
TOWN OF PLYMOUTH PLAN OF CONSERVATION AND DEVELOPMENT

2015



Final Version:
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Plymouth Planning & Zoning Commission

TOWN OF PLYMOUTH

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Additionally, many thanks to the residents of Plymouth for their continued engagement, feedback, and questions offered during the fourteen months of meetings over which the Plan was developed. Their contributions led to a better Plan and one that reflects the sentiments of the community.

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INTRODUCTION

Overview

The Plan of Conservation and Development is a guide for the future of Plymouth. It suggests ways to enhance the overall community and improve the quality of life of present and future residents. While the Plan is primarily focused on the physical development of Plymouth, it also considers the economic and social aspects of the community. This Town Plan is an advisory document, not only to the Town's Planning and Zoning Commission, but also to all other Town boards and commissions and Plymouth residents as necessary. It is intended to guide local activities and provide a framework for consistent decision-making with regard to conservation, development, and infrastructure activities in Plymouth over the next decade or so.

The Plan is general, long-range and provides a picture of how Plymouth wishes to develop in the future. The Plan is generally consistent with the State and Regional Plans of Conservation and Development. As a policy document, the Plan provides a framework for how Plymouth can implement a schedule of strategies to achieve the recommended actions in the Plan. Private sector decisions can likewise be impacted and supported by the Town Plan. The Plan can contribute to long range marketing and represent an image of the community's strengths and where opportunities for development can be pursued in harmony with the Town's future land use goals.

The Plymouth Planning and Zoning Commission In concert with members of other boards and commissions of the Town, has prepared the Plan of Conservation and Development (*POCD*) in accordance with the provisions of Section 8-23 of the Connecticut General Statutes. Those provisions state that every municipality prepare a Plan of Conservation and Development and that such plan be reviewed and updated at least once every ten years. The local planning and zoning commission is given the statutory responsibility to prepare the plan and amend it as necessary. This plan represents a comprehensive update and reflects the goals and objectives of the community for the ensuing period. The plan is intended to help guide planning decisions so that development, infrastructure, and community services be in concert with each other.

Section 8-23 states in part that "the plan of conservation and development shall be a statement of policies, goals and standards for the physical and economic development of the municipality' and that "the plan shall be designed to promote with the greatest efficiency and economy the coordinated development of the municipality and the general welfare and prosperity of its people."

The previous POCD was adopted in 2005. This update was prepared by the Planning and Zoning Commission with support from the Economic Development Commission, Inland/Wetlands and Watercourses Commission, the Board of Finance, the Capital Improvements Committee, Town Council, Town staff, the central Connecticut Regional Planning Agency, and the Naugatuck Valley Council of Governments. Public involvement also helped shape the Plan, through meetings opened to the public, public forums, and a public hearing. During the adoption and endorsement process, the Plymouth Town Council endorsed this Plan. In their endorsement they emphasized that while this Plan references numerous federal and state guidelines or policies, decision-making on specific improvements should remain at the local level(s) to afford the local context to drive those decisions.

Structure of the Plan

The structure of this Plan is consistent with the previous 2005 Plan. Each chapter will include a brief overview of the most pertinent findings followed by a number of recommended actions, where applicable. A number of critical areas including; land use, economic development, housing, transportation, and conservation, include a goal and objective. Each recommendation includes the identification of oversight entity within the town, such as the planning and zoning commission, economic development commission, etc. In many cases there are multiple partner-boards and commissions which support the implementation but for the purpose of the implementation strategy the board or commission with the most direct oversight is shown. These recommendations typically include an implementation schedule.

Implementation Schedule

Implementation of actions to achieve the goals and objectives of the POCD are divided into four timeframes, over the life of the Plan as follows:

- Short-term (S): <1 to 2 years
- Mid-term (M): 3 to 5 years
- Long-term (L): 6 to 10 years
- Continual

Goals, Objectives, and Recommendations

This plan includes long range goals and objectives, and recommendations to help achieve them. Some of the goals and objectives are being carried over from the 2005 Plan. Considerable progress has been made in certain areas and through the course of this Plan's development and public meetings these goals and objectives were confirmed or revised

accordingly. Updated recommendations were also developed in conjunction with the town's many boards, commissions, and committees. The following recommendations are designed to achieve the long range goals and objectives of the community. It is unlikely that all of the recommendations will be implemented during the ten-year planning horizon. Many of the recommendations are mutually supportive of other areas in the Plan. The ensuing chapters provide data and background which help establish trends and needs. Recommendations were made in the following topic areas:

- Land Use
- Economic Development
- Housing
- Conservation and Natural Resources
- Transportation Systems
- Community Facilities and Services
- Cultural, Historic and Recreational Resources

Land Use

Plymouth continues to become urban and developed. Since 1985 over 600 acres have been converted to developed, turf, or grass. In that same time the town lost more than 461 acres of deciduous forest and 18 acres of forested wetlands. The Town's population has increased by approximately 1,700 over this period and the numbers of households has increased by 1,200. The trends of large lot single-family home development has contributed to this land use pattern and it is consistent with other municipalities in Connecticut over the same time.

The Plymouth Planning and Zoning Commission and Economic Development Commission made considerable progress on their recommendations of the 2005 Plan. The Zoning regulations now include provision for affordable housing, age restricted and elderly housing, an 8-2j Village district, and recently approved the creation of new Industrial Zones. All were recommendations of the 2005 Plan. The Economic Development Commission has also made progress by continuing to add businesses to the industrial park, advocating for the Main Street Streetscaping project, and continue to utilize its economic incentives to attract business to Plymouth. In addition, the subdivision regulations allow for open or cluster subdivisions and require the consideration of alternative energy sources. From an economic development perspective the Commission hopes to revitalize its Main Street commercial and retail uses. Additionally, an overarching goal of this Plan is to maximize the efficiency of infrastructure that supports commercial, industrial, and residential development through coordinated land use planning that involves multiple agencies. From roads to bridges to libraries and sewers, this Plan seeks to reduce long term costs of providing municipal services through a well-coordinated land use plan. More specially, to ensure that the current infrastructure allows for economic growth through maximizing existing infrastructure, preventive capital investments, and siting new development where services exist to support it.

Goal-Encourage sustainable growth.

Objective-Promote uses of land that balance societal needs with the land's particular characteristics

Recommendation	Oversight	Time Frame
Conduct a Parking and Access Management Plan for the Route 6 Corridor	P&Z	Mid-Term
Encourage alternative to traditional single family home-subdivisions that preserve land, minimize infrastructure costs such as cluster development	P&Z	Continual
Expand Housing Choices for all income levels of residents	P&Z	Continual
Continue Efforts to Streamline the Permit Processes to support Commercial and Industrial Development	P&Z	Continual
Consider Low Impact Development regulations	P&Z	Mid-Term
Prepare a study to identify recreational trail linkages between parks and open space with inclusion of current or planned sidewalks networks	P&Z	Short-Term
Encourage sustainable development in areas of established infrastructure and guide future development in concert with projected infrastructure expansion	P&Z/EDC	Continual
Require Mapping of Stone Walls for site plans to consider preservation	P&Z/HPC	Short-Term
Utilize the state open space grant program in coordination with the land trust and water companies	P&Z/IWWC	Mid-Term
Encourage Low Impact Development and Sustainable Design in infrastructure and new development	P&Z/PWAC	
Coordinate projected water and sewer system expansion and ensure consistency between areas of planned expansion and zoning bulk-lot requirements.	P&Z/TAHD/WPCA	Continual
Maximize Existing Infrastructure through maintenance and compatible land use development	WPCA/EDC/P&Z/PWAC	Continual
Review Land Use regulations for opportunities for private investment in infrastructure	WPCA/P&Z	Mid-Term
Require a complete full set of final approved subdivision plans be filed on the land records and electronic set of application files prior to filing mylars	P&Z	Short-Term
Continue to participate in the regional rail transportation alternative study	P&Z	Short-Term
Continue to assess the need and demand for transit services	P&Z	Continual
Assess water abundance, quality, and availability	IWWC/TAHD	Continual

Recommendation	Oversight	Time Frame
Consider establishing an enterprise zone along south riverside avenue	EDC	Mid-term
Re-examine existing zoning districts throughout town to ensure uses and lot and bulk requirements are consistent with existing infrastructure and planned expansions	P&Z	Mid-Term
* Economic Development Commission (EDC), Planning and Zoning Commission (P&Z), Water Pollution Control Authority (WPCA), Public Works Advisory Committee (PWAC), Torrington Area Health Dept. (TAHD), Historic Properties Commission (HPC)		

Economic Development

The economy of Plymouth has changed in the last ten years as have many other municipalities in Connecticut, and the Country, since weathering the great recession of 2008. In spite of the economic downturn the Plymouth economy is showing signs of positive growth. The Plymouth industrial parks have retained the majority of their businesses and have added several new companies. New housing units are being built and the population is increasing. Although the resident workforce has changed composition, as has the State in general, from manufacturing to more professional, scientific, and management positions, the unemployment rate in Plymouth is less than the State average, and the Town's large population cohort is of working age (ages 35-54). Additional details of Plymouth's economy are described in detail further in the Plan.

Goal-Strengthen the Town's economic base and enhance municipal revenues with employment opportunity.

Objective-Create and implement an overall economic development strategy that includes and promotes commercial and Industrial areas in town.

Recommendation	Oversight	Time Frame
Continue to Market Town Owned Property in the Industrial Park	EDC	Continual
Continue to develop and offer innovative incentives for business development	EDC	Continual
Update the Comprehensive Economic Development Strategy	EDC	Mid-Term
Develop a Main Street Redevelopment Strategy	EDC	Short-Term
Extend and Continue Streetscape Improvements along Main Street and in Historic Plymouth Center	EDC/P&Z	
Continue to Market and Utilize Rail Lines as part of the Economic Development Strategy	EDC/P&Z	Continual

Recommendation	Oversight	Time Frame
Pursue State, Federal and other grants for infrastructure, business development, and housing	EDC/PWAC/P&Z	Continual
Encourage sustainable development in areas of established infrastructure and guide future development in concert with projected infrastructure expansion	P&Z/EDC	Continual
Maximize Existing Infrastructure through maintenance and compatible land use development	P&Z/EDC/WPCA/ PWAC	Continual
* Economic Development Commission (EDC), Planning and Zoning Commission (P&Z), Water Pollution Control Authority (WPCA), Public Works Advisory Committee (PWAC)		

Housing

Plymouth's housing market has not grown or changed significantly since 2005. But, between 2000-2010 decennials census, more than 350 new units were built. These new units were primarily detached single family homes. As discussed further, single family homes constitute 77% of all housing units in Plymouth indicating a continued need for more variety in the housing stock for elderly and younger entry work force-aged persons.

Goal- Provide a variety of housing types to address the diverse needs of present and future populations and enhance the quality of life.

Objective- Consider housing unit type and affordability in the planning process, and encourage home ownership.

Recommendation	Oversight	Time Frame
Review lot-size requirements of zoning districts for efficiency and desired densities.	P&Z	Short-term
Implement neighborhood preservation strategies to reduce vacancy rates in older sections of town	P&Z	Mid-term
Expand the variety of housing unit options to address constrained infrastructure and to provide a range of elderly and affordable housing opportunities	P&Z	Short-term
Encourage alternatives to traditional single-family subdivisions that hold potential for positive net fiscal effects and that minimize infrastructure and educational costs, such as cluster development	P&Z	Mid-term
Consider requiring “affordability” deed restrictions for new accessory apartments	P&Z	Short-Term
* Planning and Zoning Commission (P&Z)		

Conservation and Natural Resources

Plymouth is fortunate in its abundance and variations of physical and natural resources. Plymouth is approximately 22.3 square miles in size of which 21.7 is land, and .06 is water. The Pequabuck River runs through its borders and the Town is home to Hancock Brook Lake, a 40 acre Army Core of Engineers publicly available site, and contains beautiful waterfalls in Horse-shoe falls, and Greystone Falls. There are many watercourse and wetlands in Town and the open space includes Federal, Town, State Forests, and Land Trust Lands.

Goal-Guide development that recognizes the existence of, and plans for the protection of environmentally sensitive areas and allow for public use and enjoyment.

Objective-Take proactive measures to ensure the long-term protection of natural resources and revitalize existing areas.

Recommendation	Oversight	Time Frame
Reconvene the Storm Water Committee	IWWC	Short-Term
Develop an Open Space Inventory	IWWC	Short-Term
Develop an Open Space Plan that illustrates policies and strategies for acquisition	IWWC	Long-Term
Review and Update the IWWC Regulations	IWWC	Continual
Participate in the development and implementation of the Pequabuck River Watershed Management Plan	IWWC	Short-Term
Develop an Inventory of Conservation Easements	IWWC	Long-Term
Utilize the state open space grant program in coordination with the land trust and water companies	IWWC/P&Z	Mid-Term
* Inland Wetlands and Conservation Commission (IWWC), Planning and Zoning Commission (P&Z)		

Transportation Systems

Plymouth's transportation systems are critical to movement of residents and the ability to move goods and provide services. Plymouth contains two major state routes and includes a complex system of local roads, bridges, and dams. These networks also include many ancillary items including draining, signage, curbing, sidewalks, and striping. There is a strong desire within the Town to inventory the system and apply schedules of replacement, rehabilitation, and preservation activities to prolong the life of the system. This ensures a safe and well operating system, affords the ability to plan for major capital investments, and strategically invest in major municipal infrastructure components.

Goal-Provide a variety of safe and efficient transportation options, enhance mobility and assess and improve unsafe and inefficient facilities.

Objective-Develop projects that improve safety and operations, support economic development, and maintain the system through systematic and ongoing preservation activities.

Recommendation	Oversight	Time Frame
Continue to employ asset maintenance and prioritizing systems such as the Pavement Management System	PWAC	Continual
Continue to utilize bond funds for road management	PWAC	Short-Term
Continue to take proactive steps towards facility repair and reconstruction, i.e.. New Highway Garage	PWAC	Continual
Examine Traffic Improvements at S. Main, Route 6, and Agney Avenue	PWAC/ P&Z	Short-Term
Continue to take proactive steps towards facility repair and maintenance to pro-long their useful life	PWAC	Continual
Identify responsible parties for RR bridge infrastructure	PWAC	Short-Term
Inventory and Update the Pavement Management System	PWAC	Mid-Term
Modernize Traffic Signals with latest technology and adaptive signalization	PWAC	Mid-Term
* Public Works Advisory Committee (PWAC), Planning and Zoning Commission (P&Z)		

Community Facilities and Services

Plymouth includes many facilities for community use, administration of the town, public works, public safety (police and fire protection) and infrastructure. Although the board of education and the water pollution control authority maintain their own facilities, the capital investments and bonding for major investments are funded through the town budget process and are therefore a major part of the Town's capital, operating, and maintenance programs.

Goal-Plan for municipal facilities and services that meet the needs of the community and needs of the future.

Objective Develop long-range capital and operational plans that are coordinated among interdepartmental needs and projections.

Recommendation	Oversight	Time Frame
Develop a 5 Year Capital Plan	CIC	Short-Term

Recommendation	Oversight	Time Frame
Conduct a Municipal Offices Needs Assessment	CIC	Short-Term
Develop a Municipal Properties Strategy to maximize existing facilities functions	CIC/P&Z	Mid-Term
Implement Measures to lessen greenhouse gas emissions from municipal facilities	BOE/PWAC	Mid-Term
Implement the Plan of North Street Reservoir	P/R	Short-Term
Inventory Municipally Owned Assets	PWAC	Short-Term
Conduct a municipal Recreation Facilities Plan	P/R	Short-Term
Create a Town Owned Property Commission	P/R	Mid-Term
Consider establishing an enterprise zone along south riverside avenue	EDC	Mid-term
Examine alternative energy sources for municipal energy generation	P&Z/PWAC/CIC	Long-Term
* Parks and Recreation (P/R), Planning and Zoning Commission (P&Z), Board of Education (BOE), Public Works Advisory Committee (PWAC), Capital Improvements Commission (CIC), Board of Finance (BOF)		

Cultural, Historic and Recreational Resources

Plymouth has an extensive history in New England and early settlement. There are a number of well-known archaeological sites within the Town as well as state historic properties. The Town has an established Historic Properties Commission and the zoning and subdivision regulations do require the identification of sensitive areas.

Goal- Optimize utilization and preservation of cultural, historic and recreational resources.

Objective- Promote efforts to identify key resources and develop new resources based on needs and opportunities.

Recommendation	Oversight	Time Frame
Conduct a Cultural resource assessment to inventory historic, cultural and recreation assets	P&Z, HPC	Long-Term
Require stone wall mapping on site plans and subdivision applications	P&Z, HPC	Short-Term
* Planning and Zoning Commission (P&Z), Historic Properties Commission (HPC)		

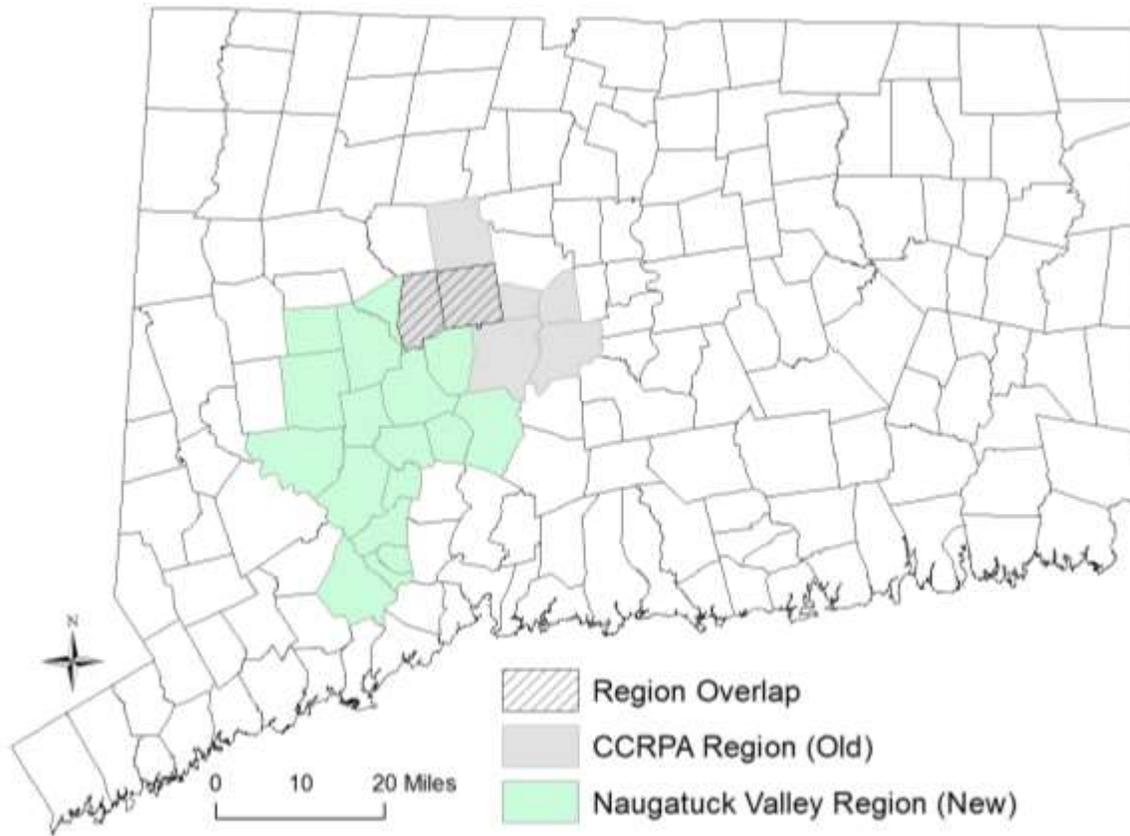
REGIONAL CONTEXT

Past and Present

When the process was started to update this Plan the Town of Plymouth was within and an active member in the Central Connecticut Region Planning Agency (CCRPA). When the Plan was adopted the Town of Plymouth was a member of the Naugatuck Valley Council of Governments. A major regional planning organization consolidation occurred during the 2013-2014 legislative session. During this session the legislature took action to reduce the numbers of regional planning organizations from fourteen (14) to nine (9). Additionally, the enacted legislation changed the organizational structure of each Regional Planning Organization, which previously could have been a Regional Planning Agency (RPA), a Regional Council of Elected Officials (RCEO), or a Regional Council of Governments (RCOG) to form and become a Regional Council of Governments. The primary distinction between the RCEO, RPA, and RCOG is that a regional Council of Governments' membership on its executive board includes the Chief Elected Official of the member municipality, versus the earlier board representation which typically included the municipality's appointment of the local planning and zoning commission. While speculation remains regarding the benefits of the change in board structure, it is widely held that since the early 1960's when the Regional Planning Organizations were first formed that the duties of the regional entities have changed considerably from what was primarily a regional planning function to matters of regional significance including economic development, transportation planning, shared services procurement and administration.

CCRPA surpassed 40 years of service to its member municipalities in 2007 and consisted of the seven (7) central Connecticut communities of Berlin, Bristol, Burlington, New Britain, Plainville, Plymouth, and Southington. Similar to its new regional planning entity, the Naugatuck Valley Council of Governments, the region had urban, rural and small town elements that weave a varied pattern and includes the nineteen (19) municipalities of Bethlehem, Woodbury, Southbury, Watertown, Thomaston, Plymouth, Bristol, Wolcott, Waterbury, Middlebury, Naugatuck, Prospect, Cheshire, Oxford, Beacon Falls, Seymour, Ansonia, Derby, and Shelton. Both agencies assist their member communities in the planning areas of transportation, land use, economic development, homeland security, public health and safety, and environmental stewardship, especially as they relate to the region as a whole.

Figure 1-COG Geography Comparison



Below represents a series or comparison of basic economic characteristics and Plymouth's relative position within its previous Central Connecticut region and new Naugatuck Valley Region.

Figure 2-Median Income

TOWN	2013- Median household income (dollars)	2013 - Median family income (dollars)	2013 - Per capita income (dollars)
Burlington	\$ 105,422	\$ 114,577	\$ 43,049
Berlin	\$ 87,432	\$ 105,084	\$ 38,738
Southington	\$ 80,029	\$ 100,430	\$ 38,046
Plymouth	\$ 70,273	\$ 82,095	\$ 30,527
Plainville	\$ 60,630	\$ 81,219	\$ 32,531
Bristol	\$ 57,610	\$ 69,862	\$ 30,573
New Britain	\$ 40,294	\$ 47,625	\$ 20,655

Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey

Figure 3-Table: CCRPA Median HH Income, Family Income, & Per Capita

TOWN	2013- Median household income (dollars)	2013 - Median family income (dollars)	2013 - Per capita income (dollars)
Cheshire	\$ 111,638	\$ 128,000	\$ 43,722
Oxford	\$ 102,167	\$ 109,235	\$ 42,719
Prospect	\$ 98,151	\$ 109,375	\$ 37,951
Middlebury	\$ 96,181	\$ 108,203	\$ 42,903
Shelton	\$ 86,138	\$ 105,580	\$ 41,679
Beacon Falls	\$ 85,280	\$ 100,588	\$ 34,471
Wolcott	\$ 83,993	\$ 94,659	\$ 35,884
Bethlehem	\$ 83,871	\$ 96,146	\$ 42,575
Woodbury	\$ 81,597	\$ 104,529	\$ 44,474
Watertown	\$ 80,067	\$ 100,259	\$ 37,140
Thomaston	\$ 76,692	\$ 85,965	\$ 33,870
Seymour	\$ 75,426	\$ 94,331	\$ 33,667
Southbury	\$ 73,341	\$ 103,750	\$ 43,058
Plymouth	\$ 70,273	\$ 82,095	\$ 30,527
Naugatuck	\$ 59,056	\$ 76,214	\$ 28,820
Bristol	\$ 57,610	\$ 69,862	\$ 30,573
Derby	\$ 53,098	\$ 63,951	\$ 27,568
Ansonia	\$ 45,505	\$ 67,306	\$ 25,374
Waterbury	\$ 40,639	\$ 47,646	\$ 21,120

Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey

Figure 4-Table: CCRPA % of Families & People Below the Poverty Line

TOWN	% BELOW THE POVERTY LEVEL - All families	% BELOW THE POVERTY LEVEL - All people
New Britain	17.7	22.4
Bristol	8.6	10.5
Plainville	5.5	6.7
Berlin	4.5	4.8
Plymouth	4.1	6.6
Southington	2.8	4.3
Burlington	2.7	3.6

Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey

Figure 5-Table: NVCOG % of Families & People Below Poverty Line

TOWN	% BELOW THE POVERTY LEVEL - All families	% BELOW THE POVERTY LEVEL - All people
Waterbury	19.7	23.3
Ansonia	14.9	18.6
Derby	12.4	13.3
Bristol	8.6	10.5
Naugatuck	8.5	9.9
Seymour	4.9	7.2
Plymouth	4.1	6.6
Shelton	3.4	4.7
Beacon Falls	3.2	3.1
Woodbury	3.2	5.9
Southbury	2.7	5.9
Prospect	2.4	3.8
Oxford	2.2	4
Cheshire	1.5	2.5
Watertown	1.4	3.3
Wolcott	1.3	2.9
Thomaston	1.3	2.9
Bethlehem	0.8	4.8
Middlebury	0.7	3.6
Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey		

LAND USE

Introduction

Analysis of land use patterns and trends is a basic foundation for a Plan of Conservation and Development. 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. Accordingly, areas of favorable natural resources that are conducive to supporting residential, commercial or industrial needs have experienced initial growth. As the community grows, competition between land uses exists. Competition begins to exist among land uses that require similar physical characteristics. Land areas exhibiting prime characteristics become scarcer as the community grows. One function of The Plan of Conservation and Development is to serve as guide for how and where future growth in Plymouth should occur among its 13,867.7 of land acres, and a net of surface water area of 423.2 acres.

