Town of Plymouth
Plan of Conservation and Development
"Connecting to the Future"

2005







The Background Report

TOWN OF PLYMOUTH

"Connecting to the Future"

Plan of Conservation and Development
Background Report

Table of Contents

Population Growth

Introduction

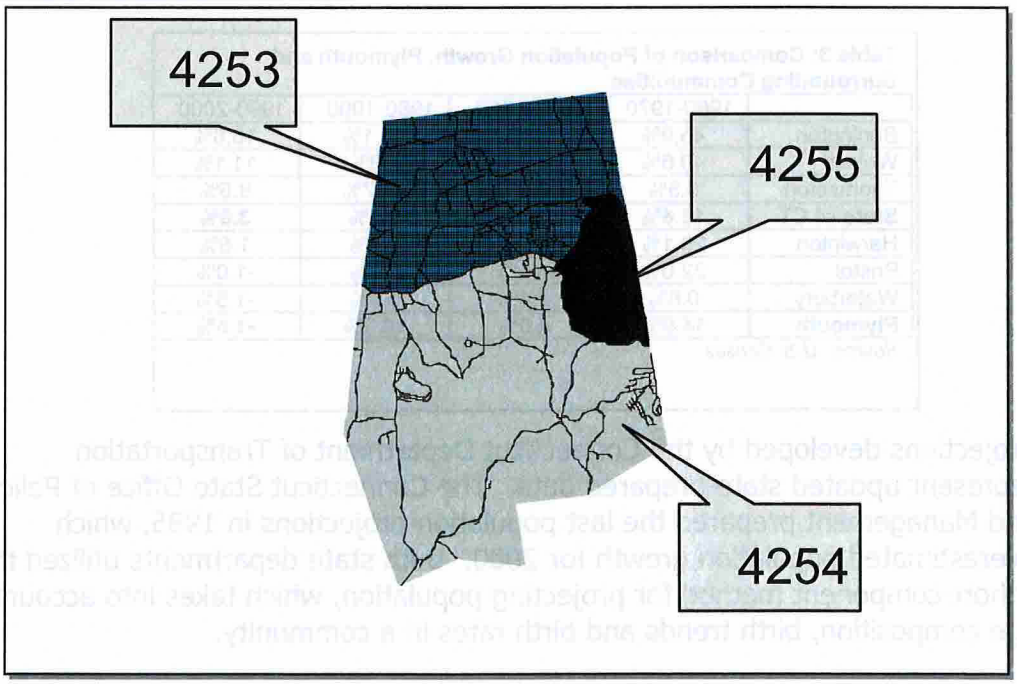
Understanding the characteristics of population growth is an integral element to formulating land use policies. The implications of demographic trends affect housing, community facilities and other major components of the Plan of Conservation and Development. This chapter describes key demographic details derived primarily from the 2000 and 1990 Census. Comparative data from those sources and others are presented for review, analyzed for key findings and restated for convenient reference for other stages of the Plan process.

According to the U. S. Census for 2000, Plymouth's total population stood at 11,634, a decline from the last Census in 1990 (11,822). There are three Census tracts in the Town, the boundaries of which have stayed consistent from the 1990 Census to the 2000 Census (see Map 1).

The changes in population by tract are shown in Table 1 below.

Table 1: Population Change by Tract, 1990-2000

	Tract 4253	Tract 4254	Tract 4255
1990	3,832	4,568	3,422
2000	3,826	4,477	3,331
Change	-6	-91	-91



Map 1: Census Tract Locations: 1990 and 2000 (Source: U. S. Census)

Population Characteristics

As shown in Table 2 below, a minor drop in the total population was experienced in the period between 1990 and 2000. The most dramatic increases experienced in the Town were a 77.5% jump from 1900-1910 and a 32.6% increase from 1950-1960.

The slight decrease in population in Plymouth during the period 1990-2000 represents a flat growth period, in contrast to the 10.2% increase in population for the previous decade. However, analyzing the population growth rate across the 20-year period of 1980 and 2000, reveals an increase of 0.4%. The population growth rate for the State during the same period was 0.5%, and Litchfield County's growth rate was 0.8%. Comparing rates of growth should be tempered with the understanding that percentages can increase sharply from low-population base towns experiencing even slow growth and that short time periods analyzed can produce more extremes (see Table 3 and the example of Burlington's rate of growth).

Table 2: Population Change: 1900-2025

Year	Population	Percent Change
1900	2,828	31.7%
1910	5,021	77.5
1920	5,942	18.3
1930	6,070	2.2
1940	6,043	0.4
1950	6,771	12
1960	8,981	32.6
1970	10,321	14.9
1980	10,732	4
1990	11,822	10.2
2000	11,634	-1.6
*2010	12,410	6.7
*2020	12,960	4.4
*2025	13,230	2.1

Source: U.S. Census
**Conn. Dept of Transportation Projections*

Table 3: Comparison of Population Growth, Plymouth and Surrounding Communities

	1960-1970	1970-1980	1980-1990	1990-2000
Burlington	45.9%	39.1%	24.1%	16.6%
Wolcott	40.6%	4.1%	5.3%	11.1%
Thomaston	6.5%	0.7%	10.7%	8.6%
State of CT	**19.6%**	**2.5%**	**5.8%**	**3.6%**
Harwinton	29.1%	13.2%	6.9%	1.6%
Bristol	22.0%	3.4%	5.7%	-1.0%
Waterbury	0.8%	4.4%	5.5%	-1.5%
Plymouth	**14.9%**	**4.0%**	**10.2%**	**-1.5%**

Source: U.S. Census

Projections developed by the Connecticut Department of Transportation represent updated state-prepared data. The Connecticut State Office of Policy and Management prepared the last population projections in 1995, which overestimated population growth for 2000. Both state departments utilized the cohort-component method for projecting population, which takes into account age composition, birth trends and birth rates in a community.

Age Characteristics

An analysis of population by age group is critical for projecting municipal services, since age clusters represent different needs. In a comparison of age-stratified data from the 2000 and 1990 Census, the wave of older adults in the population can be visualized in Chart 1 (next page). Future implications of a need for provision of a variety of housing situations for these citizens should be considered in advance of the next Plan update.

Just over 1/3 of the Town's population in 2000 is in the 30-34, 35-39, 40-44 and 45-49 age cohorts. The children of the above mentioned groups account for the significantly strong increase in the 10-14 year old age group. This group's impact on educational service delivery has an immediate impact.

Chart 2 illustrates percentages of dependent populations, which are composed of school-age children and retirement-age citizens. An increase in the "under 18" category of 85 individuals and a decrease in the "over 65" group of 74 people was recorded between 1990 and 2000. Analysis of dependent populations can help determine future needs of particular municipal services or capital investment.

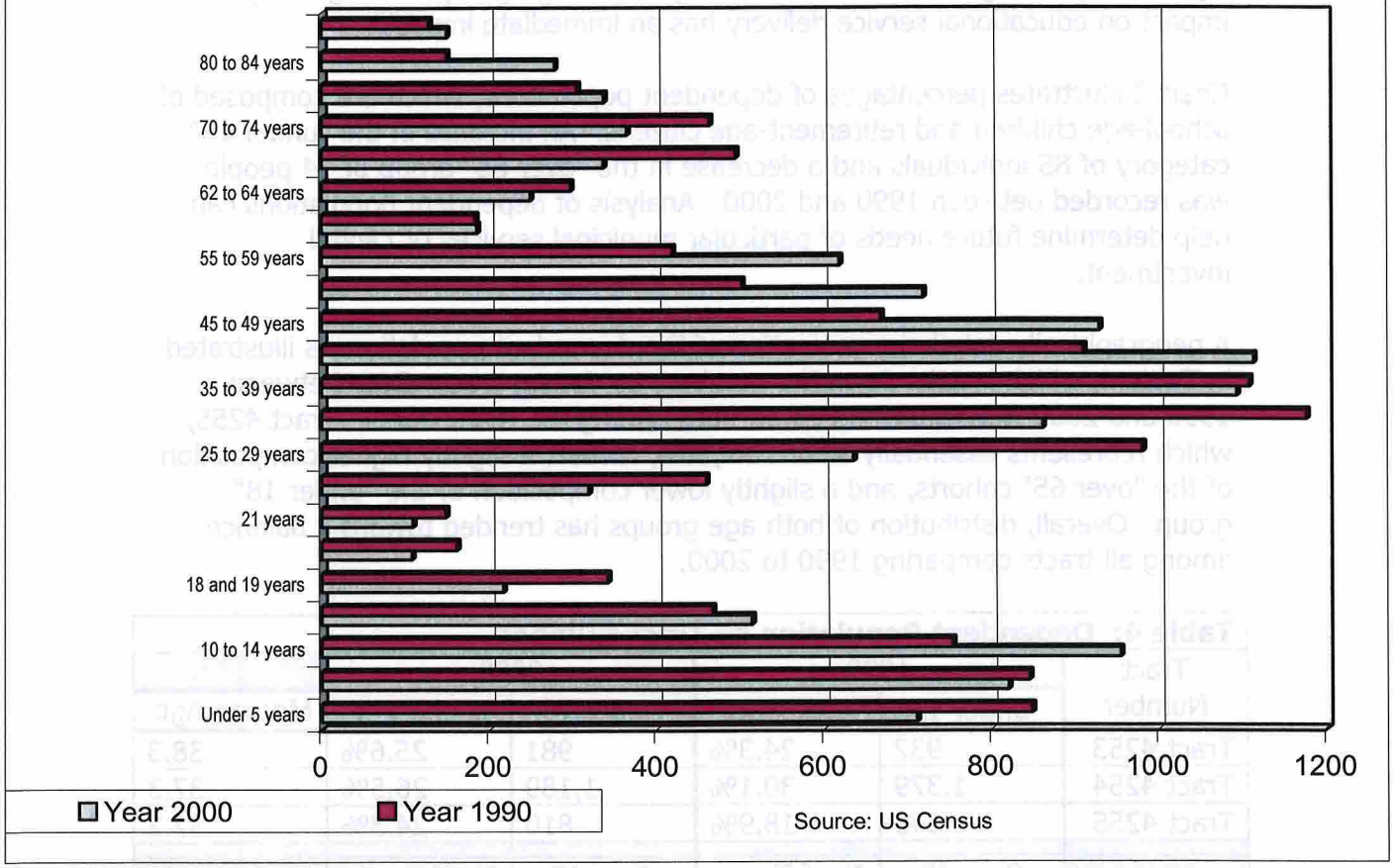
A geographically detailed examination of the dependant populations is illustrated in Table 4, which breaks down the numbers by Census tract. Data between 1990 and 2000 illustrate trend differences among the three tracts. Tract 4255, which represents essentially all of Terryville, reveals a slightly higher composition of the "over 65" cohorts, and a slightly lower composition of the "under 18" group. Overall, distribution of both age groups has trended toward a balance among all tracts comparing 1990 to 2000.

Table 4: Dependent Population by Tract Number

Tract Number	1990		2000		
	Under 18	% of Tract	Under 18	% of Tract	Median Age
Tract 4253	932	24.3%	981	25.6%	38.3
Tract 4254	1,379	30.1%	1,189	26.5%	37.3
Tract 4255	648	18.9%	810	24.3%	37.2
	Over 65	% of Tract	Over 65	% of Tract	
Tract 4253	513	13.3%	466	12.1%	38.3
Tract 4254	451	9.8%	466	10.4%	37.3
Tract 4255	583	17.0%	527	15.8%	37.2

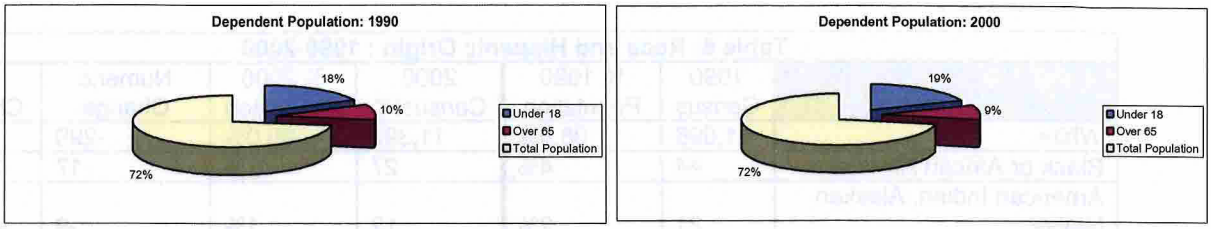
Source: U.S. Census

Chart 1: Age Distribution: 1990 and 2000



Source: US Census

Chart 2: Dependent Populations by Percent: 1990 and 2000



Source: U.S. Census

Table 5 illustrates how surrounding communities compare with Plymouth in the categories considered dependent populations.

Table 5: Age Characteristic Comparisons, 1990-2000, Plymouth and Surrounding Communities

Town	1990		2000	
	Under 18	65+	Under 18	65+
Bristol	22.1%	13.6%	23.2%	14.9%
Burlington	**28.4%**	6.5%	**28.2%**	7.3%
Harwinton	25.1%	11.6%	25.1%	13.0%
PLYMOUTH	24.6%	13.1%	25.8%	12.7%
Thomaston	23.9%	13.1%	25.3%	12.1%
Waterbury	**23.5%**	**16.5%**	26.5%	**15.0%**
Wolcott	23.2%	12.0%	26.0%	13.1%

Source: U.S. Census

Racial and Ethnic Characteristics

Racial and ethnic characteristics of Plymouth's population revealed no substantive shifts between the 1990 and 2000 Census. The White population dropped slightly (see Table 6), but only by a fraction of a percentage point. Since categorizations changed from the 1990 to the 2000 Census, actual significant comparisons are difficult. For example, it is difficult to discern the significance of adding the extra category of "two or more races" to the 2000 Census. This might or might not have affected the drop in the African American group. Persons considering themselves of Hispanic Origin increased substantially as a minority population in 2000 from 1990, a trend which is fairly typical in many cities and towns in Connecticut.

Table 6: Race and Hispanic Origin : 1990-2000						
	1990 Census	% 1990 Population	2000 Census***	% 2000 Population	Numeric Change	% Change
White	11,696	98.9%	11,397	98.0%	-299	-2.5%
Black or African American	44	.4%	27	.2%	-17	-38.6%
American Indian, Alaskan Native	21	.2%	12	.1%	-9	-42.8%
Asian or Pacific Islander	47	.4%	22	.2%	-25	-53.1%
Other Race	14	.1%	8	.1%	-6	-42.8%
Hispanic Origin**	111	.9%	290	2.5%	+179	161.3%
Two or More Races*			168	1.4%		

Source: U.S. Census
**The 2000 Census now includes a category for multiracial persons of two or more races.*
***Hispanic Origin populations may be of any race.*
****Due to changes in the reporting categories between the 1990 Census and the 2000 Census, direct comparisons are not possible.*

Table 7 depicts racial and ethnic concentrations in the Town by Census tract. The highest concentration of minorities is found in Tract 4255 (4.5%) and Tract 4253 (4.5%), followed by Tract 4254 (3.4%).

Table 7: Racial and Ethnic Characteristics by Census Tract for 2000				
Census Tract	% White	% Black	% Other*	% Hispanic**
Tract 4253	95.5	0.2	1.1	3.2
Tract 4254	96.6	0.3	1.6	1.5
Tract 4255	95.6	0.2	1.2	3.1

Source: U.S Census
**The 2000 Census now includes a category for multiracial persons of two or more races.*
***Hispanic Origin populations may be of any race.*

Household Characteristics

A review of household characteristics for purposes of the Plan includes the size, composition, location and other information concerning Plymouth households. While total population in the Town has decreased in the decade between 1990 and 2000, the number of households has increased by 2.7% (see Table 8). There are a variety of explanations for this seeming contradiction.

Table 8: Change in Number of Households, 1980 to 2000		
Census Year	Number of Households	Percent Change by Census Year
1980	3,670	-
1990	4,335	18%
2000	4,453	2.7%

Source: U. S. Census

A small part of the explanation is showed in Table 9 and reflects a national trend toward lower numbers of persons per household, due in part to lower birth rates, delays in parenthood and higher divorce rates.

Table 9: Average Persons per Household, 1970-2000	
Census Year	Persons per Household
1970	3.15
1980	2.92
1990	2.72
2000	2.60
Source: U. S. Census	

The following two tables illustrate detail of household types, primarily family and nonfamily, and compare statistics by Census tract and Census year. Family households are defined as containing one or more related individuals living in the same housing unit. Nonfamily households include individuals living alone or households, which contain one or more nonrelated individuals. Group quarter situations such as hospitals, correctional facilities, nursing homes, dormitories or other similar shared housing accommodations are not included in the discussion of households. Slight differences can be seen from the 1990 Census to the 2000 Census. Findings from Tracts 4255 (predominantly Terryville) and 4254 reveal increases in nonfamily households, although family households still hold majority percentages in each tract, except for Tract 4255. This distinction is the result of more types of housing units that attracts nonfamily households, such as rentals and apartment-style, attached housing. The number of single person elderly households, especially those living in private market housing, is an important statistic, due to the strong potential that health or age-related reasons may compel those households to vacate existing housing units. Thus, these units become available for new families and households moving to the community.

Table 10: Households (HH) by Household Type and Census Tract, 2000						
Household Type	Tract 4253	% of HH in Tract	Tract 4254	% of HH in Tract	Tract 4255	% of HH in Tract
Family Households (15 to 64 years)	**948**	**65.7**	**1,068**	**66.7**	**716**	**50.9**
Married-Couple Family	827	57.3	865	54.0	561	39.9
With own children under 18 years	431	29.8	463	28.9	306	21.7
Female Householder, no husband present	77	5.3	130	8.1	108	7.6
With own children under 18 years	60	4.1	95	5.9	84	5.9
Nonfamily Households	**222**	**15.3**	**305**	**19.0**	**333**	**23.6**
Householder living alone	170	11.7	219	13.6	266	18.9
Householder 65 years and over	120	8.3	76	4.7	167	11.8
Householder 65 years and over	**272**	**18.8**	**228**	**14.2**	**357**	**25.3**
Total Households	**1,442**	**100.0**	**1,601**	**100.0**	**1,406**	**100.0**
Source: U.S. Census						

Table 11: Households (HH) by Household Type and Census Tract, 1990						
Household Type	Tract 4253	% of HH in Tract	Tract 4254	% of HH in Tract	Tract 4255	% of HH in Tract
Family Households (15 to 64 years)	**908**	**66.2**	**1,135**	**72.8**	**736**	**52.4**
Married-Couple Family*						
With own children under 18 years	452	33.0	644	41.3	312	22.2
Female Householder, no husband present	87	6.3	146	9.3	120	8.5
With own children under 18 years	48	3.5	47	3.0	21	1.5
Nonfamily Households	**256**	**18.6**	**279**	**17.9**	**485**	**34.5**
Householder living alone	98	7.1	246	15.8	418	29.7
Householder 65 years and over	137	9.9	138	8.8	224	15.9
Householder 65 years and over	**207**	**15.0**	**145**	**9.3**	**184**	**13.0**
Total Households	1,371	100.0	1,559	100.0	1,405	100.0
Source: U.S. Census **not available in range of 15 to 64 years*						

If a range of care facilities for this growing segment of elderly householders is not available in the Town, this population cluster may be forced to relocate to surrounding communities.

Table 12 illustrates persons living in group quarters, by tract. Such arrangements are not considered households. Institutionalized population includes people under supervised care, such as correctional centers, nursing homes and juvenile detention facilities. Noninstitutional type living arrangements include college dormitories, military quarters and group homes.

Table 12: Persons in Group Quarters by Census Tract, 2000			
	Tract 4253	Tract 4254	Tract 4255
In Group Quarters	0	64	7
Institutionalized Population	0	58	0
Noninstitutionalized Population	0	6	7
Source: U.S. Census			

Another component within the discussion of household characteristics is household income. This characteristic can influence many municipal policies and decisions. Developing a current picture of household income and associated trends has implications for tax revenue expectations, local economies and household buying patterns.

Table 13: Household Income, 1999 and 1989		
	1999	1989
Less than $10,000	224	289
$10,000 to $14,999	203	222
$15,000 to $19,999	98	312
$20,000 to $24,999	278	205
$25,000 to $29,999	227	298
$30,000 to $34,999	263	359
$35,000 to $39,999	249	333
$40,000 to $44,999	209	481
$45,000 to $49,999	281	248
$50,000 to $59,999	421	629
$60,000 to $74,999	751	579
$75,000 to $99,999	664	241
$100,000 to $124,999	337	65
$125,000 to $149,999	123	57
$150,000 to $199,999	121	17
Source: U. S. Census		

For purposes of understanding the data in Table 14, per capita money income is similar to personal income, but does not include in-kind income payments that would increase personal income such as transportation subsidies or housing. Median family income is based on 2 or more related people living in one housing unit. The total income for that unit includes the income from any non-related people in the same unit. Household income is the sum of money income received in the previous calendar year by all household members 15 years old and over, including household members not related to the householder, people living alone, and others in nonfamily households.

Table 14: Income Statistics1999			
	Amount	State Rank out of 169 Towns	Relative to State Avg./Median
Per Capita Money Income	$22,056	148	69.3%
Median Household Income	$53,158	129	89.0%
Median Family Income	$59,892	136	84.1%
Source: Connecticut Market Data, 2000, DECD			

A comparison between Plymouth's median household income and those of the surrounding communities is illustrated in Table 15.

Another demographic component that affects municipal decision-making and contributes to a town's overall economic picture is educational attainment of the citizenry. Table 16 categorizes results of the 2000 Census for Plymouth and compares it to the State of Connecticut, in terms of percentages of population. Table 17 presents the same data as applied to Plymouth's surrounding communities.

Table 15: Median Household Income – Plymouth and Surrounding Communities, 1999

Town	Median Household Income
Burlington	$84,683
Wolcott	$71,144
Harwinton	$67,065
Thomaston	$53,703
Plymouth	**$53,138**
Bristol	$51,235
Waterbury	$41,258

Source: U. S. Census

Table 16: Educational Attainment for Population 25 Years and Older, 2000

	Plymouth	State
Total (25 and over)	7,887	2,295,617
Less than 9th Grade	553 (7.0%)	5.8%
9th to 12th Grade, no Diploma	917 (11.6%)	10.2%
High School Graduate (Includes Equivalency)	3,232 (41.0%)	28.5%
Some College, no Degree	1,428 (18.1%)	17.5%
Associate Degree	657 (8.3%)	6.6%
Bachelor's Degree	701 (8.9%)	18.2%
Graduate or Professional Degree	398 (5.0%)	13.3%

Source: U. S. Census

Table 17: Educational Attainment: Plymouth's Surrounding Communities, 2000

	Bristol		Burlington		Harwinton		Wolcott		Thomaston		Waterbury	
Less than 9th Grade	2,824	6.7%	90	1.6%	49	1.3%	392	3.7%	168	3.2%	8,205	11.7%
9-12th Grade, no Diploma	5,215	12.4	249	4.5	236	6.4	875	8.4	494	9.6	11,536	16.5
High School Graduate	15,877	38.0	1,319	24.1	1,109	30.1	3,909	37.7	2,002	39.0	23,961	34.3
Some College, no Degree	8,109	19.3	981	18.0	638	17.3	2,196	21.2	1,100	21.4	11,821	17.0
Associate Degree	3,080	7.3	451	8.2	436	11.8	977	9.4	420	8.1	4,590	6.5
Bachelor's Degree	4,500	10.7	1,493	27.2	751	20.4	1,245	12.0	582	11.3	6,042	8.6
Graduate Degree	2,262	5.4	886	16.2	462	12.5	756	7.3	365	7.1	3,636	5.2

Source: U. S. Census

Housing Unit Characteristics

Trend information regarding the composite of housing unit types in the Town is illustrated in Table 18. The trend information presents a downward trend in multifamily units even though total units show progressive increases. Strong

gains in the last decade in the establishment of single-family units account for the increase in total units.

Overall, housing unit numbers grew by 1.1% from 1990 to 2000, even though the population decreased in the same period by 1.6%. Some explanation of this finding can be attributed to decreases in average household size and a small increase in persons living in group quarters. Table 18 depicts substantial unit gains between each decade recorded except for the last decade. Such is the result of a protracted economic downturn regionwide in the last decade.

Table 18: Types of Housing Units, 1970-2000

		1970	1980	1990	2000
Single Family	Detached	2,816 (72.4%)	3,101 (71.6%)	3,286 (71.5%)	3,410 (73.4%)
	Attached	16 (0.4%)	18 (0.4%)	18 (0.4%)	55 (1.2%)
Multi-Family	2 units	416 (10.7%)	418 (9.2%)	422 (9.2%)	376 (8.1%)
	3 or 4 units	381 (9.8%)	381 (8.3%)	381 (8.3%)	350 (7.5%)
	5+ units	207 (5.3%)	339 (8.9%)	411 (8.9%)	381 (8.2%)
Mobile		52 (1.3%)	77 (1.7%)	77 (1.7%)	74 (1.6%)
Total		3,888	4,334	4,595	4,646
Percent Change		-	11.5%	6.0%	1.1%

Source: U. S. Census

Table 19 reveals detail pertaining to occupancy of housing units per Census tract. Overall, a large majority of occupied units were recorded for all three tracts. Owner-occupied housing units predominated in Tracts 4253 and 4254. In contrast, 34.4% of occupied housing units in Tract 4255 were renter-occupied.

Table 19: Housing Units and Occupancy Characteristics Per Census Tract, 2000

	Tract 4253		Tract 4254		Tract 4255	
	Units	% of Total	Units	% of Total	Units	% of Total
Total Housing Units	1,484	100.0	1,668	100.0	1,494	100.0
Occupied Units	1,437	96.8	1,605	96.2	1,411	94.4
Vacant Units	47	3.2	63	3.8	83	5.6
Occupied Units	1,437	96.8	1,605	96.2	1,411	94.4
Owner-Occupied	1,201	80.9	1,400	83.9	897	60.0
Renter-Occupied	236	15.9	205	12.3	514	34.4
Vacant Units	47	3.2	63	3.8	83	5.6
For Rent	0	0.0	0	0.0	53	3.5
For Sale Only	18	1.2	63	3.8	17	1.1
Rented or Sold, not occupied	19	1.3	0	0.0	0	0.0
Other Vacant	10	.7	0	0.0	13	.9

Source: U. S. Cenusus

Housing and Residential Development

Introduction

The type, condition, density and cost of housing in a community are important factors to consider in determining quality of life within that community. This element of the Plan of Conservation and Development examines characteristics of housing to understand future needs.

Section 8-23 of the Connecticut General Statutes establishes the requirements for the housing portion of a POCD as follows: *"Such plan shall make provision for the development of housing opportunities, including opportunities for multi-family dwellings, consistent with soil types, terrain, and infrastructure capacity, for all residents and the planning region in which the municipality is located...Such plan shall also promote housing choice and economic diversity in housing, including housing for both low and moderate-income households..."*

Existing Housing Characteristics

The 2000 Census recorded 4,646 housing units in the Town. Of these, 95.8% were occupied. The resulting vacancy rate of 4.2% is moderate. Table 1 restates occupancy data per Census tract originally stated in Memorandum #1. The vacancy rate of 5.6% in Tract 4255 is a concern.

Table 1: Housing Units and Occupancy Characteristics Per Census Tract, 2000

	Tract 4253		Tract 4254		Tract 4255	
	Units	% of Total	Units	% of Total	Units	% of Total
Total Housing Units	1,484	100.0	1,668	100.0	1,494	100.0
Occupied Units	1,437	96.8	1,605	96.2	1,411	94.4
Vacant Units	47	3.2	63	3.8	83	5.6
Occupied Units	1,437	96.8	1,605	96.2	1,411	94.4
Owner-Occupied	1,201	80.9	1,400	83.9	897	60.0
Renter-Occupied	236	15.9	205	12.3	514	34.4
Vacant Units	47	3.2	63	3.8	83	5.6
For Rent	0	0.0	0	0.0	53	3.5
For Sale Only	18	1.2	63	3.8	17	1.1
Rented or Sold, not occupied	19	1.3	0	0.0	0	0.0
Other Vacant	10	.7	0	0.0	13	.9

Source: U. S. Census

Vacancy and occupancy percentages for adjacent communities are compared in Table 2.

Table 2: Housing Occupancy Status for Plymouth and Adjacent Communities

Town	Year 2000	
	% Occupied	% Vacant
Bristol	95.3%	4.7%
Burlington	97.8%	2.3%
Harwinton	96.8%	3.2%
PLYMOUTH	95.8%	4.2%
Thomaston	96.7%	3.2%
Waterbury	91.0%	8.9%
Wolcott	97.6%	2.3%

Source: U. S. Census

Housing Growth and Age – To quantify the housing unit growth in the Town, statistics are compiled in Table 3 that illustrate a current trend toward greater residential construction growth in Plymouth than had been experienced in prior years. Table 4 examines the state rank data for neighboring communities over the same period.

Table 3: Housing Construction Authorizations in Plymouth, 1997-2000

Year	Total Units	Single Unit	2 Unit	3 and 4 Unit	5 Units or More	Demolitions	Net Gain	State Rank by Net Gain
2000	53	48	0	0	5	0	53	50
1999	65	43	0	0	22	0	65	46
1998	30	30	0	0	0	0	30	92
1997	33	25	0	0	8	5	28	89

Source: Conn. Dept. of Economic and Community Development

Table 4: Housing Construction Authorizations, State Rank by Net Gain of Plymouth's Neighboring Communities, 1997-2000

Year	Burlington	Thomaston	Bristol	Wolcott	Harwinton	Waterbury
2000	37	51	66	43	99	119
1999	42	60	94	49	110	165
1998	61	56	49	59	119	165
1997	59	81	43	15	92	166

Source: Conn. Dept. of Economic and Community Development

A potential indicator of housing condition in a community is the age of housing stock. Table 5 reveals an older overall stock of housing units throughout the

Town. In fact, according to the 2000 Census, 25% of all housing units in Plymouth were built prior to 1939. The implications of this older stock of housing units include a downward pressure on valuations and median home sales. These units are more affordable as starter homes. The older stock also increases potential for blighted properties to appear, as repairs become more frequent and severe; however, age alone cannot foretell condition of structures. Many older homes are maintained very well and become community assets of an historical nature.

Table 5: Age of Housing Units by Census Tract

	Tract 4253		Tract 4254		Tract 4255	
Time Period Built	Amount	%	Amount	%	Amount	%
1999 to March 2000	36	2.4%	5	0.3%	15	1.0%
1995 to 1998	49	3.3%	45	2.7%	22	1.5%
1990 to 1994	124	8.4%	112	6.7%	25	1.7%
1980 to 1989	243	16.4%	248	14.9%	130	8.7%
1970 to 1979	360	24.3%	173	10.4%	156	10.4%
1960 to 1969	143	9.6%	192	11.5%	133	8.9%
1950 to 1959	158	10.6%	313	18.8%	287	19.2%
1940 to 1949	106	7.1%	212	13.9%	179	12.0%
1939 or earlier	265	17.9%	348	20.9%	547	36.6%

Source: U. S. Census

Affordable Housing Considerations

Section 8-23 of the Connecticut General Statutes requires that municipality "shall consider" the need for affordable housing in the preparation of a plan of conservation and development. Housing affordability is a many faceted issue. Some aspects of housing affordability are beyond the control of a local jurisdiction, while others are directly affected by a municipality's land use policies and regulatory practices.

The demand for housing will "drive" the housing market and housing demand, within the setting of a regional housing market is largely beyond the control of an individual municipality. The quantity and characteristics of the demand for housing flow from a market area's economic conditions, as they affect income levels, job growth and job security. The regional economy within which Plymouth is located is continuing to become more globally connected and less responsive to the control of local municipalities.

Housing costs are largely the result of the following factors: the demand for housing relative the available supply; the locations (time/distance) of housing relative to the sources of demand; the availability and cost of buildable land for the spectrum of market desired housing choices; labor and material costs; the age, quality and supply of existing housing inventory within the competitive

housing market area; the development of new housing product as it affects available inventory; and housing carrying costs, including mortgage interest rates, utilities and taxes.

Housing affordability is a relative term. Although the level of affordability differs for different income levels and circumstances, there are generally accepted indices of housing affordability. The recognized standard of the Federal government is that housing cost should not exceed 30 percent of family income. Table 6 examines median sales prices of homes, displayed with single-family compared to condominiums. A steady climb of median sales price in both condominium and single-family homes is shown, except for slight decreases from 1998 to 1999. A surge in condominium sales in 2000 is also noteworthy. At the current pace of sales, totals would fall short of the 2002 total for single-family homes.

Table 6: Number of Sales and Median Sales Price, Single Family and Condominiums in Plymouth, 1997-2003

	Single Family		Condominiums	
Year	Number of Sales	Median Sales Price	Number of Sales	Median Sales Price
2003 Jan.-Jun.	82	$154,500	4	$100,500
2002	184	135,000	27	89,900
2001	156	129,950	22	76,900
2000	130	118,400	29	73,900
1999	181	109,800	13	65,000
1998	154	112,500	12	64,900
1997	140	99,900	13	75,000

Source: The Warren Group

Affordable Housing Appeals Law – The State of Connecticut has established an Affordable Housing Appeals Procedure (AHAP) to provide developers with assistance to build housing that contains a minimum percent of affordable housing. The AHAP does not apply where at least 10% of the dwelling units in the municipality are either:

- Governmentally assisted housing,
- Currently financed by Connecticut Housing Finance Authority (CFHA) or Farmer's Home Administration (FHA) mortgages, or
- Subject to deeds containing covenants or restrictions that require sale or rental at affordable levels.

Under the AHAP law, "affordable levels" mean housing for which persons and families pay 30% or less of adjusted gross income, where such income is less than or equal to 80% of the area's median family income.

Where municipalities do not reach the 10% level required for exclusion from the

AHAP, developers of proposed projects containing a defined percentage of government assisted housing or affordable housing set-aside, may appeal denial of municipal zoning approvals to the court. Assisted housing developments are those that receive financial assistance from government program for construction or rehabilitation of low or moderate-income housing or Section 8 supported housing. Affordable housing set-aside projects must reserve 30% of the total units proposed to be developed for affordable housing. One half of those set-aside units must be rented to persons or families whose income is less than or equal to 80% of the lesser of the state or area median income; the remaining half of the set-aside units must be reserved at 60% of the lesser of the state or area median income. Current median family income for the Plymouth area (Hartford Metropolitan Statistical Area) is $73,000 (2003) and for Connecticut is $75,400 (2003).

The Town has details for affordable housing establishment in the zoning regulations as the Planned Affordable Housing Development section and requirements within the Senior Residential Development section.

According to the state parameters for affordable income type properties, Plymouth does not qualify for exemption from the over-ride provisions of AHAP (see Table 7). The state's parameters for affordable units understate the true supply of affordable housing in Plymouth because of the restrictive definition of affordable units. It does not recognize lower priced, market rate units and homes not purchased with CHFA or FHA mortgages. There are other sources of affordable housing in Plymouth; therefore, it might be misleading to conclude (based alone on state definitions) that Plymouth lacks affordable housing.

Table 7: Affordable Housing Appeals Procedure List - Plymouth, 2002

2000 Census Housing Units	Governmentally Assisted Units	CHFA Mortgages	Deed Restricted	Total Assisted	Percent
4,646	178	239	0	417	8.98%

Source: Connecticut Dept. of Community and Economic Development

Multifamily and Cluster Development – Studies have demonstrated that single-family detached housing produces a negative net fiscal impact on a town's finances, primarily as a result of educational costs associated with this type of development. By comparison, attached single-family and multifamily housing generally consists of smaller units with fewer bedrooms and are not as attractive to larger families. Often, this type of housing is oriented toward specific population groups such as "empty-nesters" who place less of a demand on municipal services. In addition to lesser educational demands, privately maintained streets and utilities often service these developments, which can also reduce the municipal fiscal burden.

At the other end of the land use spectrum, open space requires effectively no municipal services or costs. It also reaps much smaller revenues for the town, but the net effect is not negative.

Cluster development, or open-space subdivisions, have the potential to temper some of the municipal services costs associated with traditional residential development by:
1) Consolidating the extent, thereby the cost, of utility and other infrastructure with smaller lots,
2) Providing open space areas requiring little or no service costs, and
3) Encouraging more modest structures within smaller building envelopes.

Accommodation for such cluster development exists in the zoning regulations for the Town; however, such nontraditional subdivision layouts are not commonly proposed by developers seeking to subdivide property.

Types of Housing for Aging Populations

As the Town's population ages, a variety of housing choices can help ensure that many older residents stay in Plymouth instead of being forced to seek more appropriate housing units in other towns. Many elderly citizens realize that their lifestyles are no longer compatible with the typical lifestyles of their younger adulthood spent living in the single-family detached homes that predominate in Plymouth. The costs and physical demands of owning and maintaining those houses can be difficult. Also, as "empty-nesters", many older citizens no longer need the extra bedrooms that were necessary for raising a family. There are a variety of elderly housing arrangements to fit the various needs of an aging population.

Assisted Living Facility – Assisted living facilities are managed residential communities that provide supportive services to residents. In an assisted living development, residents typically live in an apartment style unit and pay monthly fees for services. By Connecticut Statutes, assisted living communities must provide core supportive services that include laundry; transportation and housekeeping services; meals; recreational activities and maintenance. Chore services for routine domestic tasks, assistance with daily activities, nursing services and medication supervision are to be provided as needed. A resident services coordinator is required as well as emergency call services in each unit, 24-hour security and on-call nursing services 24 hours a day. Skilled nursing and medical services are generally not provided. This type of housing facility is intended to assist residents with activities of daily living while maintaining a maximum level of independence.

Congregate Living Facilities – These facilities provide residents with private living arrangements, moderate supportive services and common areas for dining,

socialization and other activities. These communities furnish at least one daily meal, which is usually included in the monthly fee, housekeeping services and a variety of social and recreational activities. Congregate housing is meant for individuals who are basically self-sufficient but need a few services to help them to live independently. Congregate housing does not generally offer in-unit assistance of health care services.

Continuing Care Retirement Community (CCRC) – CCRCs are sometimes referred to as life-care communities. These communities are designed and operated to assure residents, through contractual agreements, lifetime living accommodations and a variety of services including long-term health and nursing services. Each resident must enter into a residency agreement that requires the payment of an entrance fee and monthly fees. CCRCs offer various types of care that allow residents to remain at the development and, as their needs change, move from one level of care to another.

Government Assisted Independent Living Facility – These include rental housing complexes with age and income restrictions that have received some form of government assistance. This housing type provides independent living opportunities for senior citizens and younger persons with disabilities. These facilities are meant for individuals whose physical mobility and health enable them to live independently with minimal or no assistance. Some independent living complexes include community rooms and common rooms for tenant use. Larger complexes may employ resident service coordinators to help residents access community-based services including transportation; senior service programming; social and recreational activities; and health and nutrition programs.

Nursing Homes – These centers can be either chronic or convalescent facilities or rest homes with nursing supervision. Nursing homes provide residents with nursing care; meals; recreational and social activities; help with daily living tasks; and protective supervision. Residents usually have physical or mental impairments that keep them from living independently. Nursing homes imply medical and nursing staff to provide health care to residents.

