivision Regulations**: to be updated to provide higher quality streetscape improvements, more narrow roads for cluster sub-divisions, and improved stormwater and resource protection measures
   - **Resource Area Protection:**
     - *Update existing by-laws*
       - Flood Plain District By-law: update to model code
       - Watershed Resource Protection District: update to model code
     - *Consider new by-laws*
       - Farmland Protection
       - Hockomock Swamp (site coverage requirements to protect resources)
       - River Protection: increase buffer requirements
       - Scenic Views; protect

4. *Work with the Massachusetts Highway Department (MHD) and the Old Colony Planning Council (OCPC) on needed Transportation Improvements:*
   - **Central Square at Routes 106 and 28**: road widening, signals, landscaping
   - **Route 106**: road widening, intersection improvements
   - **Manley Street**: Road widening, sidewalk, storm drains

5. *Undertake studies, organization and staffing improvements, and pursue grants*
   - Retain Economic Development Planner
   - Extend Conservation Agent to half-time
   - Establish higher fee structure for Planning Board and Board of Appeals so as to obtain technical support in plan review
   - Establish Housing Committee and Guidelines to prepare town for review of Chapter 40-B mixed income housing developments that might seek local/State approval
   - Undertake study to determine strategies to address stormwater management in conformity with new Federal guidelines, wastewater treatment where residents have failing septic systems, and water supply protection.
   - Study establishment of a town center historic district

Please write any comments below and on the back and return in the enclose envelope. Your participation is appreciated.

Board of Selectmen: Eldon F. Moreira, Chairman
William Turner, Chairman, Master Plan Committee