Figure 6-Map: Land Use Distribution 2006

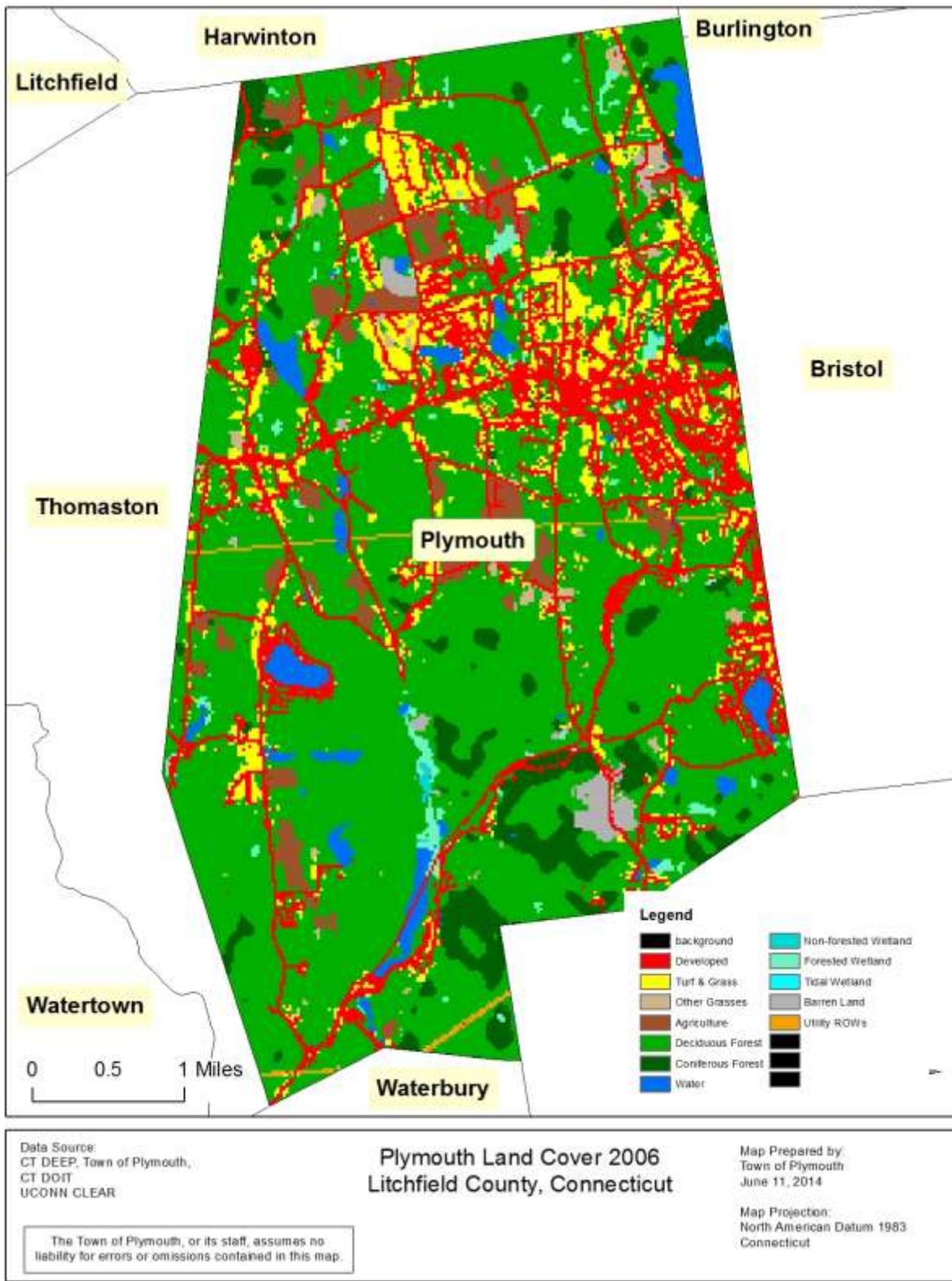


Figure 7–Table: Land Use Classification Definitions

	Developed	High-density built-up areas typically associated with commercial, industrial and residential activities and transportation routes. These areas can be expected to contain a significant amount of impervious surfaces, roofs, roads, and other concrete and asphalt surfaces.
	Turf & Grass	A compound category of undifferentiated maintained grasses associated mostly with developed areas. This class contains cultivated lawns typical of residential neighborhoods, parks, cemeteries, golf courses, turf farms, and other maintained grassy areas. Also includes some agricultural fields due to similar spectral reflectance properties.
	Other Grasses	Includes non-maintained grassy areas commonly found along transportation routes and other developed areas, and within and surrounding airport properties. Also likely to include forested clear-cut areas, and some abandoned agricultural areas that appear to be undergoing conversion to woody scrub and shrub cover.
	Agricultural Field	Includes areas that are under agricultural uses such as crop production and/or active pasture. Also likely to include some abandoned agricultural areas that have not undergone conversion to woody vegetation.
	Deciduous Forest	Includes southern New England mixed hardwood forests. Also includes scrub areas characterized by patches of dense woody vegetation. May include isolated low density residential areas.
	Coniferous Forest	Includes southern New England mixed softwood forests. May include isolated low density residential areas.
	Water	Open water bodies and watercourses with relatively deep water.
	Non-forested Wetland	Includes areas that predominately are wet throughout most of the year and that have a detectable vegetative cover (therefore not open water). Also includes some small water courses due to spectral characteristics of mixed pixels that include both water and vegetation.
	Forested Wetland	Includes areas depicted as wetland, but with forested cover. Also includes some small water courses due to spectral characteristics of mixed pixels that include both water and vegetation.
	Tidal Wetland	Emergent wetlands, wet throughout most of the year, with distinctive marsh vegetation and located in areas influenced by tidal change.
	Barren	Mostly non-agricultural areas free from vegetation, such as sand, sand and gravel operations, bare exposed rock, mines, and quarries. Also includes some urban areas where the composition of construction materials spectrally resembles more natural materials. Also includes some bare soil agricultural fields.
	Utility Rights-of-way (Forest)	Includes utility rights-of-way. This category was manually digitized on-screen from rights-of-way visible in the Landsat satellite imagery. The class was digitized within the deciduous and coniferous categories only.
	* Source UCONN CLEAR	

Land Use Analysis

Land Use is the term used to describe modifications to and or the management of the natural environment into a built environmental or settlement. It is not to be confused with zoning which is a localized regulatory division of land. One way of identify large scale trends in development patterns is to look at Land Cover Change. For this review the University of Connecticut's Center for Land Use Education's and Research Land Cover data will be used. A detailed description of the categories are below. The trends allow planners and others to study human settlement behavior and identify its impact on the natural environment. A review of the land cover change can be used to identify potential environmental and social patterns that can shape long range plans.

Plymouth's Land Use Cover change continues to indicate a trend of increased development. This development has primarily replaced wetland forests, deciduous forests, and agricultural fields. Because much of the town's population now has public water and sewerage the value of the land cover change is slightly diminished for use in assessing human settlement behavior. The location, extent, and accessibility of new development to public utilities greatly increases the natural capacity of where human settlement patterns can and will occur in communities. Combining the local data of types of building permits issued and for what types of human settlement use, for example zoning data, with the land use cover data indicates that over the past 20-30 years the dominant type of development in Plymouth has been residential with some industrial, and more manufacturing in the last ten years.

When the 1993 Plymouth Plan of Development was created, only twenty years ago, 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. Small to medium size subdivisions were also created, scattered throughout the town. Lot split residential development also occurred.

Current Land Use Analysis -To analyze trend data in land use since the 1993 and 2015 Plans of Development, the classification of land uses utilized were used again to allow direct comparison with current use patterns. Table 1 illustrates the land use classification since 1985.

Figure 8- Table: Land Use Distribution 1985-2006

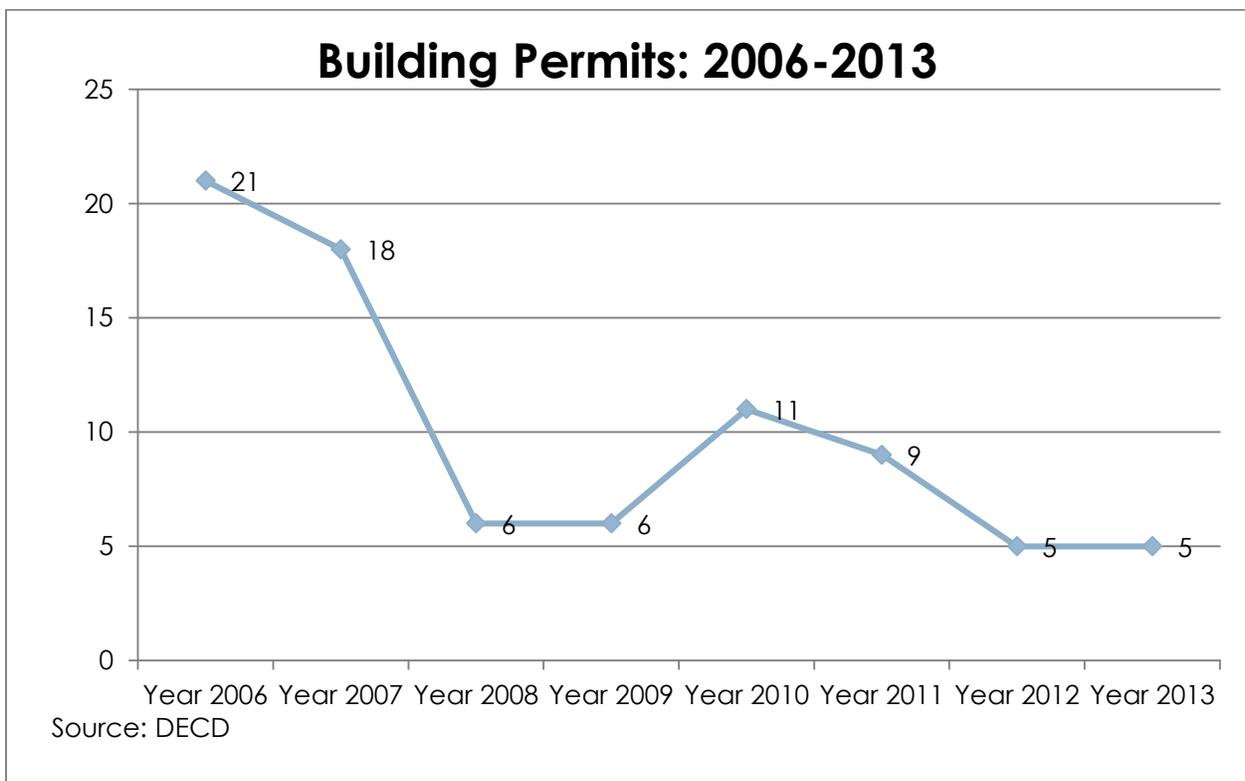
	1985		1990		1995		2002		2006		Change	
	acres	% of town	acres	Cumulative % change								
Developed	2020	14.10%	2184	15.30%	2238	15.70%	2317	16.20%	2344	16.40%	323.3	16%
Turf & Grass	830	5.80%	882	6.20%	943	6.60%	986	6.90%	1119	7.80%	288.5	34.70%
Other Grasses	92	0.60%	91	0.60%	94	0.70%	99	0.70%	116	0.80%	24.1	26.30%
Agricultural Field	760	5.30%	712	5%	693	4.90%	628	4.40%	567	4%	-193	-25.40%
Deciduous Forest	8975	62.80%	8806	61.60%	8711	61%	8655	60.60%	8514	59.60%	-461	-5.10%
Coniferous Forest	834	5.80%	832	5.80%	831	5.80%	827	5.80%	822	5.80%	-12.1	-1.50%
Water	418	2.90%	416	2.90%	409	2.90%	398	2.80%	394	2.80%	-23.5	-5.60%
Non-forested Wetland	11	0.10%	14	0.10%	12	0.10%	14	0.10%	17	0.10%	6.2	58.70%
Forested Wetland	209	1.50%	200	1.40%	193	1.30%	194	1.40%	191	1.30%	-18.4	-8.80%
Tidal Wetland	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Barren	76	0.50%	89	0.60%	100	0.70%	108	0.80%	143	1%	66.1	86.50%
Utility (Forest)	60	0.40%	60	0.40%	60	0.40%	59	0.40%	59	0.40%	-0.9	-1.50%

* Source UCONN CLEAR

This data should be considered realizing that land uses between developed and undeveloped include groups of classifications. A description of the classifications are above. This may have increased 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 2006.

Overall, the development patterns during the decade between this Plan update and the 2005 Plan demonstrate that in spite of the recession, some development continued at the local level in the form of building activity in Plymouth. However, even in 2013, building permits were issued at a much lower rate than in the years prior to 2008.

Figure 9-Chart: Building Permits: 2006-2013



Planning and Zoning

Significant changes have occurred in the community in regards to its planning and zoning. Many of the recommendations in the 2005 POCD were turned into actions and most that involved zoning were implemented. The largest of these was the recommendation to create multiple Commercial and Industrial Zones to transition from what was manufacturing uses and zones into Main Street and Retail Service uses. This recommendation, along with eliminating the manufacturing zone and creating multiple Industrial Zones with varying intensities took place over the years of 2006-2009. During this process a comprehensive zoning map amendment occurred to create more accurate zone boundaries based on existing conditions and to eliminate historic existing non-conforming uses or spot zoned parcels. The changes will be discussed throughout this Plan. During this process the Town developed new zoning district classifications as follows:

1. R-20 District – are those portions of Plymouth characterized by 20,000 sq. ft. parcels, or less, by the availability of both public water and public sewer, generally surrounding the historic center of Terryville and by those areas more suitable for a fuller range of housing opportunities and choice. Shown as high density residential on the future land use plan.
2. R-40 District – are those portions of Plymouth where generally the lack of either public water or public sewer requires minimum 40,000 sq. ft. parcels. Shown as either low or medium density residential on the future land use plan.
3. R-LAKE District – shown as high density on the future land use plan, the regulations for these two specific areas are designed to provide for the most rational and orderly development in areas bordering the lakes. Further, the purpose is to protect existing and proposed development around the lakes from siltation and pollution.
4. C-1 District – shown as commercial on the future land use plan, these districts are designed to allow general commercial and office development in areas on or near major streets, most notably Route 6, while restricting strip development.
5. RBZ District – while also shown as commercial on the future land use map, this district serves as a transitional zone for uses permitted along Route 6. It is intended for areas which contain a mix of low density homes by allowing some offices and personal services.
6. C-VILLAGE – is that area along Route 6 in the original Terryville settlement which is set apart to encourage revitalization and compatible land uses; promote and preserve the prevailing historic architectural context; promote the principles of New Urbanism and Smart Growth; and promote development that is consistent with the goals and

objectives of the Plan of Conservation and Development and the Economic Needs Study and the Market Research Analysis.

7. I-1 District – these districts are set apart by virtue of their past industrial use, their existence in industrial areas which no longer meet modern industrial standards and their potential continued use for less expensive often multi-storied facilities.
8. I-2 District – these districts are intended to provide suitable locations for heavy industrial uses, manufacturing and distribution and to include areas either in or suitable for designed industrial parks.
9. I-3 District – this district is intended to provide location for uses that will benefit from proximity to rail transportation.

In addition to the revisions to the regulations, districts, and map additions, special permit uses have been added or in some cases revised to reflect the recommendations of the 2005 POCD and the Economic Development Strategy of 2007 (*recommend by this plan to be updated*). Of note, these include the inclusion of a Planned Affordable Housing Development, an age restricted Senior Residence Development District, an Open Space Subdivision (Cluster Housing), and a Village Commercial District. Descriptions of each are below:

- **Planned Affordable Housing Development**-Promote the construction of affordable housing units as herein defined, and in accordance with the Provisions of Section 8-2g of the Connecticut General Statutes, so as to increase the diversity of housing opportunities within the Town of Plymouth,
- **Senior Residence Development District**-The Planning & Zoning Commission has determined: that there exists a need within the Town of Plymouth to provide for needed and desired housing opportunities for older persons; together with related facilities and services especially designed to meet the physical and social needs of older persons; that private programs can be implemented to satisfy such need; and, that authority for permitting such development exists pursuant to Connecticut General Statutes, Section 8-2 and 42 U.S.C. Section 3607. Therefore, the purpose of this section is to: promote well planned innovative developments which become aesthetically pleasing senior residential environments; to ensure an adequate supply of affordable housing for older persons in Plymouth, especially multi-family attached, two-family attached, and single-family detached residences; to provide for a greater variety of housing for Plymouth's residents; and to foster small developments which can be nestled into neighborhoods with minimal impact on surrounding properties
- **Open Space Subdivision**- The intent of this section is to provide alternatives to residential development permitted in the R-20 and R-40 districts if the Commission finds that the application and the accompanying maps and plans conform to the

requirements of the regulations and that it will substantially accomplish the following purposes:

- I. To conserve and preserve land to assure that its development will best maintain or enhance the appearance, character, natural beauty and historic interest of an area;
 - II. To preserve land for park and recreational purposes, for neighborhood amenities, and for the potential for the siting of community renewable energy systems;
 - III. To conserve forest, wildlife, agricultural, water supplies, and irreplaceable natural features located in the tract such as, but not limited to watercourses, significant stands of trees, individual trees of significant size, and rock outcroppings;
 - IV. To encourage controlled flexibility of design and development in such a way as to promote the most appropriate use of land, considering its particular size and topography, to protect natural drainage systems, scenic vistas, streams, ridge lines, rivers, ponds, wetlands, floodplains, and to properly manage for stormwater and runoff and erosion and sedimentation control;
 - V. To promote the preservation of space that will benefit the present and future generations of Plymouth including active or passive recreation areas (including hiking trails), farmland of local significance, and/or areas containing significant natural features such as unusual terrain or land forms, vegetation, and wildlife habitats.
 - VI. To provide for the efficient use of land by providing more flexible road and lot layout resulting in smaller networks of utilities and streets and thereby lowering housing, public maintenance, and energy costs;
 - VII. To provide design and development of a large tract or tracts of land in a manner which have street patterns, building orientations, landscaping, and south-facing slopes that maximize solar energy collection and space heating needs.
- **Commercial Village District**- It is the purpose of this section to: encourage revitalization and compatible land uses within the Commercial Village District; promote and preserve the prevailing historic architectural context; promote the principles of New Urbanism and Smart Growth; and promote development that is consistent with the goals and objectives of the Plymouth Plan of Conservation and Development (2005) and the Economic Needs Study and Market Research Analysis (1997).

Development Potential

CCRPA's 2005 analysis revealed that 40% of the land in Plymouth is still undeveloped or vacant. Geography, transportation systems, demand and available utilities determine how much of that 40% is actually buildable.

The natural constraints to development that were considered in the CCRPA analysis include: the 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).

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, with greater yields possible using average slope¹.

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 was reduced to 3,438 acres. This 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.

Residential

Residential districts are the majority of 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:

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: R-40 zone: 2,499 units –R-20 zone: 452 units –R-Lake zone: 4 units -Total New Units: 2,955

¹ CCRPA Buildable Area, 2005 POCD

Using the current average of 2.6 people per household, the projected population increase due to full build-out equals 7,684 people. Connecticut Water Company's Water Supply Plan (May 2000) assumes 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 by 545,564 gallons per day for the Town. 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: R-40: 3.9 acres 47 lots R-20: 0.8 acres 19 lots R-20L: 0.2 acres 4 lots. Utilizing the above methodology yields the following additional total new units: R-40: 588 units -R-20: 260 units -R-Lake 10 units -Total New Units: 758.

Using the current average of 2.6 people per household, the projected 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 by 139,941 gallons per day.

Nonresidential

Between 1993 and 2013 industrial land uses expanded by 125 acres. This is largely due to expansion of sand and gravel operations in the southern part of the Town and Phases I, II, and III of the Industrial Parks. The remaining 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 including 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 neighborhood summaries describe the unique characteristics and challenges of Terryville, Plymouth Center, and the Lake communities. 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 Terryville represents the built-up, densest part of town. It is the commercial center of Terryville 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.

Terryville represents Plymouth's greatest concentration of commercial land uses (41% of all commercial acres). Within the Village of Terryville's 1,809 acres is 27% of Plymouth's residential acreage. The Village also contains the majority of the Town's facilities and institutional uses (74%). Only 5% of Plymouth's undeveloped land is located in Terryville².

Historically, Terryville acted as the center for local commercial and civic activity for the Town of Plymouth. However, over time the local population and commercial activities expanded to other areas of town. The recent character of Terryville is more akin to strip commercial development, catering to pass-through and commuter trips. The concentration of community facilities has allowed Terryville to retain its civic preeminence.

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 separate the strip-type development from a more discernible village center serving niche or

² CCPRA POCD 2005, US Census ACS 2005

community oriented markets. Another concern for Terryville is the deteriorating pedestrian sidewalk network and the lack thereof in many places.

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 of the residents in town during the update of this Plan.

This neighborhood is unique from a historical standpoint, and from its definitive village character. There are 145 structures that contribute to this National Register Historic District.



Photo Courtesy Plymouth Webmaster

Plymouth's Lake Communities

The Town's two major lake communities developed as many other similar communities in Connecticut. These lake communities began as groupings of seasonal cottages to take advantage of the proximity to the lake 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.

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 extending 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 lakeshores



Photo Courtesy Plymouth Webmaster

concentrically, with later settlements on the outer rings. Traffic circulation patterns are usually tight networks serving the small lots, and shoreline roads that connect in one or two intersections with a main arterial or collector.

The lakes are important natural resources that require care and attract vacationers and residents. 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 and the human environment.

Lake Plymouth

The Lake Plymouth community has a private association, Lake Plymouth Community Association, which has tax district powers to assess property owners for improvements to support infrastructure in the neighborhood. The association's by-laws also provide ordinances that are locally enforced including fines for noncompliance.

From the 2010 Census, there are 398 people residing in this neighborhood, in 154 housing units, exclusively single-family (average of 2.4 people per unit). Only four housing units are deemed seasonal.

The water quality of the lake is rated "A" by the Connecticut Department of Environmental Protection (DEEP) (2014). This rating declares the waters to be swimmable, fishable, and appropriate for contact recreation, but not recommended for drinking.