Residential Care Homes – These are designed to accommodate residents who are no longer suited for independent living but who do not require the extensive medical care offered in nursing home, rest home or convalescent environments. Residents of residential care homes may require some assistance with daily activities, special diets and/or supervision of medications. Residential care homes generally provide a communal living environment. Connecticut law requires that residential care homes provide three meals a day, housekeeping and laundry services, recreational activities, 24-hour a day supervision and a mechanism in place for residents to obtain help in emergencies. Residential care homes are not licensed to provide nursing services. Staff can supervise residents

to ensure they remember to take their prescribed medications and may help them schedule medical appointments.

Retirement Community – Retirement communities are age restricted, but the age requirement may vary from town to town. If the age-restricted project meets certain defined requirements of the U. S. Code and Code of Federal Regulations, the age restriction may be reduced to 55 years of age or older. Retirement communities are designed for individuals in reasonable good health who can live independently. Communities may be rental or condominium. Units can single-family homes, townhouses or apartments. Retirement communities vary in the type of services and amenities they provide. Some may include extensive recreational and leisure activities to attract a particular segment of the market. Table 8 illustrates current elderly residences and certain characteristics.

Table 8: Elderly Residences in Plymouth

Complex Name/Location	Number of Units	Type of Housing
Cook-Willow Convalescent Hospital 81 Hillside Avenue Plymouth	60 Beds	Private Chronic & Convalescent Nursing Facility
Eli Terry Retirement Center 20 East Orchard Street Terryville	34 1 Bedroom Apartments	Government Assisted Independent Living Facility
Gosinski Park 31 Gosinski Park Terryville	60 1 & 2 Bedroom Apartments	Government Assisted Independent Living Facility
Quail Hollow 140 North Main Street Plymouth	66 1 & 2 Bedroom Apartments	Private Independent Living Facility

Source: Phone interviews, 2003

Review of 1993 Plan of Development – The stated goal under the category of housing was: "*Continue to reinforce Plymouth's residential character by providing for a variety of housing types and costs.*" Three objectives were developed to achieve the goal:

"*Review all land use regulation for impact upon housing costs*" – To support the above goal, the land use regulations could go a long way toward enabling a number of choices of housing types to be developed, which in turn produces choices in cost.

"*Consider accessory apartment as a means of meeting housing needs*" – This proposal became an available reality in 2003 when the Town adopted accessory apartment provisions into the Town's Zoning Regulations. When structured properly, the accessory apartment option is a very useful tool. It provides people a practical housing alternative within the context of traditional single family neighborhood while keeping the overall character of the neighborhood.

"Revise cluster requirements by relating them to density standards based upon availability of public water and natural resource constraints" – The section in the Regulations concerning residential cluster development does reference a requirement for public water and sewer that predates the 1993 Plan.

Economic Development

Introduction

Understanding the characteristics of the Town's current economic base is an integral element to formulating future land use policies. This chapter will take a comparative look, focusing on the Town and the larger geographic level in order to understand the economic base. The chapter will examine the tax base, employment, labor markets, profile the location and organization of busi-ness in the Town, and discuss the evolving economy. There will be a review of the conclusions and recommendations of the 1993 Plan of Development to establish a reference point in time. This report will make land use and policy recommendations for achieving identified goals.

Location

Plymouth has a beautiful setting, with many scenic vistas in view when traveling along the Town's byways. Geographically, Plymouth is located at the eastern edge of Litchfield County. More importantly, Plymouth is located midway between two important economic areas: greater New York City and greater Boston. At the same time, location is relative. Plymouth is not alone between these two economic centers.

In terms of access, Plymouth's location could be better. The Town is somewhat isolated compared to others seeking business development. RT 6 provides the major west / east access and RT 72 is an alternate access roadway from the east. The Town is very close to RT 8, a limited access north / south highway located in neighboring Thomaston. The portion of RT 8 north of Waterbury is not the most advantageous as it lacks the connectivity of the highway section from Waterbury south, connecting directly to I-84, I-95 and the Parkway. In contrast, RT 8's express portion terminates at Winsted. Potential workers are dependent upon private vehicles for transportation, as there are no mass transportation services.

The Town does have one transportation resource that many towns do not: location on an active rail line. The tracks of the Boston and Maine Corporation run through Plymouth. The Boston and Maine Line runs between Waterbury and Berlin where the rail tracks connect with other rail lines and thereby to other parts of the northeast and the nation.

Economic Base – Existing Characteristics

The major source of town revenue comes from taxing property within a town's boundaries and town's tax base is primarily comprised of two sectors: residential and the business community. For vast majority, the residential sector is primary

source of tax revenue. On the other hand, the residential sector is the largest generator of expenses for a town, usually dependent upon the number of children residing within these homes and the cost of educating these children. To provide fiscal balance, towns look to obtain tax revenues from their business sector, which does not bring additional students to educate. Therefore the size, health and wealth of a town's business sector is a very important issue. Moreover, each town wishes for an ever and ever expanding business sector. The hope is that the existing costs can be further divided and any new costs can be offset by additions to the growth of business sector tax base.

The business sector is important in its own right. Local business is the foundation of the nation's and the world's economy. Local business is a source of employment and wealth for people within a town's borders and beyond. A business can be a large enterprise, such as a multinational corporation or a small enterprise, whether a mom & pop store or an individual working from home. It is the cumulative effect of all of these enterprises that produces wealth.

A very telling parameter of economic health and overall wealth is a town's Grand List. Because towns vary in both size and wealth, it is difficult to compare tax bases between municipalities based on total value alone. The value of the Grand List needs to be placed into context of a municipality's size. While a large city may have a large tax base, it also has more people and consequently more demands on the tax base. On the other hand, the tax base of a small town has a lesser total value but there are also less people. The real question is the amount of assessed value per each resident.

The Department of Economic & Community Development utilizes Per Capita Adjusted Equalized Net Grand List (AENGL) as a parameter for fiscal wealth. This number provides an indication of the amount of property wealth for tax revenue generation. The Per Capita Adjusted Equalized Net Grand List is the total value of the town's tax base divided by the total population of the town. By transforming the value of the Grand List into a per capita value, it becomes easier to compare the absolute and relative wealth of one town to another.

Using Fiscal Year 2001 as a reference base, the Town of Plymouth has a Total Equalized Net Grand List of $754,577,949 and a Total Net Grand List amount of $528,204,564. These numbers are found in the Appendix Documentation to this Plan; the chart is titled Town/City Wealth Measures. Both numbers are large and appear to be a sizable amount of taxable wealth. Municipal tax bases vary significantly. The Town of Union has the smallest at $85,575,049, while the Town of Greenwich has the largest at $29,431,808,439. Plymouth ranks at 115th out of 169 towns in total value. Total value does not account for population.

The Connecticut Office of Policy and Management provides the following definitions for Total Net Grand List and Total Equalized Net Grand List. The Total Net

Grand List is "*the assessed value of all taxable property in a municipality net of exemptions allowed under state statutes as of October 1*". In contrast, Total Equalized Net Grand List is "*the estimate of the market value of all taxable property in a municipality. Municipalities revalue their Grand Lists based on schedules established by the Connecticut General Assembly (CGS 12-62). Thus, there can be a marked difference between the market value of all property and the assessed value. OPM calculates the ENGL from sales and assessments ratio information and grand list reports filed by the municipality*". Both definitions come from the "*Glossary of Terms*" in State of Connecticut Municipal Fiscal Indicators Fiscal Years Ended 1997 – 2001, October 2002.

Once population is factored into the equation, the Total Equalized Net Grand List of $754,577,949 is not large. Using Plymouth's year 2000 population (11,634) as a reference point, the $754,577,949 assessment value for the Total Equalized Net Grand List equates into a per person value of $64,860 and does not compare favorably with other towns in the state. The Town ranks in the bottom 10% of the per capita values. Plymouth's per capita Total Equalized Net Grand List value is much less than the state average of $115,170 and much less than the median of $105,680. Midpoint is where half the towns have greater and half have lower per capita values. Using the prior two referenced towns for comparison, the per capita figure for Greenwich is $481,691 and the per capita figure for Union is $123,485.

Every town wants to see their tax base grow. Just as the size of grand lists vary, so does the composition of the tax base. The grand list is comprised of residential; the business category of commercial, industrial and public utility; motor vehicles; personal and other.

The tax base's two largest components are the residential real estate and the business real estate. While each town has these, the relative amount of residential and business real estate varies. Some towns have a very high proportion of residential property and very little business real estate. Other towns have the reverse. The highest residential percentage belongs to Roxbury with 89.6% of the tax base being residential. The lowest residential portion belongs to the Town of Waterford, at 21.8%. Having a high amount of business real estate does not make a town wealthy. The town with the highest percentage of business real estate is the City of Hartford, at 44.9% yet Hartford is the most "*distressed municipality*" in Connecticut.

The term "*distressed municipality*" is defined by Section 32-9p of the Connecticut General Statutes and the concept originates from the U. S. Department of Housing & Urban Development. The statute defines "*distressed municipality*" as "*any municipality in the state which...meets the necessary number of quantitative physical and economic distress thresholds which are then applicable for eligibility for the urban development action grant program under the Housing and Commu-*

nity Development Act of 1977". The definition also has a provision to include those towns that have been "*adversely impacted by a major plant closing, relocation or layoff, provided the eligibility of a municipality shall not exceed two years from the date of such closing, relocation or layoff*".

The "distressed municipality" determination is made by the Connecticut Department of Economic & Community Development and results from a cumulative ranking of various parameters of economic health and wealth. Included in these parameters are employment related data such as the level of total employment, the employment rate and the percentage of population with a high school degree and higher; wealth determinates such as level of per capita income and poverty rate; and parameters on a municipality's fiscal health such as the amount of housing stock constructed before 1939 and the per capita adjusted equalized net grand list.

Using Fiscal Year 2001 as a reference base, the Town of Plymouth Grand List is comprised of: residential at 69.1%; business real estate at 9.2%; motor vehicles at 13.5%; personal at 6.8%; and other at 1.4%. In terms of the residential component of the Grand List, Plymouth compares favorably to other towns: 69.1% is close to the State average of 66.7% and just slightly above the median of 68.5%. In terms of the business real estate, Plymouth's 9.2% is competitive, close to the State average of 9.9% and the median of 10.1%.

The Town's Year 2003 Grand List has just been released. The Final Total number for the Grand List is $528,263,149. This is the base number which the Connecticut Office of Policy & Management will adjust into the Total Equalized Net Grand List value.

Another telling parameter of economic health and overall wealth is per capita income. The Town ranks 133rd in terms of per capita income within the State. The Year 2000 Census reports Plymouth's 1999 per capita income at $23,244. For comparison purposes, the Town of New Canaan has the highest per capita income at $82,049 while Hartford has the lowest at $13,428. In terms of the Central Connecticut Corridor communities, the Town of Plymouth is comparable. Bristol ($23,362) and Plainville ($23,257) are slightly higher than Plymouth and New Britain ($18,404) is lower.

Based upon the multiple parameters, the State of Connecticut has designated the Town of Plymouth as a "*distressed municipality*". The Town is not alone with this designation. There are a total of 25 distressed municipalities among the 169 municipalities in Connecticut. Within the Central Connecticut Planning Region, the towns of of Bristol, Plainville and New Britain are also "*distressed municipalities*".

Economies Of Connecticut, The Hartford LMA And Plymouth

There are two types of numbers when discussing employment. One is the size of the resident labor force: people living in the Town of Plymouth and seeking employment, whether within Plymouth or elsewhere. The other number is the sum of people who work within the boundaries of the Town of Plymouth. Both numbers vary over time and any reference is only a snapshot in time.

There are three major sources for employment information: U. S. Census Bureau, the U. S. Departments of Labor and the Connecticut Department of Labor. The Census Bureau is the benchmark, it provides a wealth of detailed information but is a single snapshot in time.

The other sources are the Connecticut Department of Labor for Connecticut and the U. S. Department of Labor. These snapshots are provided on a much more frequent basis: monthly, quarterly and annual basis. From this data, trends and performance can be surmised. On the other hand, the information is not as detailed as the information obtained from the Census Bureau.

Economically, Plymouth is part of Hartford Labor Market. The Hartford Labor Market is one of ten labor markets in Connecticut and is the largest. The Hartford Labor Market is comprised of 58 municipalities, extending from Winchester at the western edge, to Chaplin on the eastern front, to Haddam at the southern most point, and north to the border with Massachusetts. Moreover, the Town adjoins areas of two other labor markets: Waterbury and Torrington.

Plymouth constitutes approximately 1.1% of the Hartford Labor Market. This percentage is based upon September 2003 labor force data from the Connecticut Department of Labor. The September 2003 report places the Plymouth labor force at 6,421 people in the overall pool of 595,344 for the Hartford Labor Market.

Table 1 shows the labor force participation rates for Plymouth plus Hartford Labor Market and Connecticut for comparison purposes. The time period is ten years, from 1993 to 2002. Overall, Plymouth's labor force experienced a higher average unemployment rate than has the Hartford Labor Market and the State of Connecticut. Compared to the national average, Plymouth's employment situation has improved. Plymouth's unemployment rate had been higher than the national average from 1993 to 1997 and then became lower in the period from 1998 to 2002.

Using Census Bureau data as a guide, most of Plymouth's labor force works in the private, for-profit sector. Table 2 provides an overview. A greater percentage of Plymouth's labor force (79.6%) is employed by the private, for profit sector

than the State's average of 71.9%. The government sector and the unpaid family worker categories are relatively close to the State's average. The contrast is

Table 1: Labor Force in Plymouth & Unemployment Rates for Plymouth, Hartford Labor Market & State of Connecticut

Year	Labor Force	Number Employed	Number Unemployed	Area Unemployment Rate Percentage			
				Plymouth	Hartford Labor Market	State of CT	US
1993	6,663	6,140	523	7.8%	6.7%	6.3%	6.9
1994	6,437	6,000	437	6.8%	5.9%	5.6%	6.1
1995	6,278	5,854	524	6.8%	6.0%	5.5%	5.6
1996	6,397	5,982	415	6.5%	6.1%	5.7%	5.4
1997	6,337	5,980	357	5.6%	5.4%	5.1%	4.9
1998	6,250	6,024	226	3.6%	3.4%	3.4%	4.5
1999	6,293	6,051	242	3.8%	3.3%	3.2%	4.2
2000	6,430	6,262	168	2.6%	2.4%	2.2%	4.0
2001	6,364	6,103	261	4.1%	3.3%	3.3%	4.8
2002	6,541	6,200	341	5.2%	4.5%	4.3%	5.8

Note: Data from January 2001 & later is not fully comparable with earlier periods due to the expansion of Current Population Survey.

Source: CT. Department of Labor & Central Connecticut Corridor CEDS; Compiled by Cosgrove Development Services.

Table 2: Class of Workers in Plymouth & Connecticut: Civilians Age 16 & Over

Class of Worker	Plymouth		Connecticut	
	Number	Percent	Number	Percent
Private For Profit Wage & Salary	4,847	79.6%	1,196,310	71.9%
Private Not-For Profit Wage & Salary	345	5.7%	134,058	8.1%
Local Government	493	8.1%	121,409	7.3%
State Government	170	2.8%	73,377	4.4%
Federal Government	11	0.2%	26,626	1.6%
(Total Government)	(674)	(11.1%)	(221,412)	(13.3%)
Self-Employed	213	3.5%	108,945	6.5%
Unpaid Family	8	0.1%	3,715	0.2%
Total	6,087	100.0%	1,664,440	100.0%

Source: U.S. Census Year 2000

greater for two sectors: the private/not-for-profit sector at 5.7% for Plymouth versus 8.1% for Connecticut; and the self-employed sector, at 3.5% for the Town of Plymouth and 6.5% for Connecticut.

Tables 3 and 4 provide further insight on the variety of occupations and industries of Plymouth's labor force. Table 3 provides a detailed list of the occupations with corresponding numbers and percentage reference in each category. Table 4 provides a detailed list of the industries with corresponding numbers and percentage reference in each category. The same information is provided for the State of Connecticut, for comparison with Plymouth. (Please note that the Census Bureau does suppress numbers and re-assign people to appropriate categories when there are too few people in a population and have the potential to be identified. Two likely examples of this practice are the categories of farmers and legal professionals, as none are identified in Plymouth.)

In most of the categories, Plymouth's occupation percentages are less than the State average, although relatively close. There are notable exceptions. The most significant exception is in production where Plymouth exceeds the State average by 9.7 points: 17.3% for Plymouth and 7.6% for Connecticut. Plymouth also significantly exceeds the State's average for construction and extraction. On the other hand, Plymouth has significantly less of its labor force in the management profession, with 5.8% for the Town and 10.2% as the State average.

The findings are very similar in the industry profile. In most of the categories, Plymouth's industry percentages are less than the State average, although relatively close. There are notable exceptions. The most significant exception is in manufacturing where Plymouth exceeds the State average by 11.4 points: 26.2% for Plymouth and 14.8% for Connecticut. Plymouth also significantly exceeds the State's average for construction: 9.9% versus 6.0%. In contrast, Plymouth has significantly less of its labor force in the professional, scientific and technical services industries: 3.0% for Plymouth and 6.8% for Connecticut.

Of course, people are not restricted to living and working in the same town, especially given our amazing mobility. The employment equation has two parts: where do Plymouth residents go to work and where do people come from who work in Plymouth. An insight into these questions can be obtained from the Census Bureau's Year 2000 commutation data.

Some Census tables say that there are 5,955 workers living in Plymouth while other Census tables say that the civilian labor force is 6,087. Overall, there are approximately 6,000 people in Plymouth who work someplace.

Utilizing commutation data, there are 5,955 workers age 16 and over living in the Town of Plymouth. Of this number, 990 live and work within Plymouth, which equates to a rate of 16.6% living and working in Town.

Table 3: Occupation of Employed Civilian Population Age 16 & Over				
Occupation	Plymouth		Connecticut	
	Number	Percent	Number	Percent
Management except Farmers & Farm Managers	352	5.8%	169,378	10.2%
Farmers & Farm Managers	0	0%	2,175	0.1%
Business & Financial Operations	311	5.1%	92,469	5.6%
Computer & Mathematical	172	2.8%	48,251	2.9%
Architecture & Engineering	159	2.6%	40,597	2.4%
Life, Physical & Social Science	27	0.4%	19,154	1.2%
Community & Social Services	58	1.0%	27,251	1.6%
Legal Occupations	0	0%	23,071	1.4%
Education, Training & Library	307	5.0%	108,429	6.5%
Arts, Design, Entertainment, Sports & Media	63	1.0%	36,408	2.2%
Healthcare Practitioners & Technical	308	5.1%	84,202	5.1%
Healthcare Support Service	234	3.8%	41,021	2.5%
Protective Service	96	1.6%	31,305	1.9%
Food Preparation & Serving Related	262	4.3%	67,914	4.1%
Building. & Grounds Cleaning & Maintenance	169	2.8%	50,318	3.0%
Personal Care & Service	146	2.4%	46,848	2.8%
Sales & Related	472	7.8%	186,392	11.2%
Office & Administrative Support	907	14.9%	253,896	15.3%
Farming, Fishing & Forestry	0	0%	3,446	0.2%
Construction & Extraction	453	7.4%	79,936	4.8%
Installation, Maintenance & Repair	194	3.2%	52,942	3.2%
Production	1,055	17.3%	127,091	7.6%
Transportation & Material Moving	342	5.6%	71,946	4.3%
Total	6,087	100%	1,664,440	100.0%
Source: U.S. Census Year 2000				

Table 4: Employed Civilian Population Age 16 & Over By Industry				
Industry	Plymouth		Connecticut	
	Number	Percent	Number	Percent
Agriculture, Forestry, Fishing, & Hunting	8	0.1%	6,445	0.4
Mining	9	0.1%	1,000	0.1%
Construction	603	9.9%	99,913	6.0%
Manufacturing	1,596	26.2%	246,607	14.8%
Wholesale Trade	161	2.6%	53,231	3.2%
Retail Trade	569	9.4%	185,633	11.2%
Transportation & Warehousing	132	2.2%	49,585	3.0.%
Utilities	16	0.3%	15,077	0.9%
Information	153	2.5%	55,202	3.3%
Finance & Insurance	561	9.2%	133,781	8.0%
Real Estate, Rental & Leasing	53	0.9%	29,787	1.7%
Professional, Scientific & Technical services	183	3.0%	112,873	6.8%
Enterprise Management	0	0%	1,265	0.1%
Administrative, Support, & Waste Management Services	144	2.4%	54,196	3.3%
Educational Services	427	7.0%	156,565	9.4%
Health Care & Social Assistance	832	13.7%	210,003	12.6%
Arts, Entertainment, & Recreation	50	0.8%	36,121	2.2%
Accommodation & Food Services	192	3.2%	75,303	4.5%
Other Services (except Public Administration)	203	3.3%	74,499	4.5%
Public Administration	195	3.2%	67,354	4.0%
Total	6,087	100.0%	1,664,440	100.0%
Source: U.S. Census Year 2000				

The remaining 4,965, or 83.4%, are employed elsewhere and must commute. These people work outside of their hometown for many reasons. The most significant reasons are that the hometown economy does not provide suitable or sufficient employment opportunities and therefore commutation becomes essential.

The residents of Plymouth commute to seven counties in Connecticut and beyond. The largest portion, 79.2%, travel to towns within the three adjoining counties of Hartford (50.9%), New Haven (17.0%) and Litchfield (11.3%). The next two most significant destinations are Fairfield and Middlesex Counties with 100 or more commuters. In addition, there is some commutation to New London and Tolland Counties and out of state and country. This data comes from the Year 2000 Census Journey To Work Data and has been tabulated in Table 5. To provide a graphic illustration of the destinations, Map 1 shows the individual town destinations and the number of people who commute to these towns.

Table 5: Plymouth Journey To Work Data Travel Destinations

Hartford County	3,029
New Haven County	1,013
Litchfield County	672
Fairfield County	112
Middlesex County	101
New London County	15
Tolland County	5
Massachusetts & NYC	14
Out of Country	4
Total	4,965
Source: U.S. Census	

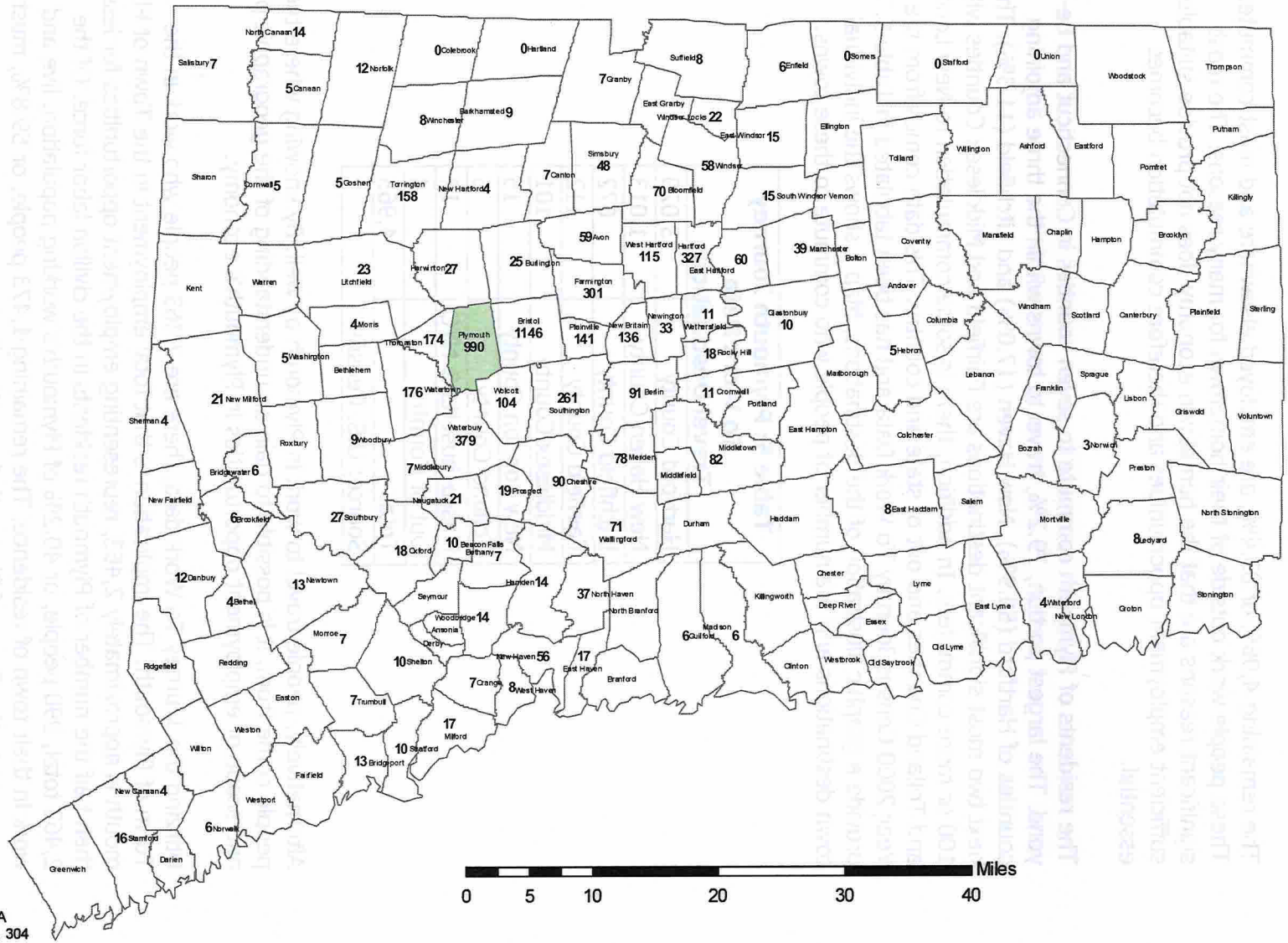
Alternatively, people travel to work in Plymouth as well. By knowing where these people come from, it is possible to gain an understanding of the geographic pull and scope of employment opportunities in Plymouth's economy.

Utilizing the Journey To Work data, there are 2,463 people who work in the Town of Plymouth. The implication is that total employment in the Town of Plymouth is approximately 2,463, representing employment opportunities for less than half the number of Plymouth residents in the civilian labor force. Of the 2,463 total, 990 people, or 40.2% of Plymouth's working population, live and work in their town of residence. The remaining 1,473 people, or 59.8%, must commute to the Town of Plymouth from elsewhere.

Town of Plymouth

Plan of Development & Conservation

Map 1. Work Destinations of Plymouth Residents



Data Source:
U.S. Census 2000
Prepared By: CCRPA
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The largest portion, 57.9%, commute from towns in the three adjoining counties of Hartford (28.0%), Litchfield (16.8%), and New Haven (13.1%), see Table 6. There are some additional commuters from Fairfield, Middlesex and Tolland Counties but the total number is quite small (48 or 1.9%). To provide a graphic illustration of the destinations, Map 2 shows the individual town destinations and the number of people who commute to these towns.

Table 6: Plymouth Journey To Work Data Originations –Travel From	
Hartford County	689
Litchfield County	414
New Haven County	322
Fairfield County	28
Tolland County	12
Middlesex County	8
Total	1,473
Source: U.S. Census	

For ease of summarizing, the above analysis used counties as a trip destination point in order to understand employment patterns. While counties provide an easy reference, counties are large areas and commute distances can vary significantly.

For reference purposes, Maps 3 and 4 have a ten mile radius from Plymouth. There are twenty-nine towns, excluding Plymouth, which are entirely within this circle or have a portion of the town within this circle, (Table 7 lists these towns). Taking a closer look, the circle shows that a significant amount of the commuting traffic is quite nearby.

Other Census data confirms the relative short distance between the place of residence and work. The Travel Time To Work data supports the relative closeness of work destinations from place of residence. Of the 5,873 people who must travel to work, as they do not work at home, 63.6% of these workers (3,734) commute for 29 or less minutes from home to work. Furthermore, the vast majority of this travel, 5,873 people (97.8%), travel by car, truck or van. 5,295 do not carpool or travel with others.

Town of Plymouth

Plan of Development & Conservation

Map 2. Home Towns of People Employed in Plymouth

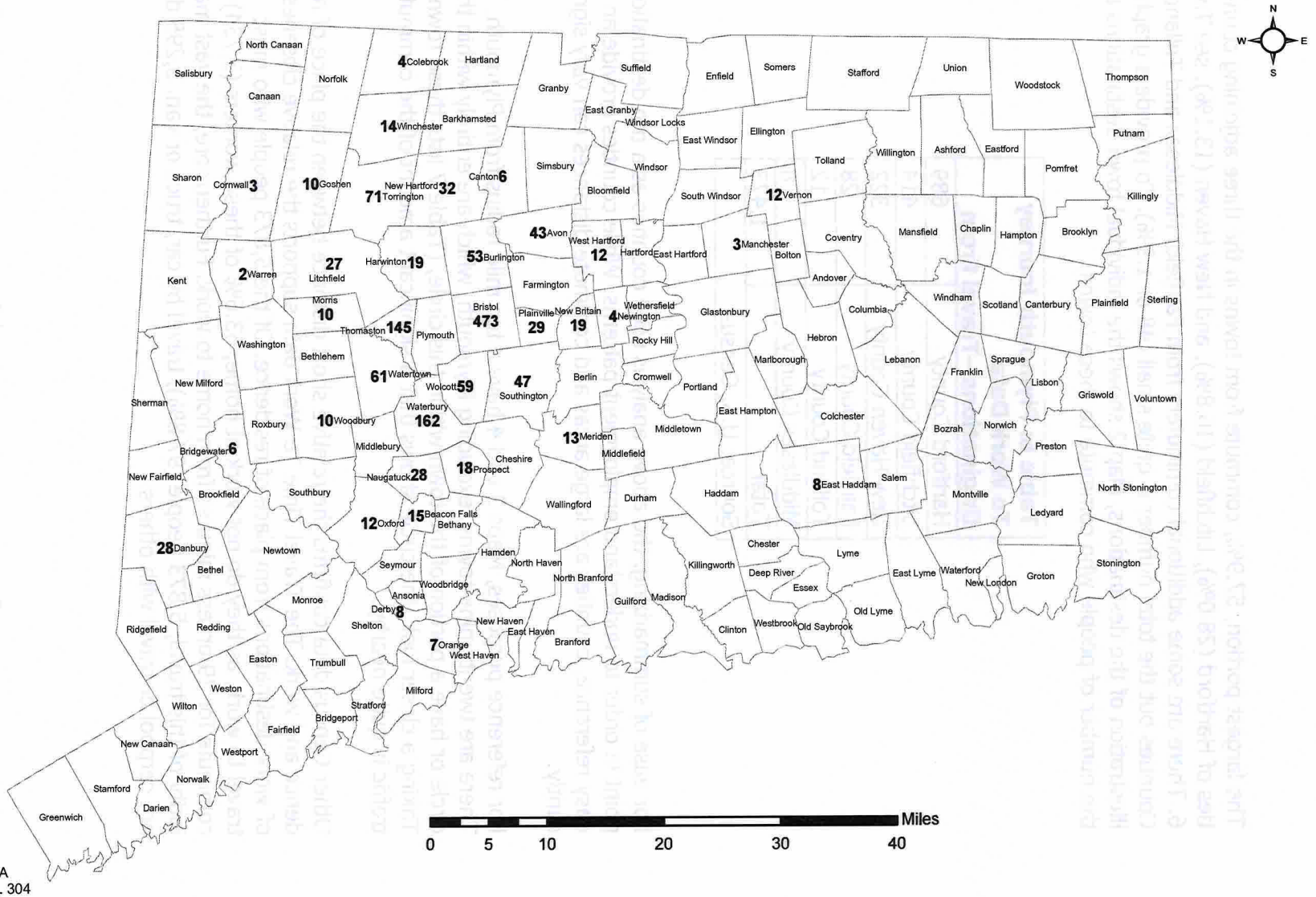

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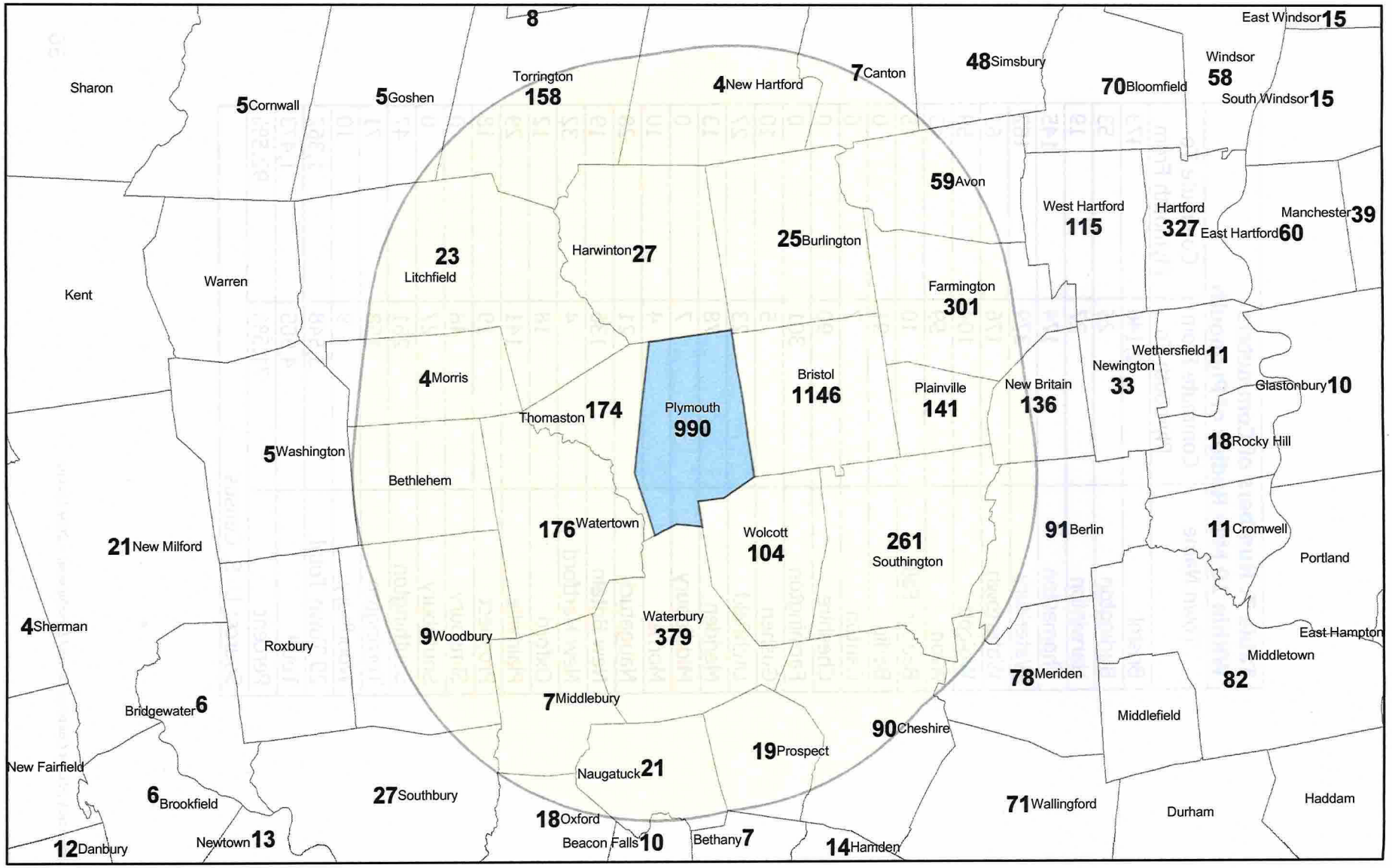
Table 7: Numbers of Commuters Within 10 Mile Radius of Plymouth		
Town Name	Commute From Plymouth To	Commute To Plymouth From
Bristol	1,146	473
Burlington	25	53
Harwinton	27	19
Thomaston	174	145
Waterbury	379	162
Watertown	176	61
Wolcott	104	59
Avon	59	43
Beacon Falls	10	15
Berlin	91	0
Canton	7	6
Cheshire	90	0
Farmington	301	0
Goshen	5	10
Litchfield	23	27
Meriden	78	13
Middlebury	7	0
Morris	4	10
Naugatuck	21	28
New Britain	136	19
New Hartford	4	32
Oxford	18	12
Plainville	141	29
Prospect	19	18
Simsbury	48	0
Southbury	27	0
Southington	261	47
Torrington	158	71
Woodbury	9	10
29 Town Total	3,548	1,362
Total	4,965	1,473
Percent	71.5%	92.5%
Source: U. S. Census		

Town of Plymouth

Plan of Conservation and Development

Map 3. Work Destinations of Plymouth Residents



Data Source:
U.S. Census 2000

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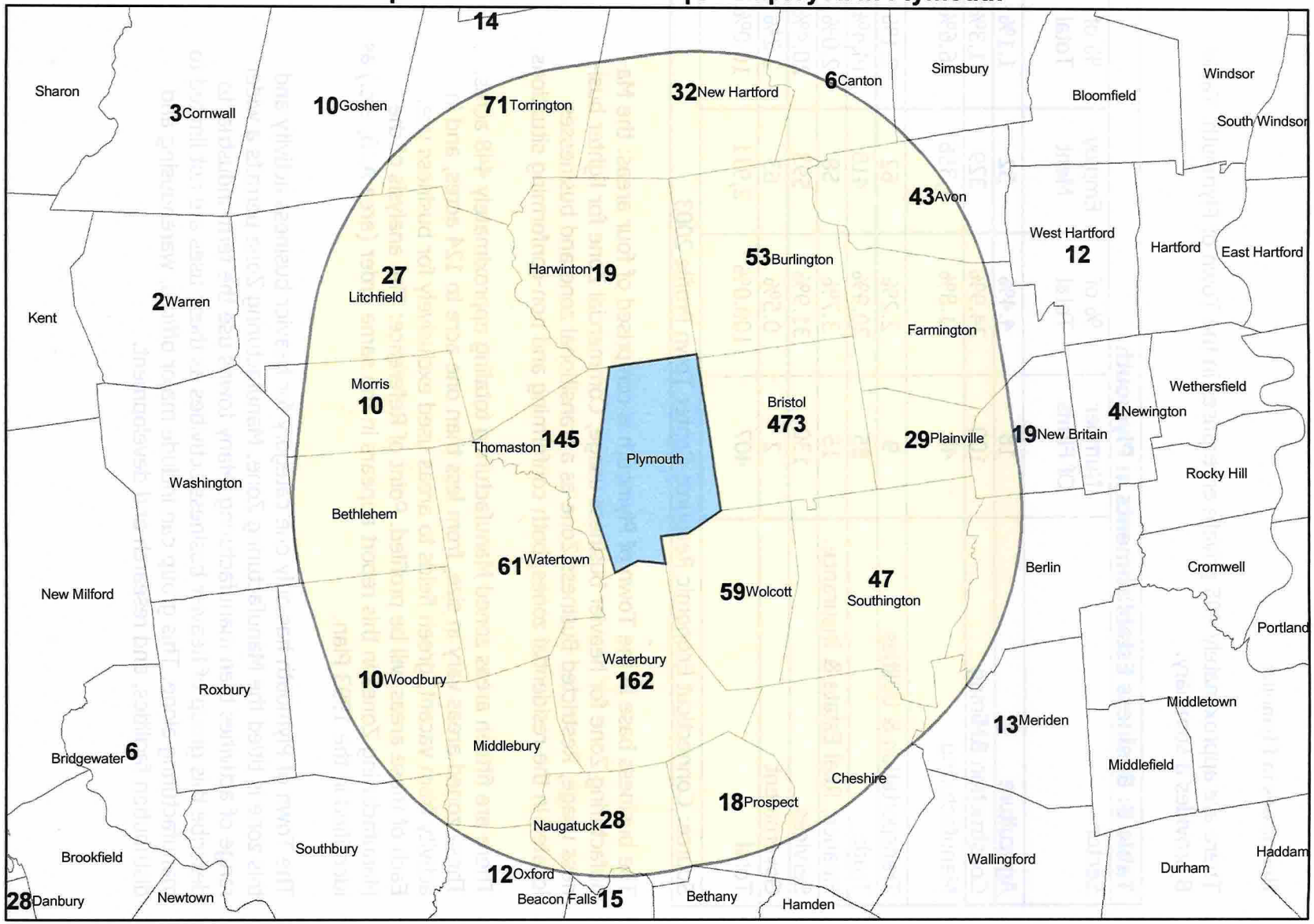
0 2 4 8 12 16 Miles

Legend

Municipalities Within 10 Mile Radius

Town of Plymouth
Plan of Conservation and Development
Map 4. Home Towns of People Employed in Plymouth



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Miles
0 2 4 8 12 16

Legend

Municipalities Within 10 Mile Radius

Businesses in Plymouth

There are approximately 405 private enterprises in the Town of Plymouth. Table 8 provides a summary.