Fall Mountain Lake

The Fall Mountain Lake community is a special taxing district created by 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 water quality of the lake is rated "A" by DEEP (2014). 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

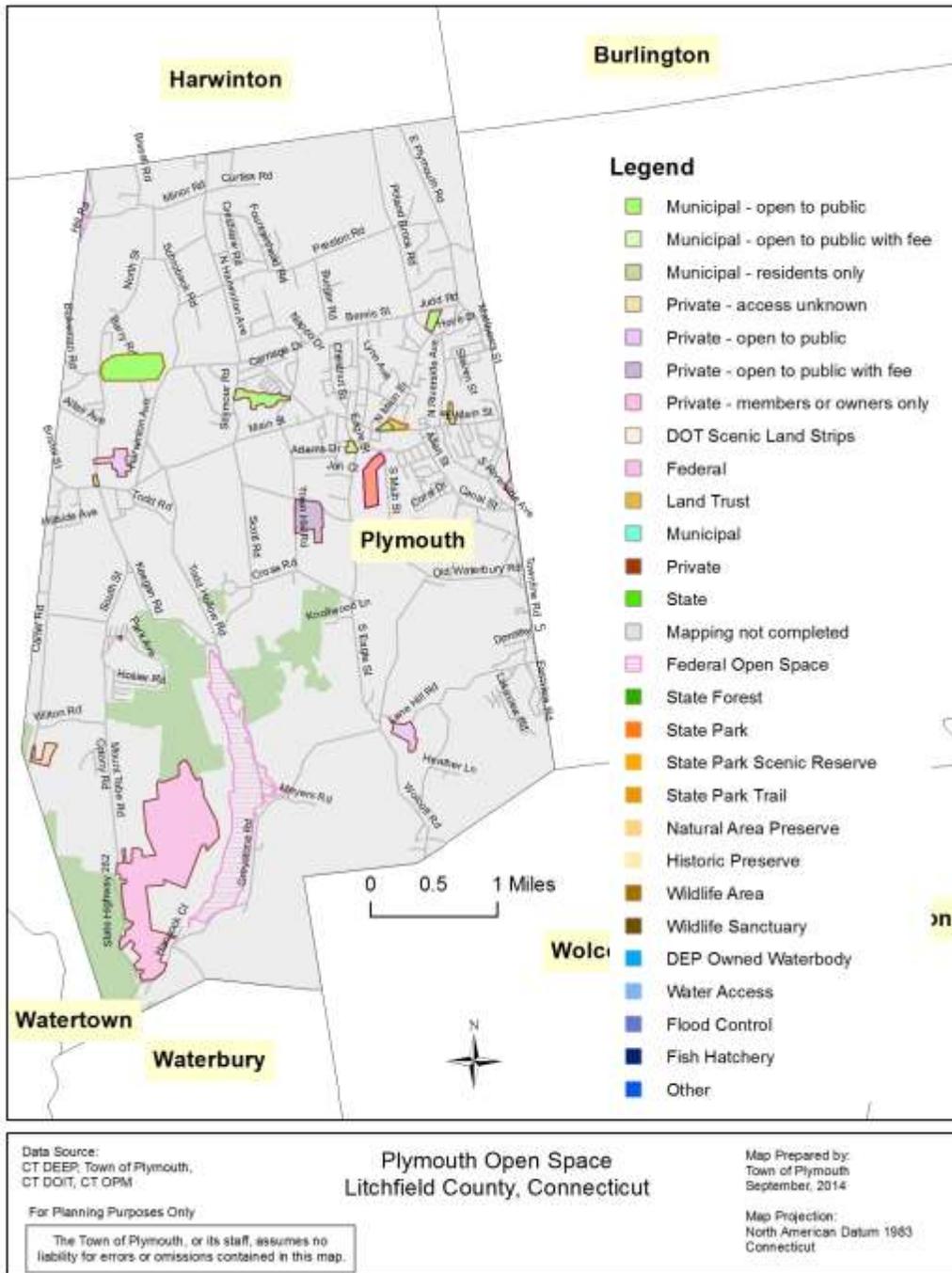
The distinction between the two types of open space is important. The two defining elements are: ownership and accessibility.

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 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.

Figure 10-Map: Plymouth Open Space



Population Characteristics

As shown in the graph below, Plymouth experienced a minor drop in total population between 1990 and 2000. This decrease was more than surpassed between 2000 and 2010, when the population increased by 5.2%. According to the 2010 U. S. Census, Plymouth's total population stood at 12,243 in 2010. Within Plymouth's three Census tracts, the boundaries of which have stayed consistent from 2000 to 2010(see Figure 12), the population has increased in two tracts and decreased in the other. Tract 4254 saw the greatest growth, which occurred primarily in the 45-64 age group (see figure 13).

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, the population growth rate across the 20-year period between 1990 and 2010 reveals an overall increase of 3.4%. The town's population has nearly doubled since 1950.

Figure 11-10 Year Population Change

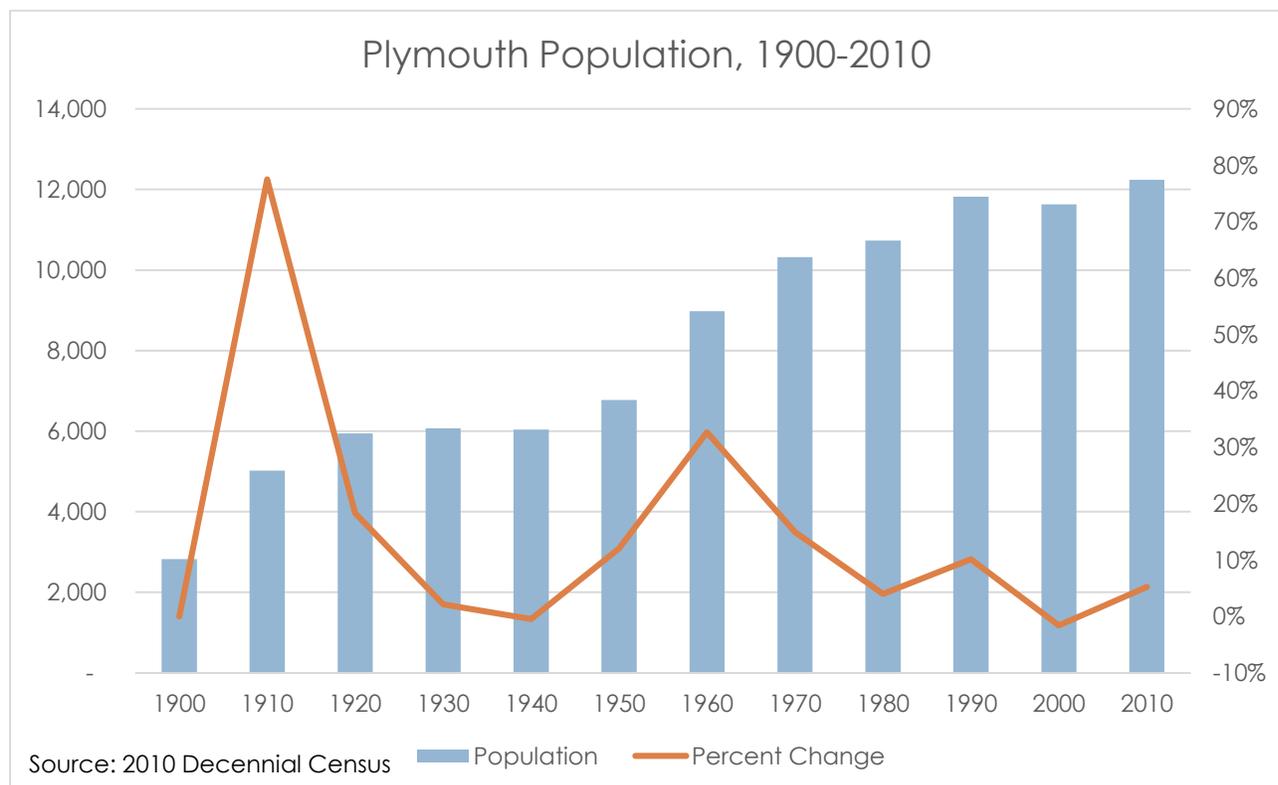


Figure 12-Plymouth Census Tracts

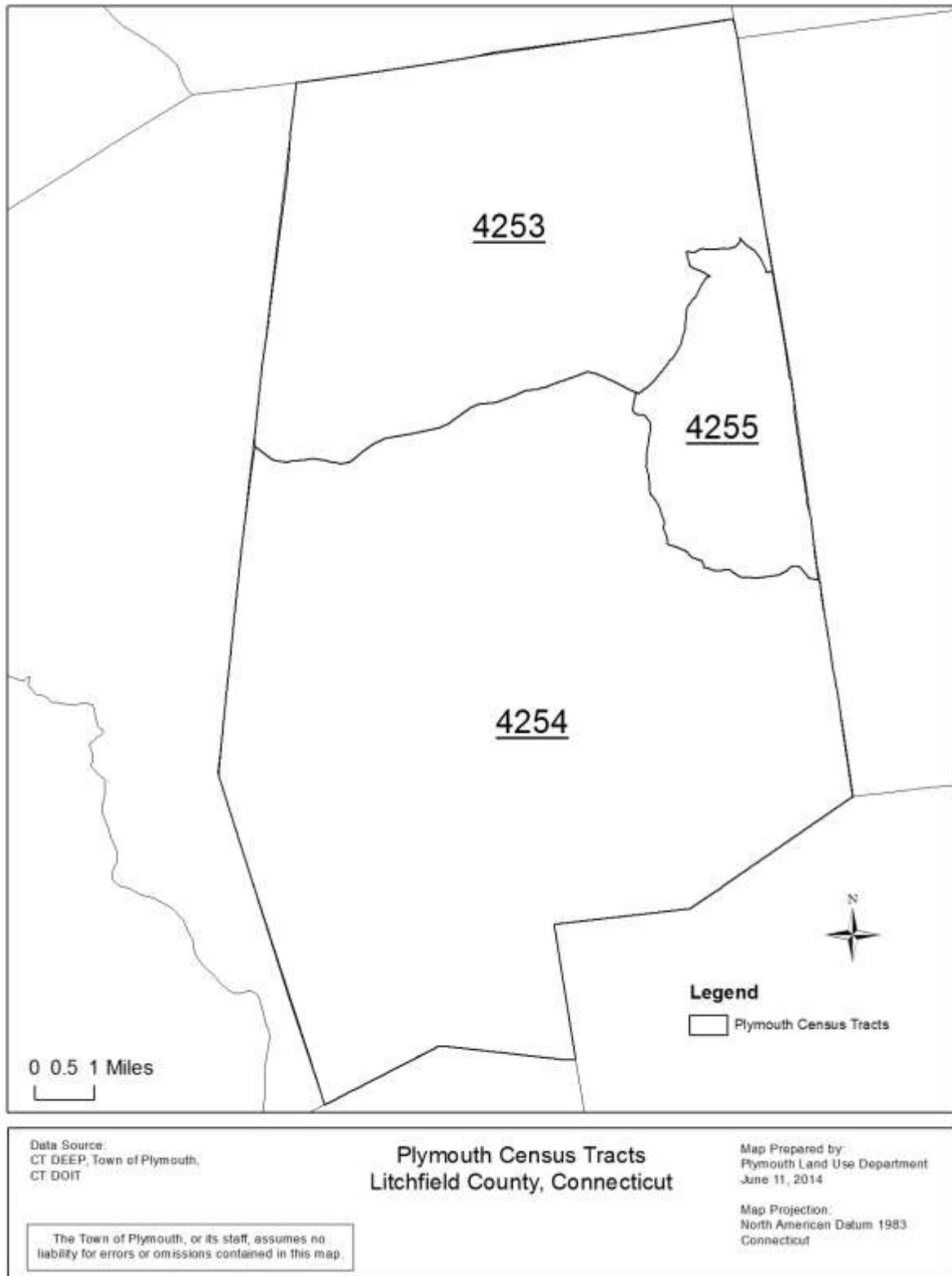
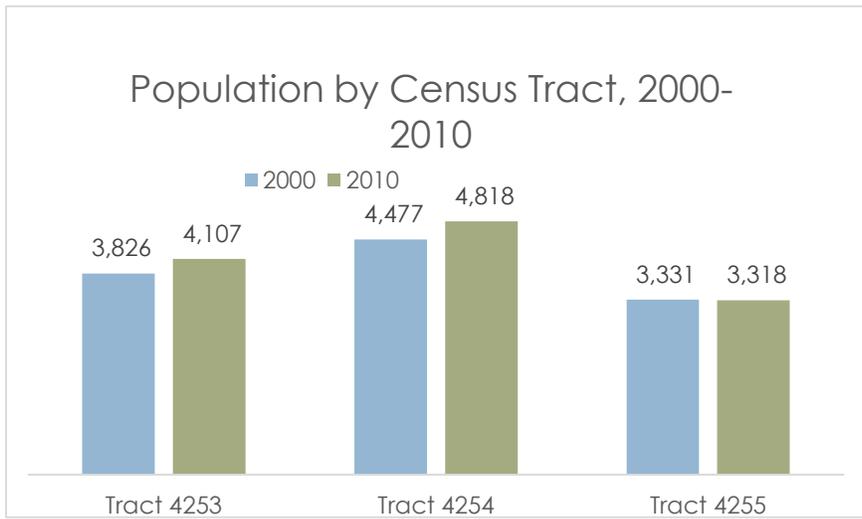


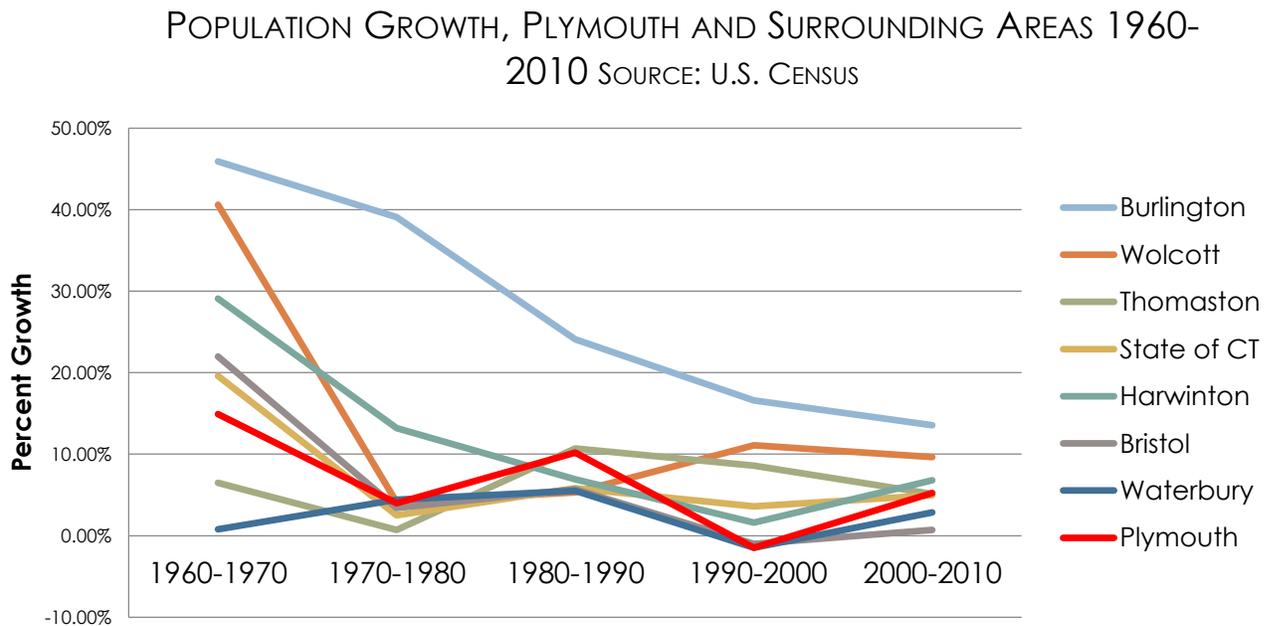
Figure 13-Chart: Population Change by Tract



The population growth rate for the State during the 2000-2010 period was 4.9%, and Litchfield County's growth rate was 4.24%, placing Plymouth's growth rate slightly above both trends. 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 Figure 14 and the example of Burlington's rate of growth). Overall, like most of Litchfield County, Plymouth's population has been stable in the past ten years.

Figure 14-Chart: 40 Year Population Growth



Age Characteristics

An analysis of population by age group is critical for projecting municipal services, since age clusters can have differing needs in terms of housing and services. Figure 15 illustrates the changes in age group distribution between 2000 and 2010. Notably, the number of children aged under 14 decreased, following the trend of other Litchfield County towns (see figure 17). While the number of teenagers and young adults ages 15-24 increased over the past decade, the number of adults aged 25-44 decreased. The middle and older adult portion of the population increased the most, with gains in people aged 45-74, as well as those 85 and older.

Figure 15-Chart: Age Distribution

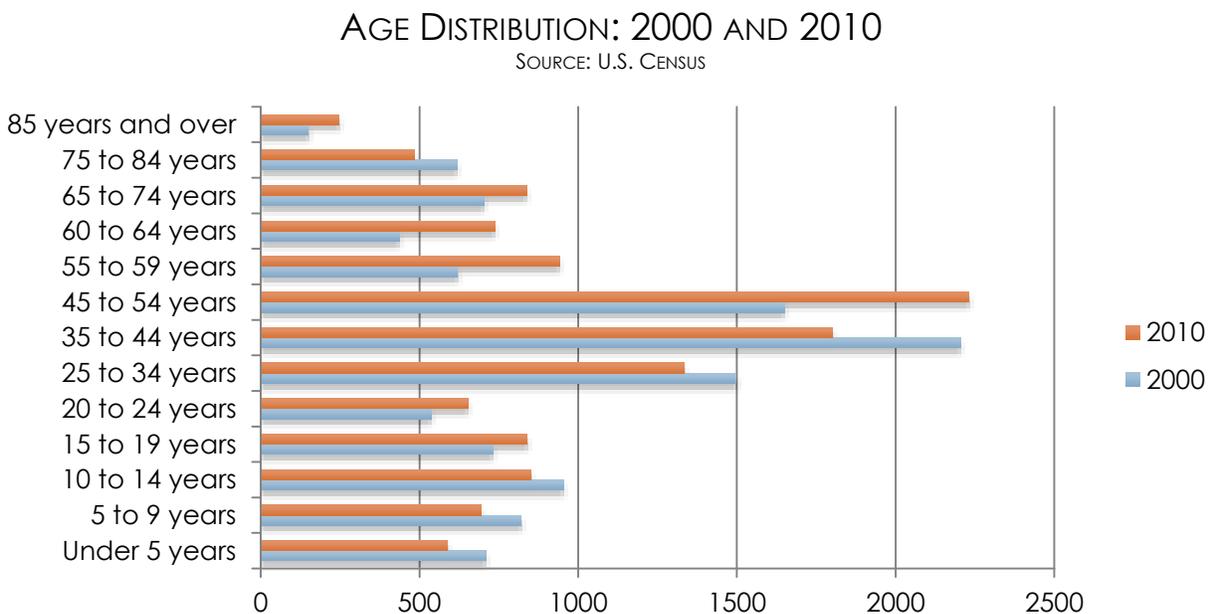


Figure 15 illustrates the difference between the Census counts of 2000 and 2010, and shows that both the 25-34 and 35-44 cohorts decreased in 2010. This comparison shows that Plymouth lost members of the 25-44 year old cohorts, most likely to out migration.

Figure 17 illustrates percentages of school-age children from Plymouth and the surrounding communities. Every town experienced a decrease in the 18 and under cohort, and every town except Waterbury saw this cohort drop below 1990 proportions. In Plymouth, all tracts saw a moderate decrease in the number of residents under 18. Tracts 4253 and 4254 saw slight increases in the population aged 65 and over, and Tract 4255 had a 2% decrease. Overall, the distribution of both dependent age groups has trended toward a balance among all tracts during two decades between 1990 to 2010, and the town wide percentages have remained stable.

Figure 16-Chart: Dependent Populations

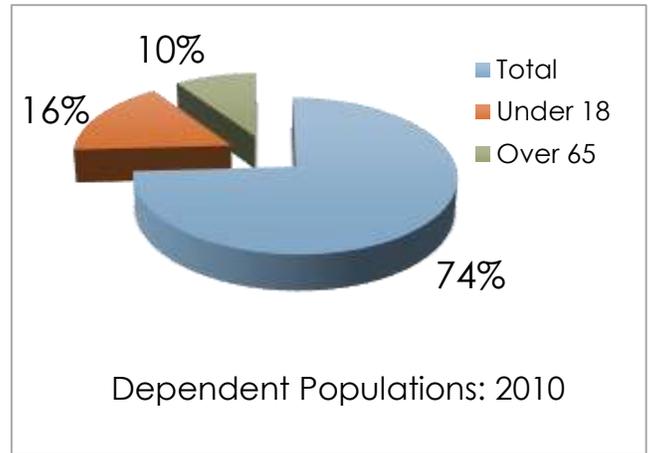
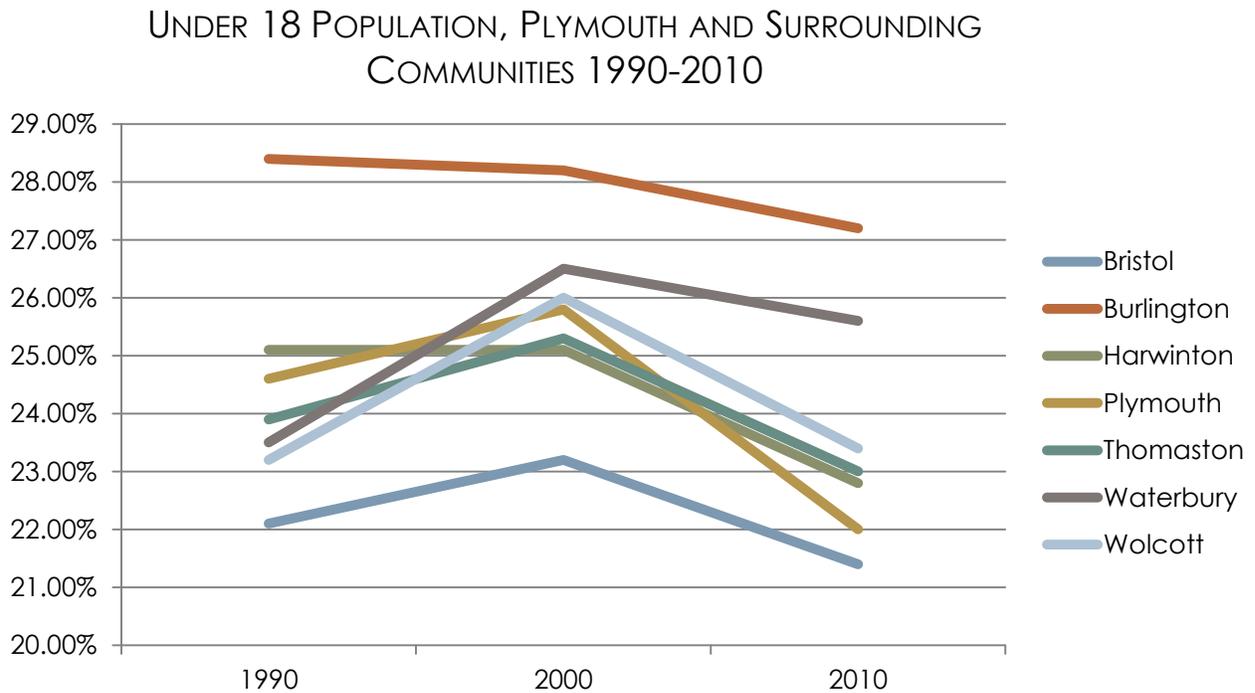


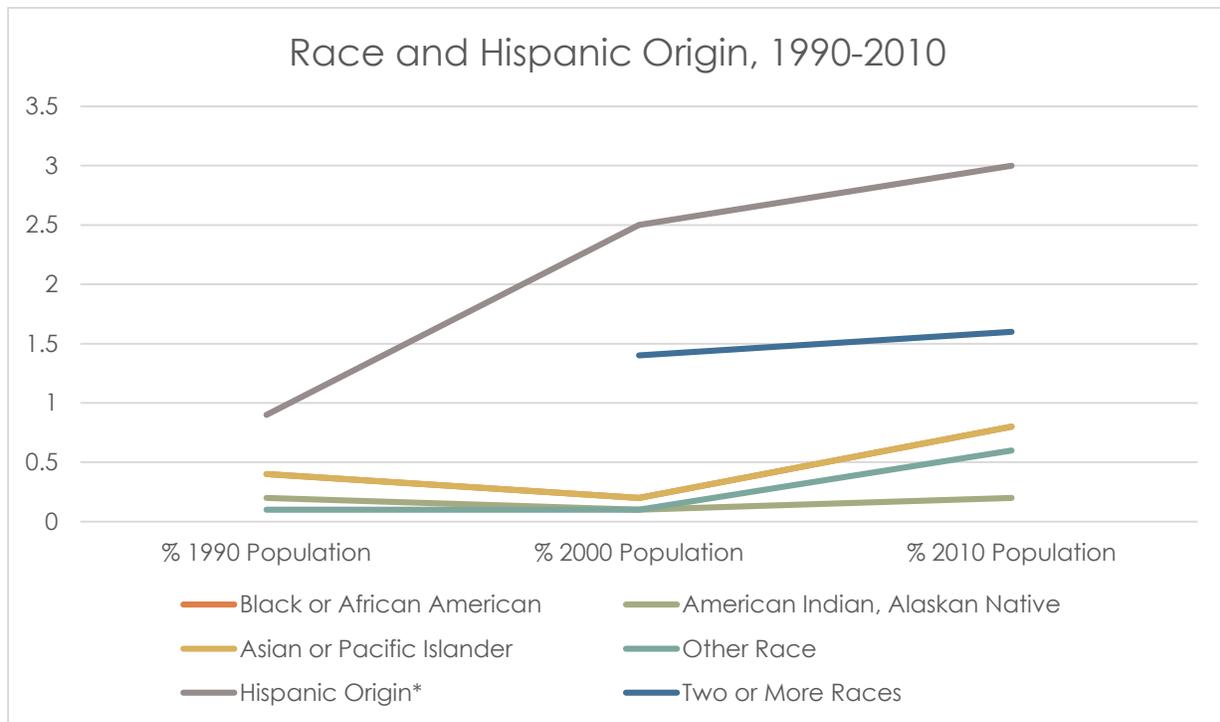
Figure 17-Chart: Under 18



Racial and Ethnic Characteristics

Racial and ethnic characteristics of Plymouth's population revealed no substantive shifts between the 2000 and 2010 Census. 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 2010 from 1990, a trend which is fairly typical in many cities and towns in Connecticut.

Figure 18-Chart: Race and Hispanic Origin



*Hispanic origin populations may be of any race

Figure 19 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%).

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 decreased in the decades between 1990 and 2000, and increased 5.2% between 2000 and 2010, the number of households increased 2.7% in 2000 and 7.9% in 2010. (See Figure 20). The increased numbers of households in Plymouth is part of a national and statewide trend of more and smaller households among a relatively stable overall population. (See Figure 21)

Figure 19-Table: Race and Ethnicity by Tract

Racial and Ethnic Characteristics by Census Tract 2010						
Census Tract	% White	% Black	% Asian	% American Indian/Alaskan Native	% Other	% Hispanic*
Tract 4253	96.5	0.8	0.9	0	0.5	2.3
Tract 4254	96.3	0.7	0.7	0.3	0.6	3.5
Tract 4255	94.8	1	0.8	0.2	0.9	3.3

*Hispanic origin populations may be of any race
Source: 2010 Decennial Census

Figure 20-Chart: Change in No. of Households

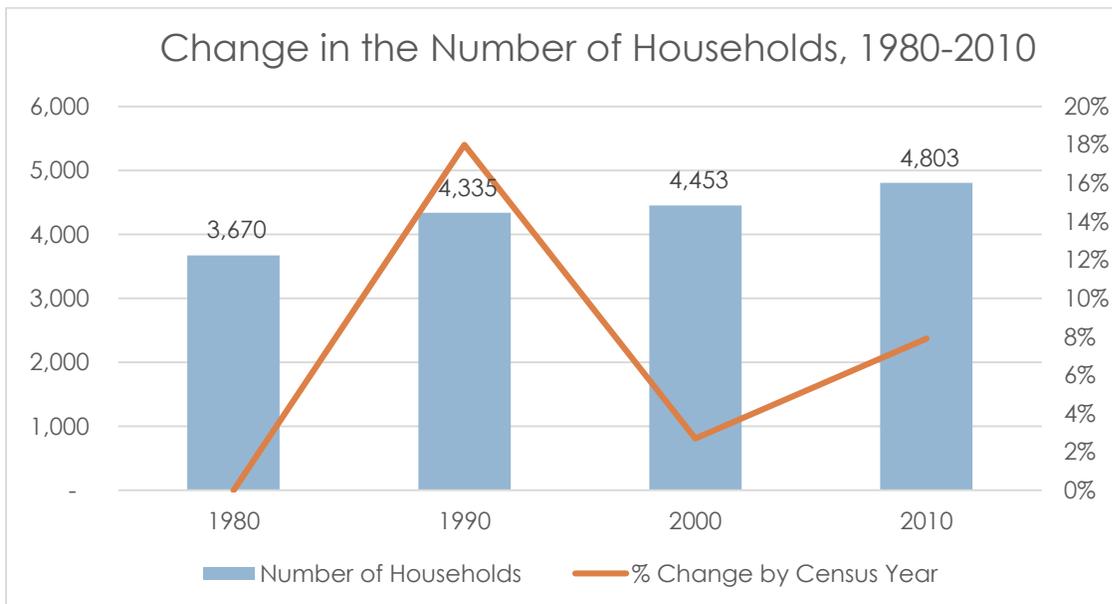


Figure 21 shows the statewide and national forty year trends toward lower numbers of persons per household, due in part to lower birth rates, delays in parenthood and higher divorce rates. Plymouth has followed this national trend, with increasing numbers of households and decreasing numbers of people per household.

Figure 22 illustrate detail of household types and compares 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 2010 Census. Findings from Tracts 4255 (predominantly Terryville) and 4254 reveal increases in nonfamily households, although family households still hold majority percentages in each tract.

Figure 21-Avg. Persons per household

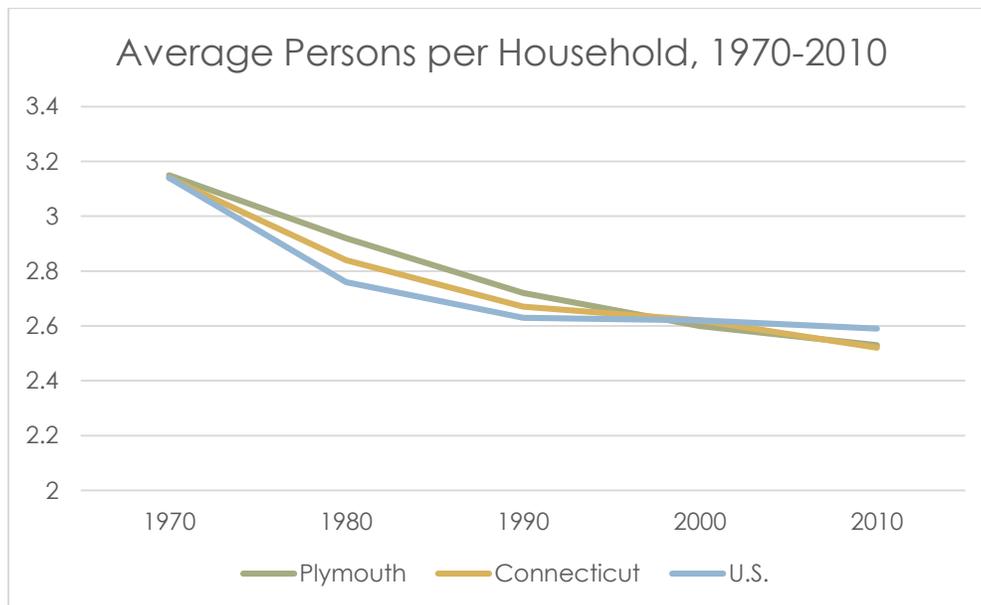


Figure 22-Table: Households by Household Type, Tract

Households (HH) by Household Type and Census Tract, 2010						
Household Type	Tract 4253	% of HH in Tract	Tract 4254	% of HH in Tract	Tract 4255	% of HH in Tract
Family Household (15-64 years)	1,188	74.4	1,295	71.7	870	62.2
Married Couple Family	959	60.1	1,034	57.2	640	45.7
With own children under 18 years	357	22.4	413	22.9	270	19.3
Female Householder, no husband present	158	9.9	170	9.4	147	10.5
With own children under 18 years	76	4.8	93	5.1	75	5.4
Male Householder, no wife present	71	4.4	91	5.0	83	5.9
With own children under 18 years	35	2.2	46	2.5	50	3.6
Nonfamily Households	409	25.6	512	28.3	529	37.8
Householder living alone	321	20.1	401	22.2	425	30.4
Male	138	8.6	208	11.5	196	14.0
65 years and over	29	1.8	37	2.0	44	3.1
Female	183	11.5	193	10.7	229	16.4
65 years and over	90	5.6	94	5.2	126	9.0
Total Households	1,597	100	1,807	100	1,399	100
Source: 2010 Decennial Census						

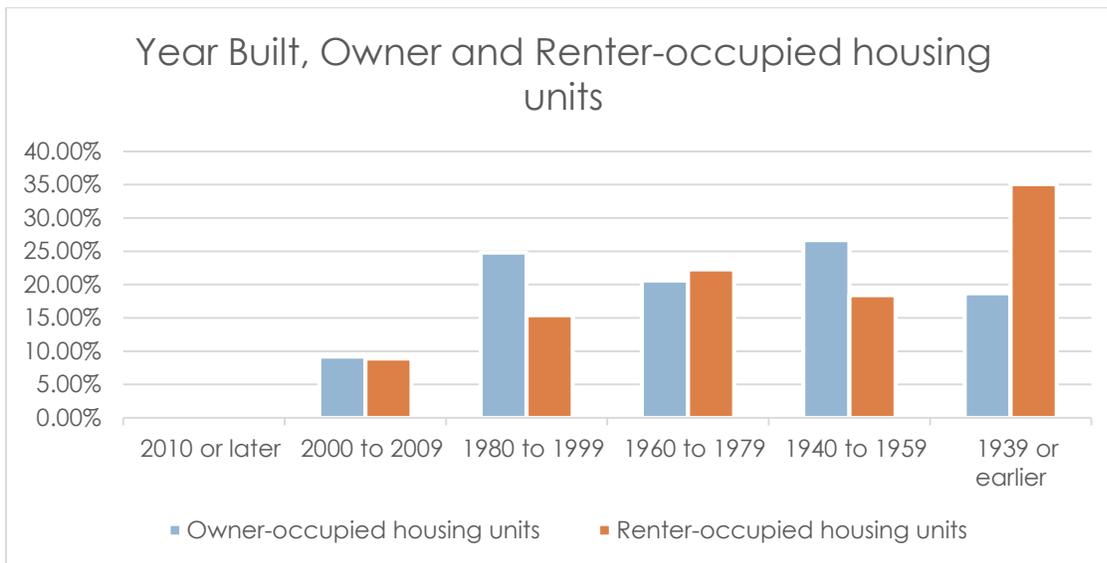
Table 23 illustrates persons living in group quarters, by tract. Such arrangements are not considered households. Institutionalized populations include people under supervised care, such as correctional centers, nursing homes and juvenile detention facilities. Non-institutional type living arrangements include college dormitories, military quarters and group homes.

Figure 23-Table: Persons in Group Quarters

Persons in Group Quarters by Census Tract, 2010			
	Tract 4253	Tract 4254	Tract 4255
In Group Quarters	9	65	3
Institutionalized Population	0	59	0
Noninstitutionalized Population	9	6	3
Source: Decennial Census, 2012			

The age of the housing stock in town is very important, as it can indicate the general mix of home styles available. Related to this, the age of the homes that are renter versus owner occupied show how the housing stock is being utilized. Chart 24 shows that the older housing stock is primarily occupied by renter households. In 2010, 35% of renter-occupied units were built in 1939 or earlier, and 20% were built in 1960-1979. Owner-occupied housing units were built primarily between 1980-1999 and between 1940-1959. Overall, the age of the housing stock is distributed fairly evenly, about 20-25% distribution for every period other than 2000-2009, which has only 9% of the total housing stock. It is an objective of the Plan to encourage home ownership.

Figure 24-Chart: Year Built, Occupied



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.

Income limits and employment are critical factors to home ownership, 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. Another demographic component that affects municipal decision making and contributes to a town's overall economic picture is educational attainment of the citizenry. Income and Education will be discussed further in the Plan.

HOUSING AND RESIDENTIAL DEVELOPMENT

Introduction

The type, condition, density and cost of housing in a community are important factors to community planning and development. This element of the Plan 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...*" This Plan does and the following discussion supports the recommendations.

Existing Housing Characteristics

The 2010 Census recorded 5,109 housing units in the Town. Of these, 4,803, or 94% were occupied. The resulting vacancy rate of 6% is moderate to slightly high. Vacancy and occupancy percentages for adjacent communities are compared in figure 25.

Figure 25-Housing Unit Vacancy

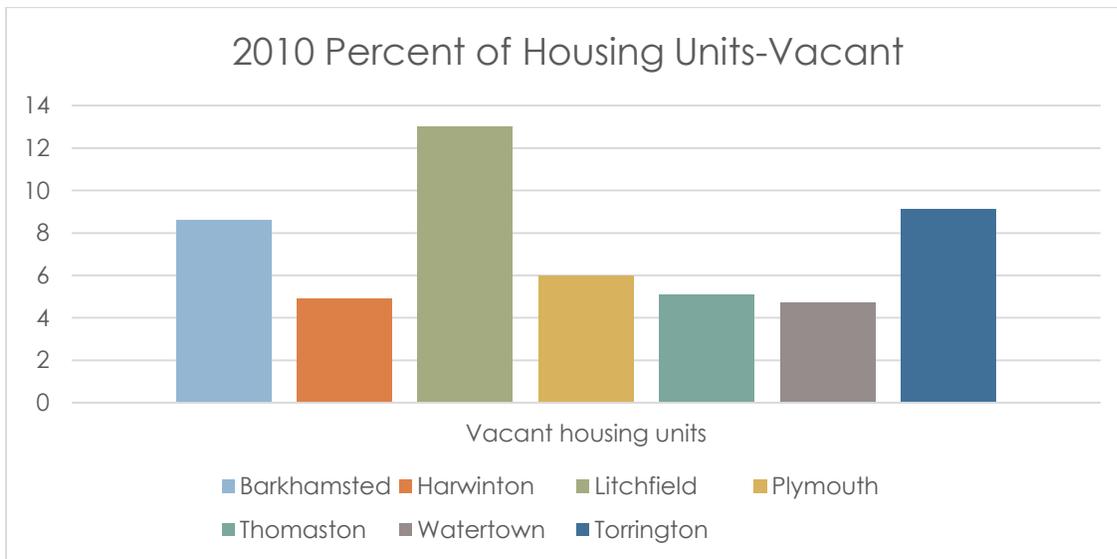


Figure 26-Median Home Sales, Plymouth

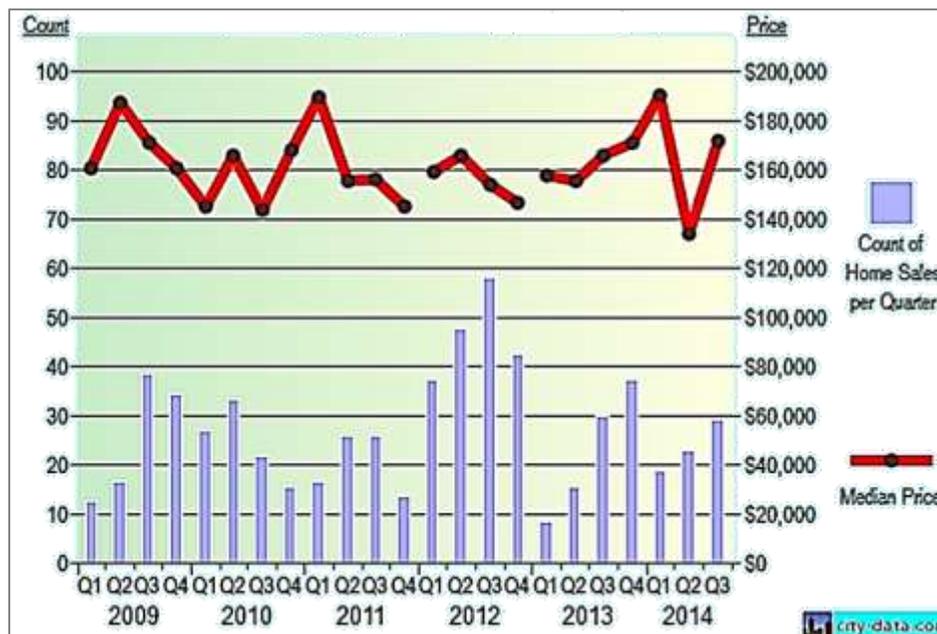
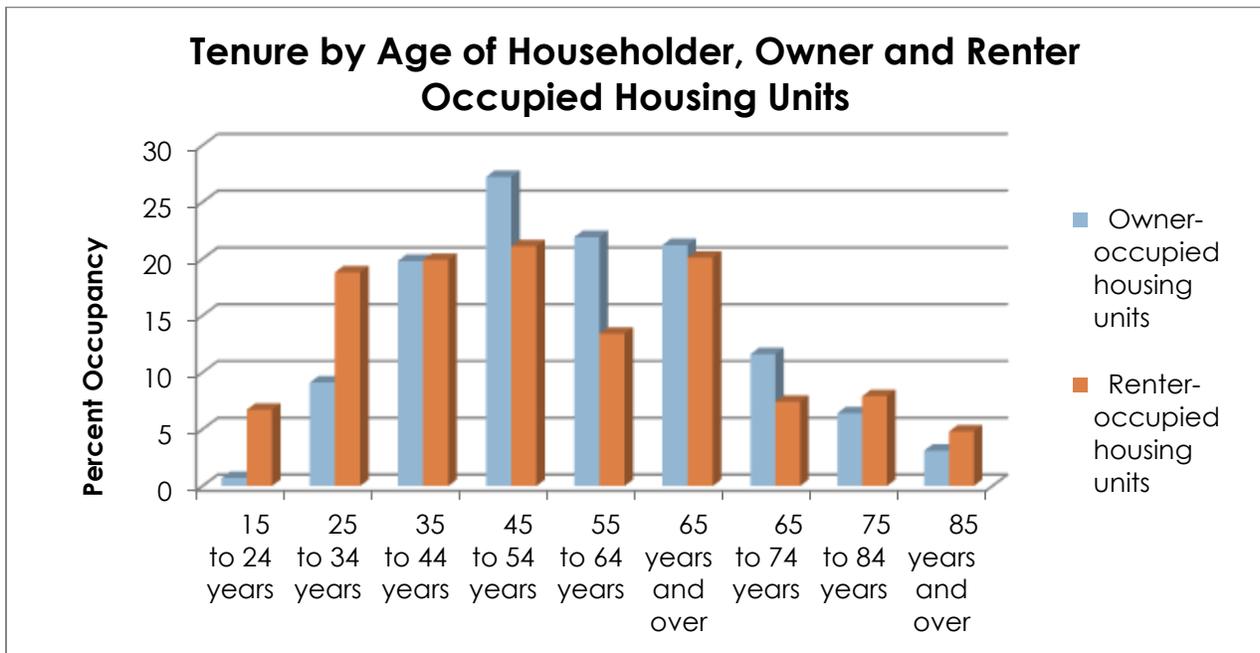


Figure 27-Age of Householder



To quantify housing ownership in the Town, statistics are compiled in figure 27 that illustrate a peak in home ownership among persons aged 45-65 years. Figure 28 shows new construction for neighboring communities in 2013.

Figure 28-Table: Housing Unit Construction

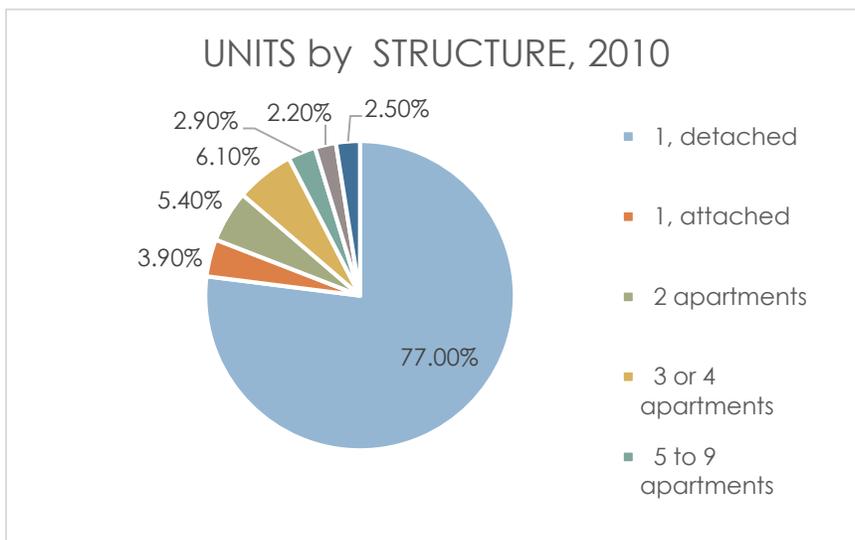
Connecticut New Housing Authorizations in 2013							
Number of Housing Units							
Permit-issuing Places	County	Total Units	1 Unit	2 Unit	3 and 4 Units	5 Units or More	Demolitions
Connecticut		5,424	2,855	138	163	2,268	1,397
Bristol	Hartford	92	17	4	0	71	11
Burlington	Hartford	43	31	0	12	0	6
Harwinton	Litchfield	1	1	0	0	0	1
Plainville	Hartford	15	15	0	0	0	17
Plymouth	Litchfield	5	5	0	0	0	0
Thomaston	Litchfield	6	0	6	0	0	1
Waterbury	New Haven	34	34	0	0	0	42
Source: Census, DECD							
Compiled by DECD Research							

One indicator of housing condition in a community is the age of housing stock. The implications of an 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 the condition of structures. Many older homes are maintained well and become community assets of an historical nature.

Housing Unit Characteristics

Trend information regarding the composite of housing unit types in the Town is illustrated in Table 28. The 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 accounts for the increase in total units.

Figure 29-Chart: Percentage of Unit by Type



Housing unit numbers grew by 463 units from 2000 to 2010, or about 10%. The percentage of housing unit growth was approximately double the population growth during the same period, in line with the trend towards larger numbers of households with fewer individuals.

Overall, a large majority of family households were recorded for all three tracts. Married couple families predominated in Tracts 4253 and 4254. In contrast, 37.8% of housing units were occupied by non-family households in Tract 4255.

Household Type	% of HH in Tract 4253	% of HH in Tract 4254	% of HH in Tract 4255
Family Household (15-64 years)	74.4	71.7	62.2
Married Couple Family	60.1	57.2	45.7
With own children under 18 years	22.4	22.9	19.3
Female Householder, no husband present	9.9	9.4	10.5
With own children under 18 years	4.8	5.1	5.4
Male Householder, no wife present	4.4	5.0	5.9
With own children under 18 years	2.2	2.5	3.6
Nonfamily Households	25.6	28.3	37.8
Householder living alone	20.1	22.2	30.4
Male	8.6	11.5	14.0
65 years and over	1.8	2.0	3.1
Female	11.5	10.7	16.4
65 years and over	5.6	5.2	9.0
Total Households	100	100	100
Source: 2010 Decennial 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 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 local economies.