Table 8: Business Establishments in Plymouth

Sector	Number Of Firms	% of Total	Employ-Ment	% of Total
Agriculture	18	4.4%	32	1.1%
Construction &Mining	100	24.9%	329	11.3%
Manufacturing	48	11.8%	1,356	46.6%
Transportation & Utilities	9	2.2%	62	2.1%
Trade	85	20.9%	418	14.4%
Finance, Real Estate & Insurance.	15	3.7%	58	2.0%
Services	130	31.9%	593	20.4%
Government	2	0.5%	63	2.2%
Total	407	100.0%	2,911	10.0%

Source: Connecticut Economic Resource Center Town Profile 2003

The business base in the Town of Plymouth is comprised of four areas: the Manufacturing Zone for heavier business usage, Commercial Zone for lighter business usage, Restricted Business Zone as a transitional zone and businesses located in the residential zones, both conforming and non-conforming situations.

There are fifteen areas zoned Manufacturing totaling approximately 448 acres. These zoned areas vary in size, from less than one acre to 124 acres, and in activity from vacant, green fields to areas used exclusively for business use. Each of these areas will be profiled. Point of Reference: The analysis of the Manufacturing Zones in this report appears in the same order (area A, B, etc.) as identified in the 1993 Plan.

The Town of Plymouth has only one category for heavier business activity and this zone is titled the Manufacturing Zone. Manufacturing Zone permits a wider range of activities than manufacturing. Many towns use the term industrial to describe this group of heavier business activities as these uses are not limited to manufacturing alone. This group can include major offices, warehousing and distribution facilities, and research and development.

Poland Brook and Judd Roads

This Manufacturing Zone is comprised of a 16 acre parcel located at the north-eastern corner of the intersection of the two roads. The parcel is currently vacant and the Assessor records note that the parcel contains wetlands. The parcel is outside of the public water and sewer service areas. For the most part, the parcel is in a relatively undeveloped area. The parcel is surrounded by two residential zones: RA1 and RA2. There is one spot of truck repair use in the Commercial Zoning to the southwest.

Plymouth Business Park

There are two Town sponsored industrial parks: the fully developed Phases I / II and the newly completed Phase III. Together, this industrial area constitutes the single largest area zoned for Manufacturing, 148.27 acres: a third of all the land area in Town zoned for Manufacturing. This industrial area is located in the central block north of RT 6 bounded by Armbruster Road, North Harwinton Avenue, Preston Road and Burger Road. Phases I / II are the larger of the two portions, with 95.16 lot acres and for the most part, fully developed. Phase I is smaller with 53.11 lot acres and is now on the market. Both are full service areas, with public water, public sewer, and utility services, including gas.

There is one problem: access. The Park is not as easily accessed as would be desirable. On the other hand, Phases I / II is full and the Park has expanded north.

Phases I / II

This portion of the Park constitutes the largest concentration of industrial land and space in the Town of Plymouth. In terms of industrial space, there is approximately 421,000 square feet, with 308,862 square feet of manufacturing, 56,636 square feet of office space, 53,485 square feet of storage, and 1,920 square feet of support area. Together, this constitutes approximately 36% of the available square space in those areas zoned Manufacturing in the Town and 21% of all business square footage in Town, excluding space utilized for agricultural uses. Moreover, this space is relatively new, with the earliest building dating to 1972.

Phase III

This portion adds 23 ready to build lots to the Business Park. Development is completed for one lot on Lassy Court. Sixteen lots are located on three new streets. One lot fronts on Preston Road. Interestingly, while six lots are technically in Phase III, these lots front on Container Road, part of the original Phases I / II. This will allow the continued development of the Park's original infrastructure.

Harwinton Avenue – West

Unlike the Plymouth Business Park, this is a small, isolated area of industrial activity surrounded by residential zoning. This is typical of many of the areas zoned Manufacturing in the Town of Plymouth.

In this situation, the zone is a single parcel of land located on the west side of Harwinton Avenue in western Plymouth, north of RT 6. The parcel contains 2.92 acres and has one main structure of 44,502 square feet, (Town's Assessor records). The structure is a multi-tenant building. The structure is within the public sewered area but outside of the public water service area.

Burr Road and Main Street

There are two parts to this area of Manufacture Zoning. Three parcels are located on the western side of Burr Road, starting at the corner with RT 6, and has 3.23 acres. The other part is a nearby vacant parcel of 9 acres on the south side of Main Street. This Manufacturing zone is not an isolated business area, as the land to the east and south are zoned Commercial. The land to the west is residential.

The three developed lots contain business uses of approximately 36,400 square feet. There is a mix of uses: manufacturing, office, storage and retail.

The Burr Road Manufacturing zone is within the public sewer service area. Interestingly, Burr Road is noted within the 50 year service area for public water yet adjoins the portion of Main Street designated for water service within 5 years.

Wilton and Mount Tobe Roads

The area zoned Manufacturing is located on the southwest corner of Wilton Road at Mount Tobe Road and is comprised of 11.51 acres. While there is a residence, a garage and a barn, most of this parcel is vacant land.

The Manufacturing Zone designation is an isolated situation. The surrounding area is zoned RA1. The parcel is noted within the 50 year service area for public water and is outside of the public sewer service area.

Wolcott Road

This is the second largest area zoned Manufacturing and the parcels are located on both sides of Wolcott Road, north of the intersection with Allentown Road. While there is some industrial space on these parcels, the primary use is excavation. The surrounding area is RA1. The area is noted within the 50 year service

area for public water and is outside of the public sewer service area.

Excavation use is unlike other industrial uses, it is resource location dependent. The excavation activity must go to where the resource is located in order for the activity to occur. With other industries, resources can be moved to an arbitrary location for the activity to be undertaken. With mining, the activity must go to the location where the resource is found in the ground, in order for there to be mining activity. Once the resource has been mined, a new and totally unrelated use can be put into the space.

Scott and Washington Roads

The subject area is located on the southeast corner of the intersection of Scott and Washington Roads and is comprised of four parcels totaling approximately 39 acres. While these 39 acres are zoned Manufacturing, the business activity is farming and not industrial as other Manufacturing zones are. Of the four parcels in the area zoned Manufacturing, two parcels contain farms.

This area is also an isolated Manufacturing Zone. The surrounding area is zoned residential, RA1 to the east, south and west, and RA2 to the north. The parcels are noted within the 20 year service area for public water and are outside of the public sewer service area.

Town Hill Road

This area of Manufacture Zoning is located on the south side of Town Hill Road and contains 3 acres. There are two parcels and both are developed. These parcels contain approximately 28,434 square feet, comprised of manufacturing, warehouse and support uses. The buildings date from 1972 and 1985.

This area is also an isolated Manufacturing zone, totally surrounded by RA1 residential zoning. The parcels are within the public water service area and are outside of the public sewer service area.

South Main Street

This area of Manufacture Zoning is located on the western side of South Main Street. The Zone contains two developed properties on 17. 43 acres and a very significant amount of the Town's developed industrial square footage. Between the two properties, there is approximately 112,715 square feet of industrial space and 101,750 square feet is classified as manufacturing (Assessor card). While one building dates from 1969, the others are from the 1980's.

In addition, these sites have something that only one other Manufacturing zoned area has and which the Plymouth Business Park does not: access to an active rail

line. The properties are located along the tracks of the Boston and Maine Corporation and contain rail sidings. The Boston and Maine Line runs between Waterbury and Berlin where the rail tracks connect with other rail lines.

The properties have public water service and utility services, including gas. These properties are outside of the public sewer service area.

RT 72 – South Corridor

This is the second largest industrially developed area within Plymouth, next to the Plymouth Business Park. (The Wolcott Road area is larger in terms of acreage, but it is excavation.). The Zone area contains 59.35 acres. The Manufacturing Zone is located along the southern corridor of RT 72, known as South Riverside Avenue, starting south of RT 6 and extending to the border with the City of Bristol. The area includes properties along other streets as well: Canal Street, Center Street, Meridian Street, School Street and William Street.

Unlike the other Manufacture Zones, this area is a mixture of uses. Nearly 42 acres have industrial or commercial uses, or approximately 70% of the total land acreage. In addition, there are vacant properties, institutional use (Town's sewer plant) and most significant, residential uses.

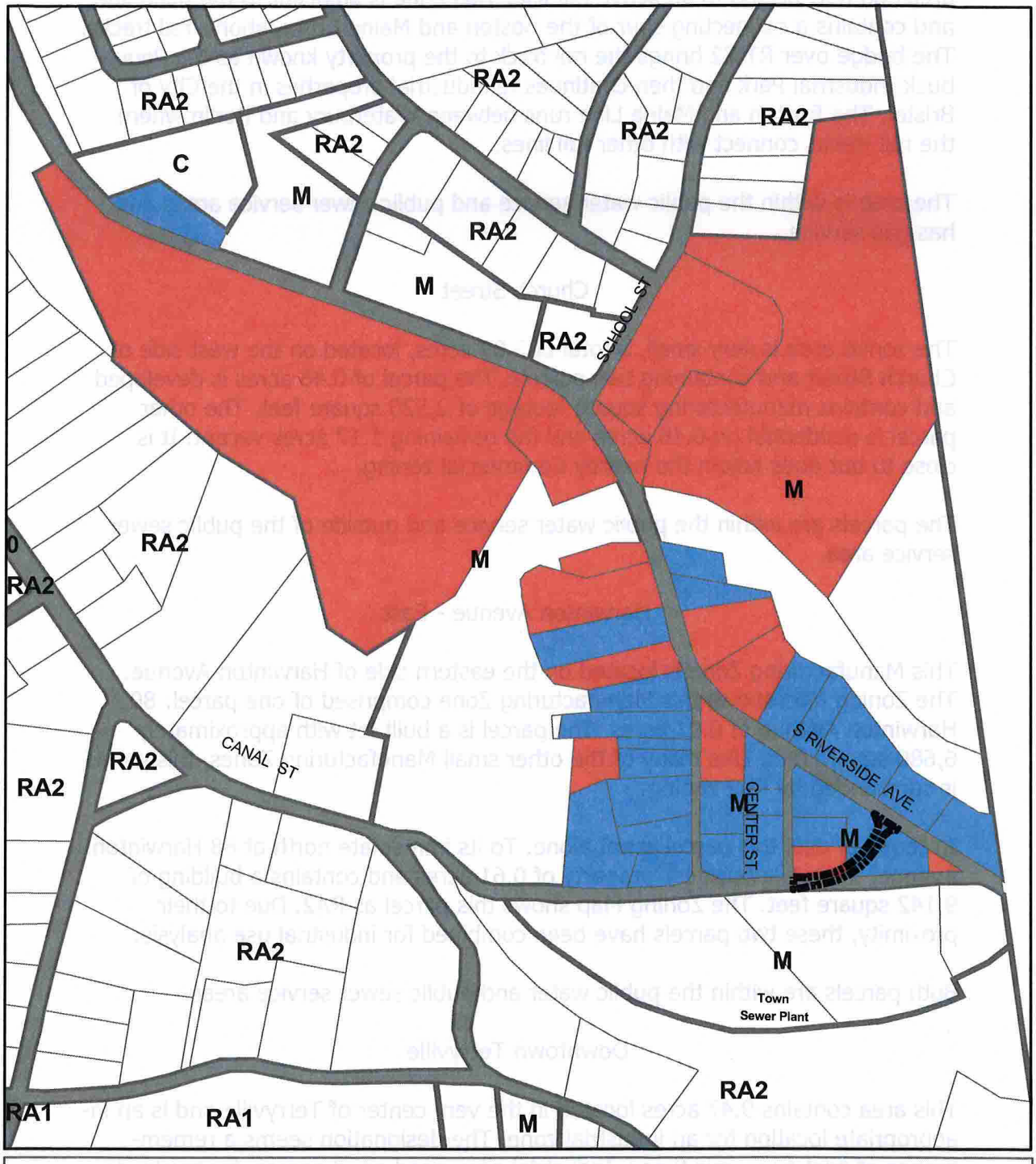
The presence of residential areas within an industrial area is a complicating feature. Nearly 10 acres are utilized for residential uses, with one or more dwelling units. Fortunately, many of the residential parcels are concentrated along side streets: Canal Street, Center Street and Meridian Street; and are easy to separate from industrial uses. On the other hand, some residential property is located along RT 72 itself and are interspersed with industrial and commercial properties creating the potential for conflict. Residential use is not compatible with industrial uses and the intermixing of industrial and residential properties establishes a conflict situation.

In terms of built industrial square footage, this area is second only to the Plymouth Business Park. There is approximately 323,000 square feet comprised of 168,401 for manufacturing, 113,249 for storage, 12,682 for office, 7,520 for support, 6,712 for retail sales and 14,430 for automobile parts and service. One major problem is age of structures. Many are old, dating as far back as 1920, 1914 and even 1900. Another problem is the potential for soil contamination and brownfields, often associated with older industrial structures and sites. In terms of the existing square footage, the major source is the complex of the O.Z. Gedney Company: 221,719 square feet and a part dates back to 1900. A part of the O. Z. Gedney complex is also situated near or in a floodplain.

Town of Plymouth

Map 5. Land Use in Manufacturing Zone

Riverside Avenue



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0 215 430 860 1,290 Feet

Legend

- Industrial
- Residential

Like South Main Street, this area has something that other Manufacture zoned areas do not: access to an active rail line. This Zone is adjacent to the main line and contains a connecting spur of the Boston and Maine Corporation's rail tracks. The bridge over RT 72 brings the rail track to the property known as the Pequabuck Industrial Park and then continues to industrial properties in the City of Bristol. The Boston and Maine Line runs between Waterbury and Berlin where the rail tracks connect with other rail lines.

The area is within the public water service and public sewer service areas and has gas service.

Church Street

The zoned area is very small, a total of 2.09 acres, located on the west side of Church Street and containing two parcels. The parcel of 0.46 acres is developed and contains manufacturing square footage of 2,520 square feet. The other parcel is residential on 0.46 acres and the remaining 1.17 acres vacant. It is close to but does adjoin the nearby Commercial zoning.

The parcels are within the public water service and outside of the public sewer service area.

Harwinton Avenue - East

This Manufacturing Zone is located on the eastern side of Harwinton Avenue. The Zoning Map shows this Manufacturing Zone comprised of one parcel: 80 Harwinton Avenue of 0.91 acres. The parcel is a built lot with approximately 6,680 square feet. Like many of the other small Manufacturing Zones, this parcel is surrounded by RA2 zoning.

In terms of use, this parcel is not alone. To its immediate north at 88 Harwinton Avenue, there is a business property of 0.61 acres and contains a building of 9,142 square feet. The Zoning Map shows this parcel as RA2. Due to their proximity, these two parcels have been combined for industrial use analysis.

Both parcels are within the public water and public sewer service areas.

Downtown Terryville

This area contains 9.47 acres located in the very center of Terryville and is an inappropriate location for an industrial zone. The designation seems a remembrance of past economic times. Industrial sites need good access, for trucks delivering supplies and picking up products and room for the parking of employees yet this area provides none of these requirements.

Town of Plymouth

Map 6. Land Use in Manufacturing Zone

Downtown Terryville

Data Source:
CCRPA

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0 200 400 800 1,200 Feet

Legend

- Industrial
- Institutional
- Residential

The Zone contains a curious cluster of properties. The two most out of character are the Eli Terry Retirement Community, a residential use, and the Congregational Church complex, an institutional use. While the Eli Terry Retirement Community has been constructed on a former industrial site, the complex is no longer an industrial use and should be rezoned to a more compatible zone, such as the neighboring RA2. (The RA2 does permit senior residence developments, although on lots of 10 acres or more.) The same is true for the Congregational Church complex. While the site is connected to the earlier industrial past, the Church complex is on Main Street. The Church complex is a focal point within the central village area and belongs in the Commercial Zone, with the other parts of Main Street.

In addition, there are three small lots with residential dwellings. These are located along the south side of East Orchard Street.

The remaining four parcels have old industrial buildings. Two are relatively small structures, containing 8,800 and 12,000 square feet and dating back to 1905 and 1907. The third is larger with nearly 33,000 square feet and also dates back to 1905. The forth parcel has two structures: a small garage, circa 1940, and a very large six level industrial structure, circa 1918, containing 96,000 square feet. The structure is classified as warehouse space and is one of the largest industrial buildings in town. There is a question on how effective the space is for current industrial uses.

The entire Zone is within the public water and sewer service area. The area has gas service.

Tunnel Road / East Washington Road

The Zoning Map shows one parcel zoned Manufacturing. Due to the difficulties of interpreting base maps, it appears this parcel may either be a 0.89 acre lot with a single family dwelling or a vacant lot of 0.67 acres. From field observations, the terrain is very steep.

The area is noted within the 5 year service area for public water and in the public sewer service area.

Commercial Zones

The Town has two general business districts: Commercial and Restricted Business Zones. The Commercial Zone is the primary district and there are eleven areas zoned Commercial, totaling approximately 185 acres. Eight of these areas are located along RT 6 and transverse the Town from the border with the Town of Thomaston to the City of Bristol. The two others are along RT 72 and the third area is on Maple Street.

Unlike the Manufacturing Zones, the Commercial Zones are mixed in character, offering retail, office, storage, automobile related uses, industrial, institutional and residential. The residential component is very important in determining the mix and character of commercial areas. Unlike the Manufacturing Zone where residential property is not easily transformed into industrial use, residential dwellings can easily be transformed into commercial uses, with office or retail space on the first floor and rental living space on the upper floors. For this reason, the square footage of existing residential is important. Each of these areas will be briefly profiled.

In terms of the setting, there are distinctions between the eleven locations of the Commercial Zone. However, the list of permitted uses is extensive and the permitted uses remain the same regardless of the specific location and the particular surroundings of each Zone.

Unlike the locations of the Manufacturing Zone, the locations of the Commercial Zone receive public water and sewer service. There are some exceptions. Only one area of Commercial Zoning is not within the public sewer service and that is the northern area of the RT 72 North Corridor. This same area is outside of the public water service area as well. Other areas of Commercial Zoning are within the existing public water service area or are within the 5 year service area. The dividing point is Seymour Road along RT 6. Those parcels east of Seymour Road are areas within the existing public water service and those west of Seymour Road are designated to have service in the 5 years.

"Plymouth Center"
Main Street at North and South Streets

This Commercial Zone is centered around the intersection of North Street and South Street on the western end of RT 6. Of the approximately 7 acres that is zoned Commercial, the majority of the acreage is in residential use (over 5 acres or 76%). There are fifteen properties in this Zone.

Main Street between Burr Road and Scott Road

This Commercial Zone is located on both sides of RT 6. The total acreage is high, approximately 66 acres and is the single largest area of Commercial zoning. The acreage total is high due to one very large parcel. Based upon the Assessor Office cards, most of the acreage is vacant (86%). Land dedicated to residential uses is second at 6.5 acres and commercial use is small at 2.5 acres. This Commercial Zone adjoins the Burr Road / Main Street Manufacturing Zone.

Main Street between Todd Hollow Road and Scott Road

This is a very small area located on the south side of Main Street. The Zone is comprised of two parcels with approximately 1.4 acres. One parcel is commercial use with retail and commercial residential space. The other parcel is classified as only residential.

Main Street – West and East of Seymour Road

This Commercial Zone is located on the north side of Main Street and is centered around Seymour Street. Total acreage zoned Commercial is approximately nine acres and there are nine parcels. Residential use is the most significant component of this Zone, with approximately 4 acres (44%). The next most significant use is vacant property at nearly 3 acres (31%) and commercial use constitutes approximately 2.2 acres (24%).

Main Street between Kellogg Avenue and Town Hill Road / Holt Street

This Commercial Zone is located on both sides of Main Street and abuts the Restricted Business Zone. The acreage total is quite large at approximately 22.5 acres. Unlike prior Commercial Zones, the acreage is significantly commercial. More than half of the available land area (almost 15 acres or 65%) is classified as commercial. Residential use constitutes approximately 29% of the available land and vacant acres is small (6%). This area contains one of the Town's two major shopping centers, Plymouth Commons.

Main Street and the Terryville Waterwheel

There are two distinct areas in this Zone and the focal point is the Terryville Waterwheel. One group of parcels is located on the north side of Main Street with the Waterwheel. The second group is located on the south side of Main Street and abuts the Manufacturing Zone on its eastern edge. Moreover, this Commercial Zone is significant as this area starts the transition into the central village area of Terryville.

The total area of this Zone is small, approximately 5.6 acres. Almost 4 of these acres are commercial and this includes acreage containing manufacturing space, approximately 7,000 square feet. The residential portion is small, 1 acre, and there is minimal vacant land, less than 1 acre.

The Terryville Waterwheel is both one of a kind and currently very underutilized asset. The Waterwheel's significance on the National Register Historic Places is lost amidst the clutter. The proposal to create a park around the Terryville Waterwheel will serve two goals: provide an appropriate setting to showcase the

Waterwheel and secondly, serve as a gateway into the central village area of Terryville.

Main Street between RT 72 and Prospect Street

This is the Commercial Zone of the central business district. The Zone area is larger than the village center area, running along Main Street, from RT 72 at the eastern end and extending to Prospect Street at the western end. The Zone encompasses approximately 29 acres area and contains a high concentration of commercial use: nearly 23 acres or 78% of the land.

This area accounts for approximately 331,000 square feet, or 53%, of the commercial square footage in all areas zoned Commercial in Town. Included in this square footage number are nearly 72,000 square feet of retail space and 52,000 square feet of office space.

This area contains two noteworthy entities. One is a noteworthy destination point: the Lock Museum of America at 230 Main Street. The other is a noteworthy building, the former home of the Terryville Bank & Trust Company at 228 Main Street. The building dates back to 1928 and has remained unoccupied for 20 years. Moreover, the building is very striking, with the presence to be the setting for a destination point. The Lock Museum is the destination point yet occupies a nondescript building. The building does not attract attention and thereby does the Lock Museum disrespect. The former bank building may be a more appropriate home for the Museum. In addition, the parcel has the land area to accommodate parking.

Main Street between RT 72 and the Bristol City Line

This Zone is the eastern entrance along RT 6 to the Town of Plymouth. The Zone runs along Main Street from the City of Bristol border to Edgewood Avenue, near RT 72. The area contains nearly 15.6 acres of land. Approximately two thirds is classified as commercial use and one third is residential use. In terms of commercial square footage, this area contains approximately 71,500 square feet and is the third largest amount in the Commercial zones.

Northern RT 72 Corridor from RT 6 to Poland Brook Road

The northern part of this Commercial Zone is somewhat "spotty". The southern portion of this Commercial Zone is a solid and located along the western side of RT 72, immediately north of RT 6. In contrast, the northern section, near Poland Brook Road, is very spotty, with each parcel independent of the other and not forming a cohesive area. This corridor contains 27.42 acres of land area. Nearly 19 acres are designated as commercial use, with 6 acres used for residential and 1.5 acres vacant.

RT 72 South

This Commercial zone is comprised of one parcel of 1.43 acres at 71 South Riverside Avenue. The use is residential. This is an isolated situation, as the zoning to the north is the RA2 zone and to the west, south and east is Manufacturing.

Maple Street

This Commercial zone is comprised of one 0.4 acre parcel on the north side of Maple Street. The use is medical office and is an isolated situation, surrounded by the RA2 Zone.

Restricted Business Zone

There is only one area zoned Restricted Business Zone. This is a new zoning category adopted in 2000 and contains a very short list of permitted commercial and institutional uses. The Zone is located on the south side of Main Street between Town Hill Road and Elm Street and contains approximately 10 acres. The character is primarily residential, 42% of the land area, and the remaining land is 37% vacant and 21% commercial.

Non-Utility Businesses in Residential Zones

Not all business operations are in designated business zones and these businesses constitute the fourth category. Some of the business facilities are permitted by the Zoning Regulations, while many others are non-conforming uses. Regardless of their zoning status, businesses in residential zones do what businesses are intended to do: provide employment opportunities and contribute to the Town's tax base.

These businesses are not all of one type and account for approximately 192 acres in the residential zones. In terms of general categories, there is a full range: 43 acres industrial, 44 acres in excavation, 95 acres commercial and 11 acres institutional.

In terms of specific uses and businesses, the range is wide. The list includes high precision manufacturing, medical research and development, automotive uses, various retail, offices, nursing facility, hospitality, and commercial recreation. In terms of square footage numbers, there is a significant amount of space in the residential zones, approximately 227,000. The single largest category is manufacturing at nearly 118,000 square feet.

Town of Plymouth – Pro-Active Player

The Town of Plymouth has been actively engaged in furthering development opportunities and the Town's competitive position. The Town has taken specific steps to advocate and empower the Town of Plymouth's continuing economic development.

These steps have been undertaken primarily by three organizations. Two are essentially the same Town agency: formerly the Industrial and Development Commission and currently, the Economic Development Commission; fulfilling the same basic purpose in differing periods of time. The third organization was an ad hoc committee titled the Plymouth Economic Development Task Force, which was disbanded and functionally rolled into the Economic Development Commission.

The most tangible step has been the expansion of the Plymouth Business Park into Phase III. This step has added 23 ready to build, fully infrastructured, industrial lots into the market place for new business to locate into Plymouth. The Town undertook all the necessary actions needed to turn a dream into reality: the preliminary studies, engineering work, financing, site construction and marketing.

Moreover, a Strategic Plan of Economic Development was created by the Town. This Plan was prepared by the Plymouth Economic Development Task Force and issued in February of 1997. The intent of the Plan was "*to serve as an official policy document to help guide future decisions affecting the economy and prosperity of the Town of Plymouth*" (Strategic Plan of Economic Development, page 1).

The Plan has eight goals and has planning objectives. The eight goals are listed below.

1. Diversify manufacturing by attracting new, technology based growth industries.
2. Capitalize on the strengths of the existing metal working manufacturing base.
3. Support vocational education and job training programs for the private sector.
4. Expand the professional / commercial / retail base to better serve our citizen's needs.
5. Promote Plymouth's proud history of invention and its innovative skilled workforce.
6. Encourage tourism, conserve our natural resources and emphasize our heritage.
7. Preserve the town's historical character through uniformity of architectural design.

8. Work with all appropriate parties to expand investment in the public and non-profit sectors.

The Strategic Plan of Economic Development recommended seven specific programs and action plans.

The first was the creation of the Town's own financial incentive program. The Town enacted the ordinance entitled "Tax and Business Incentive Program" (Article IV, Sections 15-81 to 15-99) in 1998. The purpose of the Tax and Business Incentive Program is to "*attract new firms to the Town of Plymouth and to promote expansion of existing business and industry*" (Article IV, Section 15-81). This program allows for tax abatements and other incentives, such as permit fee waivers and receipt of in-kind services.

Three proposals aimed to improve the industrial marketing of Plymouth. One was the creation of the Priority List of Targeted Properties: an inventory of top priority properties for industrial, commercial and retail development or rehabilitation. Another program was a promotional campaign, to increase the awareness of Plymouth for selected companies in emerging technologies and growth industries. A third program recognized the changing nature of the skilled workforce to the "Information Age" and called for recognizing and supporting job training programs for the "Information Age". The Town's Plymouth 200/0 Technology Plan was cited.

One proposal aimed at the Town's retail market and requested an economic needs study and market analysis. The firm of Bartram & Cochran was hired to undertake this study of Plymouth to determine the optimum mix of sustainable retail and commercial business in Plymouth. They issued a report titled Town of Plymouth Economic Needs Study and Market Research Analysis, October 10, 1997.

Main Street revitalization was another program focus. It called for the creation of a Main Street Alliance to initiate and undertake the revitalization of Main Street in Plymouth.

The final proposal sought to increase Plymouth as a tourist destination.

Review of 1993 Plan of Development

The 1993 Plan made recommendations on industrial and commercial land use in the Town of Plymouth. The overall recommendation was that business development be focused in the most appropriate locations within the Town of Plymouth.

The Business and Industry Chapter started with an overview on the Town. The Plan noted the Town's positive attributes: skilled work force and closeness to other employment centers in the region. Both attributes are true today as well. The Plan also noted a major negative attribute: location. The Town was, and still is, not as convenient or as accessible as other towns for shipping, shopping and other business related travel.

The Plan discussed business location determinants, which are still true today. These are accessible and efficient roadways, availability of utility infrastructure, preference for larger level tracts of land, and appropriateness of use locations and transitions.

The first of the eight industrial development recommendations pertained to the scatter distribution of industrial sites in Plymouth. The Plan noted the negative impacts of this scattered pattern of business development. There was potential for two negative impacts: the ability to deliver needed services to businesses and the intrusion on the surrounding residential uses.

The Plan recommended the reduction in the number of Manufacturing zoned sites. Twenty or so sites were noted, varying in size from 1 to 98 acres in size and scattered throughout the Town. Plus, there were other industrial uses located outside of Manufacturing zones. Many sites did not meet location determinants and had the potential to negatively impact adjacent uses, especially residential uses. The Plan recommended many outlying areas be rezoned to residential or to the appropriate surrounding use. The Plan recommended locating industrial facilities centrally in specific areas, in order to ensure the proper delivery of services and the minimization of negative effects from industrial uses on adjoining areas. In 1998, the Planning & Zoning Commission rezoned six such areas.

The second recommendation was to provide new industrial areas. Once the scattered industrial zones were eliminated, the Town needed to provide a location for industry to go for two reasons: to have a new supply of industrial land and, secondly, compensate for the loss of previously zoned industrial land. The Plan noted that one fundamental goal was to encourage industrial development in appropriate places. The locations were recommended: north of the existing Plymouth Business Park and south of RT 6 and west of Scott Road. While other sites were investigated, those sites were not deemed to be as promising.

The third recommendation was to create an industrial zone south of RT 6. The fourth recommendation was for a specific site: west of Scott Road; in order to not lose time while a site master plan was being prepared.

The fifth recommendation involved updating the Town's industrial zone requirements. One concern was the permitting of residential and commercial uses in the Manufacturing district, precluding industrial areas from being developed within industrial zones. Just as industrial uses should not be permitted in residential zones, residential uses should not be permitted in industrial zones. The second concern was to update the list of industrial uses and development standards in order to promote orderly development of industrial districts. In 1999, the Zoning Regulations were amended to preclude new residential and commercial uses in the Manufacturing Zone.

The sixth recommendation involved industrial incentives. The Plan recommended that the Town look into the other available incentive programs of the Connecticut and Federal Governments. Also, the Plan suggested the Town look into offering their own tax abatement program as a further incentive to new industrial development. To that end, the tax and business incentive ordinance (Article IV, Sections 15-81 to 15-99: "Tax and Business Incentive Program") was adopted in 1998.

The seventh recommendation called for enhancing industrial zone buffers. Recognizing the potential intrusiveness of industrial uses and areas, the Plan recommended increasing the buffer between industrial uses and zones from the surrounding areas. Natural landscape features could be used for buffering, such as slopes, wetlands, and watercourses. Planting vegetation was another option.

The eighth recommendation pertained to resource extraction areas and suggested changes in the regulation of sand and gravel operations. The concern was with the long term implications of Manufacturing Zone designation and not with the Zone's designation for excavation use. Not all of the excavation areas were appropriate for other industrial development. For such areas, there was a future land use issue once the excavation activity was completed. The Plan recommended that sand and gravel operations become a temporary use and be closely regulated to minimize impacts on adjacent areas and future uses. The Plan also recommended stricter bonding provisions, erosion / sediment control measures, and area restoration. In 2001, the Zoning Regulations were amended to considerably tightened the natural resource removal regulations.

The 1993 Plan made nine recommendations for Commercial Developments.

The first recommendation was to confine commercial uses to Routes 6 and 72 corridors. The recommendation was based upon the factors of the population

distribution, the road network, traffic volumes, and utility availability.

The second recommendation was to restrict strip development. Not all of RT 6 and RT 72 should be available for development. Development needed to be confined to two specific areas: Route 6 from the Bristol line westerly to around Harwinton Avenue; and Route 72 from Bristol Line northerly to around North Main Street. The Plan warned of the consequences in over-commercializing a major highway corridor: traffic congestion, interference with adjacent non-commercial uses, and decreasing highway safety conditions.

The third recommendation commented on uncoordinated curb cuts and called for consolidating driveways in order to improve circulation and traffic patterns. The RT 6 and RT 72 corridors should be studied to establish a consolidated and coordinated circulation plan. This was, in fact, accomplished through a Connecticut Department of Transportation and Central Connecticut Regional Planning Agency sponsored study completed in 1999.

The fourth recommendation called for transitions between commercial uses and adjoining residential neighborhoods. Given the situation of Routes 6 and 72 in valleys, there was an opportunity to use topography as a natural break or transition between the commercial and residential uses. To that end, the Zoning Regulations were amended to contain buffering and landscaping standards to separate residential and non-residential uses.

The Plan's fifth recommendation was to maintain and improve the character of the commercial areas. The Plan noted that mixed uses in multi-story buildings could be compatible. Ground floors should be devoted to retail or office uses with the second floor reserved for office and residential uses. Architectural design should reinforce the character and building materials prevalent in the area. Buildings of divergent design or incompatible materials would detract from the overall streetscape experience. The historic character of Plymouth Center and the residential scale of the Pequabuck area should also be protected as development occurs.

The creation of the Plymouth Center Historic District achieves some control in Plymouth. The Terryville and Pequabuck sections of the Town still require study.

The sixth recommendation called for improving pedestrian circulation and the provision of sidewalks in commercial areas. The improvement of pedestrian convenience and circulation would help to reduce traffic.

The Town of Plymouth has been asking for the creation of a sidewalk fund mechanism through the Connecticut statute governing subdivisions. If permitted, such a fund could act similar to the open space fund statutes and provide monies to build and maintain sidewalks where needed.

The seventh recommendation called for improving the commercial streetscape. In short, better looking commercial buildings would improve the appearance of the streetscape. Streetscape elements, such as trees, cross walks, street signage, and business signage, needed to be coordinated and would improve the appearance of the commercial areas. A better looking commercial area would be more appealing and result in increased sales and greater vitality for business.

The Plan's eighth recommendation asked that the Town consider closing adjacent streets in order to decrease congestion and accident potential in areas of Terryville Center. This could result in a more continuous streetscape and provide other opportunities for parking for businesses.

The Routes 6 / 72 Study made certain recommendations to improve the traffic situation in Terryville. The participation of the Connecticut Department of Transportation will be needed.

The ninth recommendation was to maintain neighborhood business scale. Recognizing the value of existing neighborhood convenience uses, there was a question of scale and potential adverse impact on surrounding neighborhood. The Plan warned not to allow these types of uses to expand and encouraged development of a Neighborhood Business Zone classification, with appropriate development guidelines.

Future Economic Development Potential – Market and Location

The term "restructuring" is often used to describe our economic times. In truth, economies are always "restructuring" and "in a state of transition". What varies is the rate of change. Pianos are no longer made in Plymouth, never mind barrel bungs, harness trimmings, malleable iron castings, or spinning wheels. It is also hard to find topical conversation about these two manufacturers, Sheldon & Tuttle Company for carriages and the E. R. Ives & Company for toys, both having been famous in their own age. The G. D. Enterprise is still around; founded in 1886 in Pequabuck. However, the company is called the Cooper Thermometer Company and is located in the Town of Middlefield.

More changes are underway and the current transition is on a global scale. Outsourcing means going oversees and is no longer confined to manufacturing. The report by Michael Gallis & Associates for the Connecticut Regional Institute for the 21st Century discusses this "*massive restructuring of the world's economic geography*" (A Strategic Framework, page 2) and notes the how "*metropolitan regions function as the foundation units of economic activity and hubs in the global transportation and communications network*" (A Strategic Framework, page 2)

The change to a global economy has brought about changes in the location and the manner which products are made and services are provided. Production is free to move to the location seemingly best suited given costs and the skill level required to produce a particular item. While more manufacturing can move into Connecticut, manufacturing is also free to move out of Connecticut and out of this country to nations with much lower wages and costs of doing business. This trend has had a major impact on manufacturing and now other sectors of the economy are joining the trend for "outsourcing".

Plymouth's area of strength has been the skilled workforce needed for manufacturing. Both the Census occupation and industry data show the higher percentage of people living in Plymouth whose occupation is in production and who find employment in the manufacturing sector.

Manufacturing employment is declining. Connecticut's manufacturing sector has lost 200,000 jobs since the late 1960s (page 8, Stanley McMillen, "Manufacturing: Reports of Its Demise Are Greatly Exaggerated", Winter 2003, The Connecticut Economy).

Plymouth has also lost manufacturing jobs. Connecticut Department of Labor reported 1,770 manufacturing for Plymouth in 1979. By 1989, the reported number was 1,590 and by 1999, the reported number was 750. This was a loss of 1,020 jobs, representing a decrease by 57.6% since 1979.

However, Plymouth is not alone. Many other towns have high percentages of people employed in manufacturing. Table 9 is a list of 29 towns located within a 10 mile radius of Plymouth. Two points are relevant. Most of the people who work in Plymouth commute from within this 10 mile radius. Secondly, Table 9 shows the importance of the production / manufacturing sector to the livelihood of people living in these 29 towns.

While there are some doomsayers, it is very doubtful that manufacturing will disappear. It is likely to change. According to an article in The Connecticut Economy, (page 8, Stanley McMillen, "Manufacturing: Reports of Its Demise Are Greatly Exaggerated", Winter 2003), Connecticut's workforce is among the most productive in the United States. Manufacturing firms will still be looking for new locations. Plymouth is not the only town seeking new business to relocate within its borders.

A skilled workforce does not necessarily foreordain having a college education. Enterprises in the new economy may require more technical skills and knowledge. While Plymouth has a skilled workforce, the Town does not have a high concentration of college educated people. Depending on the nature of the enterprise, the Town may not have the proper concentration needed.