Housing costs are largely the result of the following factors: the demand for housing relative to 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 relative to the area's income limits and housing costs. 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.

Affordable Housing Appeals Law

The State of Connecticut has established an Affordable Housing Appeals Procedure under CT CGS 8-30g to guarantee a minimum percent of affordable housing in town. This appeal is not assured in municipalities 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.

"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. Plymouth, according to the 2014 Affordable Housing Appeals annual list of affordable units, shows Plymouth has not reached 10% exemption target. Of Plymouth's 5,109 units, 8.22% are considered affordable by the standards above.

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 \$68,410 (2012) and for Connecticut is \$69,519 (2012) ACS 2008-2013.

The Town has addressed the need for affordable units in several sections of its zoning regulations. More specifically in the Planned Affordable Housing Development section and 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. 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.

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. Plymouth does have regulations for both cluster development and open-space subdivisions in its regulations, 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 reasonably good health who can live independently. Communities may be rental or condominium. Units include 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.

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 business in the Town, and discuss the evolving economy.

The economy of Plymouth is a rich, diverse mixture of traditional industries including manufacturing, professional, commercial, retail and contract services, as well as, a small agricultural component. The town has a proud history of invention and innovation dating back nearly 200 years to Eli Terry's clockworks and the Eagle Lock Company. From the early days of the Industrial Revolution powered by waterwheels and steam engines to the post-modern, technology-driven economy of the Information Age, the town draws its economic strength from the technical skills, dedication and work ethic of its people. Plymouth has embarked on several programs designed to encourage private investment, expand its industrial base, and provide a superior educational system to prepare its citizens for the technological challenges of the 21st century.

Strategic Goals & Objectives

In April 1996, a Task Force was appointed by the Town Council to draft plans, identify opportunities for growth, initiate and support programs which would accomplish a set of economic development goals summarized as follows:

- Diversify the industrial base by attracting technology-based growth industries, while capitalizing on existing metalworking and precision parts manufacturing capabilities.
- Promote vocational and technical job training programs, adult education and technology driven employment opportunities.
- Provide financial incentives for qualified businesses to expand, relocate or increase local hiring within guidelines established by state and town regulations.
- Expand the commercial and retail base, revitalize our downtown (Main St.) areas and attract new businesses to better serve the needs of the community.
- Improve our citizen's quality of life by enhancing recreational programs, cultural and leisure-time activities, protect its natural resources and preserve the town's historical character, rural charm and small-town heritage.

In 1998, the Plymouth Town Council adopted a business and tax incentive ordinance formally establishing a policy for providing those incentives necessary to compete in today's economic climate. The tax incentive ordinance is still in place and used today.

Plymouth has been dedicated to promoting economic growth in the manufacturing sector since the inception of the Plymouth Business Park in 1973. All available parcels in the first two phases of the Business Park are occupied. The Phase III expansion has added 23 new development sites to the Park, ranging in area from 1.5 to 5 acres each, capable of being combined and suitable for various sized facilities from approx. 5,000 to 50,000 sq. ft. of floor space. (See map of Phase III Expansion, Plymouth Business Park). The Business Park is zoned for general manufacturing with office uses allowed by special permit. All utilities are at the curb and improved access is available to Rte. 72 along Preston Road.

The Connecticut Department of Economic and Community Development approved the project plan in June 1999 and through the State Bond Commission granted the Town of Plymouth \$1,825,000 toward its completion. The Economic Development Administration (EDA) of the U.S. Department of Commerce is also contributing a grant of \$1.1 million for the Phase III development. The Maguire Group is the Commission's design/engineering

consultant. Richards Corporation of Terryville was the contractor responsible for the installation of all project infrastructure.

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 1-84, 1-95 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. This resource has proven valuable to town's economic base since the completion of the 2005 plan with recent reinvestment and the creation of third industrial zoning district and a new business that utilizes the active rail line.

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. The residential sector's 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.

A 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.

Plymouth's total grand list in 2012 was \$757,582,285. However, for the calculation discussed above for the Per Capita Adjusted Equalized Net Grand list 2007 data will be used and is the latest available at this time of this plan. Data from the State's 2009 report of Municipal Fiscal Indicators Report, 2009, indicates a total grand list of Plymouth of \$807,948,470, of which 73.9% was derived from residential, 7.2% from Commercial, Industrial, or Public Utilities, 3.6 % from Personal Property, and 5.8% from other sources. Using Fiscal Year 2007 as a reference base, the Town of Plymouth has a Total Equalized Net Grand List of \$1,160,098,464 and a Total Net Grand List amount of \$528,204,564. Plymouth's 2007 Per Capita Adjusted Equalized Grand List is \$96,925. Municipal tax bases vary significantly within the state. As such, so do the Per Capita Adjusted Equalized Grand List with Harford having the lowest at \$45,280 and Greenwich the highest at \$845,224

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 2004 -2008, 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 2007 State average was 71.2% (DECD Municipal Financials). The highest residential percentage belongs to New Fairfield with 91% of the tax base being residential. The lowest residential portion belongs to the Town of Waterford, at 25%. 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 49.6% 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 Community 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 2007 as a reference base, the Town of Plymouth Grand List is comprised of: residential at 73.9%; business real estate at 7.2%; motor vehicles at 9.4%; personal at 3.6%; and other at 5.8%. In terms of the residential component of the Grand List, Plymouth compares favorably to other towns: 73.9% is close to the State average of 71.2%.

The Town ranks 136th in terms of per capita income within the State. The 2008-2012 American Community Survey reports Plymouth's 2012 per capita income at \$31,407. For comparison purposes, the Town of New Canaan has the highest per capita income at \$98,693 while Hartford has the lowest at \$16,448. In terms of the Central Connecticut Corridor communities, the Town of Plymouth is comparable. Bristol (\$30, 555) and Plainville (\$31,392) are slightly higher than Plymouth and New Britain (\$20,601) 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.

Figure 30-Table: Distressed Municipalities

2014 Distressed Municipalities List					
Prepared by DECD Research, 8/19/2014					
2014 Distressed Municipalities					
Ranked by Score					
Town/City	Total Scores	Ranking	Town/City	Total Scores	Ranking
Hartford	1,448	1	Plainfield	1,243	14
Waterbury	1,439	2	Putnam	1,243	15
New Britain	1,431	3	Killingly	1,229	16
Bridgeport	1,374	4	New Haven	1,228	17
New London	1,365	5	Sprague	1,218	18
Ansonia	1,330	6	East Hartford	1,215	19
Derby	1,327	7	West Haven	1,196	20
Naugatuck	1,315	8	Preston	1,185	21
Windham	1,285	9	Enfield	1,180	22
Meriden	1,272	10	Winchester	1,166	23
Torrington	1,255	11	Montville	1,164	24
North Canaan	1,251	12	Plymouth	1,159	25
Bristol	1,250	13			

Economies of Connecticut: Hartford Labor Market Area (LMA) And Plymouth

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 southernmost 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 August 2014 labor force data from the Connecticut Department of Labor. The August 2014 report places the Plymouth labor force at 6,817 people in the overall pool of 593,199 for the Hartford Labor Market.

Plymouth's overall unemployment rate is 6.2% and is less than the state's unemployment rate for the same period of 9.7% in 2010. The state's current 2014 unemployment rate is 6.6%³. The table below provides total numbers of persons and the unemployment rate in Plymouth for the decennial census years of 2000 to 2012 and the same for state of Connecticut.

Figure 31-Chart: Plymouth Unemployment Rate

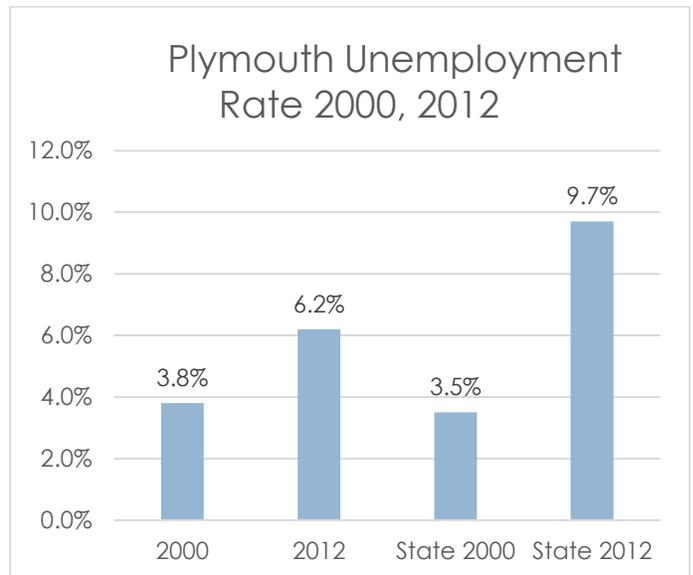


Figure 32-Table: Employment Status

Employment Status	2000		2012		State 2000		State 2012	
	# of Persons	% of Total						
Population 16 years and over	8,963	100.0%	9,961	100%	2,652,316	100.0%	2,893,530	100%
In labor force	6,427	71.7%	7,054	70.8%	1,765,319	66.6%	1,958,032	67.7%
Civilian labor force	6,427	71.7%	7,054	70.8%	1,757,108	66.2%	1,949,723	67.4%
Employed	6,087	67.9%	6,435	64.6%	1,664,440	62.8%	1,760,162	60.8%
Unemployed	340	3.8%	619	6.2%	92,668	35.0%	189,561	6.6%
Armed Forces	0	0.0%	0	0.0%	8,211	30.0%	8,309	0.3%
Not in labor force	2,536	28.3%	2,907	29.2%	886,997	33.4%	935,498	32.3%
Unemployed	340	3.8%	619	6.2%		3.5%		9.7%

Source: American Community Survey 2012

³Connecticut DECD 2014 Labor Market Area Scorecard

The chart below compares the change in employment by industry sector from 2002 to 2012 for Plymouth. Labeled is the change from 2002 to 2012.

Figure 33-Table: Occupation by Type

Occupation Classifications in Plymouth	2000	2012	% Change
Management, business, science, and arts occupations	28.9%	37.8%	8.9%
Service occupations	14.9%	13.9%	-1.0%
Sales and office occupations	22.7%	22.4%	-0.3%
Natural resources, construction, and maintenance occupations	10.6%	9.6%	-1.0%
Production, transportation, and material moving occupations	23.0%	16.3%	-6.7%
Source: American Community Survey 2012			

Management, business, science and arts occupations saw the largest gains from 2002-2012 by people employed and living in Plymouth at 8.9%. The largest decrease in occupations in Plymouth, but still twice that of the overall state occupations was Production, transportation, and material moving occupations. From 2002-2012, Plymouth Production, transportation, and material moving occupations fell by 9.7% but still remains double the state share of that occupation for a total of 16.3%, compared to a state average of 9.7%. Service industry, natural resource, construction, and maintenance occupations also declined by .05%-1.0% in the ten year period.

Figure 34-Occupation by Employment Sector

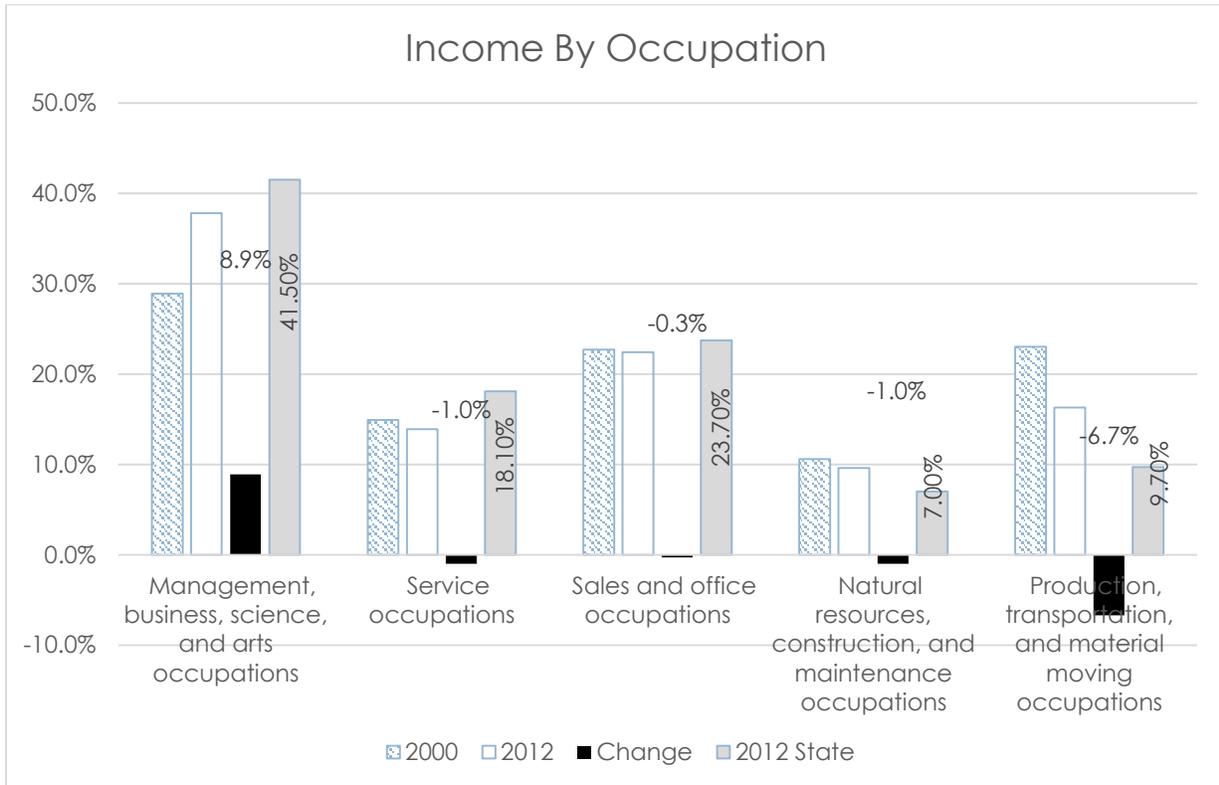


Figure 35-Historical Unemployment-Plymouth, CT: Source, City Data

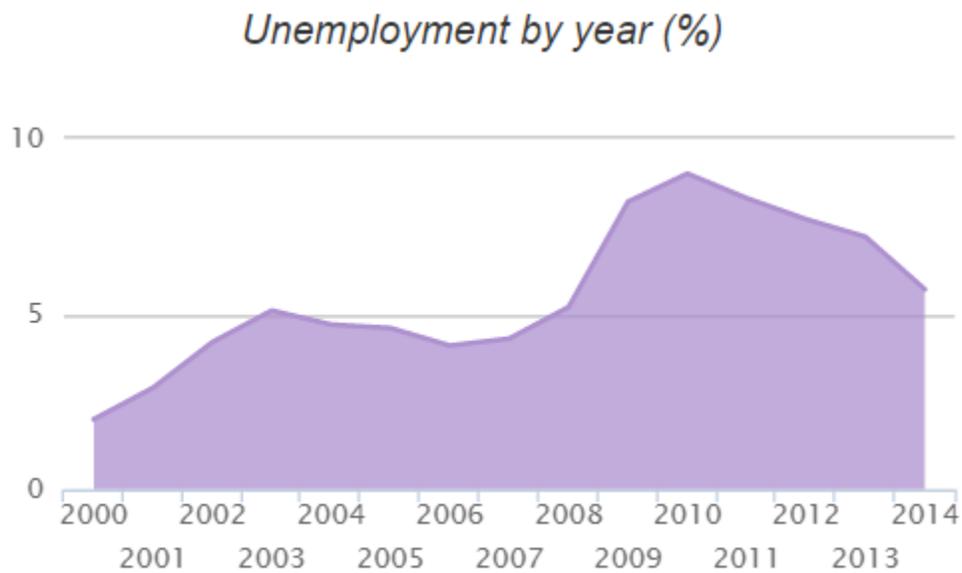


Figure 36-Employment by Economic Sector

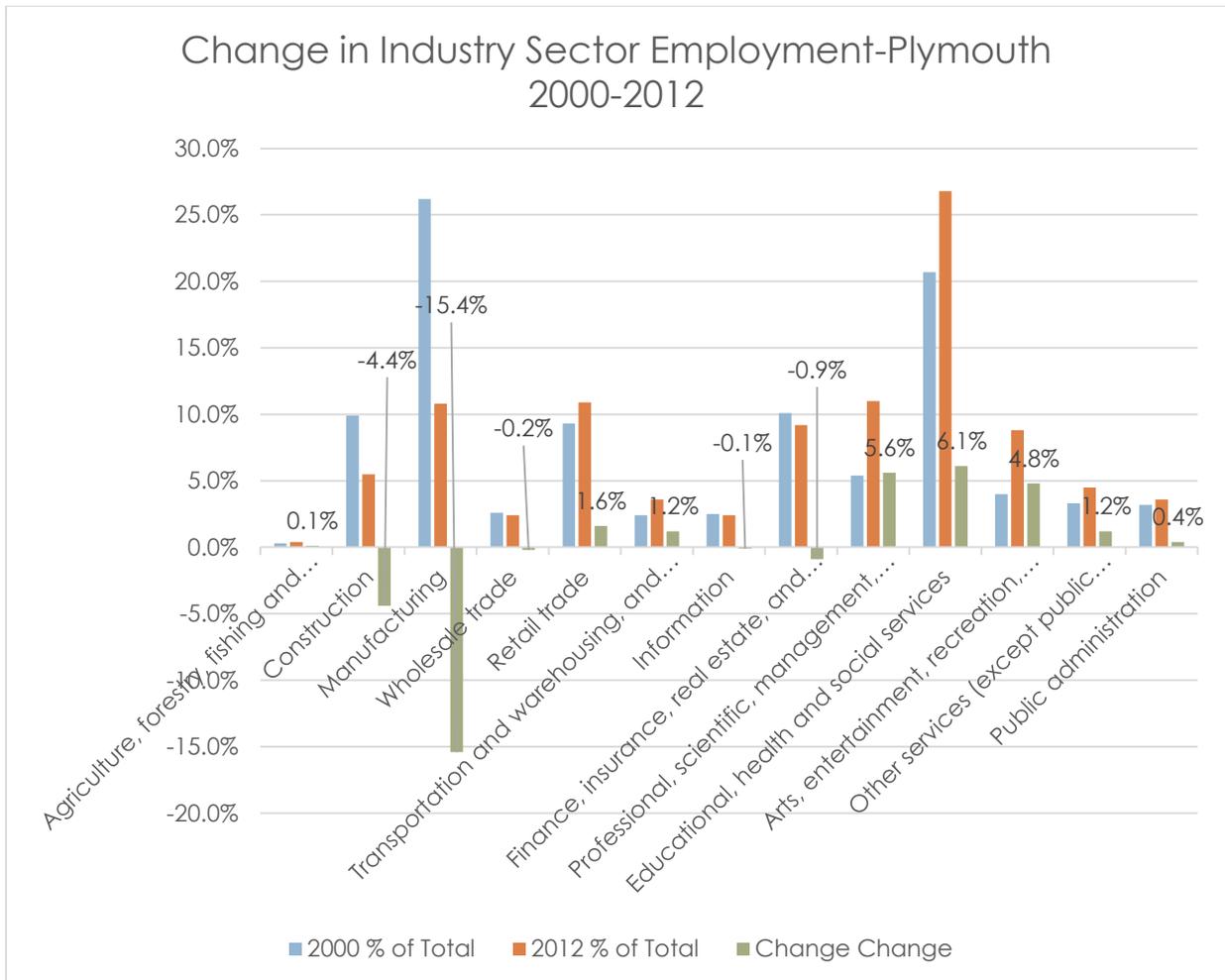
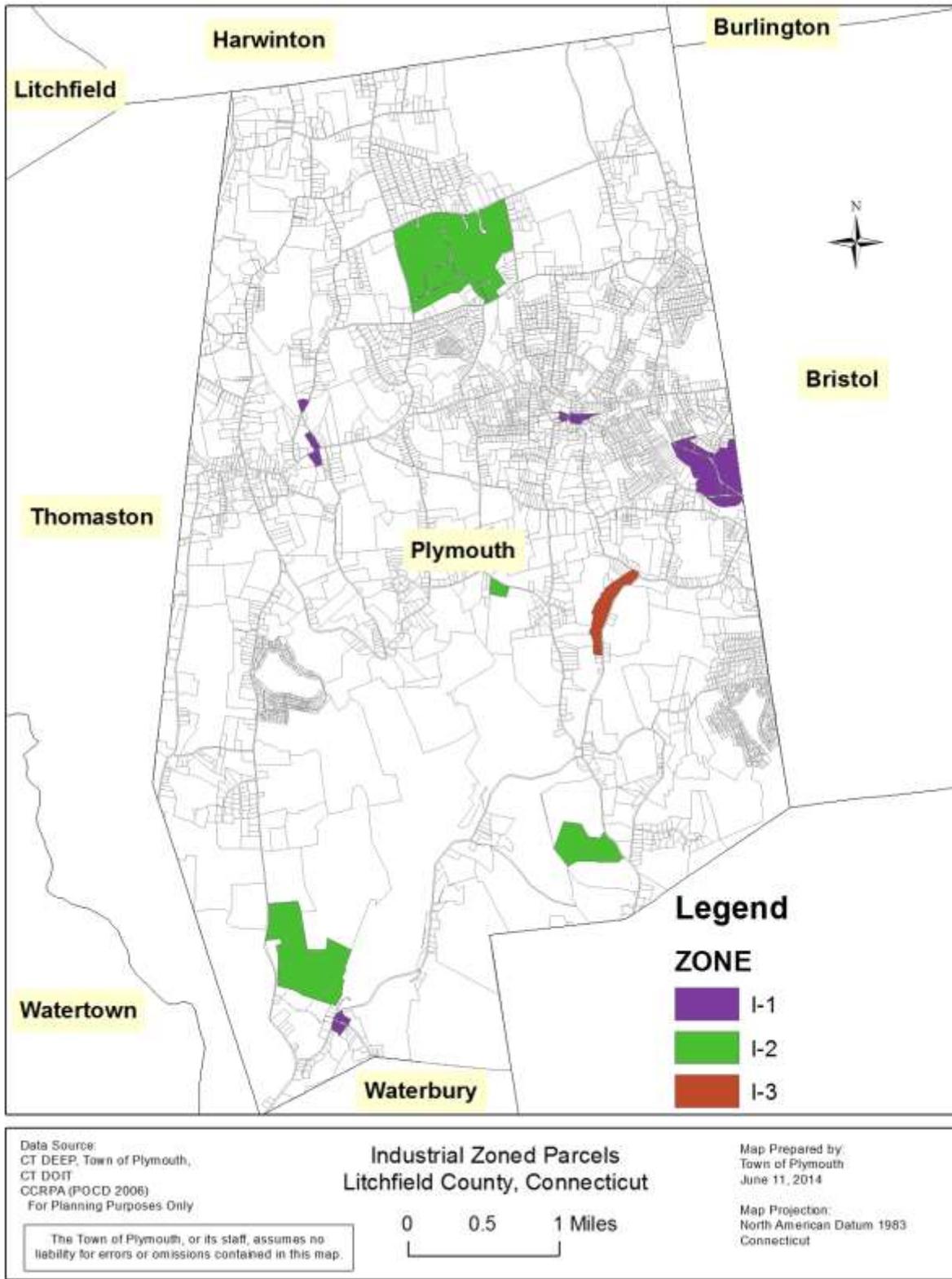


Figure 37-Table: Plymouth's employment by economic sector compared to State

INDUSTRY	% of Total 2000	% of Total 2012	% of Total State 2000	% of Total State 2012
Agriculture, forestry, fishing and hunting, and mining	0.3%	0.4%	0.4%	0.4%
Construction	9.9%	5.5%	6.0%	8.6%
Manufacturing	26.2%	10.8%	14.8%	19.1%
Wholesale trade	2.6%	2.4%	3.2%	3.0%
Retail trade	9.3%	10.9%	11.2%	9.7%
Transportation and warehousing, and utilities	2.4%	3.6%	3.9%	4.3%
Information	2.5%	2.4%	3.3%	3.9%
Finance, insurance, real estate, and rental and leasing	10.1%	9.2%	9.8%	6.6%
Professional, scientific, management, administrative, and waste management services	5.4%	11.0%	10.1%	7.7%
Educational, health and social services	20.7%	26.8%	22.0%	23.7%
Arts, entertainment, recreation, accommodation and food services	4.0%	8.8%	6.7%	7.4%
Other services (except public administration)	3.3%	4.5%	4.5%	2.7%
Public administration	3.2%	3.6%	4.0%	2.9%

Source: Decennial Census, 2010

Figure 38-Map: Industrial Owned Parcels



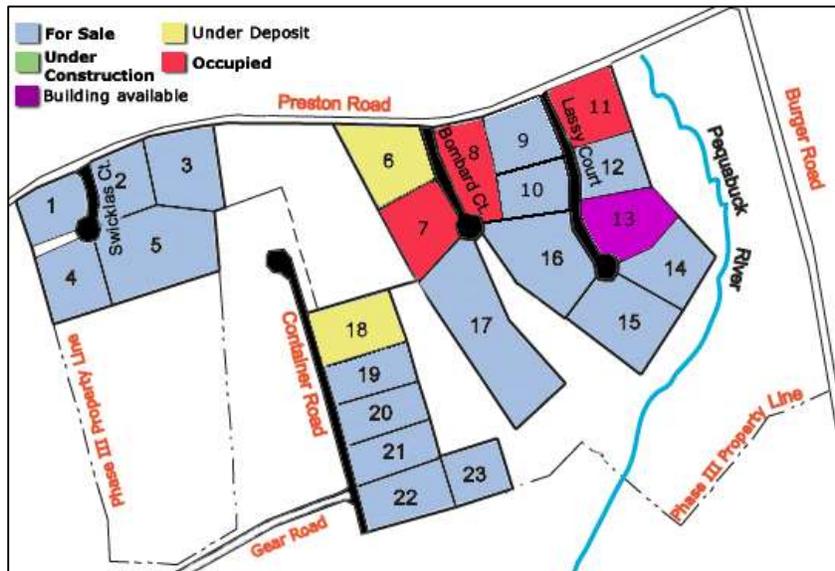
Businesses in Plymouth

There are approximately 405 private enterprises in the Town of Plymouth. The business base in the Town of Plymouth is comprised of the Industrial and Commercial zones.