In Memorandum #1, there was discussion of the educational attainment of the Town's residents. Plymouth has a higher concentration of people age 25 and over who have a high school degree or equivalency, at 41.0%, more than Connecticut's average of 28.5%. In terms of people with a bachelors or graduate degree, Plymouth has 13.9% and the Connecticut statewide average is 31.5%.

In terms of adjoining towns, Plymouth has a smaller share of the people with college and graduate degrees. Except for the City of Waterbury, the adjoining towns have a higher percentage. Burlington has the highest percentage at 43.4%. Harwinton is next highest at 32.9%. Three towns are very close together in percentages: Bristol at 16.1%, Thomaston at 18.4% and Wolcott at 19.3%.

Using professional, scientific and technical services employment as an indicator of the more technical enterprises. Table 10 looks at the same 29 towns located within a 10 mile radius of Plymouth. This time the emphasis is finding where people who work in the professional, scientific and technical services industries live.

There are industrial uses other than manufacturing and scientific related businesses. There will always be a need for warehousing and distribution facilities. This is not an area of strength for Plymouth. Location is relative and the Town does not have the proper location to attract the very large facilities.

Table 9: Employment in Production and Manufacturing
Towns within 10 Mile Radius of Plymouth

Town	By Occupation			By Industry		
	Number	Total	Percent	Number	Total	Percent
Bristol	4,420	31,219	14.2%	7,127	31,219	22.8%
Burlington	285	4,540	6.3%	716	4,540	15.8%
Harwinton	138	2,821	4.9%	366	2,821	13.0%
Thomaston	676	4,100	16.5%	931	4,100	22.7%
Waterbury	6,920	45,484	15.2%	9,563	45,484	21.0%
Watertown	1,168	11,338	10.3%	2,506	11,338	22.1%
Wolcott	707	7,948	8.9%	1,402	7,948	17.6%
Avon	142	8,001	1.8%	819	8,001	10.2%
Beacon Falls	338	2,858	11.8%	633	2,858	22.1%
Berlin	752	9,648	7.8%	1,366	9,648	14.2%
Canton	202	4,790	4.2%	627	4,790	13.1%
Cheshire	644	13,356	4.8%	1,846	13,356	13.8%
Farmington	509	11,544	4.4%	1,513	11,544	13.1%
Goshen	80	1,354	5.9%	195	1,354	14.4%
Litchfield	242	4,099	5.9%	589	4,099	14.4%
Meriden	3,354	28,103	11.9%	5,487	28,103	19.5%
Middlebury	165	3,326	5.0%	548	3,326	16.5%
Morris	98	1,226	8.0%	176	1,226	14.4%
Naugatuck	2,080	15,591	13.3%	3,684	15,591	23.6%
New Britain	5,186	31,749	16.3%	6194	31,749	19.5%
New Hartford	196	3,229	6.1%	463	3,229	14.3%
Oxford	412	5,435	7.6%	1,079	5,435	19.9%
Plainville	1,189	9,416	12.6%	2,069	9,416	22.0%

Prospect	463	4,700	9.9%	897	4,700	19.1%
Simsbury	315	11,260	2.8%	1,279	11,260	11.4%
Southbury	273	8,022	3.4%	1,543	8,022	19.2%
Southington	2,109	21,415	9.8%	3,780	21,415	17.7%
Torrington	2,583	17,530	14.7%	3,855	17,530	22.0%
Woodbury	261	5,090	5.1%	722	5,090	14.2%
Source: U.S. Census Bureau Year 2000						

Table 10: Industry Employment for Professional, Scientific and Technical Services for Towns within 10 Mile Radius of Plymouth

Town	Number	Total	Percent
Bristol	1,194	31,219	3.6%
Burlington	251	4,540	5.5%
Harwinton	189	2,821	6.75
Thomaston	127	4,100	3.1%
Waterbury	1,268	45,484	2.8%
Watertown	561	11,338	4.9%
Wolcott	322	7,948	4.1%
Avon	948	8,001	11.8%
Beacon Falls	148	2,858	5.2%
Berlin	426	9,648	4.4%
Canton	390	4,790	8.1%
Cheshire	1,072	13,356	8.0%
Farmington	1,103	11,544	9.6%
Goshen	67	1354	4.4%
Litchfield	279	4,099	6.8%
Meriden	937	28,103	3.3%
Middlebury	206	3,326	6.2%
Morris	75	1,226	6.2%
Naugatuck	750	15,591	4.8%
New Britain	1,063	31,749	3.3%
New Hartford	254	3,229	7.9%
Oxford	290	5,435	5.3%
Plainville	296	9,416	3.1%
Prospect	133	4,700	2.8%
Simsbury	925	11,260	8.2%
Southbury	678	8,022	8.5%
Southington	1,304	21,415	6.1%
Torrington	501	17,530	2.9%
Woodbury	406	5,090	8.0%
Source: U.S. Census Bureau Year 2000			

Future Economic Development Potential – Land Supply

The amount of vacant land zoned for business activity is limited. Table 11 provides a summary of the amount of vacant land in Plymouth in the three business zoned categories of Manufacturing, Commercial and Restricted Business Zone. At first glance, there is approximately 160 acres available between these three zoning categories.

Table 11: Amount of Vacant Land in Business Zones

Zones & Specific Area	Vacant	Alternative
Manufacturing Zones		
Poland Brook / Judd Rds.	16.0 acres	0 acres
Plymouth Business Park Phase III	50.45 acres	50.45 acres
Burr Rd. & Main St.	9.08 acres	9.08 acres
Wilton / Mt. Tobe Rds.	8.51 acres	0 acres
RT 72 South Corridor	5.02 acres	5.02 acres
Church Street	1.17 acres	1.17 acres
Manufacturing Total	90.23 acres	65.72 acres
Commercial Zones		
RT 6: Burr & Scott Rds.	56.81 acres	0 acres
RT 6: Circa Seymour Rd.	2.82 acres	2.82 acres
RT 6: Kellogg & Town Hill Rds. / Holt St.	1.35 acres	1.35 acres
RT 6: Waterwheel	0.68 acres	0.68 acres
RT 6: RT 72 & Prospect St.	1.97 acres	1.97 acres
RT 72: North Corridor	2.57 acres	2.57 acres
Commercial Total	66.20 acres	9.39 acres
RBZ – RT 6	3.75 acres	3.75 acres
Total	160.18 acres	78.86 acres

Source: Town of Plymouth Office of the Assessor; Complied by C.C.R.P.A.

In practical terms, there is very little appropriate land available for new industrial usage. Approximately 56% of the available industrial land is in Phase III of the Plymouth Business Park, 50.45 acres and this land is now on the market. There are two categories of remaining vacant land. There are three Zones with in-fill development: RT 72 South Corridor, Church Street and Burr Road / Main Street.

The other category is comprised of the Wilton Road / Mt. Tobe Road and Poland Brook Road / Judd Road areas of vacant land. Both locations are surrounded by residential areas and industrial development may be considered intrusive and

therefore inappropriate. The combined acreage of these two areas is 23.51 acres. When these acres are subtracted from the total for the Manufacturing Zone, there is only 65.72 acres available, mostly Phase III of the Business Park. These calculations are shown in the Alternative column in Table 11.

The Commercial Zone situation is dramatic as well. The vast portion of the vacant land, 86%, is located in one specific area: between Burr Road and Scott Road. The total for the other five areas is a little more than 11 acres and all of these areas are less than three acres each.

Conservation of Natural Resources

Introduction

At the crux of any plan of conservation and development is the physical nature of a place and what shape a community would like see the physical nature be conserved or developed. The type, location, extent and characteristics of the natural environment greatly influenced how and where communities developed originally and that influence continues now and into the future. In 1995, the importance of these resources was punctuated by the Connecticut General Assembly changing the names of these documents from plans of development to plans of *conservation* and development. Within the 22.3 square miles of Plymouth's land area is a variety of physical characteristics that greatly influence land use decisions.

Natural Resource Inventory

The process of protecting Plymouth's natural environment begins with careful documentation of the Town's natural resources. These resources include the geologic (soils, bedrock and surficial geology), hydrologic (rivers, streams, lakes and ponds), and biologic (plant and animal habitat) characteristics of the natural landscape. The location and extent of these resources have implications on development potential, open space planning, natural greenway corridors and recreational resources.

The natural resource inventory is organized and displayed using Geographic Information System (GIS) technology. The GIS allows spatial information to be presented graphically on a townwide basis. This tool allows analysis of elements of the natural resources that will be instrumental in developing policy for a number of components of the Plan of Conservation and Development.

By characterizing each of the elements of the natural resource inventory, an understanding of the assets and liabilities of the Town's environment in its entirety and its detail can be reached. With this understanding, policy can be developed. Elements of the natural resource inventory follow.

Geology

BEDROCK

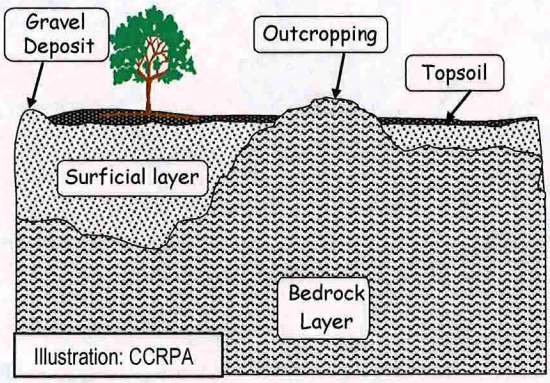
Plymouth is located in a geologic region of Connecticut called the "Western Uplands". The subsurface rock, or ledge as it is often referred, was formed by intense heat and pressure (metamorphic processes) brought on by continental plate collision. As a result, the bedrock that underlies the town and punctuates the landscape though rock outcropping is extremely strong and resilient to forces

erosion. The strength of the underlying bedrock is the principle reason that uplands have remained as uplands over the course of geologic time and have not eroded down. Plymouth's place in the Western Uplands contains mostly deposits of gneiss and schist.

Surficial

The character of the surficial geology of Plymouth is created by the actions of glaciation, as is the case with most of Connecticut. The advance and retreat of glaciers overlaid deposits onto what is now the bedrock layer in the state. This particular geologic layer is composed mostly of glacial drift, deposits of rock and sediment created as the glaciers receded. Glacial drift is composed mostly of till and stratified drift. Stratified drift, generally found in the form of sand or gravel, is uniform in size and has few large stones and boulders. Till, in contrast, is a mixture of materials ranging from large coarse boulders to fine deposits such as silt and clay.

The difference in the composition of till and stratified drift is important in that water, particularly subsurface water, travels very well through stratified drift, but not very well through till. Therefore, for purposes of identifying potential



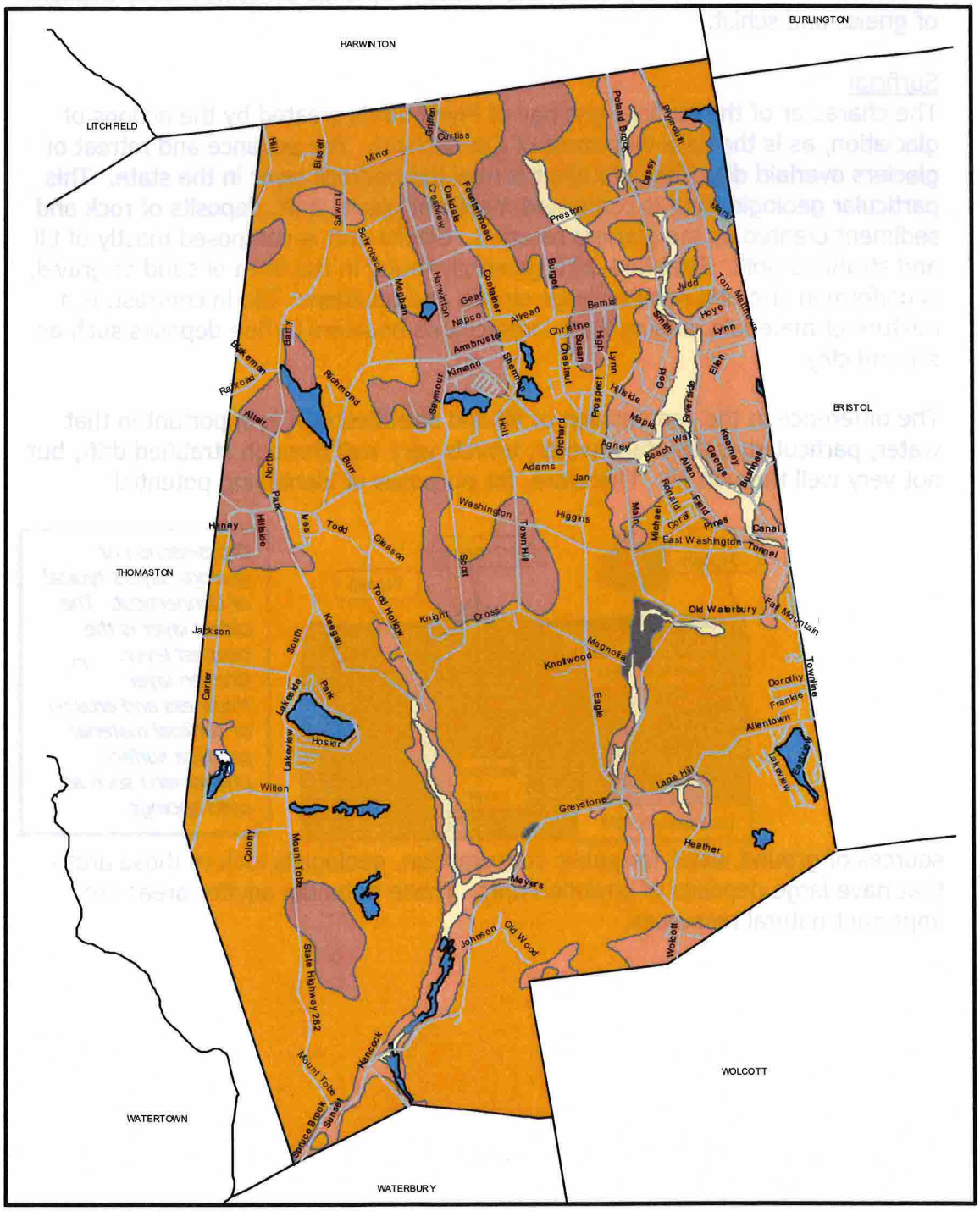
Cross-section of geologic layers typical of Connecticut. The oldest layer is the deepest layer. Uneven layer thickness and erosion of surficial material produce surface phenomena such as outcroppings.

sources of ground water for public consumption, geologists look to those areas that have large deposits of stratified drift. These potential aquifer areas are important natural resources.

Town of Plymouth

Plan of Conservation & Development

Map 1. Surficial Geology



Legend

- Alluvial/Fine
- Artificial Fill
- Gravel
- Gravel/Sand
- Swamp
- Thick Till
- Till
- Water

Source:
Connecticut DEP
Environment & Geographic
Information Center 2003

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0 0.5 1 2 Miles

This map is developed for planning purposes only.

Soils

In the review of the surficial geology of Plymouth, types of soil and their location are critical to the discussion of future physical development of the Town. Certain soils have different capabilities than other soils. As the Plan of Conservation and Development is a decidedly physical plan, soil capabilities and their locations are vital to shaping the community. The *soil types* map delineates the major complexes of soils in the Town. Descriptions of these complexes follow.

Hollis-Chatfield Rock Outcrop Complex – This soil complex, found commonly on hills and ridges, is well drained with a moderate to excessive permeability. Well-drained soils with adequate permeability are important to ensure on-site septic systems function properly. Most areas in this complex are wooded but some small, less severely sloped areas have been used for community development or agriculture. The major limitations to community development in areas with this soil type include steep slopes, shallow depth to bedrock, stony soil and exposed bedrock. The Hollis-Chatfield Rock Outcrop soil complex covers approximately 16% of Plymouth's land area.

Paxton & Montauk Soils – This soil complex consists of well-drained soils of varying slope. Most areas in this complex are wooded, but some areas have been cleared for agriculture or community development. These soils have fair potential for development primarily due to the moderate to poor permeability of the substratum. The NRCS cautions that on-site septic systems be carefully planned, located, designed and installed to ensure proper functionality on these soil types. The Paxton & Montauk soil complex covers approximately 12% of the Town's land area.

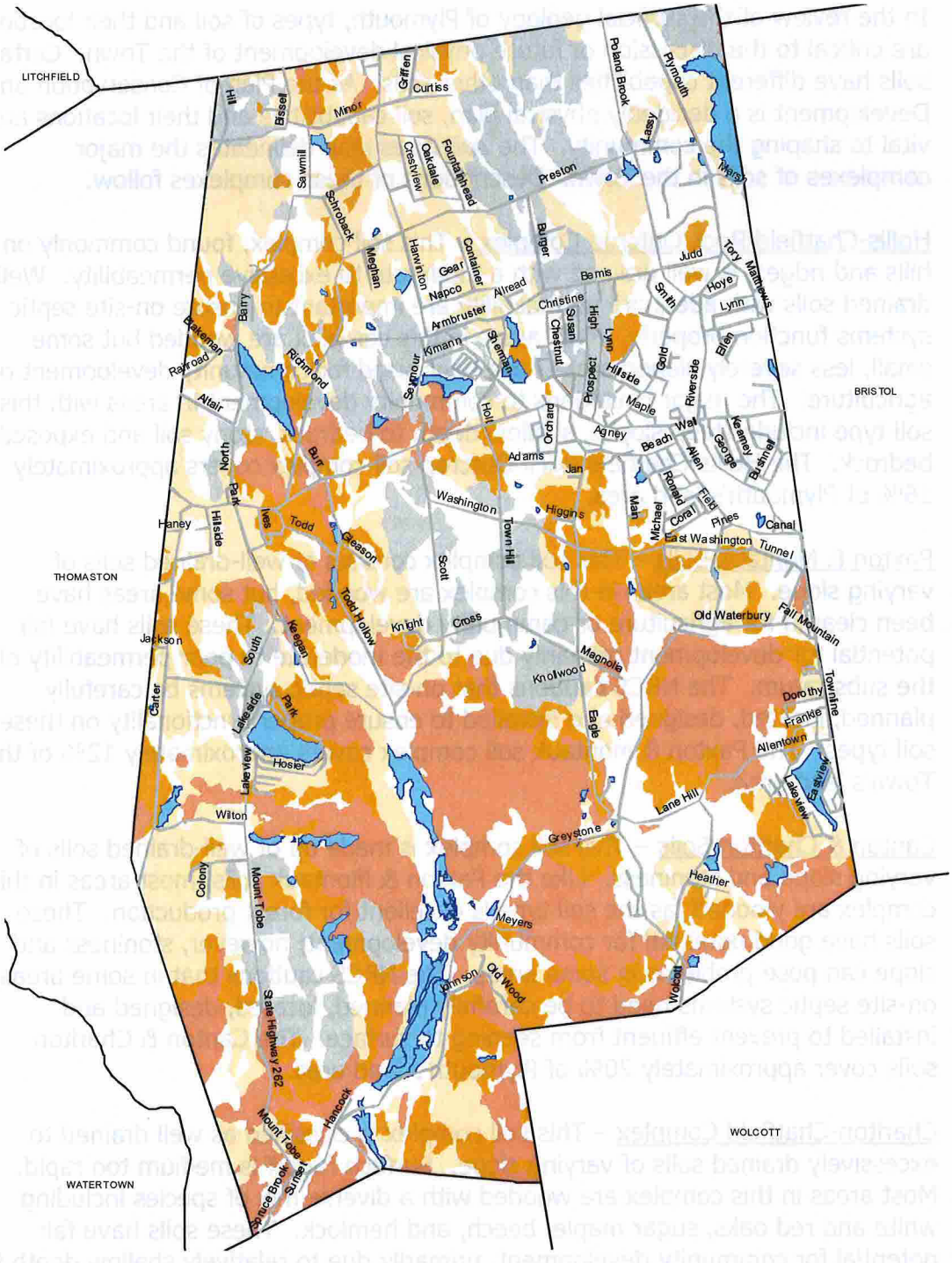
Canton & Charlton Soils – This soil complex is made up of well-drained soils of varying slope and stoniness. Like the Paxton & Montauk soils, most areas in this complex are wooded, as the soil type is excellent for forest production. These soils have good potential for community development; however, stoniness and slope can pose problems in some areas. The NRCS cautions that in some areas, on-site septic systems need to be carefully planned, located, designed and installed to prevent effluent from seeping to surface. The Canton & Charlton soils cover approximately 20% of Plymouth's land area.

Charlton-Chatfield Complex – This soil complex is classified as well drained to excessively drained soils of varying slope. Surface runoff is medium too rapid. Most areas in this complex are wooded with a diverse mix of species including white and red oaks, sugar maple, beech, and hemlock. These soils have fair potential for community development, primarily due to relatively shallow depth to bedrock. This complex of soils covers approximately 14% of Plymouth's land area.

Town of Plymouth

Plan of Conservation & Development

Map 2. Soil Type



Source:
Connecticut DEP
Environment & Geographic Information Center 2003

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0 0.45 0.9 1.8 Miles

This map is developed for planning purposes only.

Legend

- Canton and Charlton Soils
- Charlton-Chatfield Complex
- Hollis-Chatfield Rock Outcrop Complex Soils
- Paxton and Montauk Soils
- Water
- Wetland Soils
- Other Upland Soils

Wetland Soils – In Connecticut, "Wetlands mean land, including submerged land, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soil Survey, as may be amended from time to time, of the Soil Conservation Service of the United States Department of Agriculture. Watercourses are defined as rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, bogs and all other bodies of water, natural or artificial, public or private."[1]

Wetlands associated with the Pequabuck River near Napco

Wetland soil types have received protection from development only within the last 30 years. Prior to this timeframe, land areas periodically inundated or saturated with water were subject to filling, in hopes of making the land developable. With realization of the value of wetland functionality, such practices were outlawed. Further, the zone of upland soils adjacent to wetlands was recognized as influential in effective wetland functionality. Municipal wetlands agencies regulate activity in the upland soils zone within a specified distance to the edge of the wetland soils.

Wetlands have a number of functions that enhance the natural environment by providing:

- Highly productive and varied plant communities
- Rich animal habitats including those for some endangered species
- Habitat and cover for a variety of fish species
- Storage and control of flood waters
- Interception and absorption of surface runoff and sediment
- Dissipation of shoreline erosion effects of surface water
- Outdoor recreational and educational opportunity

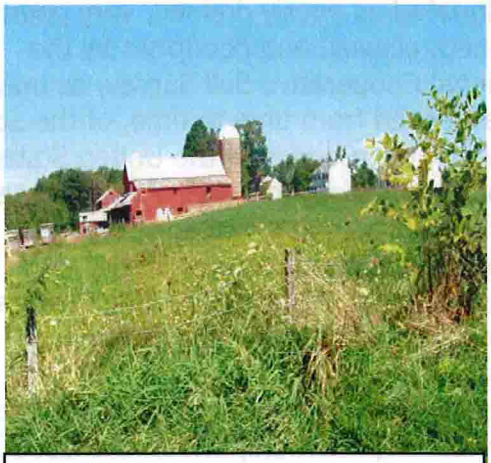
The Connecticut Department of Environmental Protection has produced the publication *Method for the Evaluation of Inland Wetlands in Connecticut*, which outlines the procedures for the measuring the functional values listed above. Knowing the relative importance of the wetlands within one drainage area can help municipal regulatory agencies in decision making.

In total, approximately 9.5% of the Town's land area are designated as wetland soils. These areas are illustrated on the map titled *Wetland Soils*. The map depicts certain wetlands buffering streams and rivers (riverine wetlands) and

[1] Connecticut General Statutes, Sections 22a-28 to 35, inclusive, 1969

some buffer ponds and lakes (lacustrine wetlands). However, some wetlands exist as isolated systems.

Prime and Statewide Important Farmland Soils – Prime farmland is defined by the Natural Resources Conservation Service (NCRS) as the land that has the best combination of physical and chemical properties for producing food, feed, fiber and crops, and is also available for these uses. Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to modern farming methods.



Farm, with soils classified as statewide important farmland soil, on North Harwinton Road with newer homes across the street.

Additionally, statewide important farmland soils are those areas that are nearly prime farmland and that economically produce high yields of crops. Some may actually produce as high a yield as prime farmland if conditions are favorable.

Statistics indicate that the quantity of farmland, and consequently the quantity of prime and important farmland soils, has been rapidly decreasing in the State. According to the University of Connecticut Cooperative Extension System, farmland has decreased from almost 50% to only 11% of the State's total land area since 1950[2]. In many cases, unprofitable farms have been sold to developers seeking large tracts of good land for residential subdivisions. In identifying appropriate locations for any farmland preservation strategies, an inventory of the NRCS designated farmland soil types are depicted on the map titled *Prime and Statewide Important Farmland Soils*.

Rock outcropping

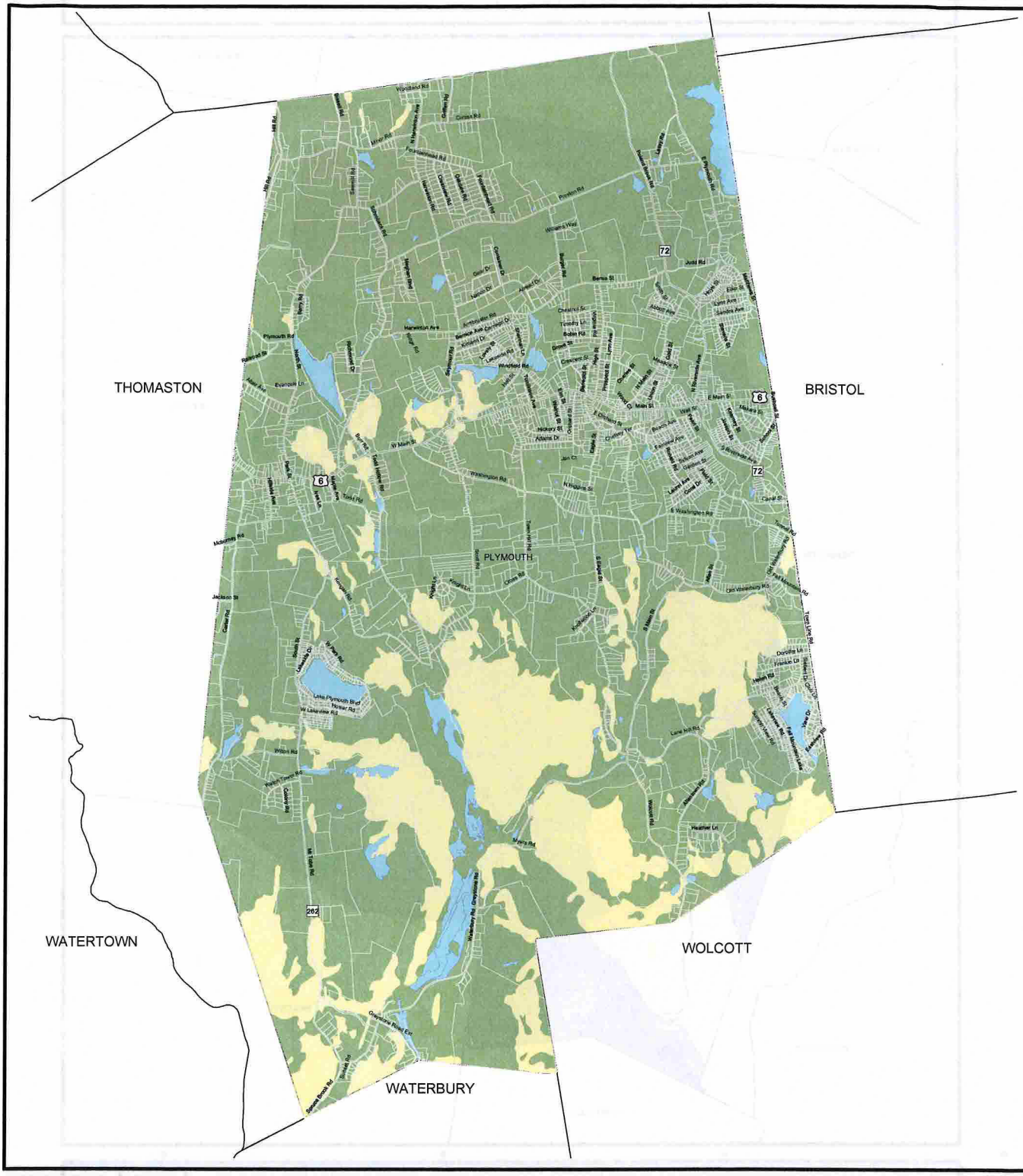
Shallow Depth to Bedrock – Bedrock depth varies considerably depending on factors such as elevation and slope. In some areas of Plymouth, the soil depth is well over five feet. However, in other parts of the Town, bedrock is exposed as outcroppings. Understanding what areas of Town have shallow soil depths is important in planning development, especially on-site septic systems. Additionally, these areas are often found in conjunction with steep slopes, another development constraint. Areas of rock outcroppings sometimes represent

[2] Jim Gibbons, University of Connecticut, Cooperative Extension System, Natural Resource Areas to be Considered when Preparing Natural Resource Inventories and Open Space Plans, 1999

Town of Plymouth

Plan of Conservation & Development

Map 3. Shallow Depth to Bedrock



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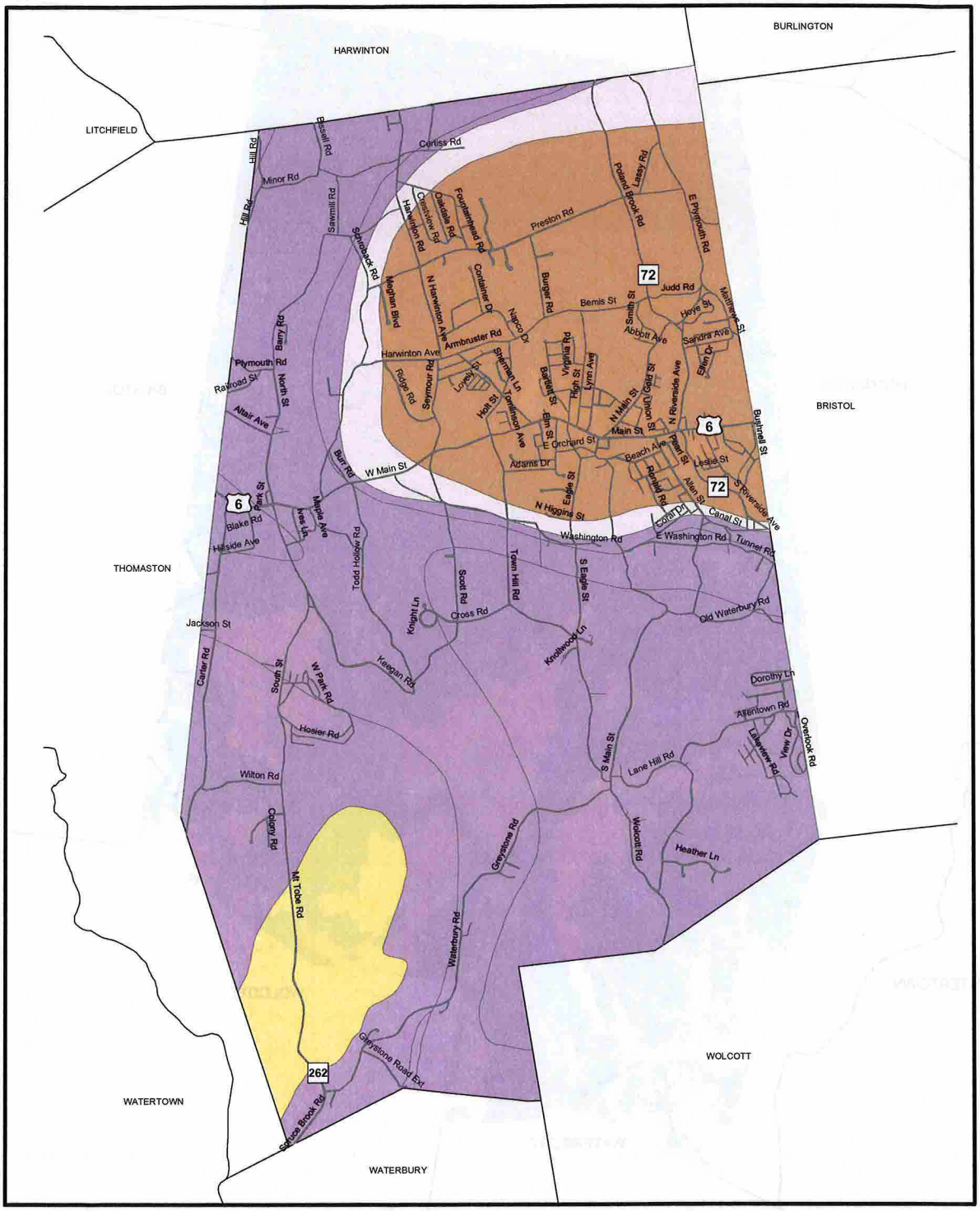
0 0.45 0.9 1.8 Miles

This map is developed for planning purposes only.

Legend

- Shallow Depth to Bedrock (1-2 feet.)
- Other(Over 5 feet)
- Water

Town of Plymouth
Plan of Conservation & Development
Map 4. Bedrock Geology



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Legend

- Amphibolite
- Gneiss
- Granofels
- Schist

Town of Plymouth

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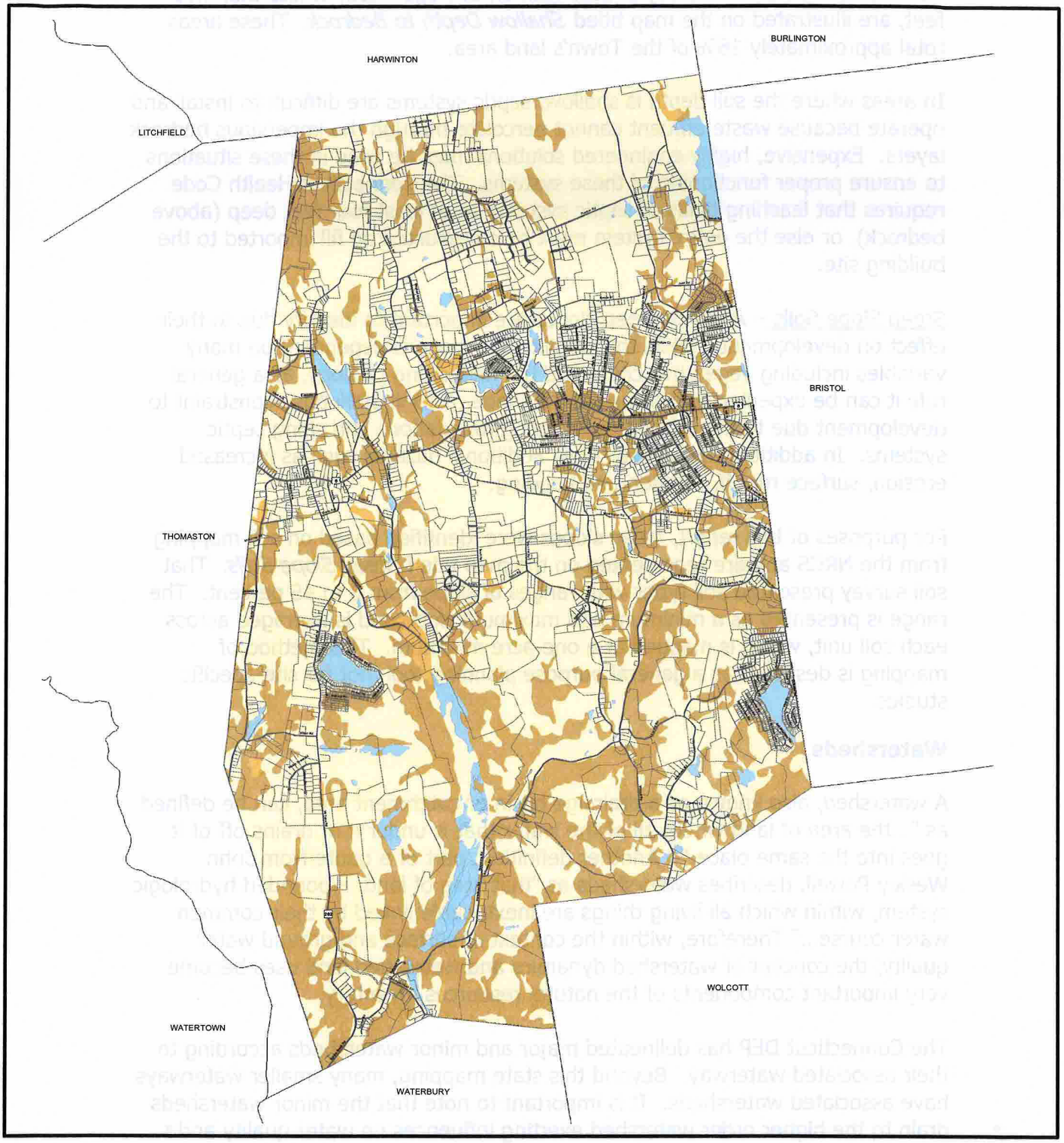
Map 5. Soil Slope



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0 0.5 1 2 Miles

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Maximum Soil Slope

- 0%
- 2 to 15%
- 15+ to 25%
- Over 25%

prominent natural features that the Town may wish to preserve. The areas of Town that have shallow soils, or soils with an average depth of less than five feet, are illustrated on the map titled *Shallow Depth to Bedrock*. These areas total approximately 16% of the Town's land area.

In areas where the soil depth is shallow, septic systems are difficult to install and operate because waste effluent cannot percolate through the impervious bedrock layers. Expensive, highly engineered solutions must be used in these situations to ensure proper functioning of these systems. The Connecticut Health Code requires that leaching fields of septic systems be at least four feet deep (above bedrock), or else the entire system must be constructed on fill imported to the building site.

Steep Slope Soils – Areas of steep slopes are important to identify due to their effect on development. While the stability of a slope is dependent on many variables including vegetative cover and the underlying geology, as a general rule it can be expected that slopes in the range of 15%-20% pose constraint to development due to the difficulty of building foundations and siting septic systems. In addition, these areas pose additional hazards such as increased erosion, surface runoff, siltation and flooding.

For purposes of this report, steep slopes were identified based on soil mapping from the NRCS and are represented on the map titled *Steep Slope Soils*. That soil survey presented soil types with ranges of slope from 0 to 45 percent. The range is presented as a minimum and maximum slope and is averaged across each soil unit, which is mapped at a one-acre minimum. This method of mapping is designed as a general purpose planning tool, not for site-specific studies.

Watersheds

A watershed, also known as a drainage basin or catchment area, can be defined as "...the area of land where all of the water that is under it or drains off of it goes into the same place."[3] Another definition, part of a quote from John Wesley Powell, describes watersheds as "that area of land, a bounded hydrologic system, within which all living things are inextricable linked by their common water course..." Therefore, within the context of surface and ground water quality, the concept of watershed dynamics and watershed land uses become very important components of the natural resources inventory.

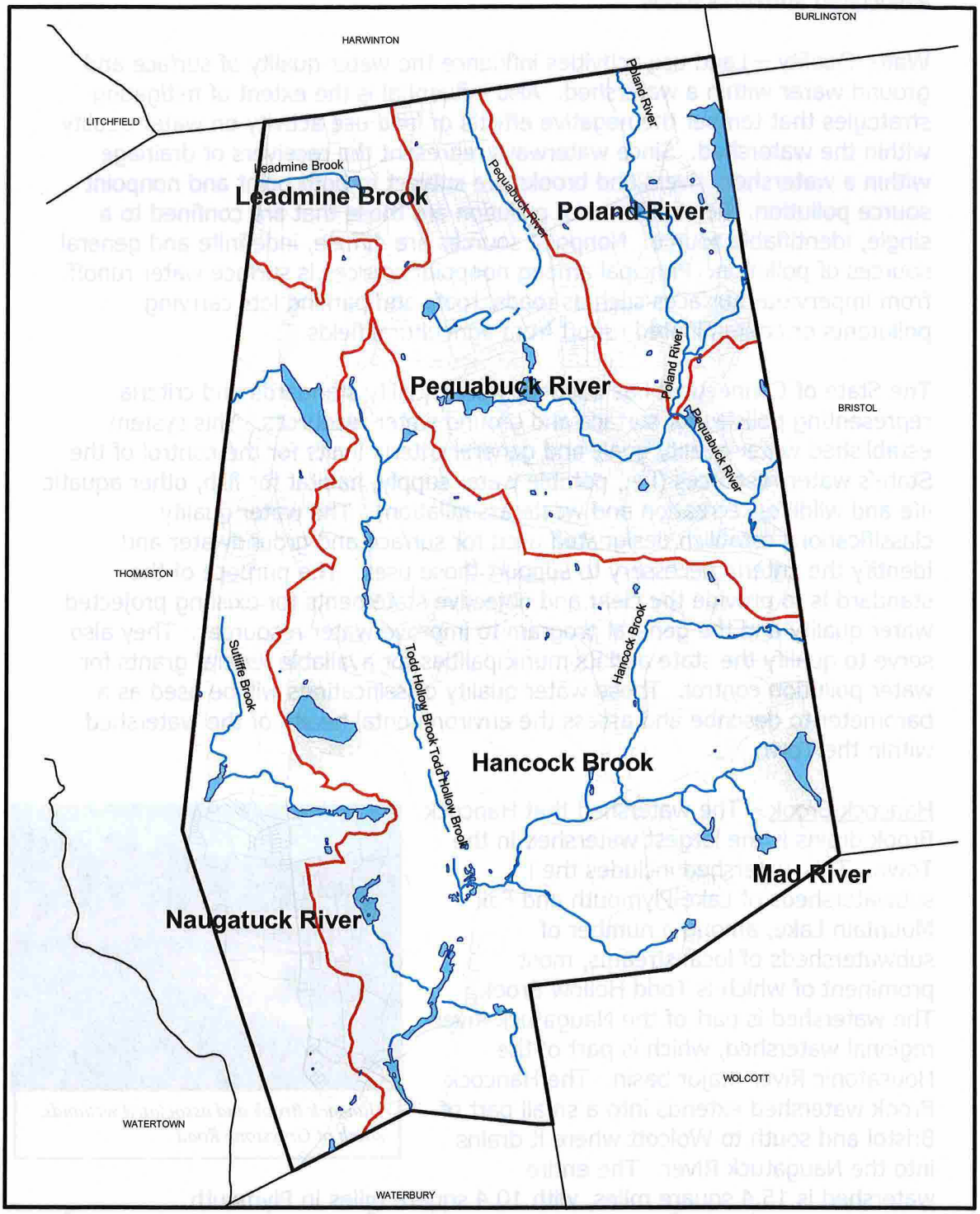
The Connecticut DEP has delineated major and minor watersheds according to their associated waterway. Beyond this state mapping, many smaller waterways have associated watersheds. It is important to note that the minor watersheds drain to the higher order watershed exerting influences on water quality and

[3] www.epa.gov/owow/watershed/whatis.html, retrieved 9/23/03

Town of Plymouth

Plan of Conservation & Development

Map 6. Watershed in the Town



Source:
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Legend

Subregional Watershed Boundary

quantity. Two major water basins bisect Plymouth: the Connecticut River basin and its associated subwatersheds and the Housatonic River basin and its associated subwatersheds.

Water Quality – Land use activities influence the water quality of surface and ground water within a watershed. Also influential is the extent of mitigating strategies that temper the negative effects of land use activity on water quality within the watershed. Since waterways represent the receivers of drainage within a watershed, rivers and brooks are subject to both point and nonpoint source pollution. Point sources of pollution are those that are confined to a single, identifiable source. Nonpoint sources are diffuse, indefinite and general sources of pollution. Principal among nonpoint sources is surface water runoff from impervious surfaces such as roads, roofs and parking lots carrying pollutants or contaminated runoff from agricultural fields.

The State of Connecticut has adopted water quality standards and criteria representing policies for surface and ground water resources. This system established water quality goals and general criteria limits for the control of the State's water resources (i.e., potable water supply, habitat for fish, other aquatic life and wildlife, recreation and waste assimilation). The water quality classifications establish designated used for surface and groundwater and identify the criteria necessary to support those uses. The purpose of the standard is to provide the clear and objective statements for existing projected water quality and the general program to improve water resources. They also serve to qualify the state and its municipalities for available federal grants for water pollution control. Those water quality classifications will be used as a barometer to describe and assess the environmental health of the watershed within the Town.

Hancock Brook and associated wetlands, south of Greystone Road

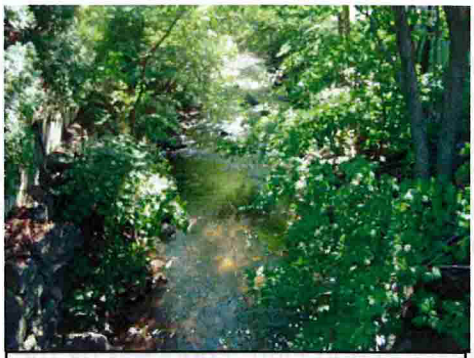
Hancock Brook – The watershed that Hancock Brook drains is the largest watershed in the Town. This watershed includes the subwatersheds of Lake Plymouth and Fall Mountain Lake, among a number of subwatersheds of local streams, most prominent of which is Todd Hollow Brook. The watershed is part of the Naugatuck River regional watershed, which is part of the Housatonic River major basin. The Hancock Brook watershed extends into a small part of Bristol and south to Wolcott where it drains into the Naugatuck River. The entire watershed is 15.4 square miles, with 10.4 square miles in Plymouth (approximately 46% of the Town's land area). Buttermilk Falls is a prominent natural feature in the watershed, located on an unnamed stream discharging into

Hancock Brook. Land uses are predominantly rural residential and forestland. However, much denser residential land uses occur in the Lake Plymouth and Fall Mountain Lake subwatersheds.

Another significant feature in the watershed is the Army Corps of Engineers (ACOE) flood control project along a stretch of Hancock Brook in the southern portion of the Town. The ACOE constructed a dam in 1966 across Hancock Brook forming Hancock Brook Lake as a flood control measure, part of a network of seven flood control reservoirs in the Naugatuck River Basin. The lake also serves as a public recreational resource, offering hunting, fishing, canoeing and limited hiking and horseback riding.[4] Surface water quality for Hancock Brook is classified as "A" for all of its length.

Leadmine Brook –
The watershed associated with Leadmine Brook cuts a small section of Plymouth's northwest corner. It is part of the Naugatuck River regional basin, which is part of the Housatonic River major basin. The discharge for Leadmine Brook is just over the Plymouth border in Thomaston. The entire watershed is 24.8 square miles with most of the watershed in Harwinton, and only .99 square miles in Plymouth (4.4% of the Town's land area). Overall land use in the watershed is rural woodlands with some agricultural activity and low density residential. Surface water quality is classified as "A", under which classification determines that the brook has uniformly excellent character and is suitable for all water uses including potential drinking water supply. The main stem of Leadmine Brook does not enter Plymouth. The unnamed streams that are part of the watershed and drain into Leadmine Brook do not have a water quality classification.

Naugatuck River –
The watershed of the Naugatuck River reaches into almost the entire western 1/5 of the Town, except for the Leadmine Brook watershed in the extreme northwest corner of Plymouth. The Naugatuck River regional basin is approximately 311 square miles with Plymouth's total approximating 4.1 square miles (18% of Plymouth's land area). Included in this watershed is Thomaston Reservoir and Wilton Pond. Land use activity is not of an intense nature in this watershed. It consists mostly of forests, including parts of the Mattatuck State Forest, and rural residential. Slightly more dense residential and commercial activity



Pequabuck River near corner of South Main St. and Orchard St.

[4] www.nae.usace.army.mil/recreati/hnk/hnkrec.hym, 9/25/03

takes place in Plymouth Center. No water quality data from DEP exists for the small brooks in this watershed.

Pequabuck River – The Pequabuck River is a subwatershed of the Farmington River regional basin and part of the Connecticut River major basin. The headwaters originate in Harwinton. This watershed, like the Poland River watershed, contains a major aquifer. The total size of the watershed is approximately 57 square miles, with 4.3 square miles in Plymouth (19.4% of Plymouth's total land area). The surface water quality is classified as "A" for most of its length in Plymouth. Upper and Middle Ponds also have Class A surface water quality. However, the water quality of the Pequabuck degrades to "B" as the river flows out of the village of Terryville, testament to the land use impacts on surface water conditions. The water quality further degrades as the river passes through the urban core of Bristol. The downstream sections of the Pequabuck River are listed in the DEP's Section 303 list of impaired waterways; a measure based on water quality.

Currently, a State of the Watershed report is being prepared by the Central Connecticut Regional Planning Agency (CCRPA) in coordination with the Pequabuck River Watershed Association (PRWA), the Farmington River Watershed Association (FRWA), and the Connecticut DEP. The Report will serve as the database in preparing a Pequabuck River Management Plan for the five towns of the watershed. The State of the Watershed report notes that another impact of dense development close to the river is an increase in stormwater runoff that not only affects quality, but water quantity. Impervious surfaces deliver the full volume of rainwater from storms to the river via catch basins in the road, without the dissipating effect of natural buffers with pervious surfaces. Sharp increases in river flow can create fluctuations in water temperature that can stress fish populations. Notable features along the Pequabuck River include the Eli Terry, Jr., Waterwheel on Main Street and Horseshoe Falls off of Canal Street.

Land use activity varies in type and intensity within the watershed. The upper reaches of the watershed are rural residential and mostly forested, with many cleared areas and several suburban-type subdivisions. The Town's industrial park is within the watershed in the vicinity of a moderately extensive wetlands system. The lower portions of the watershed contain denser commercial and residential development in Terryville Center, the origins of which date back to the industrial revolution.

The CCRPA produced a Pequabuck River Action Plan, endorsed by the Plymouth Conservation Commission and adopted by the CCRPA in 2000. The report identified several locations

Poland River near North Main Street.

in the Pequabuck River watershed within Plymouth for recommended actions for specific sites relating to notable natural areas; recreational, historic and educational resources; and economic development.

Poland River –
The Poland River is a tributary of the Pequabuck River and the Poland River watershed is a subwatershed of the Pequabuck's drainage area. Both watersheds are subwatersheds of the Farmington River regional basin, part of the Connecticut River major basin. The Poland River watershed drains an area of 10.2 square miles, much of which is in the towns of Harwinton and Burlington, with lesser land areas within Bristol and Plymouth. The watershed encompasses 2.4 square miles in Plymouth (11% of the Town's total land area). The Poland River's confluence with the Pequabuck River is close to the intersection of Routes 72 and 6, behind the day care center and post office area. The river runs at a low gradient through much of its course through town, but the watershed it drains is hilly. Forested land and rural residential areas typify the majority of land uses in the watershed. It is of note that much of the drainage area is water supply watershed land of the Bristol Water Company, with surface water reservoirs #2, #3, #4, #5 and #7 (Old Marsh Pond) within the drainage basin. Additionally, a major aquifer underlies the Plymouth portion of the watershed.

Floodplains

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) designed to encourage communities to adopt and enforce a floodplain management program that will regulate activities in flood hazard areas. The objective of the local program is to reduce flood loss by ensuring that activities will not increase the potential for flooding and that new buildings will be protected from future flood damage.

FEMA produces a series of flood maps for communities to utilize in enforcing regulatory standards, which are the basis for floodplain management. These maps delineate flood hazard areas and floodways and include information such as the water elevation during base flood. The map titled FEMA Flood Hazard Areas illustrates the designated 100-year floodplain.

An updated local flood control ordinance was adopted in 1998. The regulations control any activity and development within special flood hazard areas identified on the federal flood maps. The Planning and Zoning Commission perform oversight of regulating flood hazard areas.

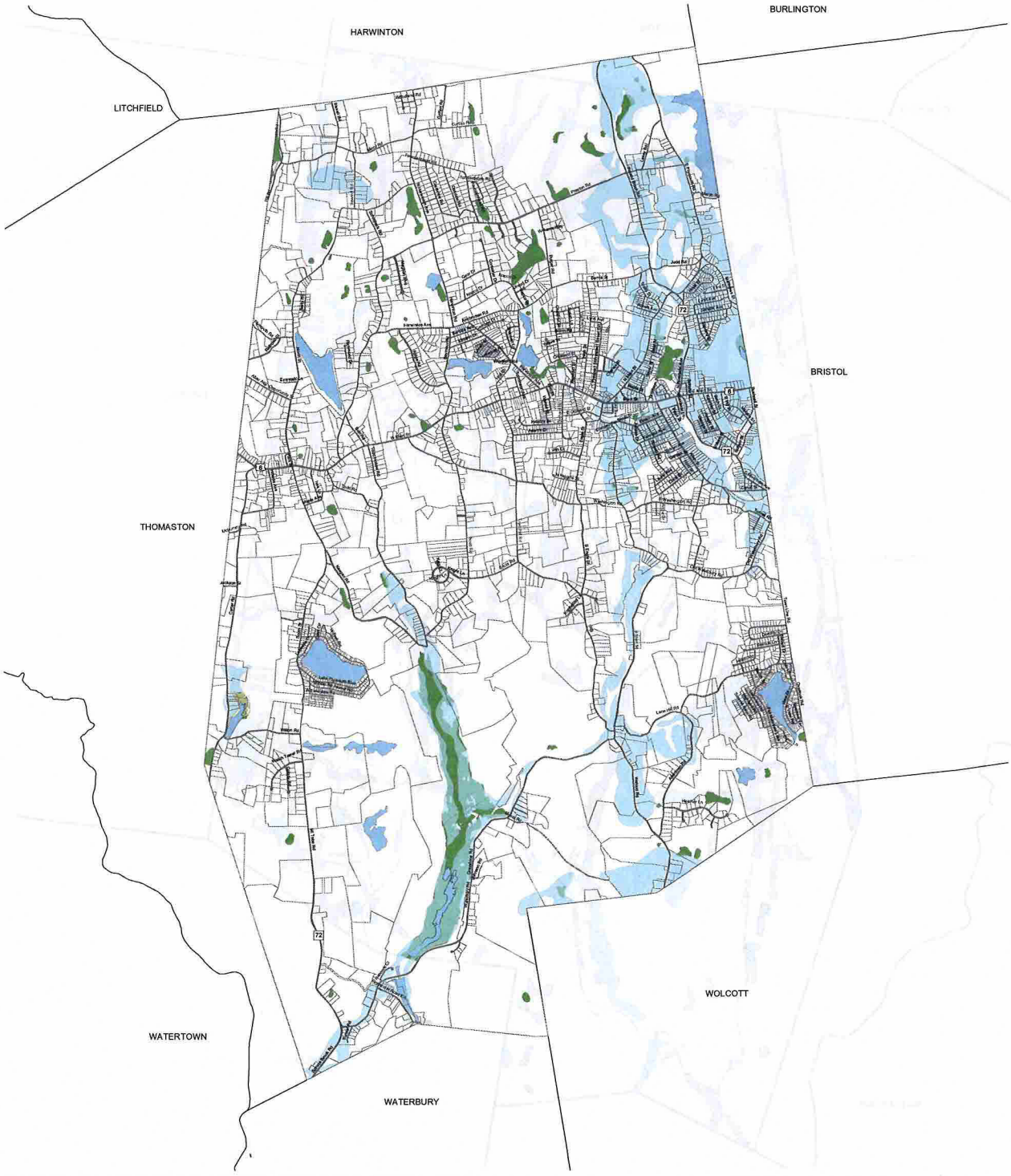
Flood hazard areas are generally considered those areas that can be expected to flood during the occurrence of a base storm. These areas provide for water storage while floodways, which include the channel of a watercourse and adjacent stream banks, allow floodwater discharge. Any activities that will

restrict or increase floodwater flows are specifically prohibited. As with the protection of wetlands, flood hazard areas and floodways are vital elements in stormwater management. Unregulated activities and development within these hazard areas could result in large loss of life and personal property. Therefore, policies affecting land use activities are critical to assuring the maintenance of floodplains and floodways for stormwater discharge and protection of public health.

Town of Plymouth

Plan of Conservation & Development

Map 7. Groundwater Resources



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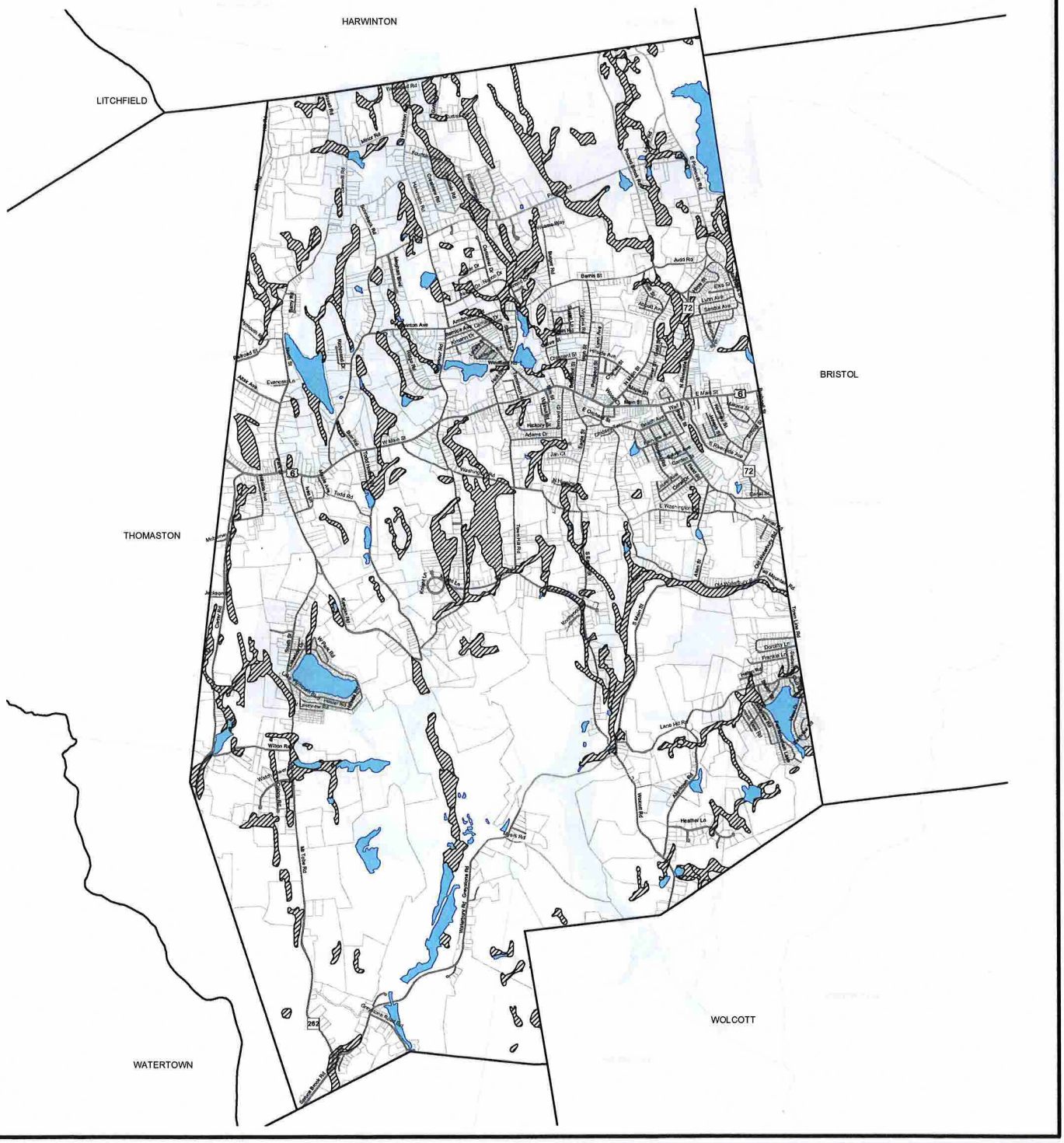
Legend

- Potential Groundwater Resource Areas
- Swamp
- Waterbody

Town of Plymouth

Plan of Conservation & Development

Map 8. Floodplain & Wetland Soil



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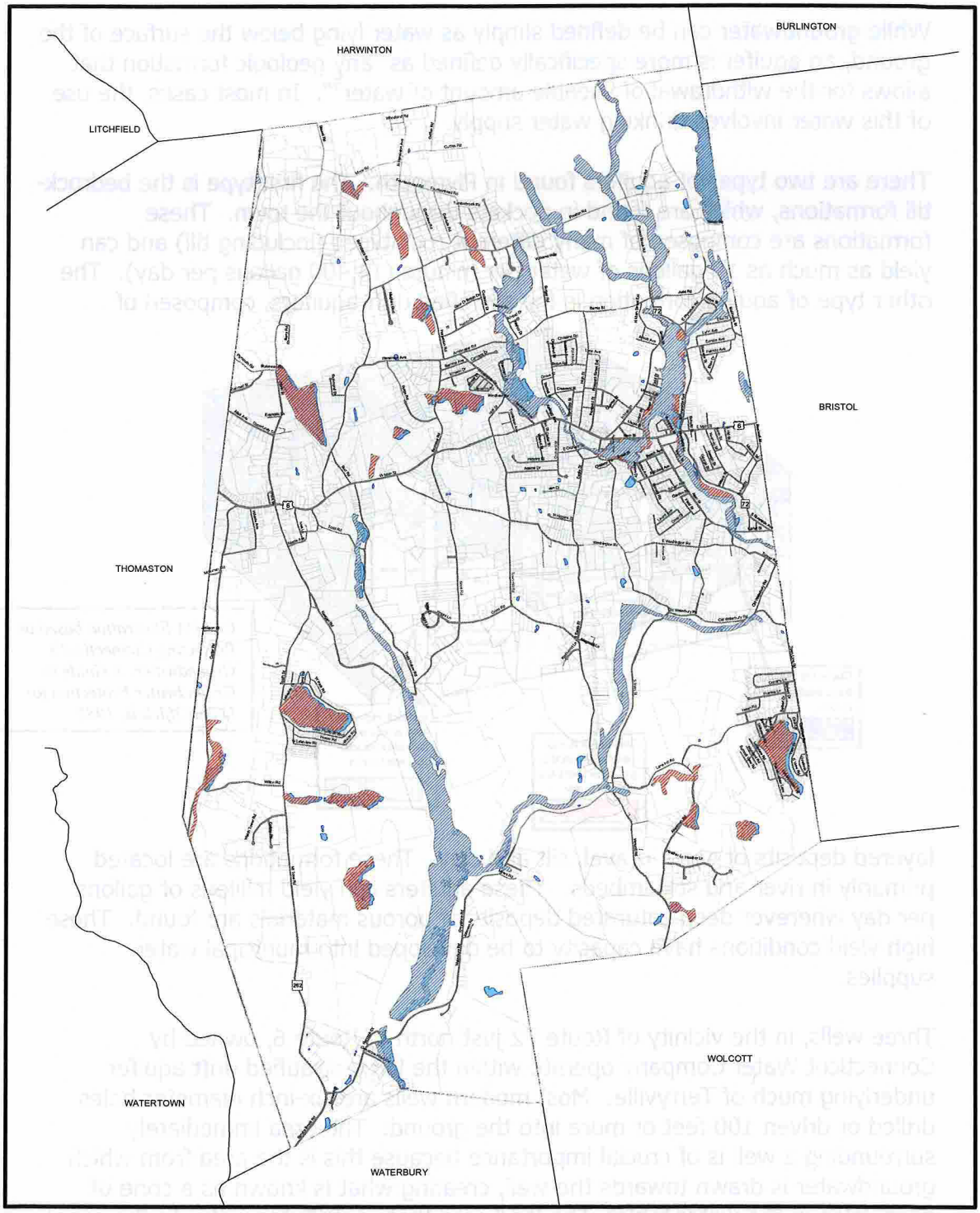
Legend

- Floodplain, Muck and Upland Wetland Soils
- Water

Town of Plymouth

Plan of Conservation & Development

Map 9. FEMA Flood Hazard Areas



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Legend

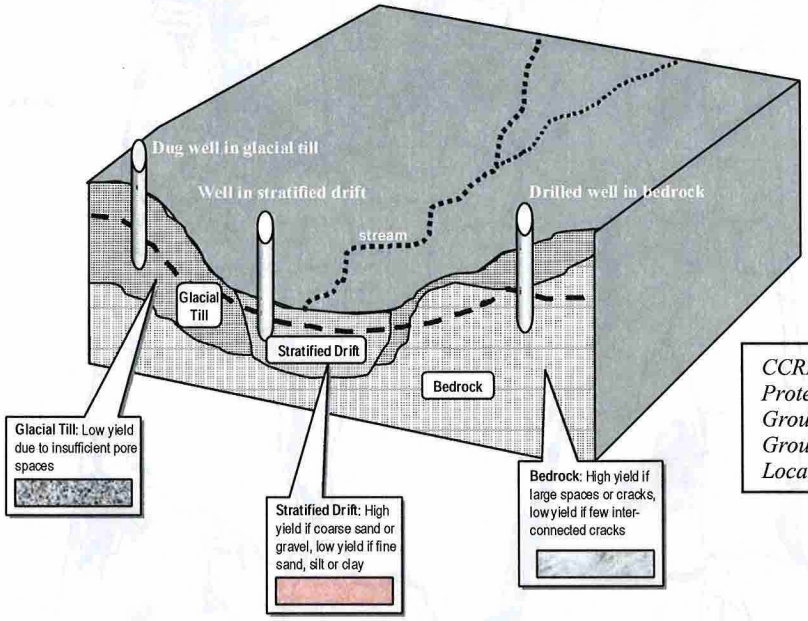
100 Year Flood Zone

500 Year Flood Zone

Aquifers

While groundwater can be defined simply as water lying below the surface of the ground, an aquifer is more specifically defined as "any geologic formation that allows for the withdrawal of useable amount of water[5]". In most cases, the use of this water involves drinking water supply.

There are two types of aquifers found in Plymouth. The first type is the bedrock-till formations, which are found in pockets throughout the town. These formations are composed of many different rock types (including till) and can yield as much as 10 gallons of water per minute (14,400 gallons per day). The other type of aquifer formation is the stratified drift aquifers, composed of



CCRPA Illustration based on Protecting Connecticut's Groundwater: A Guide to Groundwater Protection for Local Officials, 1985

layered deposits of sand, gravel, silt and clay. These formations are located primarily in river and streambeds. These aquifers can yield millions of gallons per day wherever deep saturated deposits of porous materials are found. These high yield conditions have capacity to be developed into municipal water supplies.

Three wells, in the vicinity of Route 72 just north of Route 6, owned by Connecticut Water Company operate within the large stratified drift aquifer underlying much of Terryville. Most modern wells are six-inch diameter holes drilled or driven 100 feet or more into the ground. The area immediately surrounding a well is of crucial importance because this is the area from which groundwater is drawn towards the well, creating what is known as a cone of depression in the water table. The land area that contributes water to the cone

[5] Understanding Groundwater, Protecting a Natural Resource, Conn. DEP, 1998

of depression is called well recharge area and varies in size and shape depending on the type of aquifer tapped and the yield of the well. Because the recharge area of the well is so important to the overall purity of the well water, special care must be taken to protect this area from contamination. The radius of the recharge area surrounding the Terryville wells is 3,000 feet.

Aquifer Protection Areas – Many aquifers across the state are threatened by contamination due to potentially contaminating land uses. Connecticut has established the Aquifer Protection Program (CGS, Section 22a-354a et.sec.). The purpose of this program is to identify critical water supply areas and to protect them from pollution be managing land use. Thus, DEP, working with local and regional water authorities, have identified over 120 Aquifer Protection Areas (APA) around the state, one of which is in Plymouth.

These areas must meet requirements that stipulate that these stratified drift aquifers contain public water supply wells that serve more than 1,000 people. Limits on particular land uses within the aquifer protection area are in the process of being drafted by DEP. The map entitled *Groundwater Resources* depicts areas in Town with high potential for public water supply wells including the large aquifer in Terryville. Such potential resources coincide with the surficial geology of gravel and sand deposits that favor establishment of water supply wells. Connecticut Water Company identifies a future source for groundwater supply within the aquifer located in the northwestern part of the Town, adjacent to Sawmill Road.

Farmland and Forest Land

Farmland – The suburbanization of Connecticut, especially in the last 50 years, has pitted two competing land uses against one another for usable acreage. Fore ease of development, residential and commercial projects seek the same physical land and soil conditions as agricultural concerns. Financial pressures due to increasing operational costs often lead to a selling off of farmland in favor of other development. Every year, Connecticut acres dedicated to agriculture declines steeply. A total of 13% of the land in Plymouth was considered agricultural in 1997.

Qualifying parcels of farmland may participate in the incentive program provided by Public Act 490, which allows lands containing farms, forests or open space to receive lower local property taxation base on the land's current use and not on its market value. Such valuation is based on what the land is actually used for, not what the land might potentially be worth on the real estate market. Thus, for the farmer one financial burden is eased. However, participation in the program does not protect the agricultural use of the land, since the owner maintains the right to sell the property, but with a conveyance tax requirement.
Forest Land – Forests are biological resources with many environmentally

Town of Plymouth

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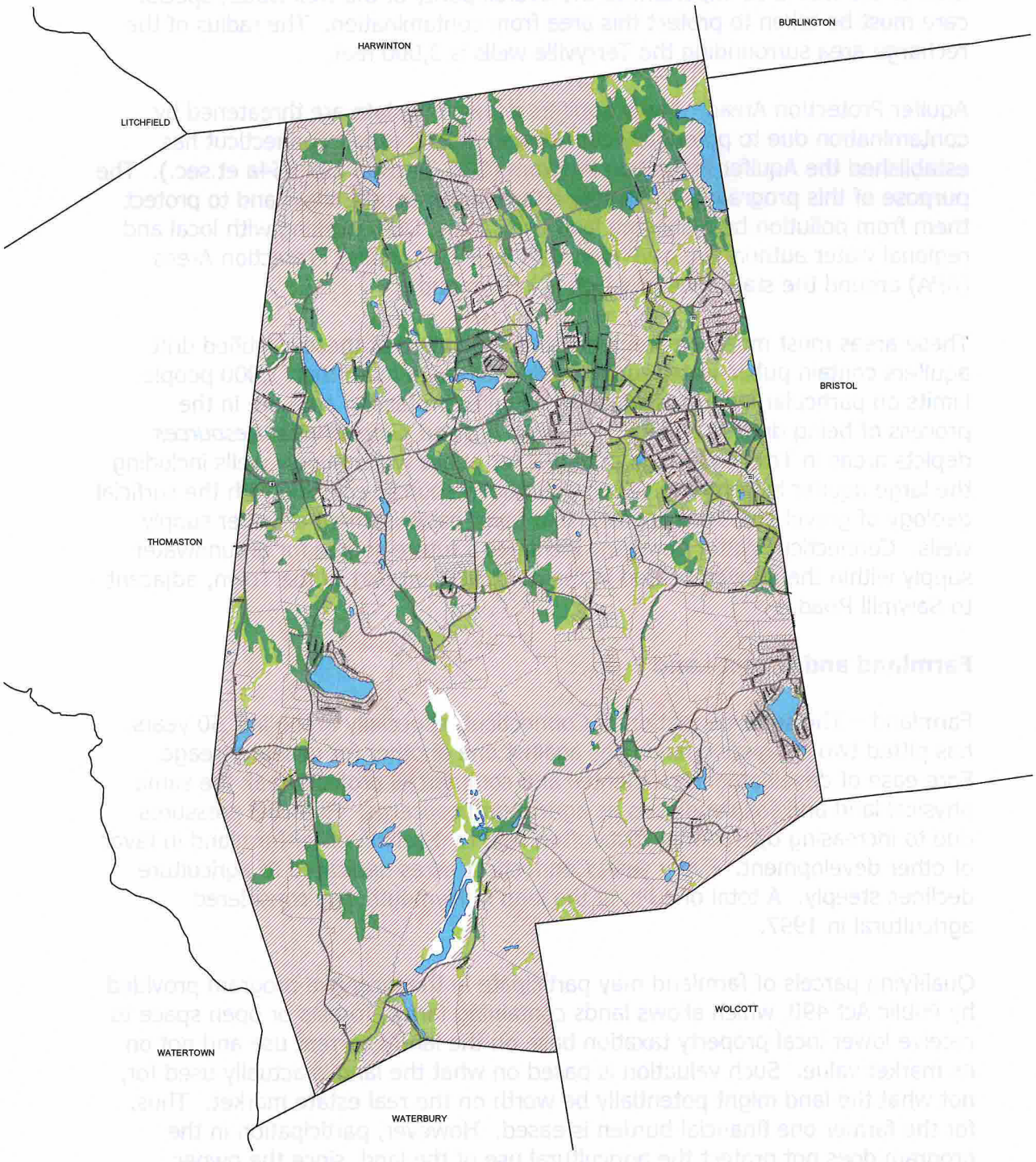
Map 10. Prime & Statewide Farmland Soil



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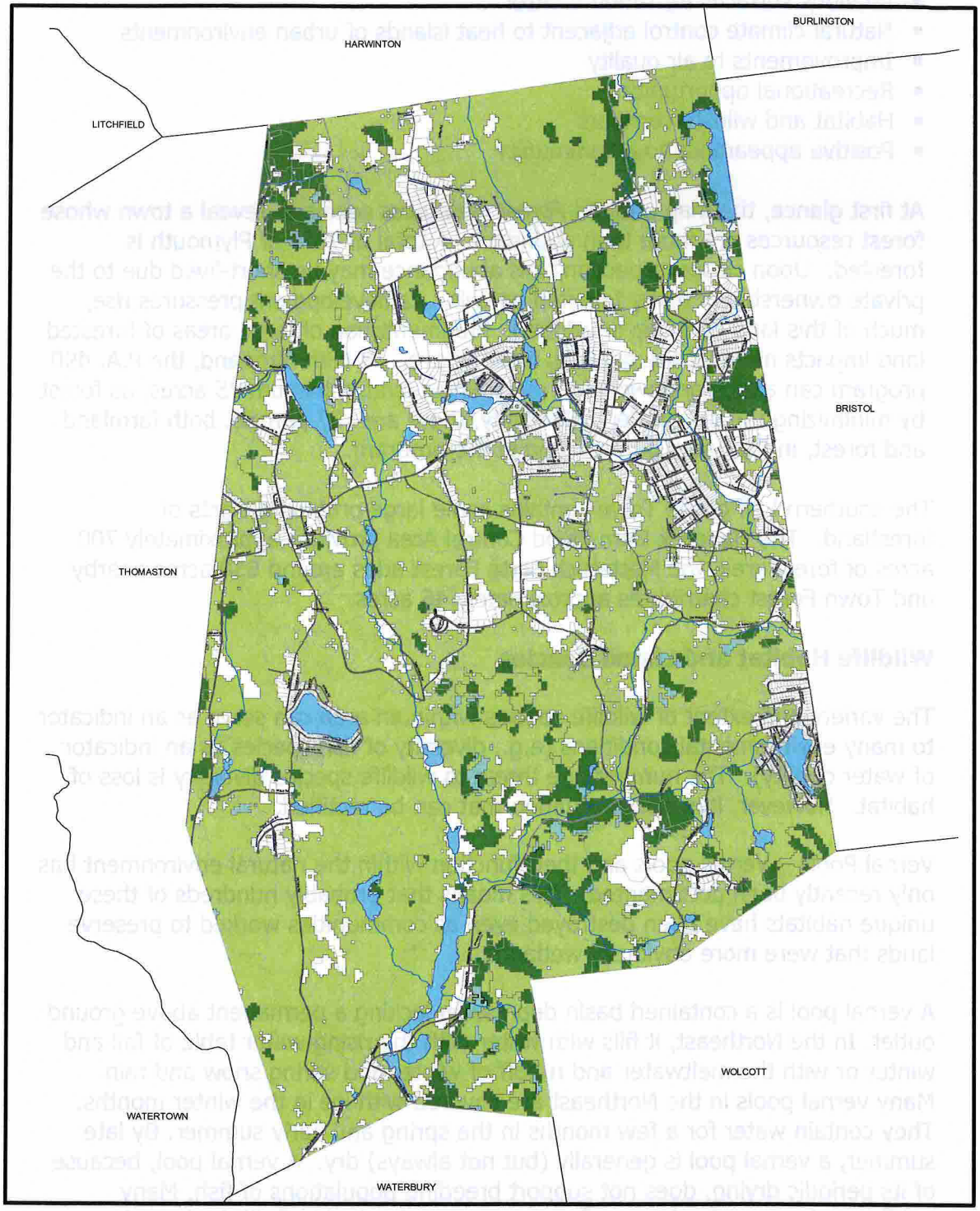
Legend

- Prime Farmland Soils
- Water
- Additional Statewide Important Farmland Soils
- Not Prime or Not Statewide Important Farmland Soils

Town of Plymouth

Plan of Conservation & Development

Map 11. Forest Land Cover



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Legend

- Coniferous Forest
- Deciduous Forest & Mt. Laurel
- Forest / Clear Cut
- Mixed Forest

significant qualities. They provide:

- Green buffers between developed land uses
- Pervious surfaces for runoff control
- Natural climate control adjacent to heat islands of urban environments
- Improvements to air quality
- Recreational opportunity
- Habitat and wildlife corridors
- Positive appearance to a community

At first glance, the map entitled *Forest Resources* seems to reveal a town whose forest resources are more than abundant. A total of 73% of Plymouth is forested. Upon closer inspection, this abundance may be short-lived due to the private ownership of many forested parcels. As development pressures rise, much of this land could be developed. Fragmentation of large areas of forested land impacts many of the qualities listed above. As with farmland, the P.A. 490 program can assist landowners in maintaining land, minimum 25 acres, as forest by minimizing the tax burden. Currently, there are 127 parcels, both farmland and forest, in Plymouth participating in the program.

The southern half of the Town contains some large protected tracts of forestland. The Hancock Dam Flood Control Area provides approximately 700 acres of forest area, the Mattatuck State Forest adds around 650 acres nearby and Town Forest contributes approximately 46 acres.

Wildlife Habitat and Listed Species

The variety and extent of wildlife species within an area can serve as an indicator to many environmental conditions (e.g., diversity of fish species as an indicator of water quality). The number one threat to wildlife species diversity is loss of habitat. However, it is also a situation that can be rectified.