There are fifteen areas zoned Industrial 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.

Plymouth Business Park

There are two Town sponsored industrial parks: the fully developed Phases I / II and the more recently completed Phase III. Together, this industrial area constitutes the single largest area zoned Industrial, 148.27 acres: a third of all the land area in Town zoned for Industrial. 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.



Plymouth Industrial Park-lavout

Both are full service areas, with public water, public sewer, and utility services, including gas.

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 space in those areas zoned Industrial in the Town.

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.

Burr Road and Main Street

There are two parts to this area of Industrial 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 Industrial 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 Industrial 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 Industrial 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 Industrial Zone designation is an isolated situation. The surrounding area is zoned R-40. 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 Industrial 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.

Town Hill Road

This area of Industrial 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 Industrial zone, totally surrounded by R-40 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 Industrial 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 1980s.

In addition, these sites have something that only one other Industrial 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. The Zone area contains 59.35 acres. The Industrial 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.

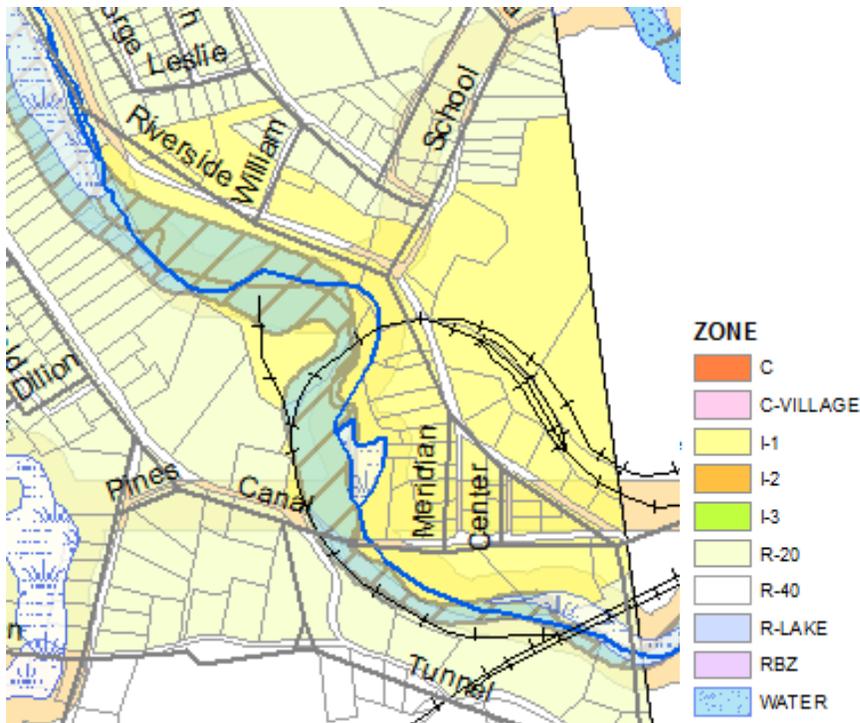
Unlike the other Industrial Zones, this area is a mixture of uses. Nearly 42 acres have industrial or commercial uses, or approximately 70% of the total land acreage. In addition, there are vacant properties, institutional use (Town's sewer plant) and most significant, residential uses.

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.

Over the past decade considerable planning and private investment towards the redevelopment of the western side of South Riverside has occurred. A private company, 100 South Riverside LLC has initiated the environmental clean-up and presented redevelopment conceptual plans. These plans include an open space gathering place along a newly restored riverbank with river walks on the western side of river. On the remainder of the site on the east side a mixed use office, retail, light industrial, and/or other commercial uses have been discussed. The site has significant potential for revitalizing this area of Town. The land owners, with the support of the town, have made considerable progress on this site in the past decade.

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. In terms of the existing square footage, the major source is the complex of the former O.Z. Gedney Company: 221,719 square feet and a part dates back to 1900. A part of the former O. Z. Gedney complex is also situated near or in a floodplain.

Figure 39-Map: South Riverside



Like South Main Street, this area has something that other Industrial 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.

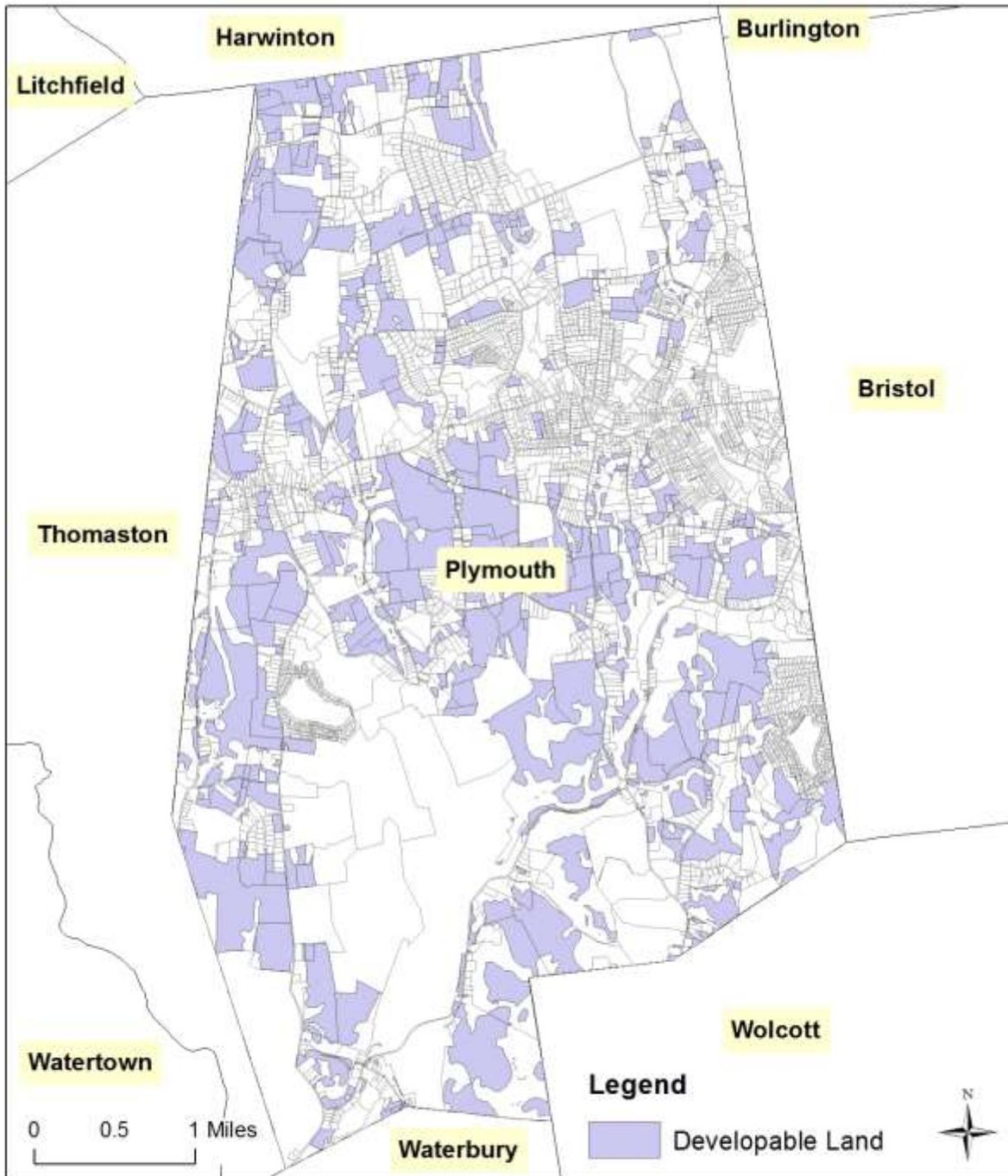
Harwinton Avenue -East

This Industrial Zone is located on the eastern side of Harwinton Avenue. The Zoning Map shows this Industrial 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 Industrial 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.

Figure 40-Developable Land (Per CCRPA 2005)



Data Source:
 CT DEEP, Town of Plymouth,
 CT DOIT
 CCRPA (POCD 2006)
 For Planning Purposes Only

**Plymouth Developable Land
 Litchfield County, Connecticut**

Map Prepared by:
 Town of Plymouth
 June 11, 2014

Map Projection:
 North American Datum 1983
 Connecticut

The Town of Plymouth, or its staff, assumes no liability for errors or omissions contained in this map.

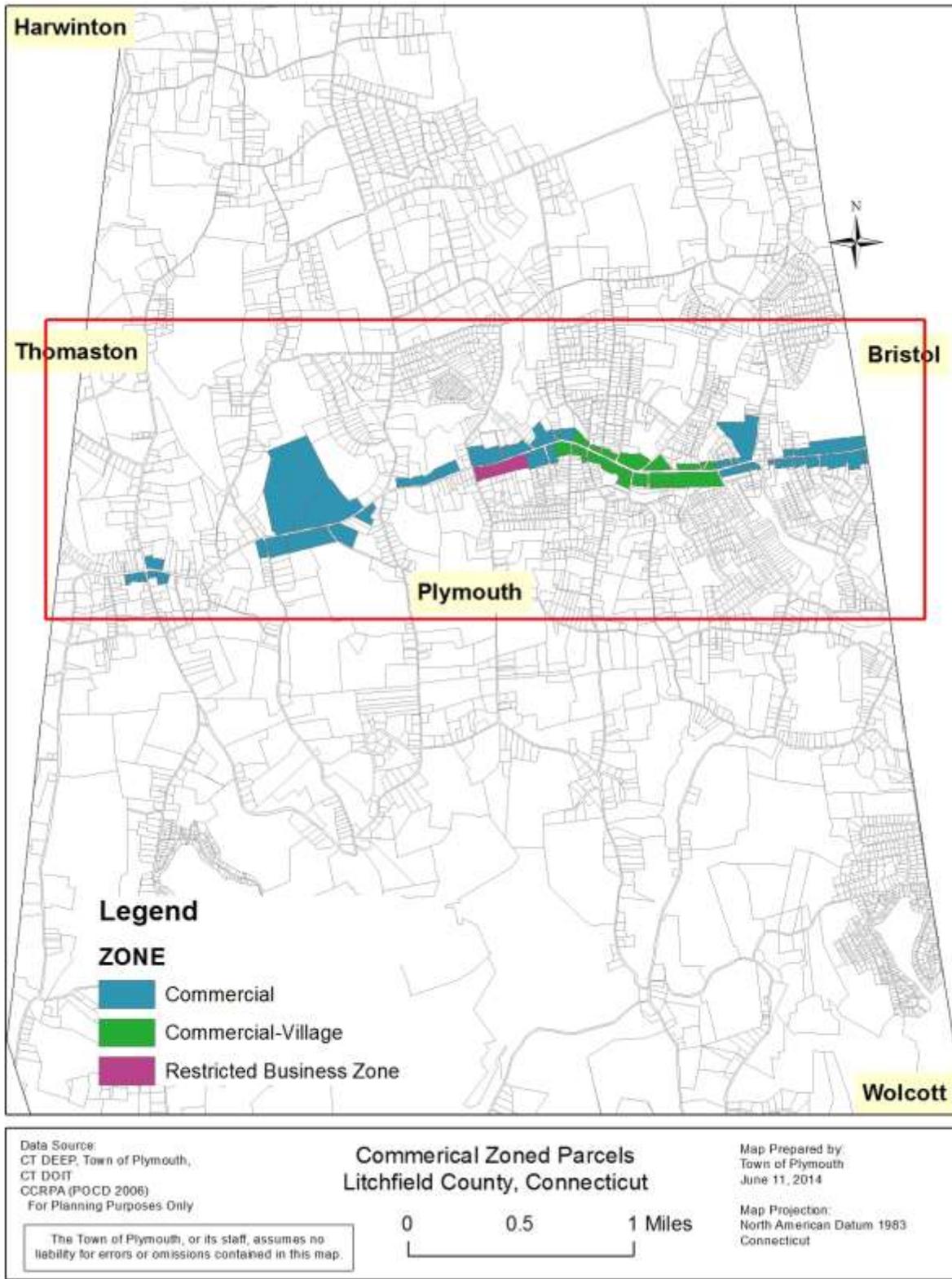
Commercial Zones

The Town has three general business districts comprised of the Commercial, Village Commercial, and Restricted Business Zone. Unlike the Industrial 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.

In terms of the setting, there are distinctions between the locations of the Commercial Zones. 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.

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.

Figure 41-Map: Commercial Zones



Downtown Terryville

This area contains 9.47 acres located in the very center of Terryville and is an in-appropriate location for a Commercial 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.

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 R-20. The R-20 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 fourth 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.

"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. This area has seen an increase in “heritage tourism” in the last decade and has potential to increase this niche market through active marketing and continued adherence to architectural standards with new development.

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 of the Village Commercial 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 Industrial Zone on its eastern edge. Moreover, this Zone is significant as this area starts the transition into the central village area of Terryville.

Main Street between RT 72 and Prospect Street

This Village Commercial Zone runs 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. 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 dispersed among residential and commercial uses. A recent zone change has re-established a commercial zone on the western side of north riverside avenue.

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, with full infrastructure, 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 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 2000 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.

Comprehensive Economic Development Strategy (CEDS)

Plymouth is part of the approved Central Connecticut Region Comprehensive Economic Development Strategy (CEDS)⁴. The included comprehensive review of the entire region. Below are several elements of the CEDS which should be acknowledged in the overall economic condition and future planning of the Town.

Plymouth: Industrial Park- Infrastructure

For the past several years, Phases 1 and 2 of the Industrial Park in the Town of Plymouth have experienced major problems with existing utility wiring for cable, phone, and electricity. Underground conduit problems have caused many service interruptions, creating severe difficulties for business owners in the industrial park. In many cases, power has gone out in the middle of manufacturing processes. Many piecemeal repairs have occurred, but a total upgrade of the entire wiring system is needed to fix the problem.

⁴ 2011, Central Connecticut Comprehensive Economic Development Strategy

Plymouth: Terryville Trust Site

This significant property is within the Terryville downtown area and is the former location of the Terryville Trust Company. The building is one of the defining structures in the downtown area but currently sits vacant, unutilized and in a state of deterioration due to the lack of maintenance over the years. Its successful reuse as commercial and/or office space would represent a signal of economic resurgence in the downtown area. It would be one of the main contributors to the revitalization of the downtown area.

Plymouth: Waterwheel Park Redevelopment

This redevelopment site is in the center of the Town of Plymouth's Main Street and Downtown area. The redevelopment of this site will transform an underutilized contaminated site into a historic and recreational Waterwheel Park, which will be a focal point of the Downtown area and the community. There has been a lot of community support and activism behind the redevelopment of the site. In recent years, the Town has made several strides toward achieving the goals of the Plan for the Waterwheel Park.

When complete, the Waterwheel Park will feature a historic museum with walking trails, picnic areas and the Eli Terry, Jr. Waterwheel as the centerpiece. Recognized on the National Register of Historic Properties, the Eli Terry, Jr. Waterwheel exemplifies the heritage of this community. Not only will this cultural park present a passive recreational opportunity for the residents of Plymouth, but it will also create a tourist destination where people from the region can come to visit the museum, see the waterwheel and enjoy the park-like settings and tranquil surroundings.

Plymouth: Terryville Business District/Downtown Revitalization

Over the years, Downtown Terryville has lost much of its identity as the mercantile center of Plymouth, while still retaining many of its historical resources. Terryville has been the subject of land use studies, historic preservation studies, traffic studies and economic development studies. Unfortunately, the resources for implementation have not yet been marshaled and Terryville continues to decline. The problem has only exacerbated with the decline in the state and national economy. The goal is to reinvigorate the downtown area and encourage private investment to Terryville. Progress has been made in this area since the prior plan and phase I of streetscaping has occurred on the southern side of Main Street.

Baldwin Park, which enjoys a public-private partnership has enjoyed a renewed success in bringing the community together for many events in the summer. It also includes a very popular war monument. The Planning and Zoning Commission heard the request for continued and more municipal support to keep Baldwin Park maintained and open to the public. The Commission supported this approach.

Plymouth Business Park/Phase IV This project is for the final phase of the Plymouth Business Park. The parcel has the highest elevation within the industrial area. Its visibility calls for a high-end business/office park use. Project development would include road linkage with Phase III, utilities, engineering, permits and inspection services. This project would be a public/private partnership with the use of local, state, and national funds, in addition to private investment by a developer. This project would bring more business into the region. A high end business/office park would support other businesses in the region and provide jobs for the residents of neighboring towns. This would help to make the region more economically viable and competitive.

Plymouth: Route 6 Streetscape

The streetscape area extends from Benedict Street (Near the Waterwheel), easterly to Allen Street. This project will serve to beautify the heavily traveled Main Street area. A new streetscape will create a more pedestrian-friendly environment that will help develop a sense of place for the main downtown area. Improvements will include new 5 foot wide sidewalks with 3 ft wide brick ribbons, granite curbing, pedestrian crossings, street trees, and pedestrian lighting and signage. Grant funding has enabled the Town to reach several milestones with this project to date. Existing Conditions mapping was produced, which identifies project needs. A concept design plan has been created for the entire 3100 linear feet of project area. The Town had several public informational meetings to encourage involvement from the residents and business owners of the project area and the community at large, including a Mayor's Breakfast and Site Walk for the business owners and residents included in Phase 1 of the project area. A Development Design Plan and construction documents for Phase 1 of the project area have already been created.

Future Economic Development Potential - Market and Location

The term restructuring is often used to describe economic times. However, economies are always in a state of transition. A large variable is the rate of change, or transition. 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 overseas 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 in 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.

Manufacturing employment is declining in Connecticut and in Plymouth as discussed in previous sections. 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, and continued to decrease from 2000 to 2010.

However/ Plymouth is not alone. Many other towns have high percentages of people employed in manufacturing. Two points are relevant.

Plymouth has a higher concentration of people age 25 and over that 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%.

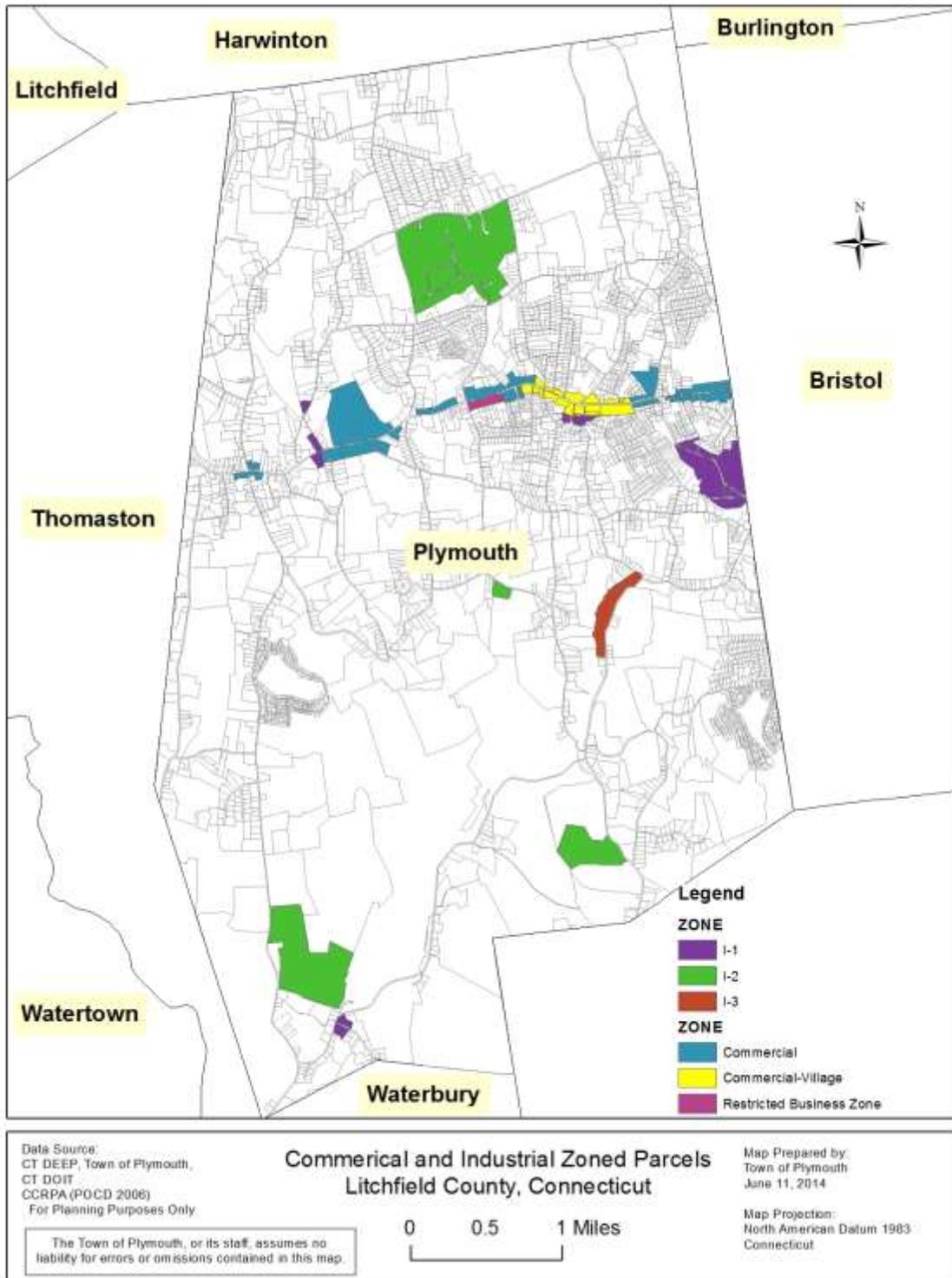
Future Economic Development Potential-Land Supply

The amount of vacant land zoned for business activity is limited although at first glance there appears to be approximately 160 acres available between the three zoning categories. 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 South Main Street, and Wolcott Road. Residential areas surround many locations and industrial development may be considered intrusive.

The Commercial Zone situation is significant as well. There are many opportunities along the entire route 6 corridor and the route 72 south corridor.

Figure 42-Map: Commercial and Industrial Zones



CONSERVATION OF NATURAL RESOURCES

Introduction

A critical factor, perhaps the most, to a community is the physical nature of a place, topography, and natural resource availability. 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 town wide 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 can be reached. With this understanding, policy can be developed. Elements of the natural resource inventory follow.

Geology

Bedrock

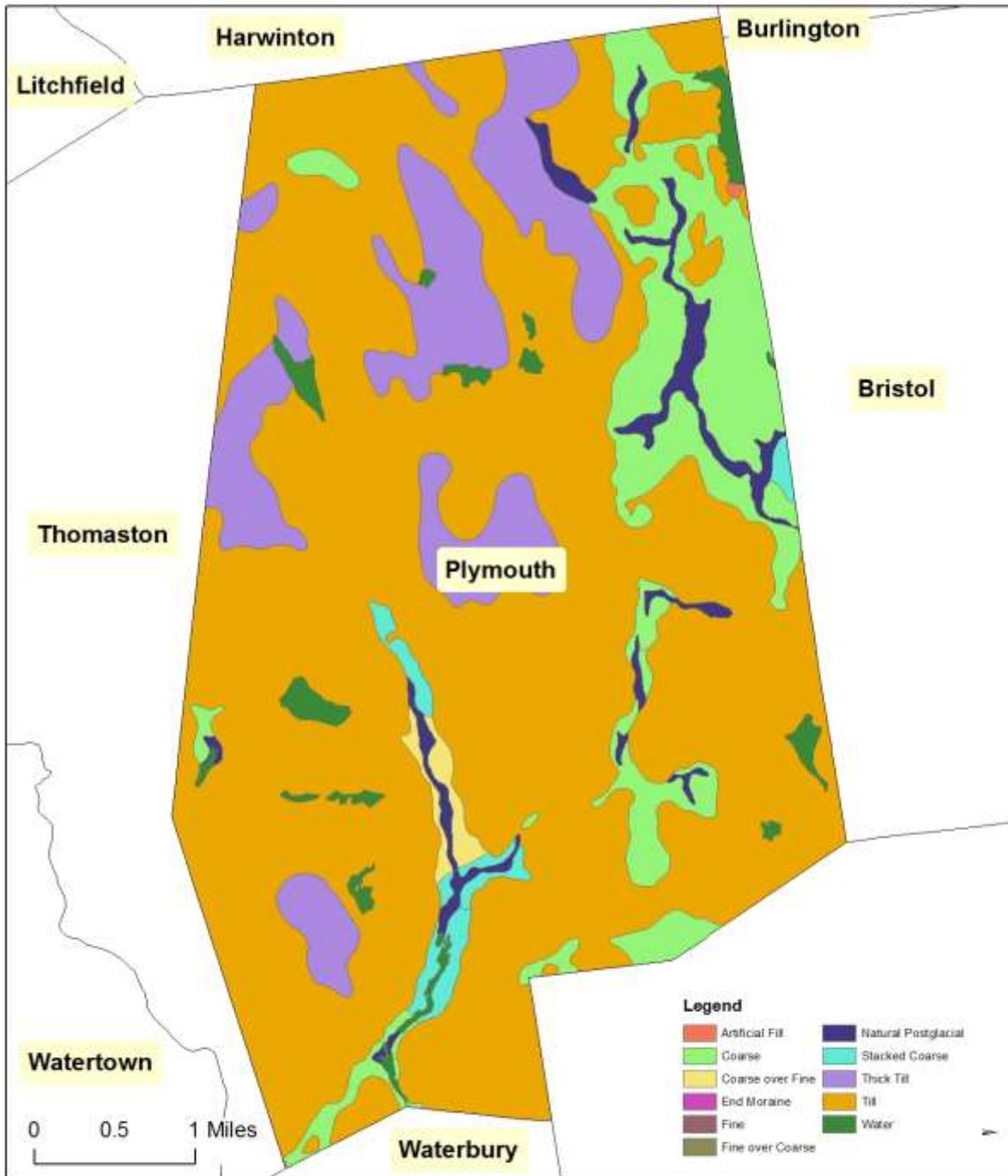
Plymouth is located in a geologic region of Connecticut called the "Western Uplands". The subsurface rock, or ledge as it is often referred, was formed by intense heat and pressure (metamorphic processes) brought on by continental plate collision. As a result, the bedrock that underlies the town and punctuates the landscape through rock outcropping is extremely strong and resilient to forces of 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. that have large deposits of stratified drift. These potential aquifer areas are important natural resources.

Figure 43-Map: Surficial Geology



Data Source:
CT DEEP, Town of Plymouth,
CT DOT

**Surficial Geology
Town of Plymouth
Litchfield County, Connecticut**

Map Prepared by:
Town of Plymouth
June 11, 2014

Map Projection:
North American Datum 1983
Connecticut

The Town of Plymouth, or its staff, assumes no liability for errors or omissions contained in this map.

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.

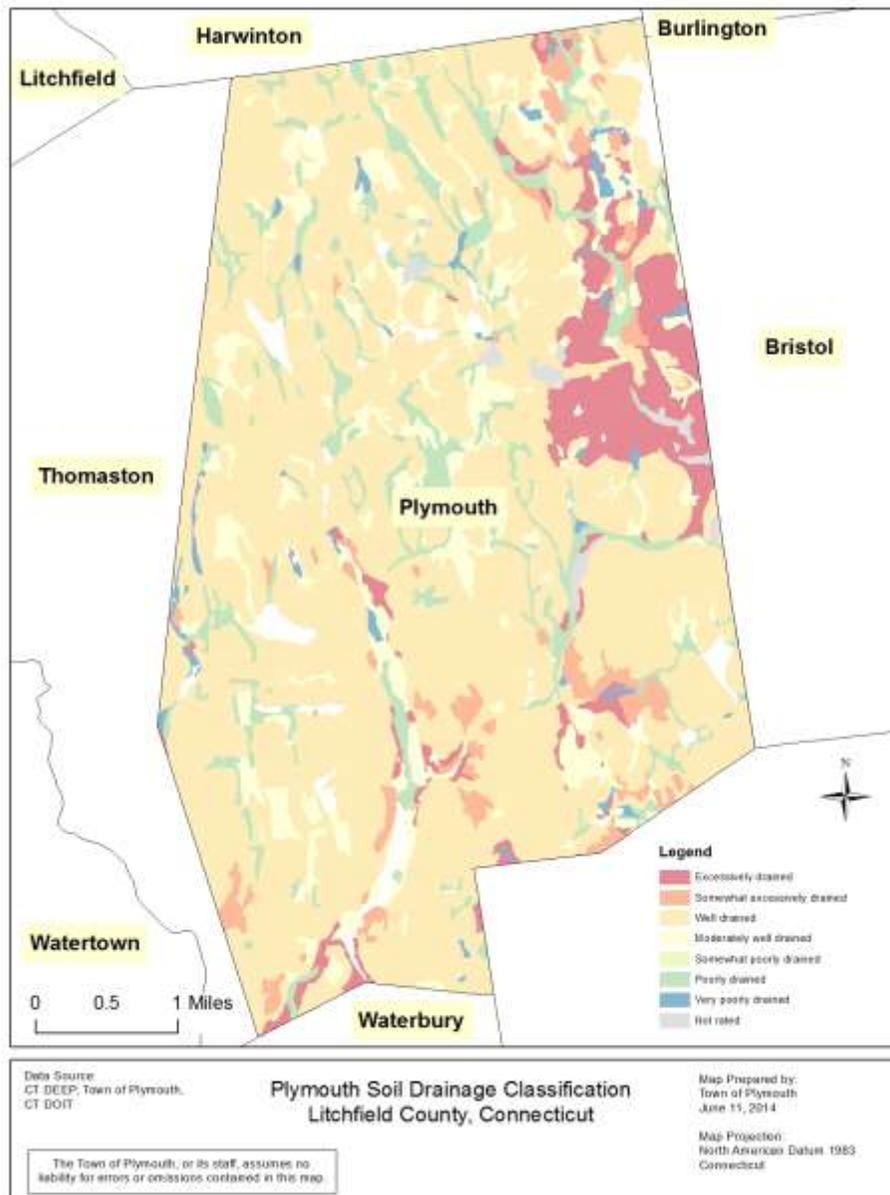
Canton & Charlton Soils

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 to 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.

Figure 44-Map: Soil Type



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. Wetlands associated with the Wetland soil types have received protection Pequabuck River near Napco Drive 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 regarding development, especially on-site septic systems. Areas of rock outcroppings sometimes represent prominent natural features that the Town may wish to preserve. The

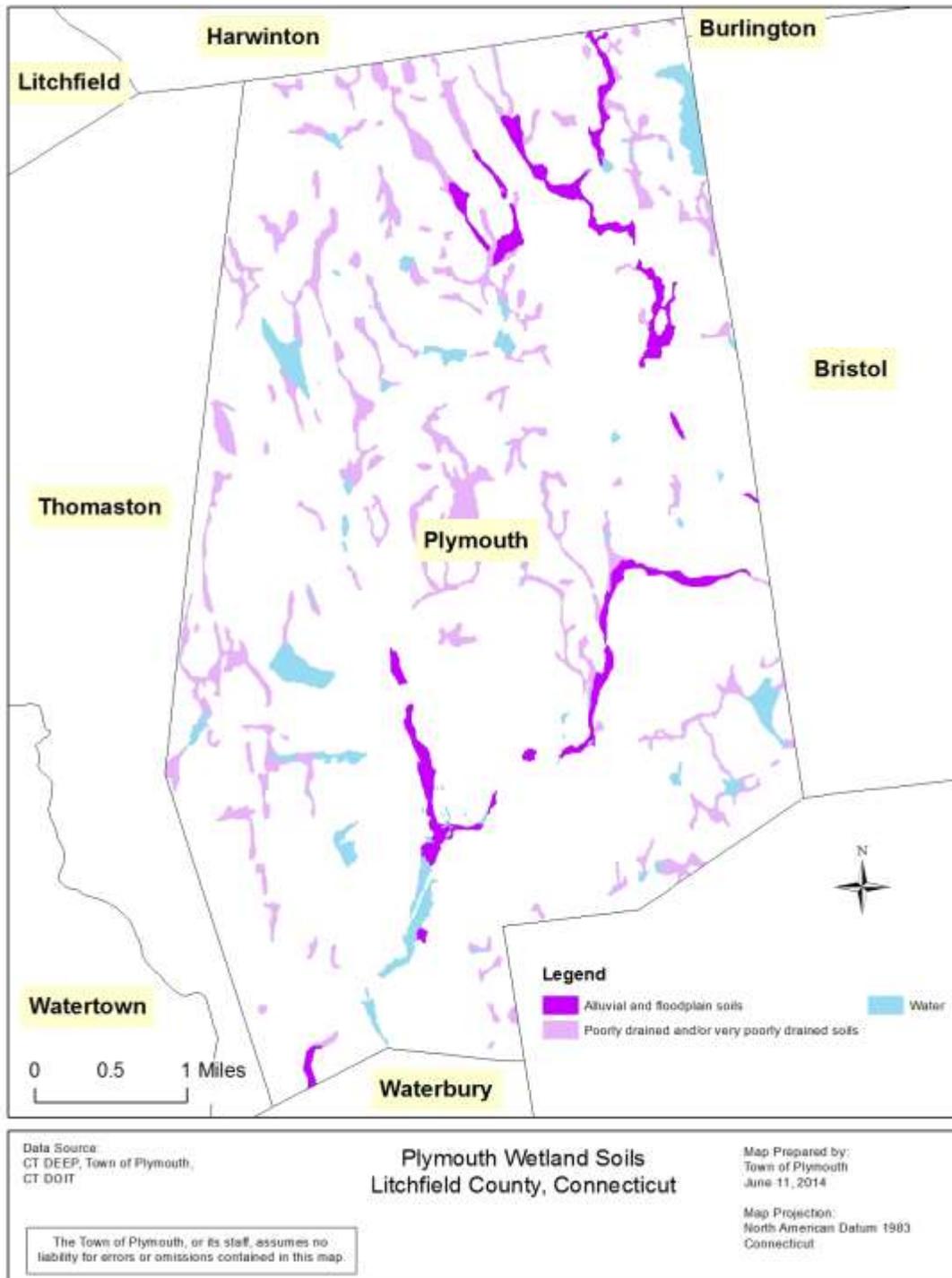
areas of Town that have shallow soils, or soils with an average depth of less than five feet, are illustrated on the map titled Shallow Depth to Bedrock. These areas total approximately 16% of the Town's land area.

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.



Horse shoe falls-Photo Courtesy, Plymouth Webmaster

Figure 45-Map: Wetland Soils



Steep Slope Soils

Areas of steep slopes is 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.

Figure 46-Map: Bedrock Geology

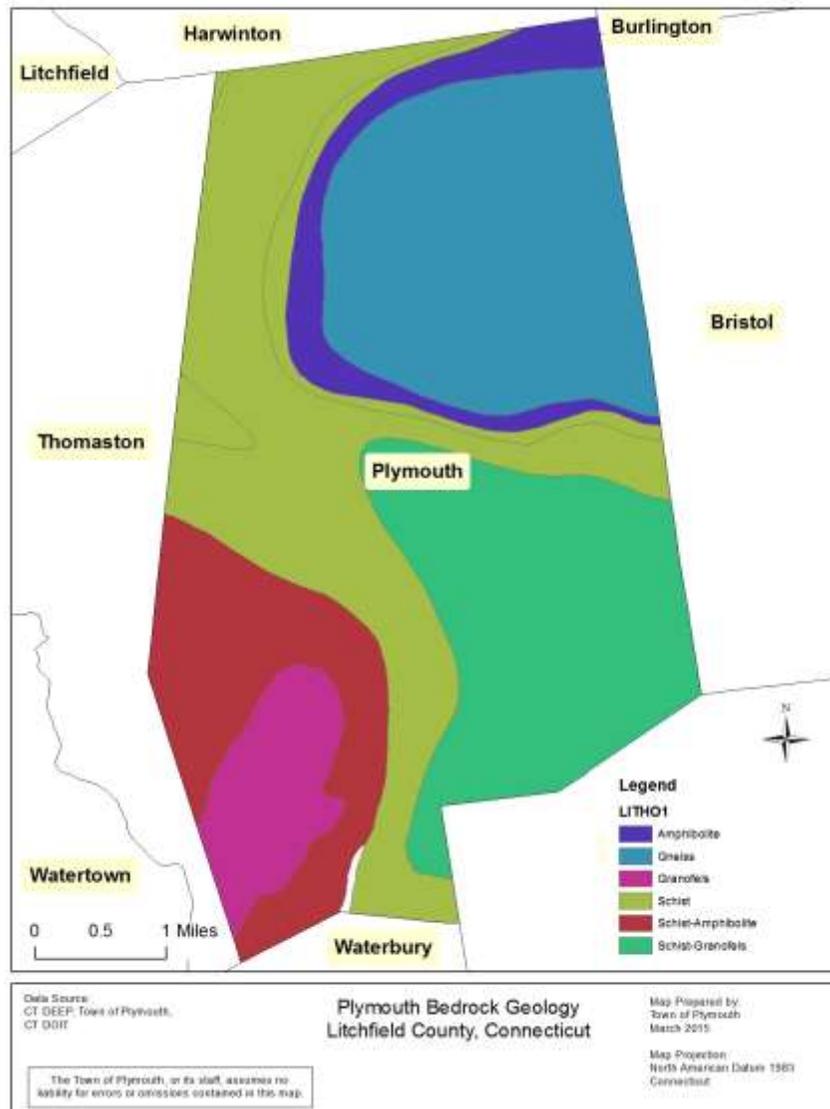
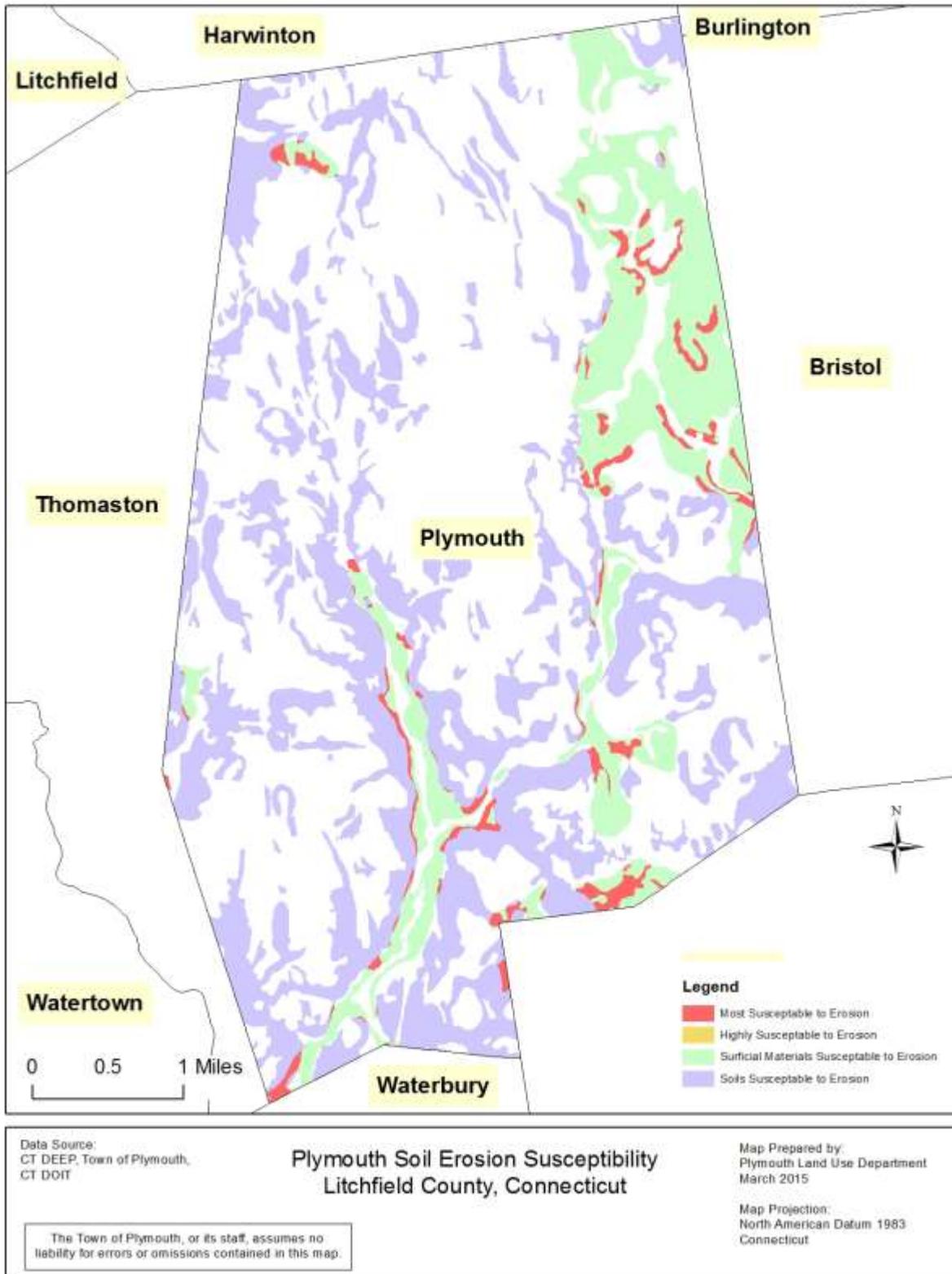


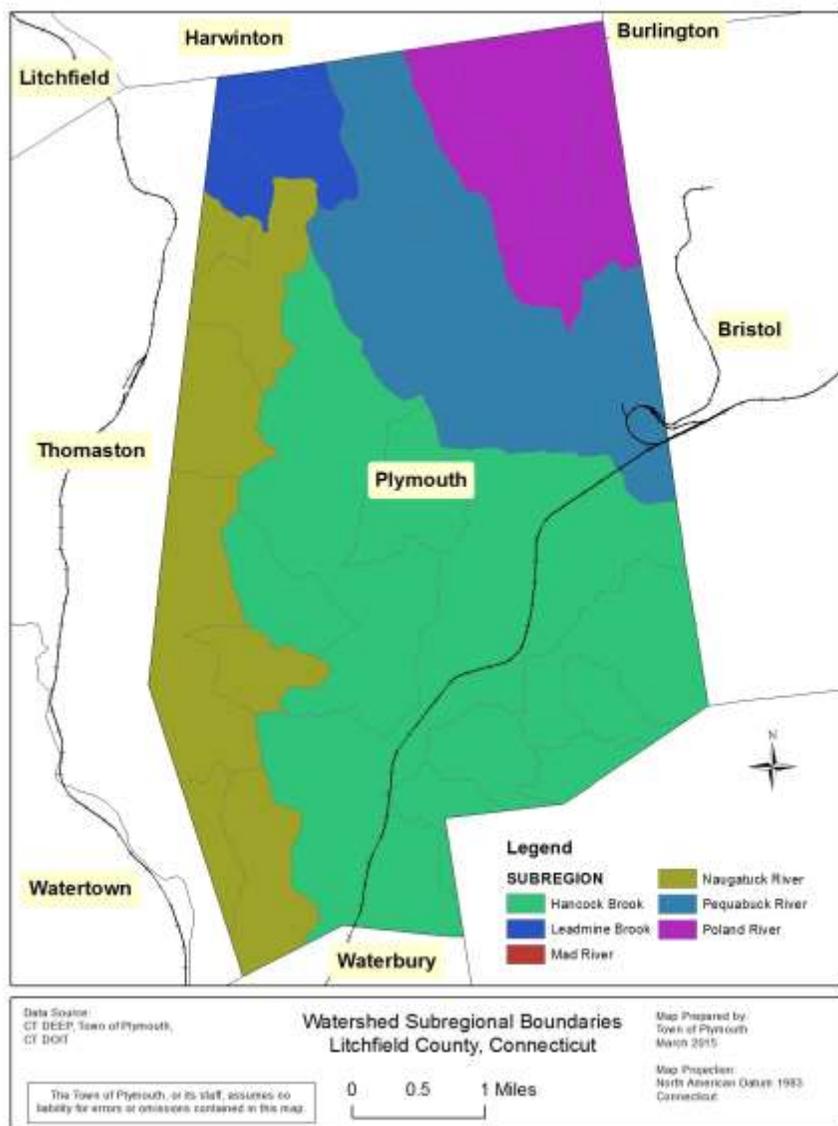
Figure 47-Map: Soil Slope and Erosion Susceptibility



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" 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.