Vernal Pools – Vernal pools and their function within the natural environment has only recently been documented. This means that probably hundreds of these unique habitats have been destroyed even as communities worked to preserve lands that were more obviously wetlands.

A vernal pool is a contained basin depression lacking a permanent above ground outlet. In the Northeast, it fills with water with the rising water table of fall and winter or with the meltwater and runoff of winter and spring snow and rain. Many vernal pools in the Northeast are covered with ice in the winter months. They contain water for a few months in the spring and early summer. By late summer, a vernal pool is generally (but not always) dry. A vernal pool, because of its periodic drying, does not support breeding populations of fish. Many organisms have evolved to use a temporary wetland which will dry but where they are not eaten by fish. These organisms are the "obligate" vernal pool

species, so called because they **must** use a vernal pool for various parts of their life cycle. If the obligate species are using a body of water, then that water **is** a vernal pool. In New England, the easily recognizable obligate species are the fairy shrimp, the mole salamanders and the wood frog.

Protection of vernal pools is difficult since for most of the year the pools are dry and have no inlet or outlet. Further, it is not incumbent upon the regulatory agency (Inland Wetlands Commissions) to identify and delineate these areas, rather it up to applicants who may overlook these areas. In Connecticut, only the Town of Haddam has instituted a proactive approach to identifying vernal pools before site specific applications are received.[6]

Endangered, Threatened, And Species of Special Concern – Inventories conducted by the Connecticut Department of Environmental Protection, based on goals established by Public Act 89-224 (1989), produced finalized lists and maps in 1998.

The three classifications are defined as follows:

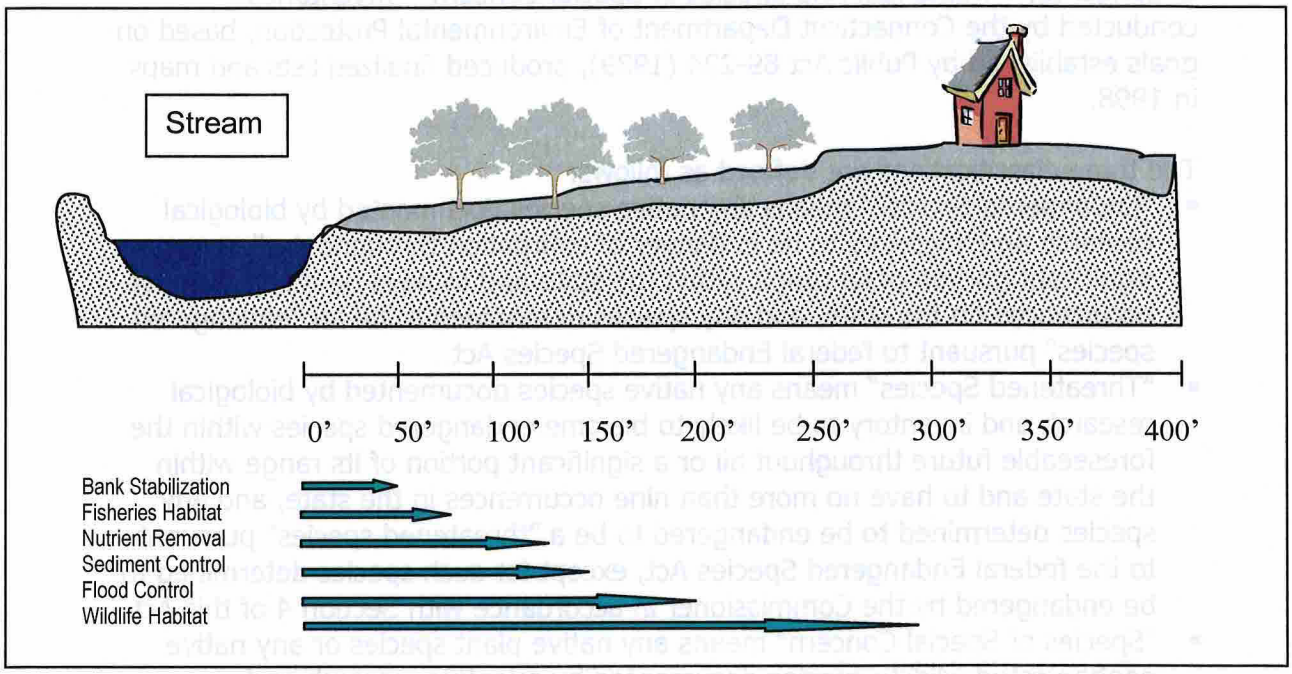
- "Endangered Species" means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences tin the state, and any species determined to be an "endangered species" pursuant to federal Endangered Species Act.
- "Threatened Species" means any native species documented by biological research and inventory to be likely to become endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be endangered to be a "threatened species" pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with Section 4 of this Act.
- "Species of Special Concern" means any native plant species or any native nonharvested wildlife species documented by scientific research and inventory top have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would detrimental to conservation of its population or has been extirpated from the state.

Much of the State's inventory is based on very old recordings of sightings, which have been documented and mapped, but unsubstantiated since initial sightings. Much of the areas noted then may already have suffered habitat alteration, and the species in question may not be present.

[6] Here Today, Gone Tomorrow? Connecticut's Vernal Pools, A Policy Guide to Ephemeral Wetlands Protection, Center for Coastal & Watershed Systems, 1998

Riparian Corridors – Riparian corridors, or riparian buffers, are undisturbed, naturally vegetated areas contiguous with and parallel to rivers and streams. The benefits of riparian buffers include protection of water resources by improving water quality through filtering pollutants and sediments, stabilizing stream banks and riverbeds, and improving wildlife habitat by providing travel corridors and improving aquatic habitat.

The recommended buffer width of riparian corridors varies depending on the goal of the buffer. The illustration below depicts recommended widths for specific uses.



Scenic Views

Viewsheds can be termed natural resources for conservation consideration. A scenic view may be considered a noteworthy for natural features or historic features. A viewshed also assumes that there is an access point to the view, usually a road.

For state roads, the Connecticut Department of Transportation established the scenic road program. With a scenic road designation, that particular route and its scenic qualities are inventoried. While this state designation does not provide protections to the scenery or the qualities of the scenic road, more carefully considered reviews are required when development and/or road improvements are contemplated. Nominations to the program are reviewed by the Scenic

Roads Advisory Committee and forwarded to the Commissioner for action.

Review of Recommendations from the 1993 Plan of Conservation and Development -

The 1993 Plan listed as a general theme "Protect Natural Resources." For the goal of "Guide development to protect and enhance natural and cultural features so as to preserve such resources as water supply, flood plains, wetlands and open spaces," objectives were listed as follows:

"Develop an Open Space Preservation Plan with implementation guidelines relating to acquisition, conservation easements, and use of updated regulations." While regulations are continuing to evolve regarding conservation and preservation of natural resources, a formal open space plan with acquisition and funding strategies has not been formulated.

"Update zoning regulations to provide for aquifer protection, especially for the Terryville well fields." While waiting for State DEP guidelines for aquifer protection to be finalized, no formal regulation enacted by the Town has been incorporated into the zoning regulations.

"Update zoning requirements to recognize limitations presented by natural constraints such as topography, wetland areas, and flood plains." Such constraints as stated above are subject to updated modification by the Town and have been incorporated into the appropriate regulations.

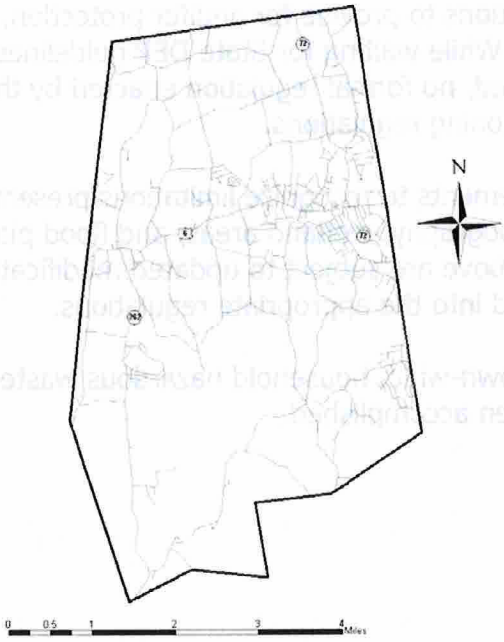
"Institute a periodic, town-wide, household hazardous waste pickup/disposal program." This has been accomplished.

Transportation

Introduction

Transportation systems have a profound effect on a town's population, employment, economics and quality of life. This chapter illustrates key details of Plymouth's transportation system with data derived from a variety of sources. These data are presented for review, analyzed for key findings and restated for convenient reference for other stages of the Plan process.

As of December 31, 2001, the town of Plymouth maintained 81.03 miles of road. The State of Connecticut maintained an additional 12.02 miles[7]—U.S. Route 6 and State Routes 72 262 and 222. Plymouths roads are shown on Map 1.



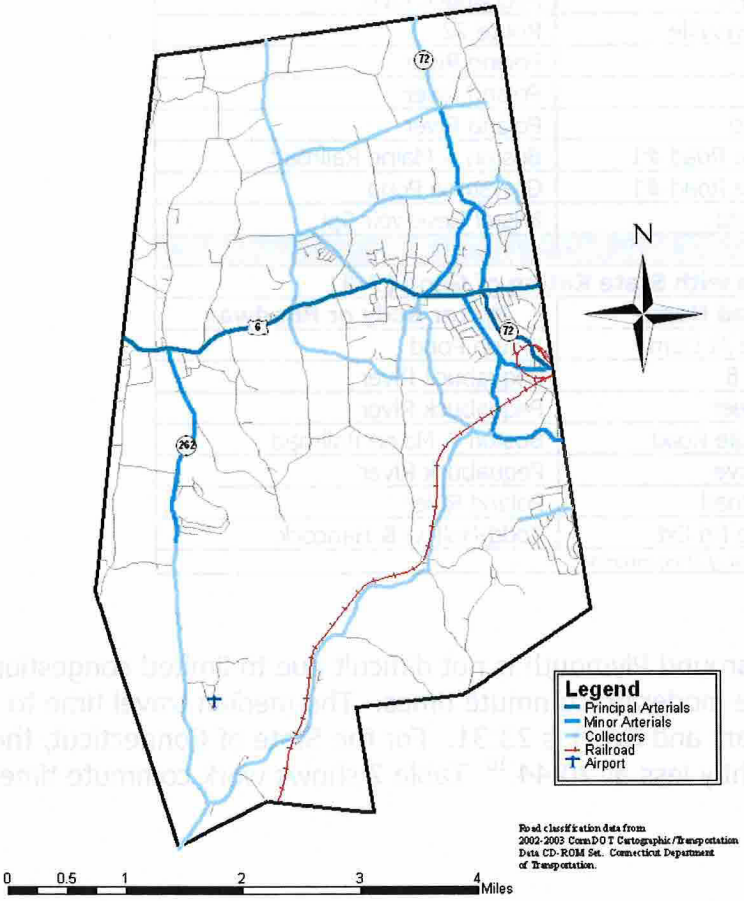
Map 1: Plymouth Roads

[7] Connecticut Department of Transportation

Road Infrastructure

Map 2 below shows road classifications. Route 6 is the Town's only Principal Arterial. No limited access highways or freeways run through Plymouth. Also shown is the Boston and Maine Railroad, the only rail line in town. This line carries freight but does not carry passengers. The Waterbury Plymouth Airport is shown as well.

The town's major source of congestion is Route 6. The majority of Route 6 is at least 10 percent over capacity and is projected to remain so through 2025.[8] Traffic congestion is not otherwise a major problem.



Map 2: Roadway Classification, Railroad and Airport

[8] Connecticut Department of Transportation.

There are many bridges located in Plymouth. Table 1 shows the 20 State-owned bridges over 20 feet in length. Two of these bridges are listed as being in poor condition. There is one state-recognized historical bridge in Plymouth, a concrete arch bridge on Tunnel Road, Allen Street and South Main Street built in 1910.[9]

Table 1: State-Owned Bridges Over 20 Feet in Length		
Bridges with State Rating of Poor (0-4)		
Rating	**Road Name**	**Water Body/ Roadway**
4	Route 72	Poland River
4	Bemis Street	Pequabuck River
Bridges with State Rating of Fair (5-6)		
Rating	**Road Name**	**Water Body or Roadway**
5	Route 72	Marsh Brook
5	North Main Street	Poland River
6	US Route 6	Pequabuck River
6	US Route 6	Pequabuck River
6	B & M Terryville	Route 72
6	Route 72	Poland River
6	Route 72	Poland River
6	Judd Road	Poland River
6	Greystone Road #1	Boston & Maine Railroad
6	Greystone Road #1	Greystone Pond
6	Marsh Road	Bristol Reservoir Spl
Bridges with State Rating of Good (7-9)		
Rating	**Road Name**	**Water Body or Roadway**
7	Wilton Rd At Dam	Wilton Pond
7	Us Route 6	Pequabuck River
7	Canal Street	Pequabuck River
7	South Eagle Road	Boston & Maine Railroad
7	Napco Drive	Pequabuck River
7	Preston Road	Poland River
8	Greystone Rd Ext	Todd-Hollow & Hancock
Source: Connecticut Department of Transportation		

Traveler Access

Automobile travel around Plymouth is not difficult due to limited congestion. Most travelers have moderate commute times. The median travel time to work (for workers 16 years and over) is 23:31. For the State of Connecticut, the median time is slightly less at 20:44.[10] Table 2 shows work commute time in more detail.

[9] Connecticut Historic Bridge Inventory, Final Report: Inventory Phase. State of CT, Department of Transportation. December, 1990.

[10] 2000 US Census.

Table 2: Travel Time to Work for Workers 16 Years and Over	
Less than 10 minutes	583 (9.8%)
10 to 19 minutes	1,722 (28.9%)
20 to 29 minutes	1,429 (24.0%)
30 to 44 minutes	1,233 (20.7%)
45 to 59 minutes	514 (8.6%)
60 to 89 minutes	314 (5.3%)
90 or more minutes	78 (1.3%)
Worked at home	82 (1.4%)
Total	5,955
Source: 2000US Census	

While Plymouth has an extensive road network, it is important to determine access to other modes of transportation. Pedestrian access is limited by the fact that many roads do not have sidewalks. Bicycle access is limited by the fact that there are no bicycle lanes in Plymouth. Some roads, however, have adequate width and low enough speed and traffic volume to accommodate vehicles and bicycles. There is no public transportation in Plymouth.

Some residents do not have access to an automobile. In Plymouth, 3.84% (171 total) households have no access to a vehicle.[11] This is significantly less than the statewide average of 9.57%.

Traveler Behavior

Table 3 shows what mode workers 16 and over use to travel to work. The vast majority, nearly 90%, drive alone while less than two percent walk, bicycle or use public transportation.[12]

Table 3: Means of Transportation to Work for Workers 16 Years and Over		
	Plymouth	**State**
Drove alone	5,295 (88.9%)	80.0%
Carpooled	447 (7.5%)	9.4%
Public transportation	18 (0.3%)	4.0%
Motorcycle	14 (0.2%)	0.0%
Bicycle	0 (0.0%)	0.2%
Walked	92 (1.5%)	2.7%
Other means	7 (0.1%)	0.5%
Worked at home	82 (1.4%)	3.1%
Total	5,955	1,640,823
Source: 2000US Census		

[11] Ibid.
[12] Ibid.

Safety

The Connecticut Department of Transportation creates a list of high-accident locations called the State List of Suggested Surveillance Sites (SLOSSS). None of the listed road segments or intersections is in Plymouth.[13] However, this list is only inclusive of State-maintained roads. Care should be taken to assure that all roads are safe.

For the same period of the aforementioned SLOSSS, 1998-2000, CCRPA found all incidents of severe injury and deaths on Plymouth's State-maintained roads.

Table 4: Deaths and Severe Injuries on State Roads, 1998-2000[14]

ROUTE	From Mile	To Mile	Deaths	Severe Injury	TOTAL
6	41.28	41.28		5	5
6	42.85	42.85		4	4
6	41.83	41.83		2	2
6	43.79	43.9		2	2
72	12.25	12.39	1	1	2
6	42.43	42.44		1	1
6	43.13	43.18		1	1
6	43.52	43.52		1	1
6	43.78	43.78		1	1
6	44.08	44.08		1	1
6	40.83	41		1	1
6	41.86	41.86		1	1
6	43.53	43.6		1	1
72	14.74	15.71		1	1
262	8.74	8.74		1	1

Zoning Code Off-Street Parking Requirements

Inclusion of parking requirements in a zoning code is necessary because it is important to assure that a use is not creating spillover parking in the community. Plymouth has the following parking requirements in its zoning code:

- Single family detached residencies: At least two spaces per dwelling unit plus two spaces for an accessory home occupation or principal agricultural use.
- Buildings or open stands for displaying of agricultural products: At least one space for each five feet of front wall of such building or stand.
- Churches, public buildings: At least one space for each 200 square feet of floor area but not less than one spaces for each five seats provided.

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[13] Connecticut Department of Transportation.

[14] Severe injuries indicate injuries are incapacitating injuries as defined by the Connecticut Department of Transportation "(i.e., severe lacerations, broken or distorted limbs, skull or chest injures, abdominal injuries, unconsciousness at or when taken from the accident scene, unable to leave the accident scene without assistance)".

- Schools: At least one space for each 12 seats or students.
- Golf courses or country clubs: At least one space for each two members or accommodations such as lockers.
- Telephone exchanges, substations: At least one space for each two employees or 300 square feet of floor area, whichever is less.
- Theaters: At least one space for each five seats.
- Undertakers: At least one space for each two employees, five spaces for each chapel.
- Restaurant: At least one space for each five seats
- Offices and retail & service establishments: At least one space for each 300 square feet of floor area in such use.
- Manufacturing: At least one space for each 350 square feet of gross floor area or two employees, whichever is greater.

Progress Since the 1993 Plymouth Plan of Development

Some of the following recommendations were made in the 1993 Plan of Development:

- Route 6 intersection improvements (Riverside Ave., Maple St., N. Main St., Harwinton Ave., Town Hill Rd., Seymour/Scott, Burr Rd., Todd Hollow Rd., Carter Rd., Allen St., S. Main St., Agney Ave.): A corridor study of Routes 6 and 72 was completed in 1999 and contained conceptual design improvements at many of the aforementioned intersections. Improvements have been made to the intersection at Allen Street along with the intersection at Seymour and Scott.
- Provision of alternate routes to Route 6: A feasibility study conducted by ConnDOT concluded unfavorably for a Route 6 bypass.
- Minimizing Route 6 curb cuts: No progress has been made.
- Changes in Road Design Standards:

	Existing		Proposed	
	ROW	**Paved**	**ROW**	**Paved**
Primary Arterial	Varies	Varies	Varies (60 min)	Varies (36 min)
Collector	60	40	50	30
Local	50	30	50	24 to 30
Limited Local	N/A	N/A	50	24

These standards have been used. The paved standard is 28 feet.

Provide right-of-way of 70 feet (80 ft. on Route 6) within 300 feet of intersections of arterials/collectors. The minimum pavement width at these locations should also be increased as needed to accommodate existing or projected traffic volumes and turning movements: Some progress has been made.

Allow temporary cul-de-sacs only in locations where it is virtually certain that the road will be extended at some point in the future and do not permit permanent cul-de-sacs where there is a need for future road connections. Cul-de-sac standards: This has been done.

	Existing	**Proposed**
Temporary cul-de-sac	400 feet	None specified
Permanent cul-de-sac	400 feet	1000 feet or 20 lots, whichever is more restrictive
Cul-de-sac radius	70' ROW radius, 60' paved radius	ROW and paved radius equal to road standard

Permanent cul-de-sacs are allowed up to 1500 feet.

Community Facilities and Services

Community Facilities Inventory

The operation of governmental and community functions within Plymouth depends largely on the availability and capability of facilities and support infrastructure. Monitoring areas of growth and need for various community facilities on a regular basis can help to forecast types and costs of major capital investments.

General Government Facilities

All of the functions of municipal government and services need facility spaces of certain required sizes. The needs change over time as population characteristics and growth areas change. The Plymouth Town Hall houses many governmental functions and services such as:

- Assessor
- Building Department
- Comptroller's Office
- Judge of Probate
- Land Use Department
- Mayor's Office
- Parks and Recreation Department
- Public Works Department
- Senior Center
- Tax Collector
- Town Clerk

244 Main Street offices

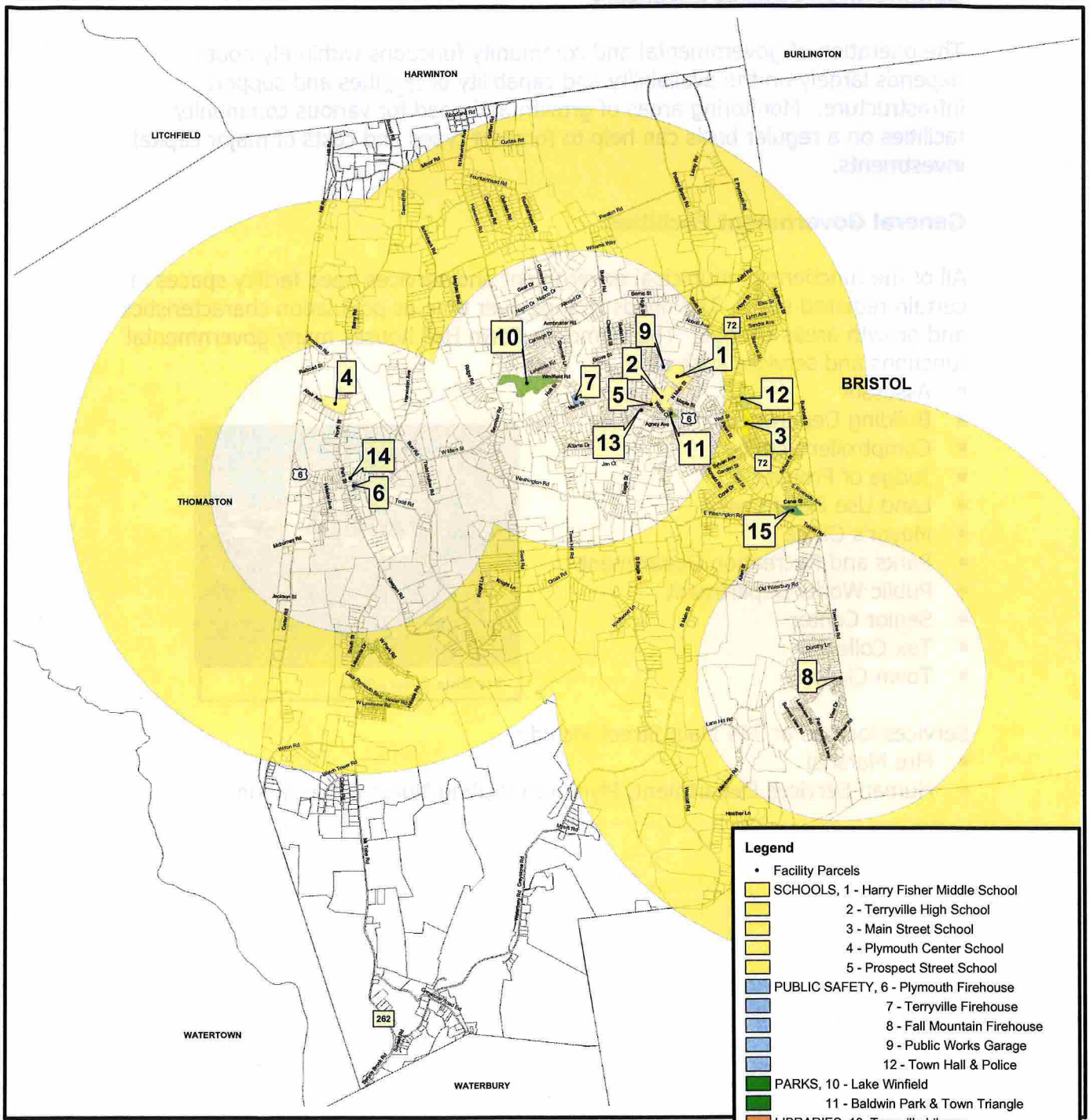
Services located at 244 Main Street include:

- Fire Marshal
- Human Services Department, Plymouth Visiting Nurses Association

Town of Plymouth

Plan of Conservation & Development

Map 1. Community Facilities



Legend

- Facility Parcels
- SCHOOLS, 1 - Harry Fisher Middle School
- 2 - Terryville High School
- 3 - Main Street School
- 4 - Plymouth Center School
- 5 - Prospect Street School
- PUBLIC SAFETY, 6 - Plymouth Firehouse
- 7 - Terryville Firehouse
- 8 - Fall Mountain Firehouse
- 9 - Public Works Garage
- 12 - Town Hall & Police
- PARKS, 10 - Lake Winfield
- 11 - Baldwin Park & Town Triangle
- LIBRARIES, 13, Terryville Library
- 14, Plymouth Library
- Waste Water Treatment Plan, 15 - Plymouth WPCF

Buffer Distance

- 1 Mile Buffer
- 2 Mile Buffer

Source:
CCRPA;
Connecticut DEP
Environment & Geographic Information Center 2003

0 0.5 1 2 Miles

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This map is developed for planning purposes only.

The 1993 Plan of Development cited space concerns on the lower level of town hall between the Senior Center and Police Department. The 1993 Plan recommended a study be initiated to review the needs for the senior facilities in one to three years (1994 to 1996). Besides the senior center at town hall, similar facilities exist at the elderly housing complexes in the town. While facilities for the seniors at town hall may not need immediate attention, facilities for housing police functions may prove to be the more pressing. Those aforementioned needs are explored under the *Police Protection* segment of this Chapter.

Town Hall from the south on Main Street.

Public School System

The Plymouth Public School system currently consists of five schools:

- Harry S. Fisher School (grades 6-8)
- Main Street School (grades 3-5)
- Plymouth Center School (grades PreK-5)
- Prospect Street School (grades PreK-2)
- Terryville High School (grades 9-12)

Enrollments at the existing schools are as follows:

Table 1: Plymouth School Enrollment by School and Grade: October 2003

School	Pre-K	K	1	2	3	4	5	6	7	8	9	10	11	12	Sub-total
Main St.					59	62	64								185
Plymouth Center	12	62	69	80	80	90	99								492
Prospect St.		57	61	65											183
Fisher								155	171	165					491
Terryville H.S.											176	156	119	110	561
TOTAL	12	119	130	145	139	152	163	155	171	165	176	156	119	110	1912

Source: Plymouth Superintendent of Schools Office

In 1992, a long-range, school facilities study was completed, which endorsed the following:

- Close Prospect Street School and Main Street School, and building a new elementary school (pre-K to grade 5) with enrollment capacity for approximately 600.
- Expand and bring up to code the Plymouth Center School to accommodate a

pre-k through grade 5 population of approximately 600. (Such recommendation has been accomplished).

- Determine that the Harry S. Fisher School remains a middle school.
- To upgrade Fisher Middle School through code update and expansion to follow elementary school projects.
- To consider, for the future, the acquisition of a site for the construction of a new Plymouth/Terryville High School, to be completed approximately in the year 2000.

The current Terryville High School was built in 1950 and expanded in 1966 and 1985. The site is 7.4 acres, with severe limitations on expansion. The State of Connecticut recommends a 26-acre site for high schools the size of Terryville High School. Space requirements relate not only to school age population growth but also to facility needs of new technologies requiring more space, such as science labs, vocational programs, etc.

The current long-range plan for the public school system includes:

- Building a new high school facility.
- Performing a renovation/code update at the existing high school facility.
- Moving the grades 6-8 student population from the Harry S. Fisher School to the present Terryville High School site.
- Closing Prospect Street and Main Street Schools, and sending those students to the Harry S. Fisher School facility, which was originally built as an elementary school.

Enrollment projections as prepared by the Connecticut State Department of Education are as followed:

Table 2: Projected Enrollment by Grade: 2004-2013

Year	PreK	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
2004-05	29	100	104	124	147	154	158	177	159	171	147	146	125	91	1832
2005-06	29	121	105	108	128	151	156	175	178	159	156	123	129	106	1824
2006-07	29	90	127	109	112	132	152	168	176	178	145	131	109	109	1767
2007-08	29	104	95	132	113	115	133	167	169	176	163	121	116	92	1725
2008-09	29	96	109	99	137	116	116	159	168	169	161	137	107	98	1701
2009-10	29	99	101	114	103	141	117	129	160	168	155	135	121	91	1663
2010-11	29	97	104	105	118	106	142	130	130	160	154	130	119	103	1627
2011-12	29	97	102	108	109	121	107	156	131	130	146	129	115	101	1581
2012-13	29	97	102	106	112	112	122	120	157	131	119	122	114	98	1541
Total	261	901	949	1005	1079	1148	1203	1381	1428	1442	1346	1174	1055	889	

Source: Connecticut State Department of Education

While total enrollments are projected to decrease, the enrollment projections for near term and mid-term show increases that will impact Fisher Middle School on strictly a student capacity standpoint. In that regard, the proposal to move the middle grades to the present high school site could be warranted. Similarly, decreasing projections for the lower elementary grades might warrant some

facility consolidation.

Parks and Recreation

Recreational facilities, for the most part, account for much park space. Parks can house opportunity for passive and/or active recreation. Parks also are part of a town's open space inventory, a subject apart from recreational activities. Recreational programming can, and does, utilize other sites, such as schools.

Dedicated recreational space within a community can roughly follow the national standards for recreation of 10 acres per 1,000 population, according to guidelines of National Parks and Recreation Association (NPRA). The NPRA has established a set of recreation standards based on the size of a community and ratio of facilities to population. These standards establish a minimum baseline for recreation opportunities and must be modified to reflect the specific needs of each individual community. For example, if there are no organizations or individuals vocalizing a need for badminton courts, then the standard for badminton courts may be modified to reflect the popularity of the activity, or lack thereof, in the community. Conversely, standards can also be increased if one activity, such as soccer, is more popular and has a larger number of participants in a particular community. Survey instruments can be useful to ascertain the recreational needs of the community in terms of facilities. The following table illustrates the more popular activities from the NPRA standards with recommended service areas.

Table 3: NPRA Recreational Standards and Service Areas

Activity	Facility/Population	Service Area
Baseball	1/5,000 or 1 lighted/30,000	¼ to ½ mile
Basketball	1/5,000	¼ to ½ mile
Football	1/20,000	15-30 minutes travel time
Ice hockey	1/100,000 (indoor)	½ to 1 hour travel time
Soccer	1/10,000	1-2 miles
Softball	1/5,000	¼ to ½ mile
Swimming pool	1/20,000	15-30 minutes travel time
Tennis	1/2,000	¼ to ½ mile
Volleyball	1/5,000	¼ to ½ mile

Source: Interim Community Facilities and Programming, The Johnson Hill Land Ethics Studio, 2002

The NPRA standards relate only to public facilities and do not take into account the presence of private facilities that may be accessible to the entire population of community. Another factor to consider is the availability of facilities accessible in neighboring communities.

Table 4: Parks with Recreational Opportunities			
Name	Approx. Size in Acres	Passive Recreation	Active Recreation
Baldwin Park	3	Walking	None
Lake Winfield Recreation Area	27	Walking, bird watching	Swimming, jogging
Veterans Memorial Playground	3	None	Children's playground

Source: Municipal Records

Lake Winfield Recreation Area

Schools with publicly accessible recreational facilities are listed below in Table 4:

Table 5: School-based Recreational Facilities	
School	Facilities
Main Street School	Playground, softball field
Prospect Street School	Playground, tennis courts (2)
Plymouth Center School	Playground, basketball court, all-purpose field
Fisher Middle School	Soccer, track, softball, additional soccer and baseball fields under reconstruction
Terryville High School	Baseball field

Source: Plymouth Public Schools, Board of Education

The recent addition of a soccer field adjacent to the Hancock Brook Dam added to the mix of recreational opportunities found in the community.

Playing fields and trails are part of the plans for the Phase III of the Town's Industrial Park, and appear in the Year 2001 Update to the Capital Improvement Plan (CIP). Specifically, the CIP estimates $460,000 for two Little League fields, and a soccer field, with accompanying parking. The trails system is estimated at $130,000 in the CIP. Currently, such projects are not ranked as urgent.

Development of the proposed Waterwheel Park would add to the mix of passive recreational activities in Town by creating additional walkways in the area of the Eli Terry, Jr., Waterwheel and the Pequabuck River.

Neighborhood parks which offer playing fields and/or playscapes, including

"boundless" playscapes, may need to be considered if residential development patterns disperse through town. Hernando County, Florida, imposes impact fees to new residential subdivisions to provide funds for needed neighborhood recreational facilities.

Sanitary Sewer System

Properties serviced by public sewers have expanded out from the more dense development of the Route 6 corridor both north and south. Additionally, sewer service for the lake communities of Lake Plymouth and Fall Mountain Lake were crucial to public and environmental safety, as well as preserving the viability of the dense residential nature of those areas.

The map entitled *Public Sewered Areas* illustrates the current service areas, including those that could easily connect to the system. Expansion of the system to address public safety inadvertently opens other areas up to development of a somewhat denser nature, which may or may not be desirable.

The Capital Improvement Plan (CIP) dated February 2002, noted a critical situation on Knollwood Lane, and the need to provide public sewers in this neighborhood of failing on-site septic systems. The 1993 Plan of Development recommended that the Town work on a Master Sewer Plan. Such plan has not been developed. A master plan would ideally be complementary to the Plan of Conservation and Development, because the provision of sanitary sewers to properties has implications on the character, density and type of development that occurs in that area of town.

Water System

The availability of public water also has implications on development types and densities. Public water is supplied by systems of the Connecticut Water Company (CWC). Most of Plymouth's water is derived from public wells, but projections of CWC for service delivery forecast a shift by the year 2040 whereby 54% of Plymouth's population has water supplied via the Water Company. As noted in Memorandum #5, Conservation of Natural Resources, water yield is limited when derived from nonaquifer sources.

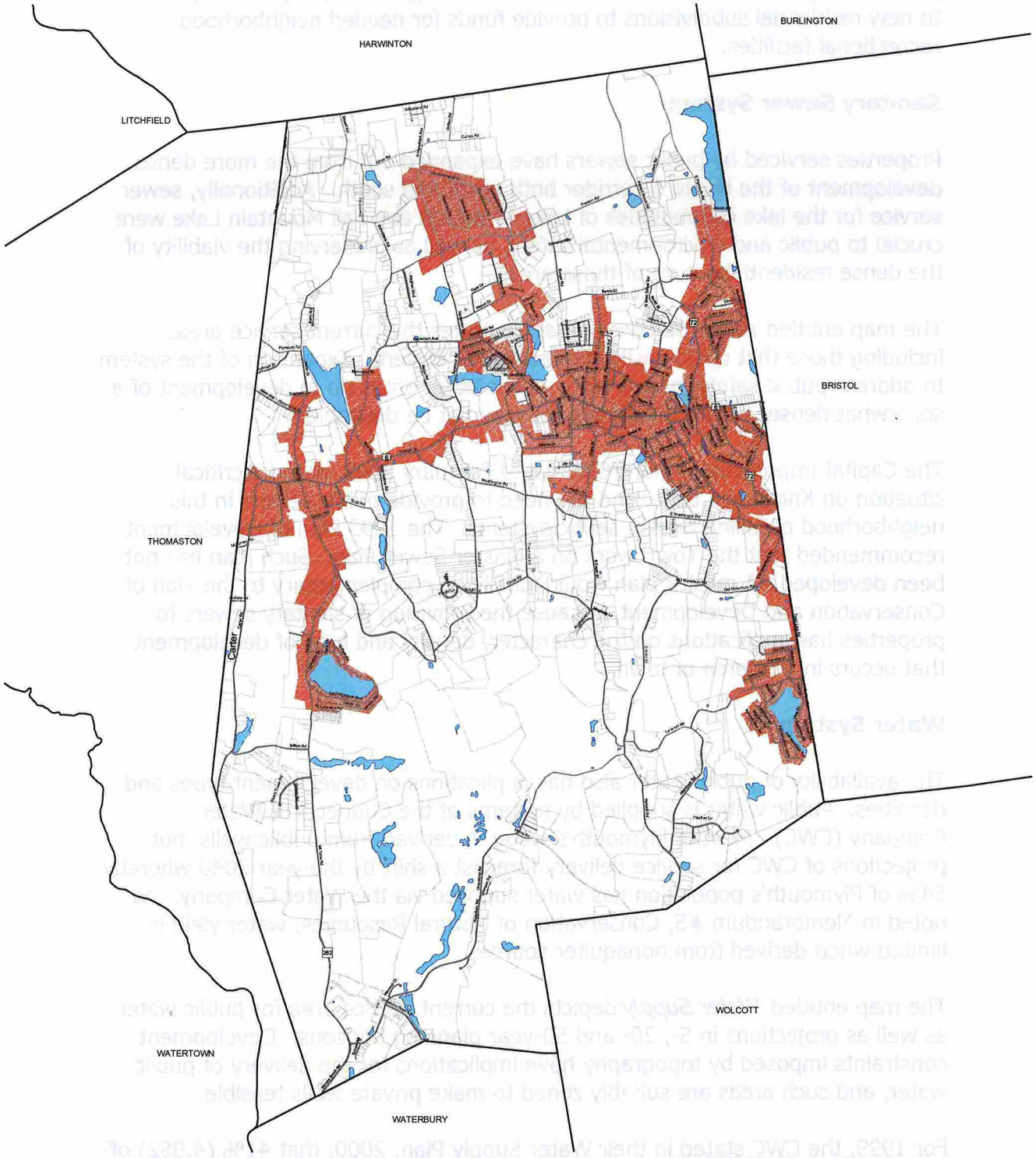
The map entitled *Water Supply* depicts the current service area for public water as well as projections in 5-, 20- and 50-year planning horizons. Development constraints imposed by topography have implications for the delivery of public water, and such areas are suitably zoned to make private wells feasible.

For 1999, the CWC stated in their Water Supply Plan, 2000, that 41% (4,962) of Plymouth's population was connected to CWC's public water system. That percentage is projected to hold for the near future; however, the percentage

Town of Plymouth

Plan of Conservation & Development

Map 2. Public Sewered Areas



Data Source:
CCRPA;
Connecticut DEP
Environment & Geographic Information Center 2003

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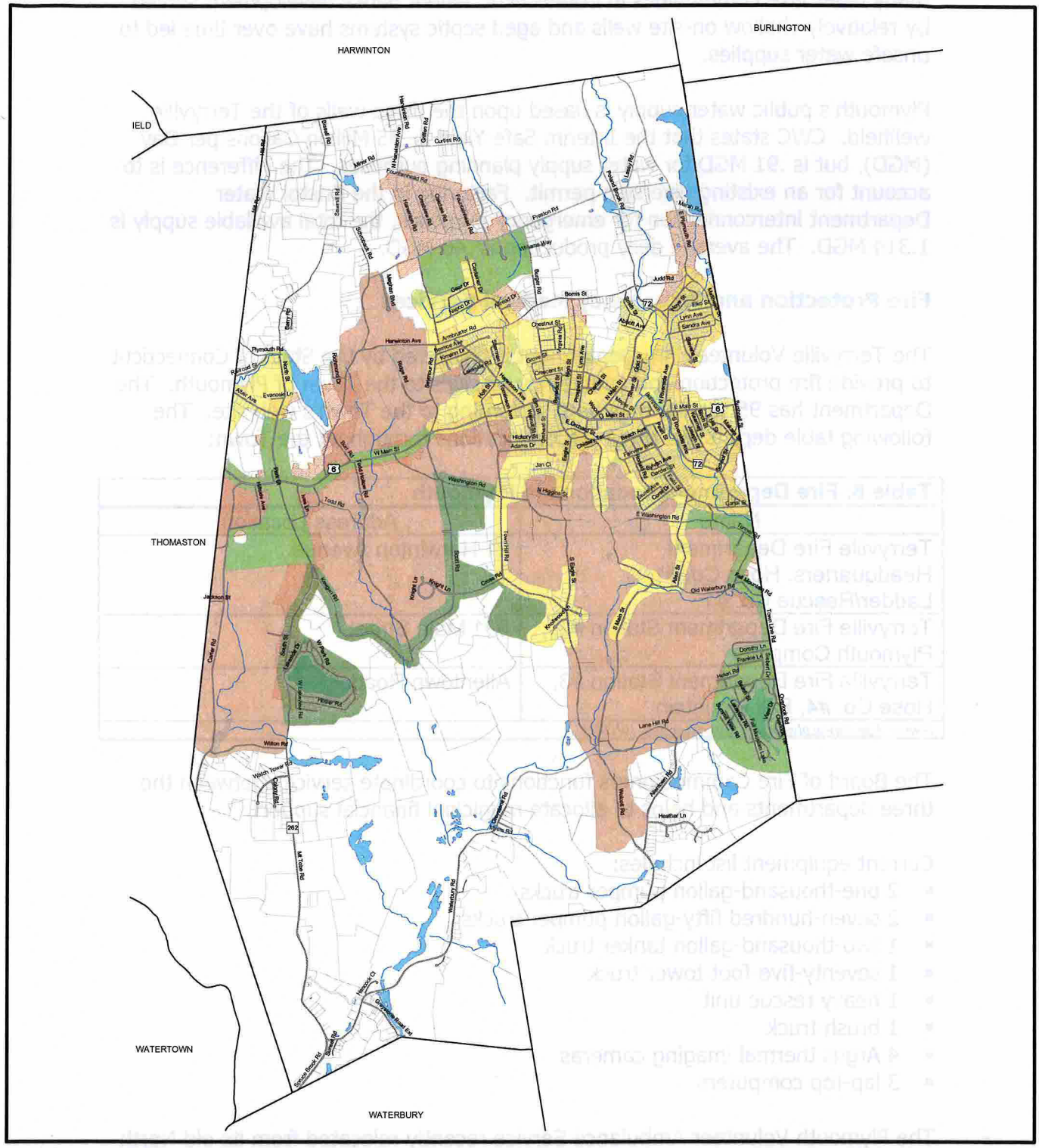
Legend

Public Sewered Areas

Town of Plymouth

Plan of Conservation & Development

Map 3. Water Supply Map



Data Source:
CCRPA GIS Database;
Connecticut DEP
Environment & Geographic Information Center 2003

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0 0.25 0.5 1 Miles

This map is developed for planning purposes only.

Water Supply Service Area

- Existing Sevice Area
- 5 Year Sevice Area
- 20 Year Sevice Area
- 50 Year Sevice Area
- Public Sewered Areas

increases as the Fall Mountain area is connected. Fall Mountain is typical of many older lake communities in Connecticut, where dense development served by relatively shallow on-site wells and aged septic systems have over time led to unsafe water supplies.

Plymouth's public water supply is based upon the three wells of the Terryville wellfield. CWC states that the Interim Safe Yield is .95 Million Gallons per Day (MGD), but is .91 MGD for water supply planning purposes. The difference is to account for an existing diversion permit. Factoring in the Bristol Water Department interconnection for emergency purposes, the total available supply is 1.314 MGD. The average daily production is .46 MGD.

Fire Protection and Emergency Medical Services

The Terryville Volunteer Fire Department is chartered by the State of Connecticut to provide fire protection and emergency services to the Town of Plymouth. The Department has 95 regular members, according to the Town's web site. The following table depicts the three station locations throughout the Town:

Table 6: Fire Department Locations in Plymouth

Name	Address Location
Terryville Fire Department Headquarters, Hose Co. #1, Ladder/Rescue Co. #1	21 Harwinton Avenue
Terryville Fire Department Station #2, Plymouth Company	691 Main Street
Terryville Fire Department Station #3, Hose Co. #4, Fall Mountain	Allentown Road

Source: http://www.plymouthct.us/services.htm, 10/16/03

The Board of Fire Commissioners functions to coordinate services between the three departments and helps to allocate municipal financial support.

Current equipment list includes:

- 2 one-thousand-gallon pumper trucks
- 2 seven-hundred fifty-gallon pumper trucks
- 1 two-thousand-gallon tanker truck
- 1 seventy-five-foot tower truck
- 1 heavy rescue unit
- 1 brush truck
- 4 Argus thermal imaging cameras
- 3 lap-top computers

The Plymouth Volunteer Ambulance Service recently relocated from its old North Main Street location across from Baldwin Park, to a new expanded location on Main Street across from Baldwin Park.

Police Protection

Preliminary needs analyses performed in 1998 by the Plymouth Land Use Office indicated projected requirements. The International Association of Chiefs of Police (IACP) issued a publication, *Police Facility Planning Guidelines: A Desk Reference for Law Enforcement Executives*, which states that while standards exist for jail and holding cell sizes and requirements for ADA compliance, work space needs for police personnel has no absolute guiding principles.

The 1998 needs analyses included assessment of space for the Plymouth Volunteer Ambulance Corps, which has since relocated to larger quarters, vacating an older structure on North Main Street.

Police facilities are located in 2,600 square feet of Town Hall on the lower level. The 1998 analyses cited that no particular function of police operations is overcrowded, rather all areas of police services suffer from working in undersized facilities. Utilizing ratios of sworn officers per population, a standard of 1 officer per 500 population is assumed in the analysis. Since 1998, more accurate population projections have been produced by the Connecticut Department of Transportation that forecast a population of 12,410 in 2010 and 12,960 in 2020. Utilizing the above ratio, a police facility to accommodate 26 sworn officers would be needed in approximately 16 years. If 350 square feet per officer is about right, a facility of 9,100 square feet would be required to efficiently house officers alone, without regard for space needs for dispatch and other non-officer positions. In 1998 dollars, the analysis estimated a $3 million cost for a new facility outside of land costs. Any site considered for a new police station would need to be reviewed for its convenience to efficiently access all parts of the Town.

Utilities Infrastructure

In the discussion of utility services in the town, there are new technologies that must be considered. While basic electric and telephone service are available throughout town, new wireless communications are still expanding throughout the town. Access to high quality communications infrastructure is an important economic development consideration. Areas served by natural gas connections, provided by Yankee Gas Company, extend to a limited extent from the Route 6 corridor.

Library

There are two libraries in Plymouth. A small historic building houses the Plymouth Center library. The main library is on Main Street in Terryville. A planning report in 1999 outlined the need for additional space at the Terryville

Library. The library currently utilizes 10,900 square feet. The planning report proposed that space needs would approximate 19,599 square feet by 2020. Such expansion plans include community rooms, which can accommodate local activities beyond library programming. The 1993 Plan of Development cited concern that the present space occupied by the library was inadequate to service the public. The 1993 Plan recommended expansion by 2000.

The Connecticut State Library offers a program of construction grants for facility improvement of municipal libraries. The grant program has two categories: 1) 80% of total monies that create additional usable space, and 2) 20% of total monies to fund projects that improve existing space, such as code updates and ADA accommodations.

Solid Waste Disposal

The Transfer Station on Old Waterbury Road currently handles mixed residential solid waste and the recycling of all scrap metal, automobile tires and the environmentally safe disposal of the capacitors and chloroflouro carbons (CFC) from appliances. Local landfill operations have ceased in the Town.

The Cultural Inventory

The cultural inventory of the town can consist of certain unique aspects of Plymouth that are not covered under any other category, but add substantially to the character of the community. Certainly the following topics of the historic and recreational inventories fall under this broad category; however, other features of note that contribute to the character of the town should be included here as well. By organizing the components of the community character of Plymouth, some directions for the future can be explored and emphasized within the Plan of Conservation and Development.

Culture can have several meanings. Culture can be "...the act of developing the intellectual and moral faculties especially by education...", as well as "...enlightenment and excellence of taste acquired by intellectual and aesthetic training..." and " acquaintance with and taste in fine arts, humanities, and broad aspects of science as distinguished from vocational and technical skills"[15]. Utilizing the parameters of the three definitions above, a community's cultural inventory can be distilled as those educational experiences that broaden knowledge apart from that which is available through the educational system.

Following this logic, the Terryville Waterwheel is part of the historic inventory, but the Lock Museum of America is part of the cultural inventory. The provision of programming of cultural activities is primarily the responsibility of the Town's libraries, schools and civic groups. However, other public and private entities

[15] Merriam-Webster Dictionary, On Line Edition, www.m-w.com/cgi-bin/dicitonary, accessed 12/16/03

hold the potential for enriching the arts experience for the residents of Plymouth. The following are examples of types of activities, facilities and organizations that are components of the arts environment within a town:

Art museum	Arts center
Arts council/agency	Commercial art ventures
Cultural series organization	Fairs/festivals
Gallery/exhibit space	Historical society
Musical groups	Concert facilities
Literary magazine	Other museums
Performance facilities	Community/youth performing groups

The Plymouth Historical Society, organized for historic preservation, maintains headquarters in Plymouth Center. *Artworks* on Wilton Road would qualify as an art center/gallery space that draws patronage from multiple towns. The Terryville Lions Club Fair is a large annual festival/event that attracts statewide. Many arts organizations have a regional orientation that might preclude duplication in other towns, but only a cultural needs assessment could determine the extent of regional coverage of certain organizations.

The Historic Inventory

I. Statement of Purpose

Plymouth has recognized that responsible planning must include consideration of important archaeological and historic structure resources within the town's boundaries. Today planning for the management and or protection of these cultural resources involves many state and federal agencies in order to protect our cultural heritage. In addition such planning can help identify sensitive archaeological and historic structure resources which need protection and/or are elements which the town can use as part of its overall economic plan of development.

II. Archaeology

Archaeology is the study of the artifacts and life-ways of past peoples. Connecticut has been occupied for at least ten thousand years much of it only by Native Americans popularly called Indians. Native American culture is by and large poorly understood or recorded. Archaeology is one of the few ways that information can be found about these past peoples. Plymouth historical archaeology is several hundred years old. It starts at the Contact Period between European and Native American culture in the 17th century and continues up to approximately 1950 encompassing many social and economic changes.

A. Prehistory

The prehistory of the town of Plymouth area is particularly poorly known. A recent search of the Connecticut Historic Commission records disclosed only three archaeological surveys have been conducted since 1977. Results from these surveys are preliminary and intensive archaeological excavation of prehistoric sites has been performed at the industrial park site.

B. History

Plymouth's history is quite rich in change and historical importance. Present day Plymouth is derived from early settlement as part of Farmington in the 17th Century as part of a mining speculation scheme. The present day town lands were purchased from the Tunxus Indians whose principal residence was in Farmington (Ryan 1976:7) Some early historic records indicate at least one Tunxus village along the Pequabuck River in Plymouth. Later present day Plymouth was settled as Northbury, a community that straddled both sides of the Naugatuck River and a part of Watertown. In 1795 Plymouth incorporated as a separate town from Watertown, and in 1875 a portion of Plymouth called Plymouth Hollow incorporated as the town of Thomaston. Today Plymouth remains part of that original settlement (The Center or Town Hill area along Route 6 just west of Thomaston), the additional important community of Terryville to the east along Route 6 and several smaller communities. Important innovations in industrial manufacturing took place in the early 19th century in the Plymouth Hollow and Center areas pioneered by Eli Terry. Later Terryville became an important manufacturing center. As such, these places of innovation and others within Plymouth are of national importance and are legitimate subjects for archaeological and historical research. It has been suggested that Terry may have invented mass production methods in his mill in what is now the Greystone district. Their historical importance should be a factor in the towns Plan of Conservation and Development.

C. Archaeological Sensitivity Mapping

Archaeological sensitivity mapping is the use of information from historical, archaeological, geological, and biological studies in combination to predict the likelihood that a particular location was used for past human activity. It is part science and part guesswork. In order to be useful such models should state explicit assumptions, state conditions of applicability, and make clear their limitations. The following model uses soil types as the primary differentiation of

locations according to archaeological sensitivity. There is no typology of soil types which past cultures have stated a preference for; rather we use today's recognized Connecticut soil types determined by soil scientists as our basic units because archaeologist's have noticed the coincidence of soils with certain properties and the location of known archaeological sites. In general the preference of prehistoric cultures is for well-drained soils with low slope for camp and village sites. Occasional or special purpose use sites can have variable soil characteristics. The location of early 17th and most 18th century sites is best predicted using slightly different criteria but much of the general model's characteristics apply also. Again some kinds of early 19th century historic sites share some of the predicable soil characteristics of prehistoric sites and some kinds of historic sites have very different soil characteristics. One advantage we have for middle and late 19th century sites is the excellent highly detailed maps that were generated during this period especially the DeBeers map series. In addition such criteria as known or probable travel routes, plant and animal species past availability, and mineral resource locations all influence the determination of location sensitivity.

Archaeological sensitivity mapping can be an important planning tool. It can be used to help guide economic development by 1.) helping to avoid the loss of potentially important archaeological resources and 2.) helping to predict the cost of mitigating a potential development project where public funding would entail archaeological mitigation.

1. Legend Explanation: The following is a description of the archaeological sensitivity determinations used to group soils of like properties and archaeological site potential together. None of the groupings are precise. Rather they indicate a gross determination of likelihood or probability by ranking of soils.

    a. ***High*** - A high archaeological sensitivity designation means that the likelihood is quite high that an archaeological site will be found at a location. This is based on a combination of modeling criteria and field experience. The probability is not one hundred percent and a walkover by an archaeologist may help to make a better and finer detailed determination.
    b. ***High, Potentially*** - This designation indicates that soil and other characteristics suggest a high likelihood of a site present but past experience does not lend additional assurance one way or another.
    c. ***Medium*** - The likely hood *here* is somewhat reduced from high. The soil type and other factors may be the same as for High but some factors are different. For example slope may be steeper

or the soil may be stony.

d. Low - Again this designation indicates some criteria suggest archaeological sites may be present but the likelihood has dropped significantly

e. Poor - This designation is usually reserved for soils that are disturbed to great depth and unlikely to contain useful archaeological evidence even if a site existed there at one time.

f. Variable - Locations designated with Variable exhibit too varied a landscape to adequately characterize by one designation. For example, slope can vary from 2 percent to 25 percent in one soil type. This means that most of the location is not sensitive but a portion may be highly sensitivity. In general a site walk over by an archaeologist is needed to help make a better determination.

g. Unknown - Not every soil type has been adequately studied by archaeologists to make a more informative designation for archaeological sensitivity. For the town of Plymouth all soils have been characterized as other than Unknown.

2. Discussion

In general the above designations are useful for the discovery of both prehistoric and historic sites. The criteria for prehistoric encampments and 19th century mill and farmstead sites are similar. They tend to be near water streams and rivers. Seventeenth and eighteenth century mill sites tend to be small and also neatly follow prehistoric site sensitivity modeling. Pre-nineteenth century farmsteads are more predictable based on travel routes and some soil characteristics. Such sites can be isolated or can be clustered into communities. Historic maps can frequently be a more accurate way of locating historic structures but maps vary highly in accuracy and completeness. Unfortunately, the smallest and poorest households frequently are not represented on these maps. Some areas that at first glance would not be considered archaeologically sensitive because of urban or village development are sensitive for several reasons. First, the destruction of archaeological sites is frequently not complete in urban/village environments. Fill and landscaping frequently cover and protect archaeological sites rather than destroy them. Second, many sites are multi- component which is to say the location has had repeated use by different groups prehistorically and sometimes additionally historically. Much can be learned by studying the use of one location by different cultures over time. The surest way to determine a particular location's archaeological sensitivity without excavation is to have it walked over by a competent archaeologist who can make a

recommendation for or against additional archaeological survey.

III. Historic Structure Resources

The Town of Plymouth has within its boundaries many historic structures. These structures represent significant examples of past historic building types including houses, retail/service buildings, and manufacturing facilities. The recognized historic periods of Connecticut are generally typified by different kinds of domestic structures and Plymouth has fine examples of most of them.

A. National Register

There are two National Register districts in Plymouth. The smaller is East Plymouth, which consists of ten structures. The larger, which is in the Center or Town Hill area at the West End of town, is the site of the earliest village settlement as part of the settlement of Northbury. This national register district consists of 140 structures and was expanded to include additional 5 structures in 2001. In addition there is a single National Register structure, the Terryville Water Wheel and Race in Terryville where the Pequabuck River crosses Route 6. The appearance of these National Register Districts is quite impressive and contain some truly valuable historical resources.

1. East Plymouth

The collection of structures near the intersection of East Plymouth Road and Marsh Pond Road is impressive. This National Register District holds examples of 18th and 19th Connecticut domestic architecture, an 18th century Episcopal Church/Meeting House, and a cemetery. It also is the vicinity some interesting local history, being a noted area of Tory or Loyalist activity during the American Revolution. The church/ meeting house is one of perhaps 13 remaining in Connecticut and therefore a rare historical resource.

3. Plymouth Center

The Plymouth Center National Register Historic District shows much of the development of a town center during the 18th and 19th century with only a small amount of intrusion of late 20th century development. This is remarkable since it has a major thoroughfare Route 6 down its center lengthways which is also a very old highway. The village green area is remarkably intact as are the buildings surrounding it. Also the Center has examples of most of the important domestic architectural styles of the late 18th and all of the 19th century. It probably owes its

stability to the ascendancy of nearby Terryville as an economic and manufacturing center. As early as the 1840s, it was noted that there were superior waterpower resources to be had in Terryville and the Center community was reverting to mostly an agricultural and minor manufacturing area. A short examination extracted from the National Register Nomination, Section 8 follows:

The Center preserves much of its original colonial street alignment with homes on the main highway and cross roads with evidence of former agricultural fields to the rear of many houses.

The Federalist or Late Colonial Period of domestic architecture is well represented in several scattered dwellings including the Byron Tuttle House (Inventory #14) which has a traditional Colonial center chimney organization. A slightly later Federalist style is typified by the Dean-Stoughton House, which has a side hall and a gable to street orientation.

The Greek Revival style of the early 19th century is typified in the house of worship, the 1838 Plymouth Congregational Church. In domestic architecture there are the fine examples of the Riley Ives House (Inventory #158 and the Truman Wedge House (Inventory #112) the latter possessing recessed kitchen wings and rectangular multipaned windows in the pediment. Even cottages were built in the Greek Revival Style such as the Thomas Scoot house (Inventory #680).

Late 19th century styles of Carpenter Gothic and Italianate were sometimes mixed as in the examples of the George Langdon House (Inventory #35) and the Horace Fenn House.

The Colonial Revival of the Early 20th Century produced several single story Cape Cod houses and a distinctive Colonial Revival Four-Square built at the intersection of Maple and Main in 1906 (Inventory # 102).

4. The Terryville Waterwheel and Race.

The Terryville Waterwheel is a rare example of a "pitch back overshot wheel which directs the water flow down and to the back of the wheel". The fact that a waterwheel rather than a water turbine was used at this site well into the 19th century is unusual. It remained covered by a shed and part of an Eagle Lock Co. building. The present metal parts of the waterwheel date back to 1851. The wooden parts are from a reconstruction done in 1990. The Reconstruction stabilized the wheel by raising it in its well and isolating it from the Pequabuck

River, which runs past it. The property adjacent to the Waterwheel is part of a town proposal for a cultural heritage park.

IV. Historic Properties Preservation Programs

The following is a brief discussion of historic preservation programs that exist either locally in Connecticut or are National programs to assist in the preservation of cultural and or historic resources. Some of these programs assist tapping into Federal or State dollars available to support cultural/ historical preservation efforts. There are also private/ non-public entities that can be a source of support and or funding for historic preservation projects. Finally some of the programs mentioned are really recommendations for local ordinances or building guidelines that help guide the care and preservation of historic properties, and promote the modern use of them. Additional information and references can be found by contacting the CT.Trust for Historic Preservation or by going to their Internet web site www.cttrust.org.

1. Certified Local Government

One of the most powerful and useful programs in Connecticut for historic preservation, the Certified Local Government Program (CLGP) allows local government to partner with the National Park Service and the Connecticut Historical Commission to provide the municipality with technical assistance and grants for historic preservation. It ensures the creation of local historic district legislation and historic district commissions that participate in local planning and decision making.

2. Demolition Delay Ordinances

Enactment of a demolition delay ordinance by a municipality can be a useful tool in preventing the loss of historic resources by mandating a delay to explore alternative means of preserving and or using historic structures. Connecticut Public Act #83-187 and General Statutes section 29-406(a,b) identify the terms under which a demolition permit can be issued. A demolition delay ordinance can give up to ninety days of breathing space for consideration of alternatives to demolition of a structure. The ordinance should encourage adaptive reuse of structures and not impair the property rights of the property owner.

3. Easements

Historic easements are legal agreements in which a property owner enters into an agreement with a non profit organization to protect a

property from changes which are not in keeping with its historic character. The benefit to the property is that all changes must be reviewed by the non-profit organization and reasonable maintenance of the property is assured. The benefit to the property owner varies and is determined by the details of the agreement entered into. The easement runs with the property and is binding on the owner and all subsequent owners of the property.

4. Main Street Program

   This program is designed to support the revitalization of commercial buildings in a downtown environment. It aims to encourage economic growth by reutilizing existing historic building resources. This program has been successfully implemented in ten Connecticut towns/cities so far, and has the advantage of being locally sponsored by the Connecticut Power and Light Company. It has a four-point approach to economic revitalization.

   a. Cooperative organization of private and public groups and individuals
   b. A mix of design features including reuse of old buildings and the incorporation of new construction, public improvements and design management systems.
   c. Promotion by marketing and advertising and events to attract new business.
   d. Economic Restructuring by analyzing the area and creating new opportunities through mixed used development.

5. State Archaeological Preserves:

   A relatively new form of location protection in Connecticut, the Connecticut State Archaeological Preserve program is defined in Connecticut State Regulations Sections 10-384 through 10-384-4. In brief the state regulations define a voluntary program in which a property owner may ask to have his property designated an archaeological preserve if the state archaeologist determines that the property is on the National or State Register of Historic Places, has significant archaeological/historic value, or is on existing state lands designated for Native American reburial use. Anyone may nominate a property for this program but the property owner must approve and accept the limitations placed on the property by the regulations. In general, no subsurface disturbance of this property is allowed unless reviewed by the state archaeologist. Advantages to this program are the preservation at little monetary cost of existing archaeological

resources of importance.

6. Village District Act

The Village District Act is described in Connecticut Public Act No. 98-116. This law allows the designation of town sections with distinctive historic structures or landscape as Village Districts allowing the local zoning commission to place restrictions on public views. This law encourages conversion of older buildings for modern uses and construction of new buildings in the character and spirit of the existing one of the village district. The bill applies this program to urban, suburban and rural districts which "exhibit village like characteristics". This bill is distinct from the National Register District nomination as the steps for creation of a village district are different and the designation is at the state level. The steps for designation are listed below:

a. Educate the residents of the area designated for a village district nomination.
b. Inventory the structures and landscapes considered as participating.
c. Establish common guidelines for design of views and structures
d. Design zoning regulations to support the village district designation.
e. Monitor the effects of the zoning regulations on the new village district.

7. National Historic Landmarks

Designation of a site as a National Historic Landmark is the highest historic designation available. It is a form of recognition of properties determined to be of great historic significance to all Americans and which help all Americans understand and appreciate their past. Sites designated National Historic Landmarks and privately owned are not subject to restrictions on use or alternation of the landmark structure. The principle difference is that if Federal monies are involved in a project that may affect the historic landmark property the Section 106 and/or 110 Review process of the National Historic Preservation Act will be conducted. This review insures that where federal dollars are involved that a careful consideration of impacts to historic landmark properties is conducted before any building or alteration occurs. It may be useful to designate the Terryville Waterwheel such a site since it is adjacent to a Federal Highway Route 6.

8. National Register of Historic Places

The National Register for Historic Places recognizes the importance of properties by one or more of the following criteria; their architectural significance, association with an important historic figure, and or association with important historical events. It is more of an honorific designation since it entails no additional responsibilities on the property owner to maintain it in its present condition or not make alterations to it. It is a useful designation for planning purposes because it involves the collection of information about the structure or location that becomes available to local, state and national planning bodies. This insures that due consideration of the structure/location 's historic value is recognized during the planning process. In addition some owners such as non- profit organizations may be eligible for federal grant aide.

9. Scenic Road Designation

The Town Scenic Highway Statute allows towns to enact an ordinance to designate certain town roads as having views that add to the quality of the town's life. Restrictions by planning and zoning commissions can be placed on the kinds of improvements and or changes to the road's character. Traditionally scenic road ordinances are very different from town to town allowing the ordinance to meet each town's uses.

10. Connecticut Historic Homes Rehabilitation Tax Credit Program

This program is targeted at urban renewal and can only be applied to eligible towns and cities. Plymouth is not presently eligible but if it became eligible then this could be a source of funding for rehabilitation of historic one to four family housing. Tax credits are given to corporations that fund in various ways the rehabilitation work proposed in an urban environment. Under some criteria Plymouth is considered part of the greater Hartford Urban Area and an argument might be made for the town to be eligible for this program.

11. Historic Restoration Fund

This Fund is used to give grants for projects that include the restoration and or rehabilitation of a historic property that is listed on the State Register of Historic Places. Municipalities and non-profit organizations that own and operate a historic property are eligible for a 50 percent matching grants-in-aid.

12. Federal Historic Preservation Tax Incentives Program

The Federal Tax code of 1986 allows buildings that are listed on the National Register of Historic Places to be eligible for a 20 % investment tax credit as part of a certified rehabilitation of the structure. This encourages the maintenance, conversion and reuse of listed residential, commercial and industrial historic structures.

V. Connecticut Historical Commission Records of Archaeological surveys.

The following list represents all documented archaeological surveys of the Town of Plymouth up to the year 2002. Copies of the survey reports are kept at the University of Connecticut Dodd Research Center.

1. Agner, Jean S., Terry DelBene and Kenneth Feder
   1977 Report on the Archaeological Reconnaissance for Reconstruction of Carter Road,
   Plymouth, CT. Ms PAST INC, CHPC # 35, NPS NADB # CT-103.

2. Atwood, Katheleen A.
   1999 Historic Properties Management Plan, Thomaston Dam, Thomaston, Litchfield, Harwinton, and Plymouth Connecticut. Ms New England District Corps of Engineers, CHPC # 888.

3. Raber, Michael S.
   1994 Cultural Resources Assessment Survey for Proposed Phase III Industrial Park Development, Town of Plymouth, Connecticut. Ms Raber Associates, CHPC # 950

   1999 Cultural Resources Reconnaissance Survey for Proposed Phase III Industrial Park Development, Town of Plymouth, Connecticut. Ms Raber Associates, CHPC # 951

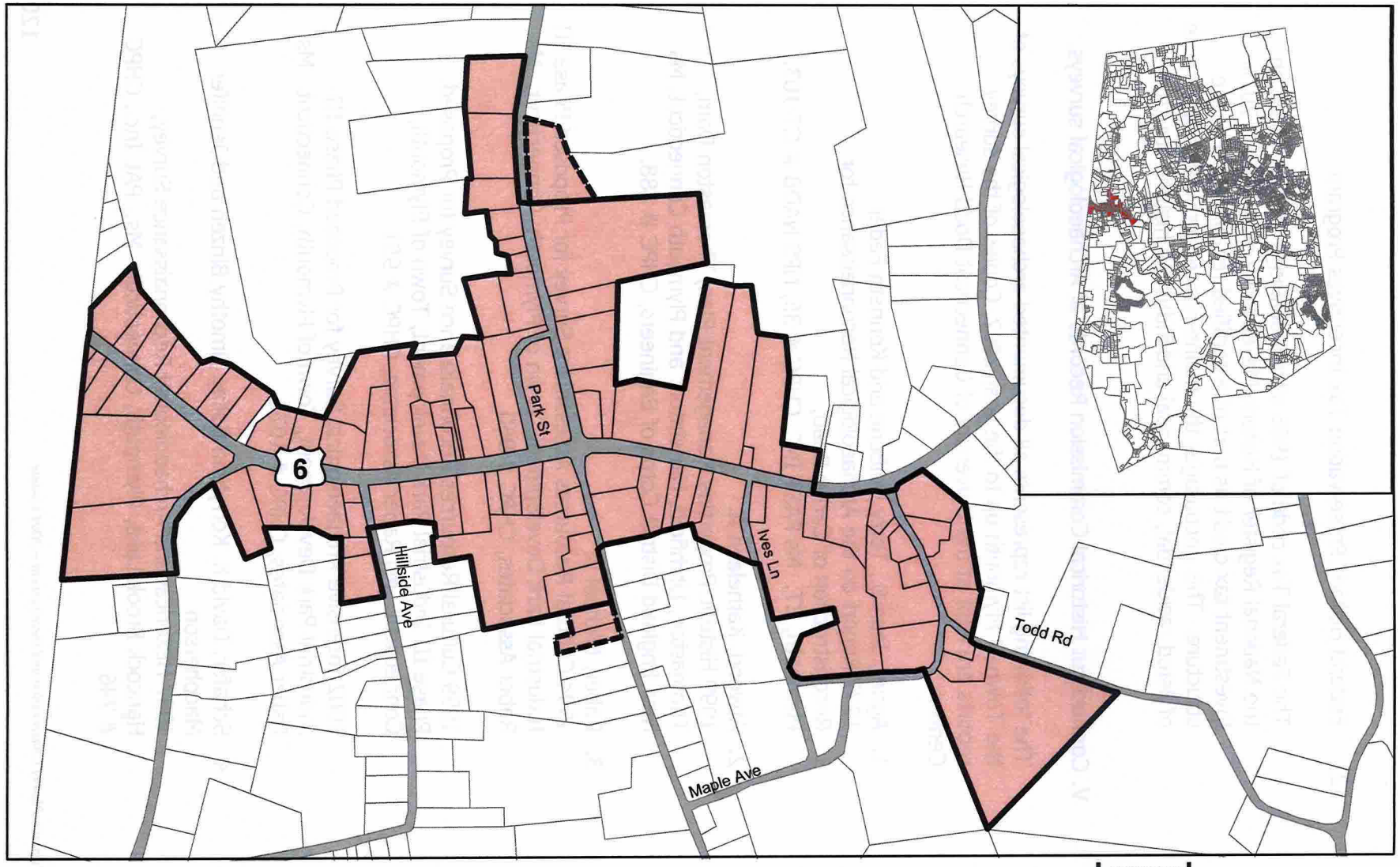
   2002 Intensive Archaeological Survey for Proposed Phase III Industrial Park Development, Town of Plymouth, Connecticut. Ms Raber Associates, CHPC # 1074

4. Schafer, David K. Kerrylynn Boire, Timothy Binzen and Jennifer Macpherson
   1997 Historical and Archaeological Reconnaissance Survey, Hancock Brook Lake, Plymouth, Connecticut. Ms., PAL Inc., CHPC # 746

Town of Plymouth

Plan of Conservation and Development

Plymouth Center Historic District



Data Source:
Town of Plymouth

Prepared By: CCRPA
225 N. Main St., Ste. 304
Bristol, CT 06010
860 589 7820
ccrpa@ccpra.org www.ccrpa.org

0 0.045 0.09 0.18 0.27 0.36 Miles

Legend

- Historic District Area
- Existing Boundary District
- Expansion Boundaries

Recreational trails add value to the quality of life within a community. They become amenities to their immediate neighborhoods that enhance natural areas and they become assets to the town as recreational attractions. They provide opportunities for passive recreation that offer healthy exercise for users and are one of the only activities that can be enjoyed on designated open space lands.

The recreational trail inventory includes walkways under various maintenance authorities such as local land trusts, municipal agencies, and statewide nonprofit organizations among others. Maintenance is a major priority for trails, and the in-charge authority has a high responsibility.

State Trails

Two major blue-blazed trail systems cross the town: the Mattatuck Trail and the Tunxis Trail. A blue-blazed loop trail originating in Thomaston, the Whitestone Trail, circles through a portion of extreme southern Plymouth, skirting Mt. Tobe Road briefly. The blue-blazed system of trails in Connecticut is a network of trails of significant length and maintained by volunteers under the direction of the Connecticut Forest and Parks Association.

The Mattatuck Trail – This trail traverses the southern tier of Plymouth for approximately six miles and links Buttermilk Falls and portions of Mattatuck State Forest and the Hancock Lake Federal Lands. Besides Buttermilk Falls, other natural sites of note include Indian Jack Cave, near Wolcott, and Ed's Big Pebble, a large glacial boulder near the crossing of Todd Hollow Road.

Tunxis Trail – This blue-blazed trail cut through the extreme northeast corner of the town through lands and around reservoirs owned by the Bristol Water Department. A portion of the trail represents a loop off of the main trail called the White Dot Trail that starts in Plymouth and continues north through Harwinton and Burlington. Sections of the Tunxis Trail are fragmented, and the blue-blazed section in Plymouth represents the terminus of the northern section of the trail coming down from Massachusetts. The trail has a southern section in Southington and Wolcott. The White Dot Trail intersects with the main trail in Plymouth; however, both trails cover about 1.5 miles in town. This corner of Plymouth where Harwinton and Burlington meet has historical significance, which becomes accessible only through the Tunxis Trail. This area was home to Stephen Graves, a known Tory during the Revolutionary War, who hid other known tories at Tory's Den in Burlington.

Local Trails

Local trails are maintained by a variety of entities. Their relatively small length

and circuitous path characterize these trails. They are located in various areas in Plymouth. Local trails hold potential for linking open space areas and connectivity to a greater network of recreational trails.

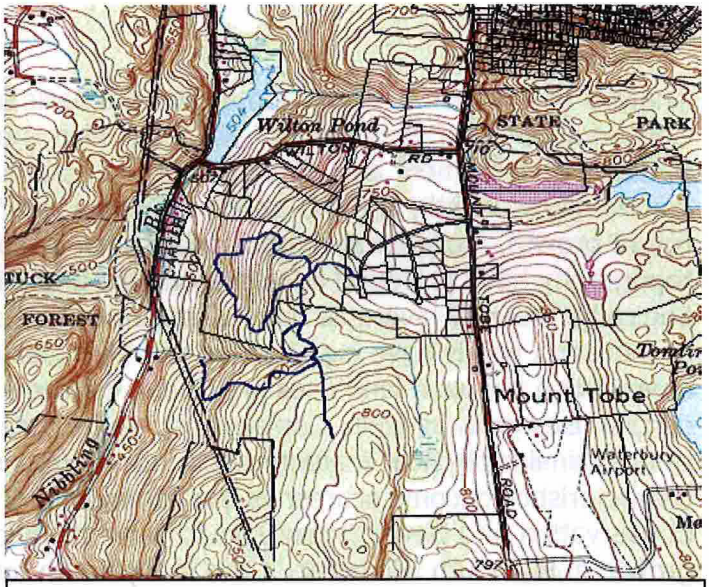
Plymouth Conservancy – This area is owned and maintained by the Plymouth Land Trust. The trail mapping as illustrated was performed in 2001 by CCRPA in conjunction with the Central Connecticut Plan for Alternative Transportation and Health (in development). The initial draft of the Plan cited no outstanding deficiencies connected with this trail circuit. However, the draft offered comment that the borders of the property be better demarcated to prevent inadvertent trespassing onto private property. Additionally, access to the trailhead off of North Street is constrained due to lack of sidewalks leading from Plymouth Center or parking accommodations on site.

Plymouth Conservancy trail circuit

Town Forest – This town-owned parcel is maintained by the Conservation Commission of the Town. This open space area was created out of the residential subdivision of Watchtower Road. CCRPA also reviewed and mapped this trail in 2001 and offered the following recommendations: "*Some trail clean-up needs to be accomplished to keep it walkable [fallen trees obscured trail] in the paths that are designated. Review of trail blaze logic should take place. Such review should include placement and technique of blazing, to ensure ease of navigation and consistency. The disposition of the property to south of Town Forest and its trails should be clarified. This property could serve as a possible trail expansion. Feasibility of other trail linkages, such as with the Mattatuck Trail, should be explored.*"[16] As is the case with the Plymouth Conservancy, access is constrained, although not as severely, by limited parking. Open space subdivisions are a technique to provide for the open space inventory of a town, but can also add to the inventory of recreational trails, especially in cases where connectivity to other trail systems is viable.

[16] Draft Central Connecticut Plan for Alternative Transportation and Health, CCRPA, 2001

Buttermilk Falls – The trail circuit in the Buttermilk Falls preserve is maintained by the Nature Conservancy. The area was not reviewed under the first round of trail mapping in CCPATH. As such, no review is included here. However, is worthy to note that the trail circuit around the Falls connects directly with the blue-blazed Mattatuck Trail.



Land Use

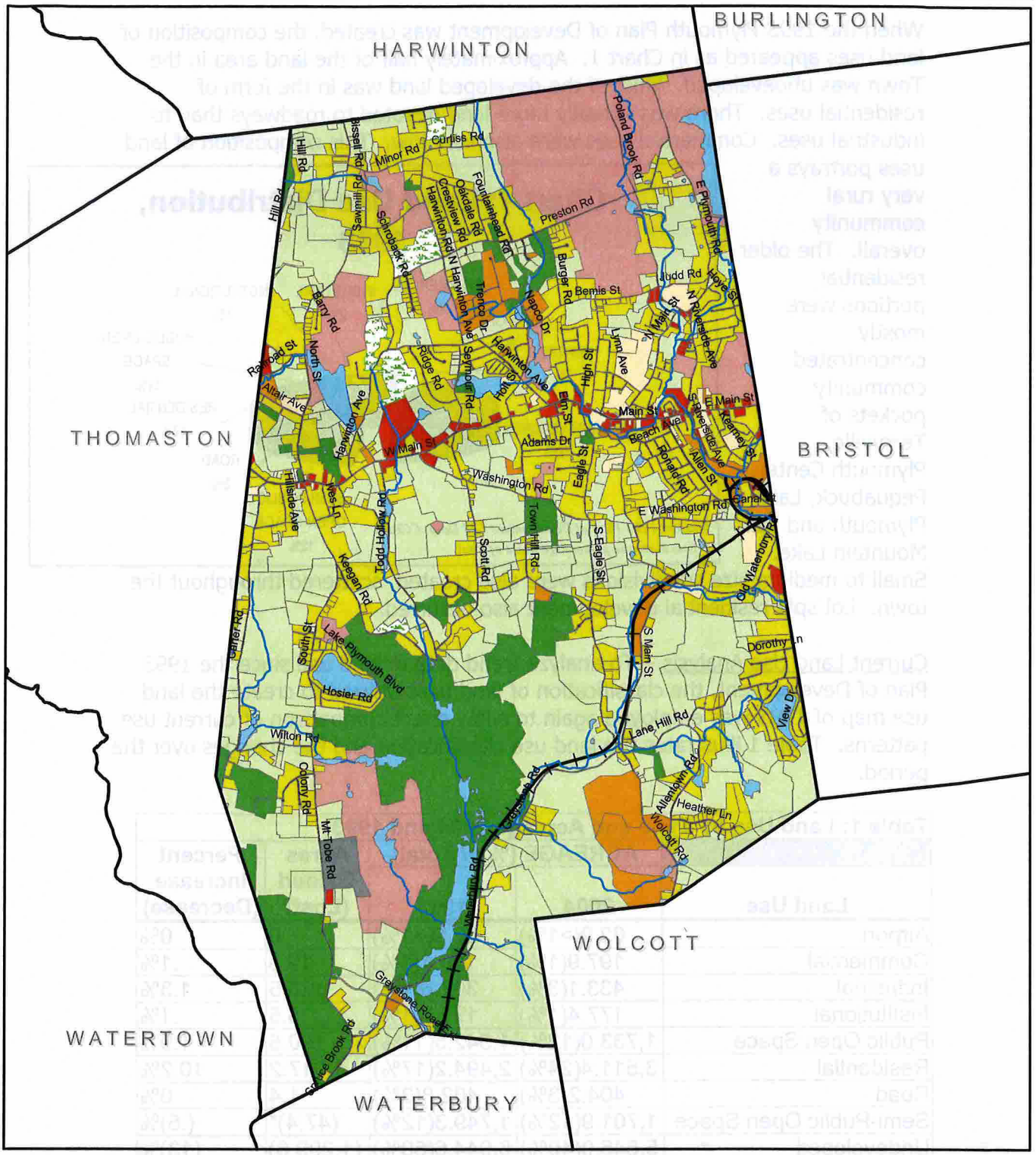
Introduction

Analysis of land use patterns and trends is a basic foundation for a Plan of Conservation and Development. Since this Plan is primarily a physical plan, the patterns of settlement and development are essential to understanding the community's growth, and the trends are important for preparing a blueprint for future growth. Locational characteristics such as soil type, groundwater and topography have profound influence on type and intensity of development. Logically, areas of favorable natural resources that serve residential, commercial or industrial needs have experienced growth initially. As the community grows, competition between land uses grows and concerns centered on attenuation of certain uses grow as well. Competition results because many types of land uses require similar physical characteristics. Land areas exhibiting prime characteristics become scarcer as the community grows. The Plan of Conservation and Development should serve as guide to how and where future growth in Plymouth will occur. Land in Plymouth totals 13,867.7 acres, net of surface water area of 423.2 acres.

Town of Plymouth

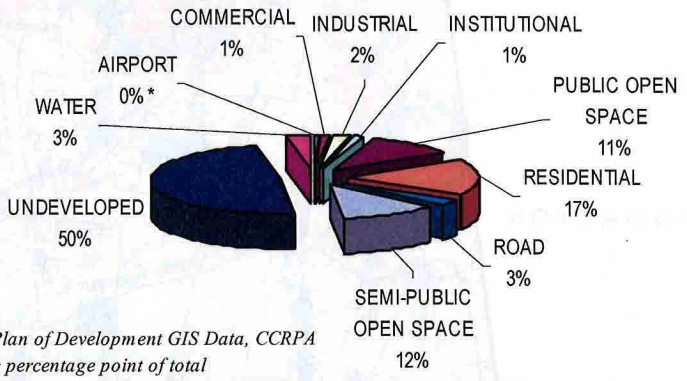
Plan of Conservation & Development

Map 1. Land Use Distribution 2003



When the 1993 Plymouth Plan of Development was created, the composition of land uses appeared as in Chart 1. Approximately half of the land area in the Town was undeveloped. Most of the developed land was in the form of residential uses. There was actually more land devoted to roadways than to industrial uses. Commercial uses were also very low. This composition of land uses portrays a very rural community overall. The older residential portions were mostly concentrated community pockets of Terryville, Plymouth Center, Pequabuck, Lake Plymouth and Fall Mountain Lake. Small to medium size subdivisions were also created, scattered throughout the town. Lot split residential development also occurred.

Chart 1: Land Use Distribution, 1993



Source: 1993 Plan of Development GIS Data, CCRPA
** Less than one percentage point of total*

Current Land Use Analysis – To analyze trend data in land use since the 1993 Plan of Development, the classification of land uses utilized to create the land use map of 1993 was employed again to allow direct comparison of current use patterns. Table 1 illustrates the land use classification and the changes over the period.

Table 1: Land Use by Type and Acreage 2004 and 1993

	ACREAGE (% of Total)		Acres Gained (Lost)	Percent Increase (Decrease)
Land Use	2004	1993		
Airport	62.9(>1%)	62.9(>1%)	0	0%
Commercial	197.9(1%)	185.1(1%)	12.8	.1%
Industrial	433.1(3%)	307.6(1%)	125.5	1.3%
Institutional	177.4(1%)	171.9(1%)	5.5	.1%
Public Open Space	1,733.0(12%)	1,542.5(11%)	190.5	1.9%
Residential	3,511.4(24%)	2,494.2(17%)	1,017.2	10.2%
Road	404.2(3%)	402.8(3%)	1.4	0%
Semi-Public Open Space	1,701.9(12%)	1,749.3(12%)	(47.4)*	(.5)%
Undeveloped	5,645.0(40%)	6,944.6(50%)	(1,299.6)	(13)%
Water	423.2(3%)	426.5(3%)	(3.3)*	0%

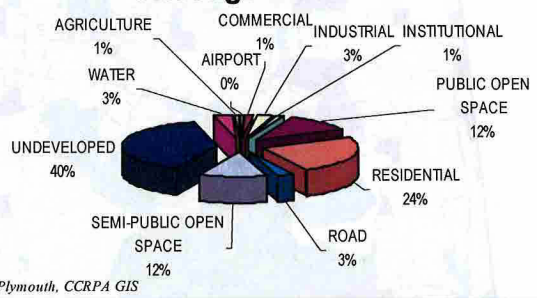
Sources: 1993 Plan of Development, 2004 Town Information, CCRPA GIS
**Indicative of map corrections*

Residential uses represented the strongest surge of the land use over the period between plans of conservation and development. The great drop in undeveloped land since the 1993 report depicts the natural trend toward development of land. However, despite an approximately 1,000-acre increase in residential development, there were gains in public open space dedication of around 200 acres (assuming correct designations in 1993).

This data must be tempered with the realization of the following:

- The 1993 data may have categorized certain developed parcels as undeveloped (such as farmland and particular remote large residential lot development). This may have inflated the undeveloped land figures. However, agricultural uses very often are converted to other uses and considered "undeveloped".
- In many cases, large lot residential uses often do not utilize the entire parcel, but they are totaled as residential use for 2004, since no other use is designated on the parcel.

Chart 2: Land Use Distribution by Acreage: 2004



Source: Town of Plymouth, CCRPA GIS

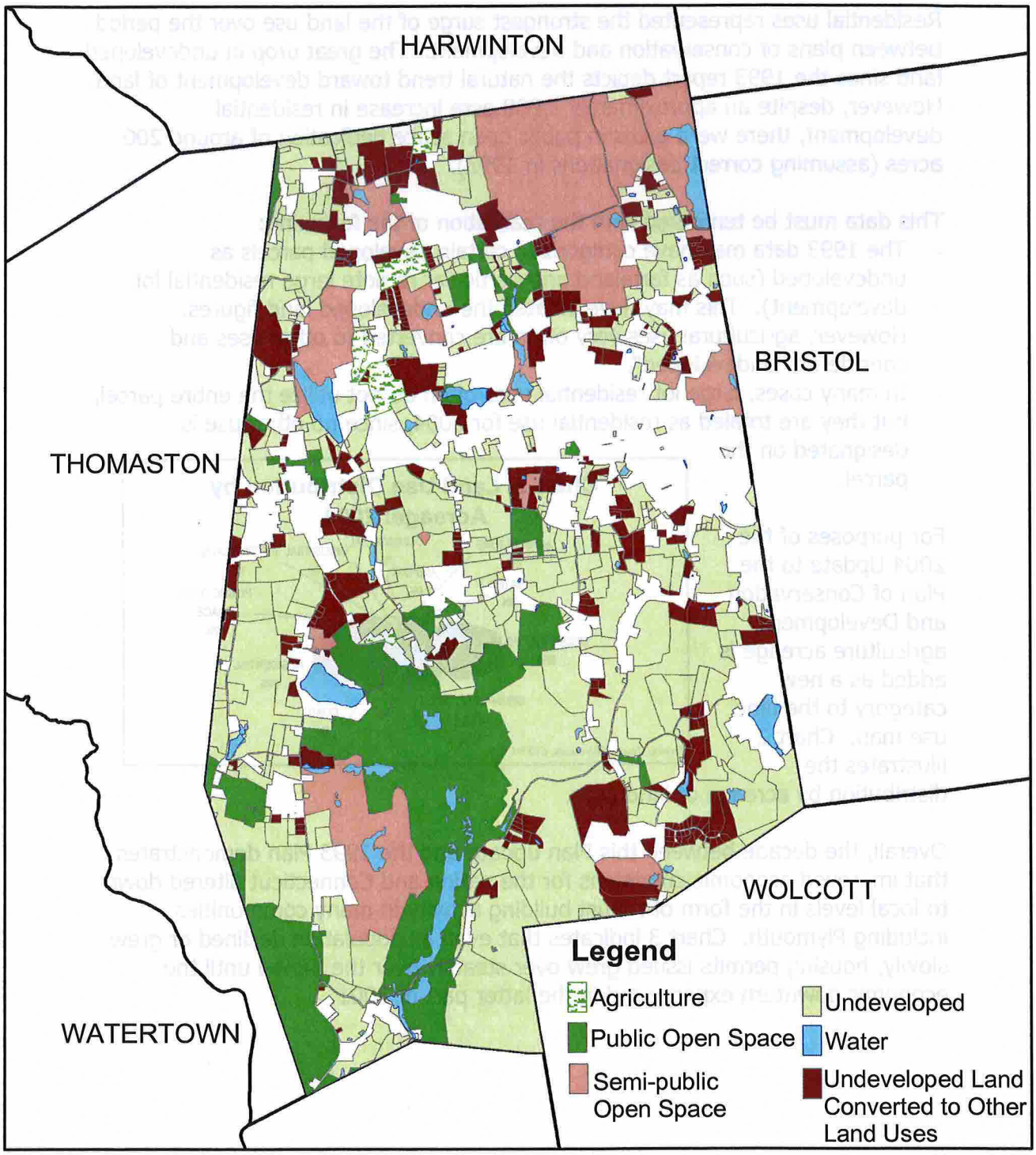
For purposes of the 2004 Update to the Plan of Conservation and Development, agriculture acreage is added as a new category to the land use map. Chart 2 illustrates the distribution by acreage of land uses.

Overall, the decade between this Plan update and the 1993 Plan demonstrates that improved economic conditions for the nation and Connecticut filtered down to local levels in the form of robust building activity in many communities, including Plymouth. Chart 3 indicates that even as population declined or grew slowly, housing permits issued grew over steadily over the period until the economic downturn experienced in the latter part of 2001.

Town of Plymouth

Plan of Conservation & Development

Map 2. Change in Undeveloped Land 1995-2003



Data Source: CCRPA

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0 0.5 1 2 3 Miles

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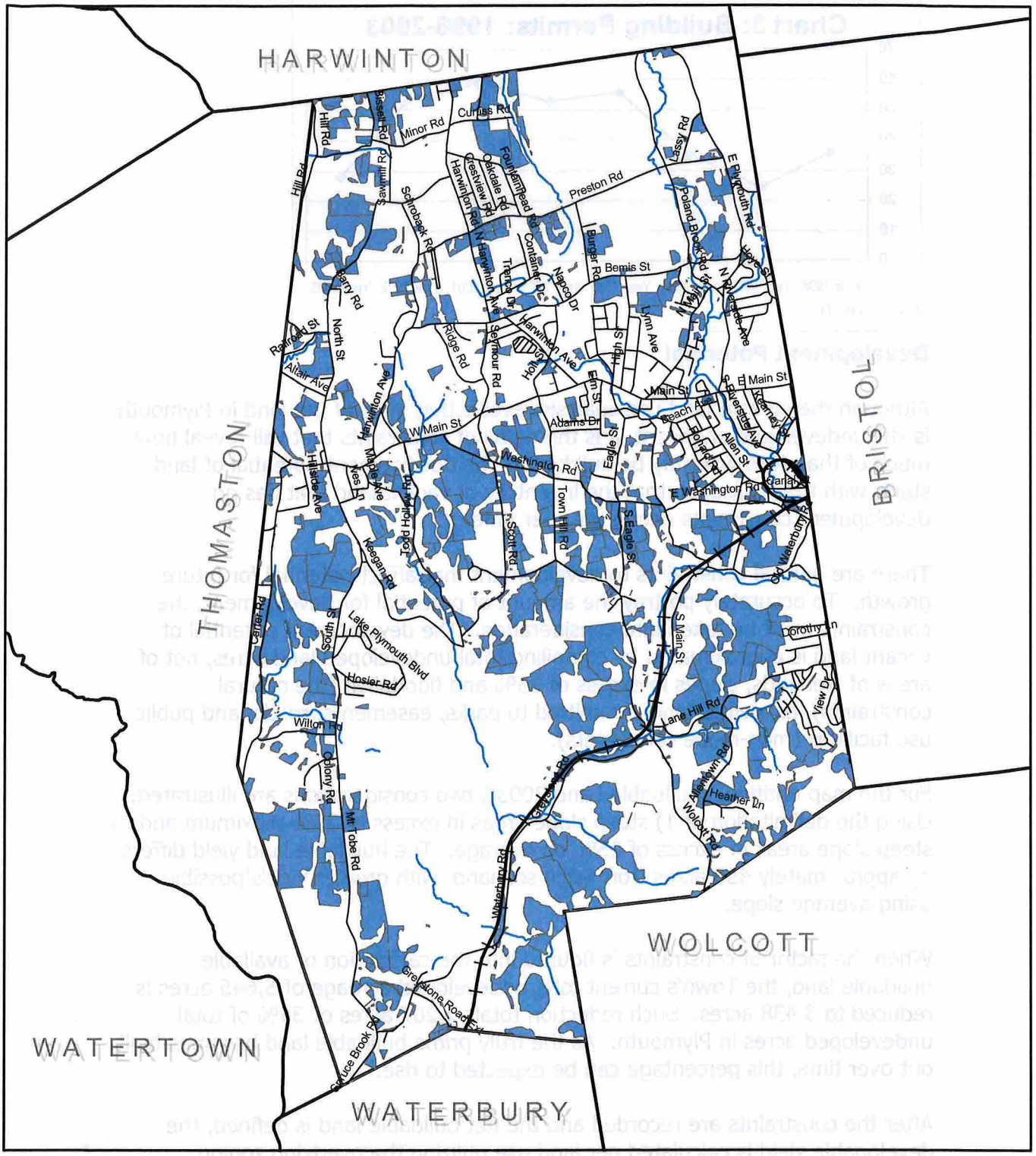
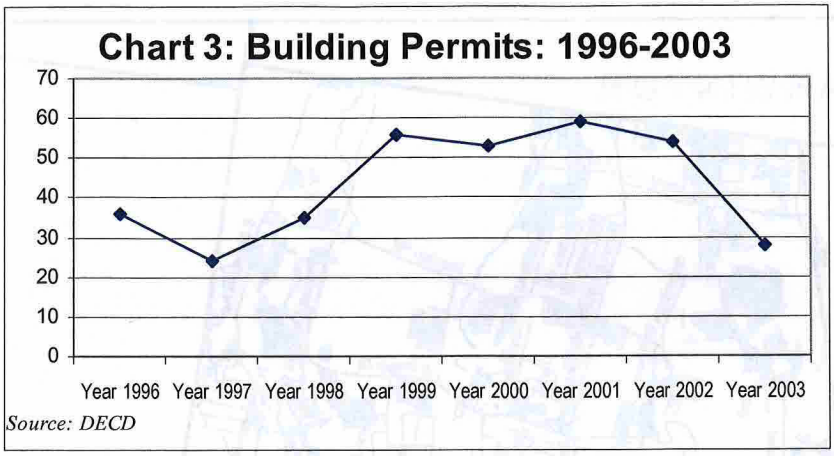
Map 3. Buildable Land 2003





Source: DECD

Development Potential

Although the current land use analysis reveals that 40% of the land in Plymouth is still undeveloped or vacant, it is the detail of constraints that will reveal how much of that 40% will truly be buildable. The development potential of land starts with the realization that the inventory of vacant land that has no development constraints decreases over time.

There are natural constraints to development that affect potential for future growth. To accurately portray the amount of potential for development, the constraints must be taken into consideration. The development potential of vacant land is approximated by compiling total undeveloped land acres, net of areas of wetlands, slopes in excess of 25% and floodplain (the natural constraints), as well as land committed to parks, easements, roads, and public use facilities (man-made constraints).

For the map entitled, "Buildable Land 2003", two considerations are illustrated: Using the delimitation of 1) steep slope areas in excess of 25% maximum and 2) steep slope areas in excess of 25% on average. The buildable land yield differs by approximately 450 acres from each scenario, with greater yields possible using average slope.

When the factor of constraints is figured into the calculation of available buildable land, the Town's current total undeveloped acreage of 5,645 acres is reduced to 3,438 acres. Such reduction totals 2,207 acres or 39% of total undeveloped acres in Plymouth. As the truly prime buildable land becomes built out over time, this percentage can be expected to rise.

After the constraints are recorded and the net buildable land is defined, the developable yield is calculated per land use utilizing the overlying zoning requirements. Table 2 depicts the buildable acreage for each zoning district

incorporating both steep slope scenarios.

Table 2: Buildable Acreage per Zoning District			
Zone	Principal Land Use	Buildable Acres with Average Slope >= 25%	Buildable Acres with Maximum Slope >= 25%
C	Commercial	9.03	9.03
M	Industrial	89.91	87.07
RA1	Residential	3,059.25	2,619.49
RA2	Residential	276.96	268.08
RA2L	Residential	2.66	2.66
Source: CRPA GIS, Plymouth Land Use Office			

The full build-out scenario may never materialize, but it is a useful tool to measure the effectiveness of zoning techniques and estimate growth carrying capacities.

Residential

Residential districts are the majority zones within the town available for development. While other uses are permitted besides residential development, home building will continue as the number one activity in these zones. A deduction of 25% is applied to the total of buildable land to account for new roads, utility easements, additional smaller wetlands not mapped, and lot irregularities. This assumption results in the following:

Table 3: Net Buildable Acreage per Zoning District					
Zone	Principal Land Use	Buildable Acres with Average Slope >= 25%		Buildable Acres with Maximum Slope >= 25%	
		Amount	Less 25%	Amount	Less 25%
RA1	Residential	3,059.25	2,294.44	2,619.49	1,964.62
RA2	Residential	276.96	207.72	268.08	201.06
RA2L	Residential	2.66	2.00	2.66	2.00

Theoretical Application – This application of build out represents the extreme-case scenario, which assumes that all development will utilize the minimum lot standards. Estimated housing unit yields at full build out, utilizing current minimum lot size requirements of each zone, are as follows:

- RA1 zone: 2,499 units
- RA2 zone: 452 units
- RA2L zone: 4 units
- Total New Units: 2,955

Using the current average of people per household of 2.6, the projection of population increase due to full build-out equals 7,684 people. Connecticut Water Company's Water Supply Plan (May 2000) utilizes 71 gallons of water used per customer per day as a benchmark for current and projected demand. Applying that rate of residential consumption to the projected build-out in housing units would increase water usage to 209,805 gallons per day. Assuming that the growth of developed land is constant at an average of 1% per year, full build-out would occur in approximately 40 years.

Historical Trend Application – Trend data was attained over a two-year period to ascertain the average building lot size for residential development. Seventy properties were analyzed by zone with the following average size per zone:

RA-1:	3.9 acres	47 lots
RA-2:	0.8 acres	19 lots
RA-2L:	0.2 acres	4 lots

Utilizing the above methodology yields the following:

RA-1:	588 units
RA-2:	260 units
RA-2L	10 units
Total	758 units

Using the current average of people per household of 2.6, the projection of population increase due to full build-out equals 1,971 people. Connecticut Water Company's Water Supply Plan (May 2000) utilizes 71 gallons of water used per customer per day as a benchmark for current and projected demand. Applying that rate of residential consumption to the projected build-out in housing units would increase water usage to 13,994 gallons per day.

Nonresidential

In the last decade between plans of conservation and development, industrial land uses have expanded in acreage by 125 acres. This is largely due to expansion of sand and gravel operations in the southern part of the Town. The

developable acreage zoned for industrial is mostly located in Phase III of the Plymouth Industrial Park in the Preston Road area.

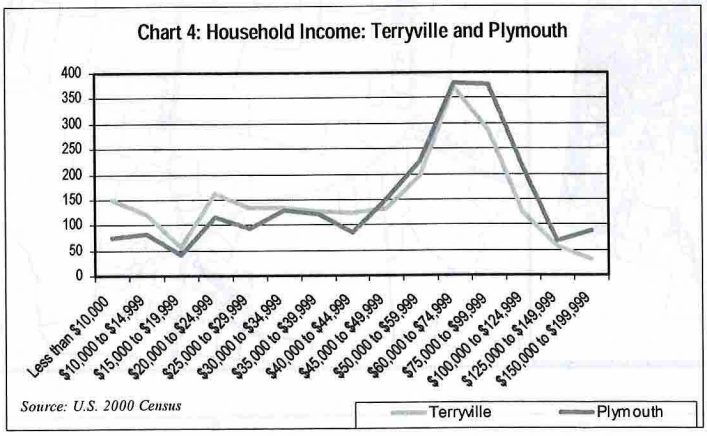
Although the market for residential development outpaces the market for industrial development, the inequity of zoned and committed land between those two uses will need future attention. Although full-build out scenarios are rare in many cases, an over-dependence of residential land development has a significant cost-of-services component. A more balanced approach toward distribution of land uses in the direction of providing more industrially zoned acres might be beneficial. Development of a new cluster of industrial uses should be explored for future development within the life of this plan. Requisites for location of a new industrial cluster would include:
Infrastructure – Access to modern systems of water, sewer, gas and communications.
Transportation – Corridors with relatively easy commuting routes to major concentrations of potential workers and networks that facilitate transport of goods.

Selected Neighborhood Summaries

The four neighborhoods represented in these summaries describe the unique characteristics and challenges of these particular areas. Each one holds measures of importance for the whole community, each contributing a special attribute that helps define the Town as a whole.

Terryville

This neighborhood of Plymouth represents the built-up, densest part of town. It is the commercial center of Plymouth and home to most of the municipal institutions, such as schools and town offices. For purposes of the U.S. Census, Terryville is a designated place, a distinction indicative of the village's importance within Plymouth. Map 1 depicts the boundaries of Terryville as described by the 2000 Census. This area contains many different land uses.



According to Census 2000, the population of this neighborhood in 2000 was 5,445, compared to the Town's population in 2000 of 11,634, or 45% of Plymouth's total population. The area of Terryville as delineated by the Census is 1,819 acres or 13% of the Town's total area in acres. The population density of

Town of Plymouth

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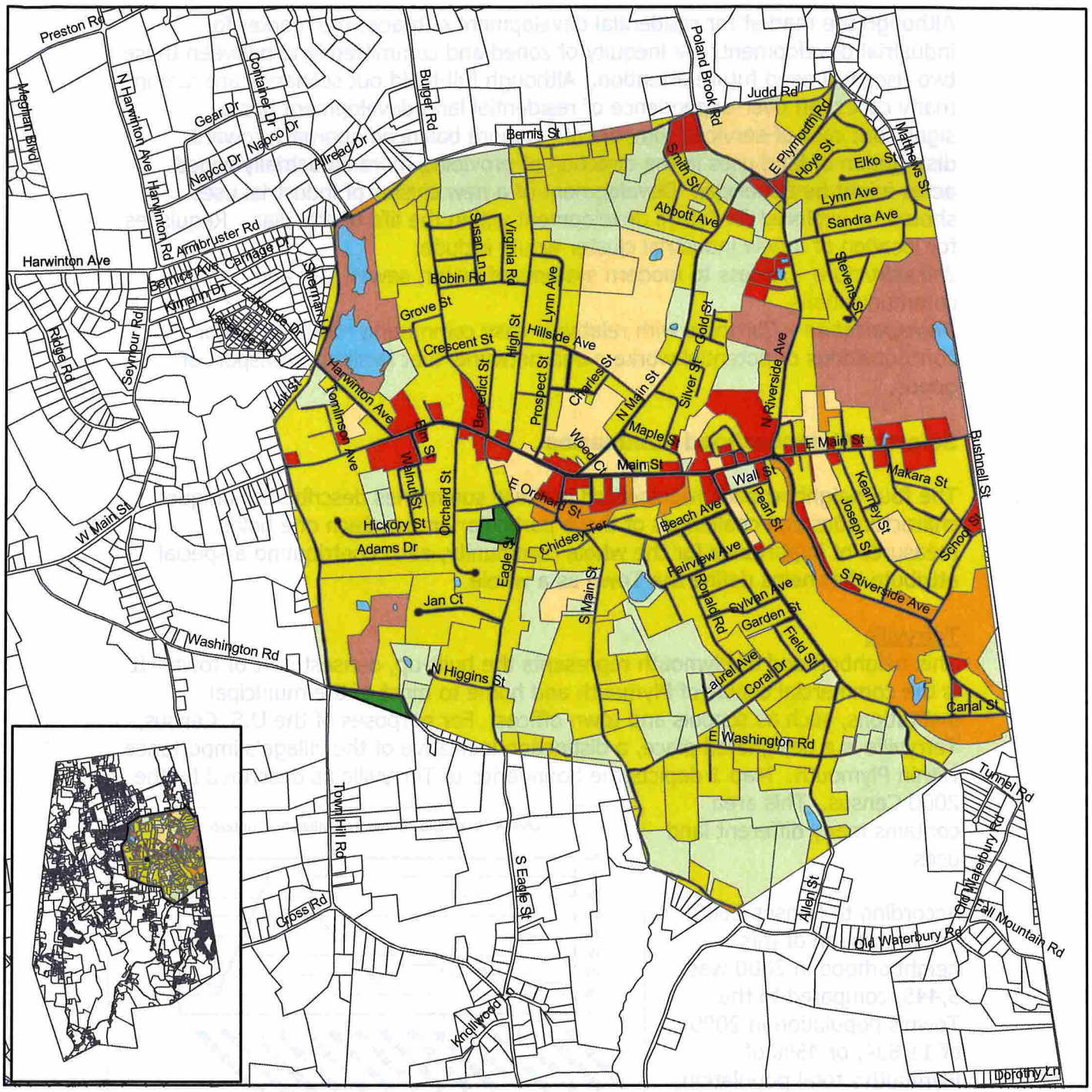
Map 4. Terryville Boundaries and Land Use



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0 0.125 0.25 0.5 0.75 1 Miles

Legend

- Agriculture
- Airport
- Commercial
- Industrial
- Institution
- Public Open Space
- Residential
- Road
- Semi-public Open Space
- Undeveloped
- Water
- Railroad

the Village of Terryville is approximately 3 persons per acre, compared with 0.8 persons per acre townwide.

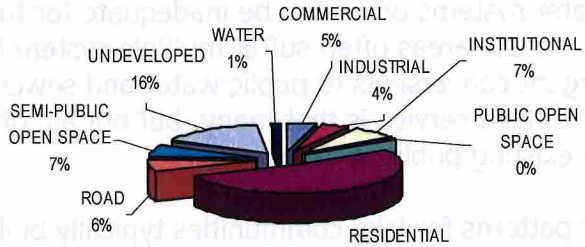
Of the 2,980 persons aged 18 years or under in Town, 1,385 (46%) reside in Terryville. Resident populations of the persons 65 years and older total 1,459 townwide, and total 847 (58%) in Terryville, according to the 2000 Census. This excludes populations of elderly housed in group quarters. These two age groups represent those cohorts traditionally more dependent upon municipal services than the other population groups.

Chart 4 illustrates the household income levels of Terryville residents versus the rest of Plymouth, based on Census 2000 data (income data collected in 1999). The village resident households earn comparably less than their counterparts in other sections of the Town. Additionally, 4.8% of Terryville residents are considered to be living under the federally-defined poverty level, as opposed to 3.3% for the remainder of Plymouth's population.

Chart 5 illustrates the land use distribution in Terryville. Besides being the center of almost half of the Town's population, Terryville represents Plymouth's greatest concentration of commercial land uses (41% of all commercial acres). Within the total of 1,809 acres, representing the Village of Terryville, 27% of Plymouth's residential acreage is contained. The Village also contains the wide majority of Town facilities, or institutional uses (74%). Only 5% of Plymouth's undeveloped land is located in Terryville.

Historically and characteristically, Terryville acted as the center for local commercial and civic activity for the Town of Plymouth. However, over time the local population became more mobile and commercial centers, therefore, became more accessible, many commercial functions in Terryville declined. The more recent character of Terryville is more akin to strip commercial development, catering to pass-thorough and commuter trips. The concentration of community facilities has allowed Terryville to retain its civic preeminence.

Chart 5: Terryville Land Use



Source: Plymouth Land Use Office, CCRPA GIS

To recapture the town center type of commercial activity will require a concerted effort to redefine the focus of Terryville's commercial

function. This redefinition will be a vital step to separating the strip-type development from a more discernible village center serving niche or community-oriented market. Another concern for Terryville is neighborhood preservation. Chart 5 illustrates that Terryville is a strong location for residents, but a continued move toward strip-type development with its attending characteristics of pedestrian unfriendliness can degrade the residential element in the center.

Plymouth Center

Plymouth Center represents the original early colonial settlement in the Town. The historic district here has an extensive building inventory. The preservation of this neighborhood was expressed as a priority among many attendees of the Community Forum held on December 8, 2003, regarding the Plan of Conservation and Development.

This neighborhood is unique from an historical standpoint, and from its definitive village character. There are 145 structures that contribute to this National Register Historic District. Chapter #7 detailed more about this unique neighborhood and its contribution to the town as an historic resource. As a unique resource, opportunities for enhancing the environment for tourism could be explored.

Lake Communities

The Town contains two major lake communities that developed as many other such communities did in Connecticut. Originally, these lake communities were developed as seasonal cottages to take advantage of the lake proximity for recreational purposes. Most of these lake communities developed prior to modern building codes, and their seasonal appeal has dwindled over time giving way to year-round conversions. Thus, unique, alternate-housing stock was developed, but conversion to all year use brought other challenges.

Typically, these homes were built on small lots with shallow wells and septic systems of varying quality. While this situation was suitable for seasonal communities, the trend toward year-round conversion and general aging of the septic and water systems proved to be inadequate for the contemporary lake communities. These areas often suffer multiple system failures that quickly precipitate urgent conversions to public water and sewer. Compounding the expense of extended service is that many, but not all, of these communities are isolated from existing public systems.

Development patterns for lake communities typically build out from the lake shores concentrically, with later settlements on the outer rings. Traffic circulation patterns are usually tight networks serving the small lots, and shore line roads that connect in one or two intersections with a main arterial or collector.

Finally, the lakes, which attracted vacationers originally and then residents, are important natural resources that require care. The lake associations need to be vigilant to encourage best management practices among its residents to avoid water quality problems brought on by polluted runoff.

Lake Plymouth

The Lake Plymouth community has a private association (Lake Plymouth Community Association) that has tax district powers to assess property owners for improvements to support infrastructure to the neighborhood. Their by-laws also provide ordinances locally enforced with fines for noncompliance.

From the 2000 Census, there are 365 people residing in this neighborhood, in 150 housing units, exclusively single-family (2.4 people per unit). Only four housing units are deemed seasonal. The 2000 Census also totaled 73 school-age children in the community.

The water quality of the lake itself is rated "A" by DEP (2003). This rating declares the waters to be swimmable and fishable, appropriate for contact recreation, but not recommended for drinking.

Fall Mountain Lake

This area The Fall Mountain Lake community is a special taxing district as created in state statutes. The Town maintains the roads of the community, but other services are assessed on the property owners for the costs of these services.

The population of the neighborhood, according to the 2000 Census, is 531, of which 114 are school-age children. The Census totals 200 housing units in the 13 census blocks of the Fall Mountain Lake area. There are seven houses considered vacant (one rental, four seasonal and two other vacant).

The water quality of the lake itself is rated "A" by DEP (2003). This rating declares the waters to be swimmable and fishable, appropriate for contact recreation, but not recommended for drinking.

Open Space Inventory

The purpose of an open space inventory in the Plan of Conservation and Development is to provide the Town with a basis from which to proceed in the following activities:

- development of an open space acquisition plan
- consideration of rezoning areas in an effort to direct development patterns

The land use analysis, employed earlier in this Chapter, provided a picture of public open space and semi-public open space in Plymouth.

The differentiation between the two types of open space is important. The two defining elements are:

- ownership
- accessibility

Semi-public open space has an ownership that restricts public access. Examples of semi-public open space are the watershed parcels of the Bristol Water Department and Connecticut Water Company. The primary function of this open space is to help ensure ground and surface water quality. Other examples of semi-public open space are lands of the Terryville and Plainville Fish and Game Clubs.

Public open space parcels have wider accessibility allowances with a primary function of land conservation. Examples of ownership are the Plymouth Land Trust and the Town of Plymouth, as well as federal and state conservation areas and forests.

The current assemblage of open space parcels, both public and semi-public, are important in planning where to direct expansion of the open space inventory. Conversely, the open space inventory is useful in delineating areas where development is more desirable.

Future Open Space Considerations

Undeveloped land as mapped on the open space map, is useful for describing areas for open space consideration. Stream buffers can also be regarded as future open space considerations. Such stream corridors would necessitate securing of easements from property owners along the waterway. Stream corridors can connect open space parcels that may not otherwise be connected, or can add to the open space inventory in cases where acquisition is not feasible.

Additionally, the mapping of open space can assist in identification of preferred locations for open space sections in cluster subdivisions.

Although the total acreage of public and semi-public open space approximates 24% of the land area of the Town, the semi-public portion of the open space spectrum is subject to changing priorities of water companies in the area of supply, demand and financial considerations.

Very often the rate of demand for open space acquisitions parallels the rate of demand for land development. That is, the urgency for open space dedication

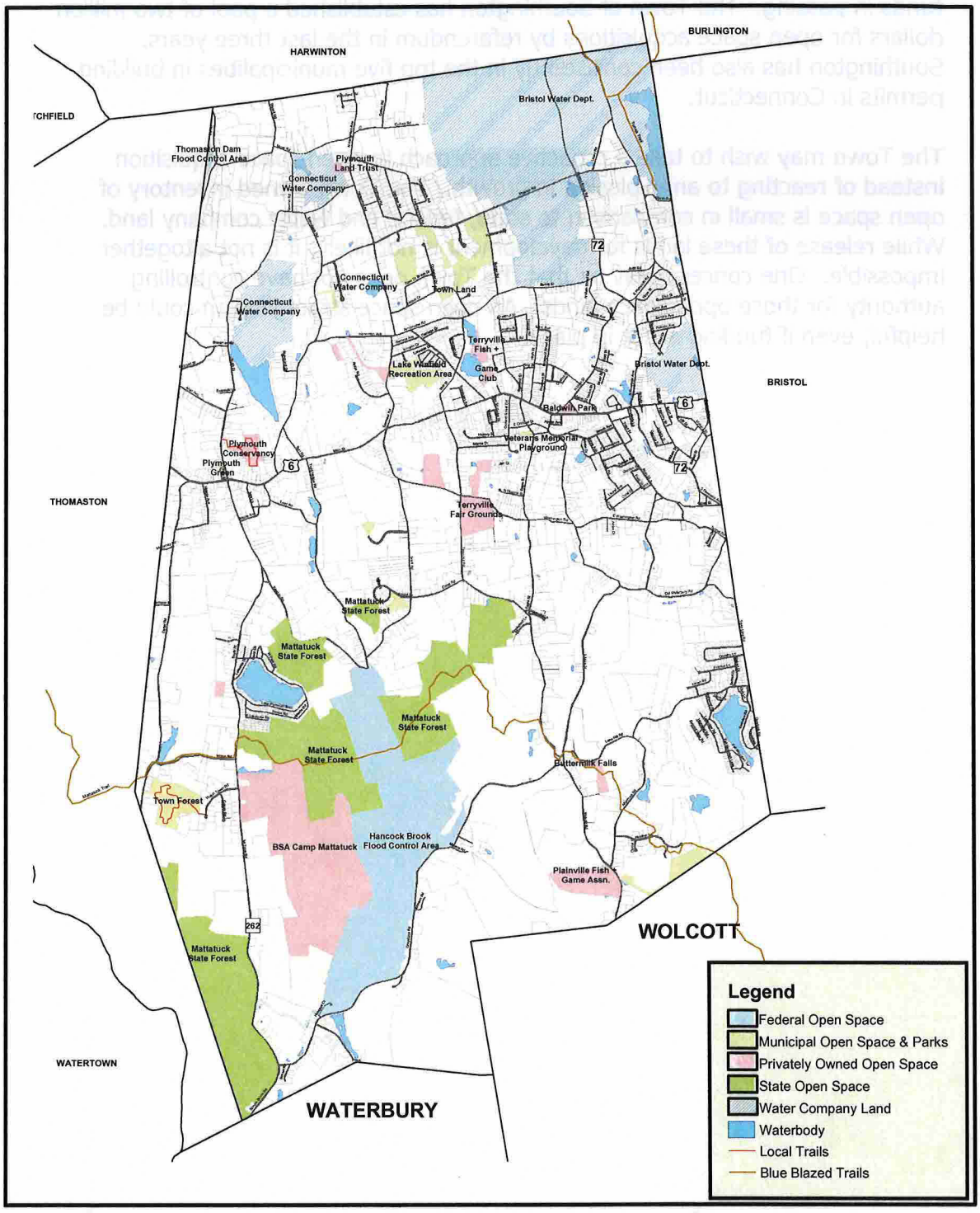
often follows a rapid rise in subdivision growth. Plus, a stronger tax revenue base can actually help referendums for establishment of open space acquisition funds in passing. The Town of Southington has established a pool of two million dollars for open space acquisitions by referendum in the last three years. Southington has also been consistently in the top five municipalities in building permits in Connecticut.

The Town may wish to take a proactive approach to open space acquisition instead of reacting to an explosion in growth. The Town-owned inventory of open space is small in comparison to state, federal and water company land. While release of these lands for development is not likely, it is not altogether impossible. One concern may be that the Town does not have controlling authority for those open space lands. An open space strategic plan could be helpful, even if funding is not in place.

Town of Plymouth

Plan of Conservation & Development

Open Space Map



Source:
Town of Plymouth;
Connecticut DEP
Environment & Geographic Information Center 2003

0 0.45 0.9 1.8 Miles

This map is developed for planning purposes only.

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