Figure 48-Map: Subregional Watershed Boundaries



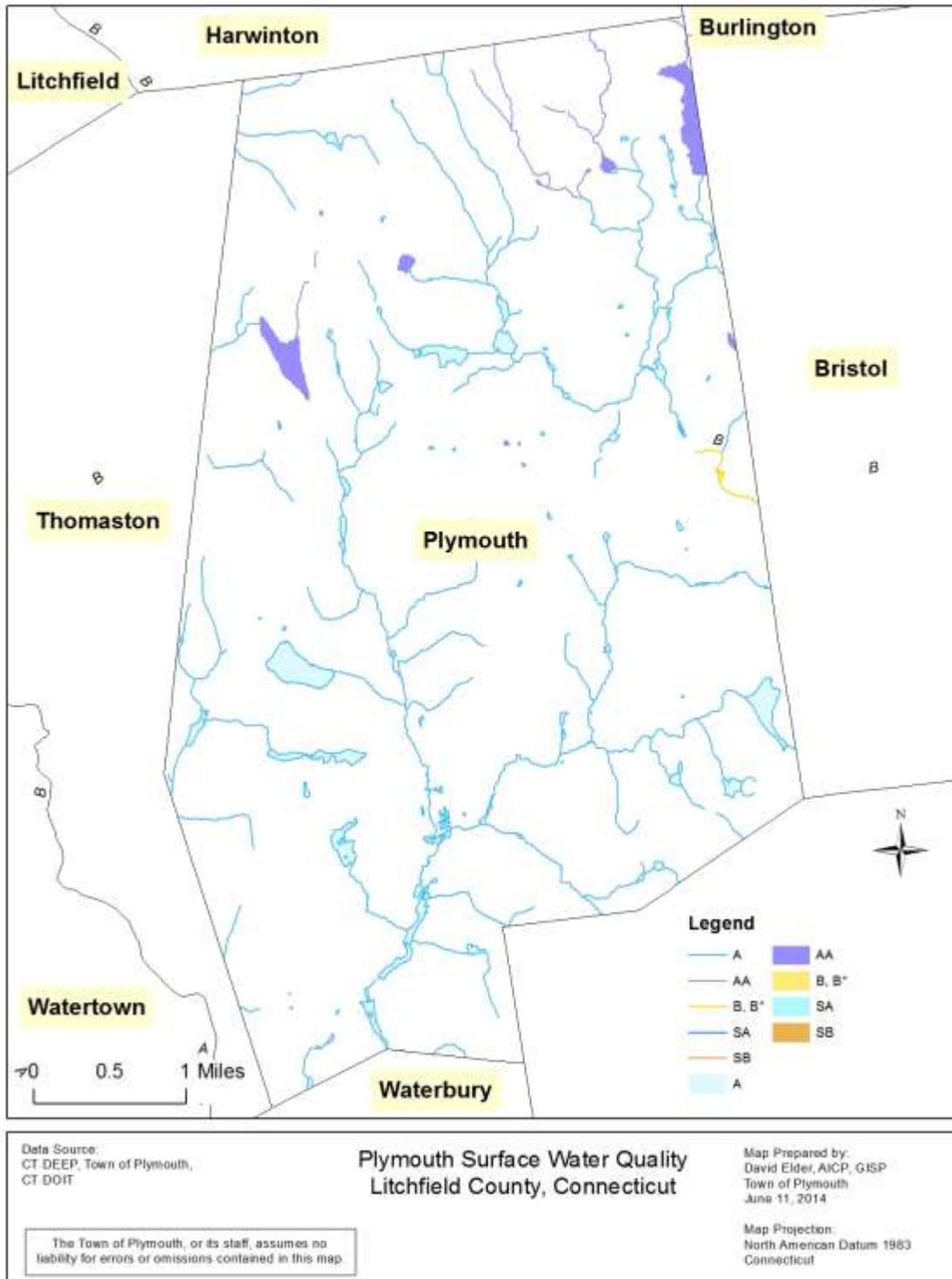
The Connecticut DEEP has delineated major and minor watersheds according to their associated waterway. Beyond this state mapping, many smaller waterways have associated watersheds. It is important to note that the minor watersheds drain to the higher order watershed exerting influences on water quality and quantity. Two major water basins bisect Plymouth: the Connecticut River basin and its associated sub watersheds and the Housatonic River basin and its associated sub watersheds.

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 uses 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.

Figure 49-Map: Surficial Water Quality



Hancock Brook

The watershed that Hancock Brook drains is the largest watershed in the Town. This watershed includes the sub watersheds of Lake Plymouth and Fall Mountain Lake, among a number of sub watersheds 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

Hancock Brook and associated wetlands, south of Greystone Road Bristol and south to Wolcott where it drains into the Naugatuck River. The entire watershed is 1504 square miles, with 10A 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 sub watersheds.

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 (404% 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 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 sub watershed 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 "8" 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 comprehensive study is underway evaluating the Pequabuck River and its watershed. The study is evaluating a the flood potential, risk, and mitigation strategies for river shed management. The Town is an active member of the study steering committee. The study was undertaken in response to several major flood events and the Watershed report 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 storm water 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 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 sub watershed of the Pequabuck's drainage area. Both watersheds are sub watersheds 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 Planning and Zoning Commission is the designated floodplain administrator for the Town.

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 storm water 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 storm water discharge and protection of public health.

Extreme Weather Events

Hurricane Sandy (unofficially known as "Superstorm Sandy") was the deadliest and most destructive hurricane of the 2012 Atlantic hurricane season, as well as the second-costliest hurricane in United States history. Classified as the eighteenth named storm, tenth hurricane

and second major hurricane of the year, Sandy was a Category 3 storm at its peak intensity when it made landfall in Cuba.^[1] While it was a Category 2 storm off the coast of the Northeastern United States, the storm became the largest Atlantic hurricane on record (as measured by diameter, with winds spanning 1,100 miles (1,800 km)). Estimates as of March 2014 assess damage to have been over \$68 billion (2013 USD), a total surpassed only by Hurricane Katrina. At least 233 people were killed along the path of the storm in eight countries.

In October of 2012 Plymouth, along with much of the east coast of the United States experience significant damage from Hurricane Sandy. Connecticut Governor Dan



Malloy partially activated the state's Emergency Operations Center on October 26 and signed a Declaration of Emergency the next day. On October 28, U.S. President Barack Obama approved Connecticut's request for an emergency declaration, ahead of Hurricane Sandy making landfall, hundreds of National Guard personnel were deployed. On October 29, Governor Malloy ordered road closures for all state highways to be done in two phases. At 11 a.m. EDT, trucks were prohibited from operating on limited access highways. At 1 p.m. EDT, state highways were closed to all non-emergency vehicles; the last time such an order was issued in Connecticut was during the Blizzard of 1978. Numerous mandatory and partial evacuations were issued in cities across Connecticut.

Hurricane Irene was a large and destructive tropical cyclone, which affected much of the Caribbean and East Coast of the United States during late August 2011. Irene is ranked as the seventh-costliest hurricane in United States history, resulting in \$16.6 billion in damage. Irene originated from a well-defined Atlantic tropical wave that began showing signs of organization east of the Lesser Antilles. Irene made landfall in St. Croix as a strong tropical storm on August 20th. Early on August 21, the storm made a second landfall in Puerto Rico. While crossing the island, Irene strengthened into a Category 1 hurricane. The storm paralleled offshore of Hispaniola, continued to slowly intensify in the process. Shortly before

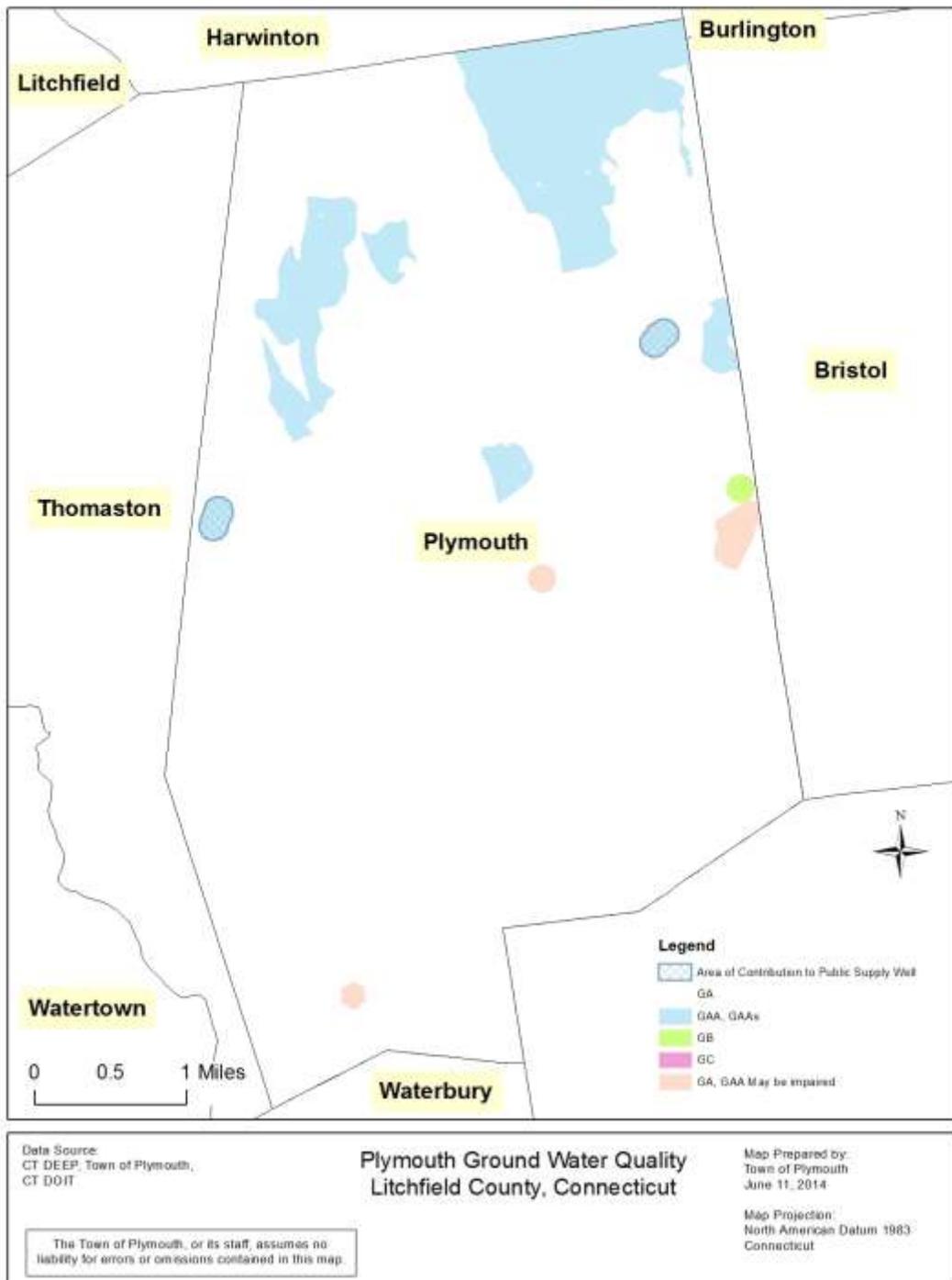
making four landfalls in the Bahamas, Irene peaked as a 120 mph (195 km/h) Category 3 hurricane (National Oceanic and Atmospheric Association).

Thereafter, the storm slowly leveled-off in intensity as it struck the Bahamas and then curved northward after passing east of Grand Bahama. Continuing to weaken, Irene was downgraded to a Category 1 hurricane before making landfall on the Outer Banks of North Carolina on August 27, becoming the first hurricane to make landfall in the United States since Hurricane Ike in 2008. Early on the following day, the storm re-emerged into the Atlantic from southeastern Virginia. Although Irene remained a hurricane over water, it weakened to a tropical storm while making yet another landfall in the Little Egg Inlet in southeastern New Jersey on August 28. A few hours later, Irene made its ninth and final landfall in Brooklyn, New York City. Early on August 29, Irene transitioned into an extratropical cyclone hitting Vermont/New Hampshire after remaining inland as a tropical cyclone for less than 12 hours. It was this slow moving system that resulting in significant flooding for portions of the northeastern United States and caused severe flooding in New England and Plymouth.

Throughout its path, Irene caused widespread destruction and at least 56 deaths. Damage estimates throughout the United States are estimated near \$15.6 billion, which made it the seventh costliest hurricane in United States history, only behind Hurricane Andrew of 1992, Hurricane Ivan of 2004, Hurricanes Wilma and Katrina of 2005, Hurricane Ike of 2008, and Hurricane Sandy in 2012. In addition, monetary losses in the Caribbean and Canada were \$830 million and \$130 million respectively for a total of nearly \$16.6 billion in damage (National Oceanic and Atmospheric Association).

These storms, in more frequent and intense rain events have destroyed roads, private property and have underscored the need for reassessing the amount of flood storage along the streams and rivers in Plymouth. Work to restore the riverbank at the water pollution control authority was undertaken after these storms as well as emergency repairs along the Pequabuck river post tropical storm Irene. These events hurried the recommendations of the CCRPA Pequabuck river study and a full watershed management and flood storage study is underway. In addition, Bemis street, in Terryville Connecticut was undermined by flooding of the adjacent reservoir which led to complete road failure. Full reconstruction, including drainage is underway.

Figure 50-Map: Groundwater Resources



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". 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 layered deposits of sand, gravel, silt and clay, primarily in river and streambeds. These aquifers can yield millions of gallons per day wherever deep saturated deposits of porous materials are found. These formations are located 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 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.

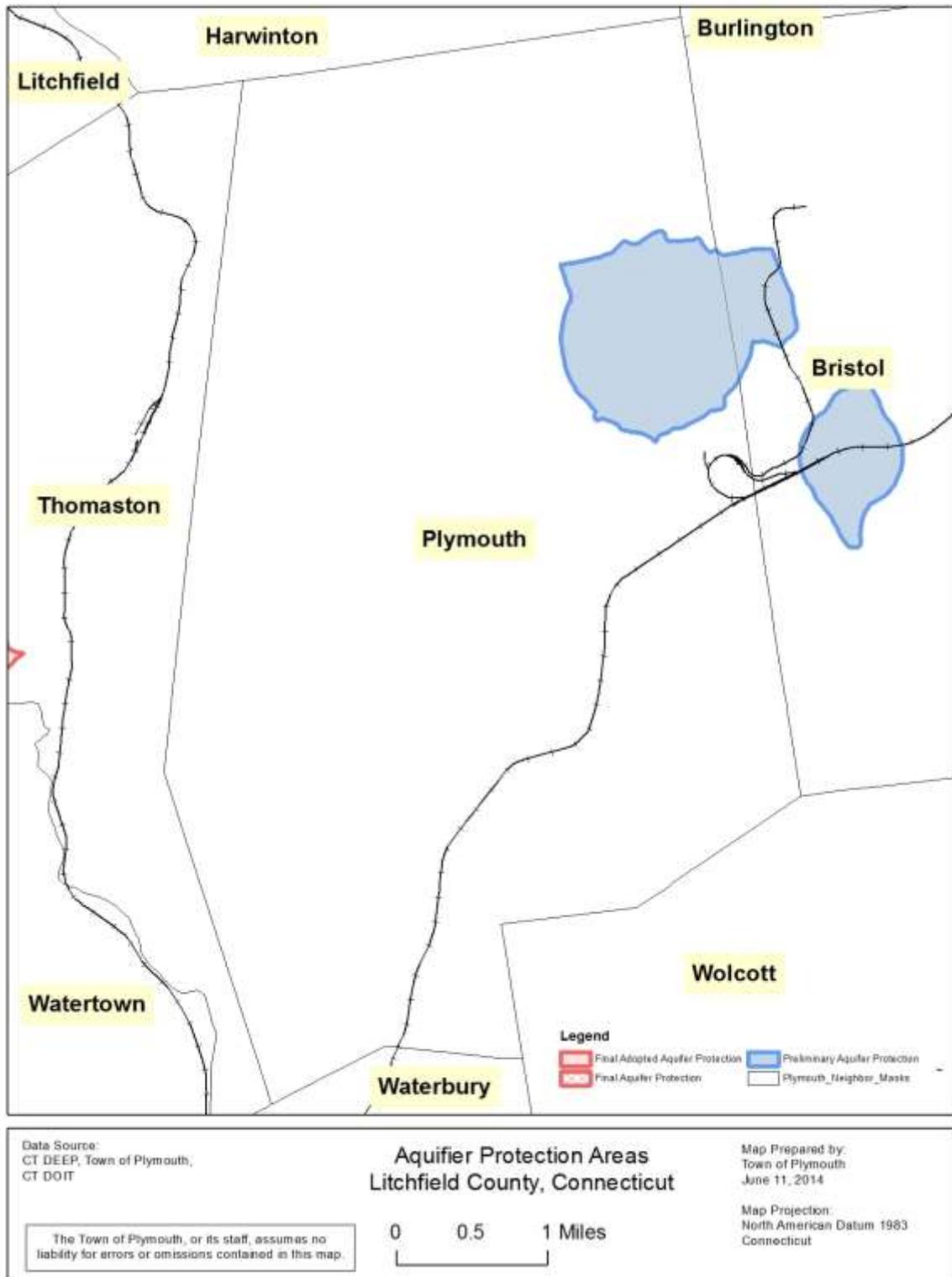
Aquifer Protection Areas

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 by 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.

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.

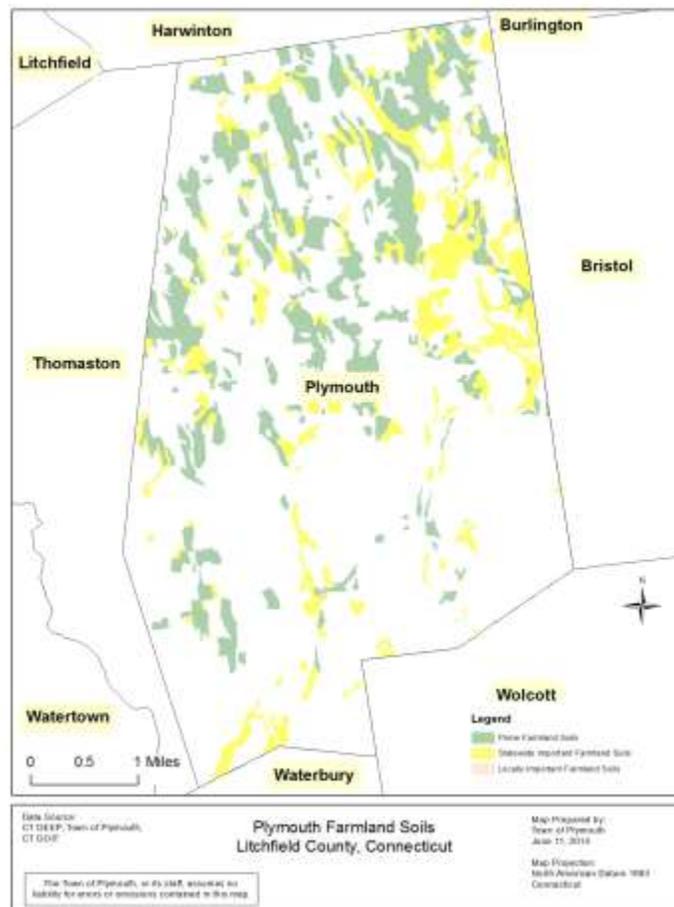
Figure 51-Map: Aquifer Protection Areas (Level B)



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. For 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 4% of the land in Plymouth was considered agricultural in 2006 based on Land Cover (UCONN CLEAR). However, new advents in farming including microfarms, urban farms, and farm-to-table service trends make the possibility for locally produced agricultural products a possibility. This is especially true of fertile lands and soils found in Plymouth.

Figure 52-Map: Prime & Statewide Farmland Soil



Farmland Soils

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 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. 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 the 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 melt water 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 is up to applicants, with Commission review, to identify and protect these areas. In Connecticut, only the Town of Haddam has instituted a proactive approach to identifying vernal pools before site specific applications are received.

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.

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 in 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 non harvested wildlife species documented by scientific research and inventoried to 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. Additional resources including maps can be found here <http://www.ct.gov/deep>

Scenic Views

View sheds can be termed natural resources for conservation consideration. A scenic view may be considered a noteworthy for natural features or historic features. A view shed 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.

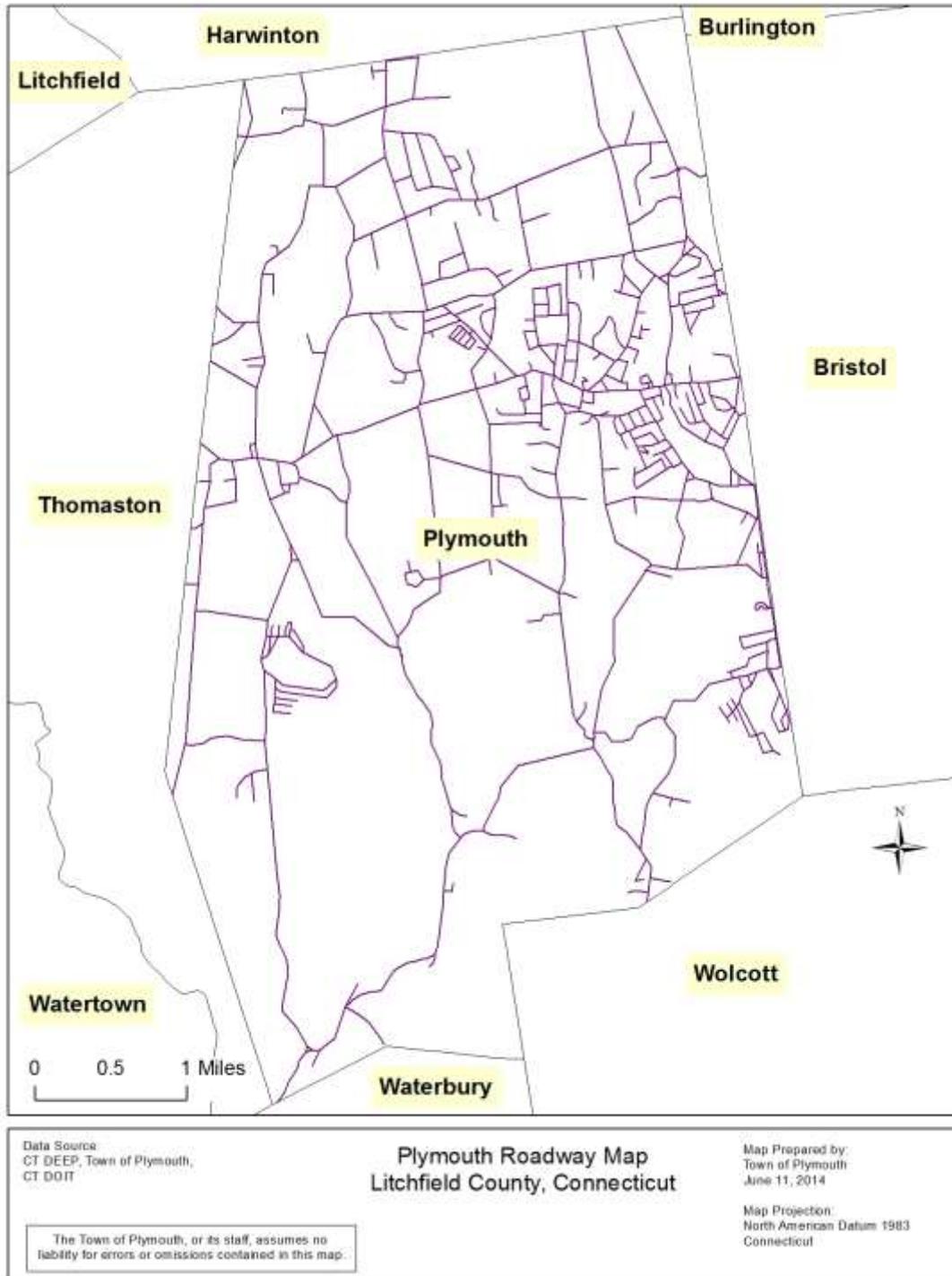
TRANSPORTATION SYSTEMS AND NETWORK

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, 2013, the town of Plymouth maintained 82.84 miles of road according to Town Aid Road Grant. This does not include state roads. The State of Connecticut maintained an additional 12.02 miles on U.S. Route 6 and State Routes 72, 262, and 222. Plymouth's roads are shown on Map 1. Plymouth conducted a pavement management inventory and analysis in 2011. This inventory, analysis, and system has the capability of prioritizing the performance of the roadway system in terms of pavement. The system is a tool that can be used to prioritize the proactive maintenance of the system to maximize cost efficiencies. This aids in preservation activities to preserve the condition for optimal performance within a constrained budget.

Figure 53-Map: Plymouth Roads



Road Infrastructure

Figure 54 below shows road classifications. U.S. 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.

Several major roadway projects have recently occurred or are being planned. Notably, the major reconstruction of Seymour Road, including drainage, and the upcoming reconstruction of Bemis Street. Several recommendations are made to continue to proactively plan, in a capital manner, the ongoing maintenance of the roads budget for major projects.

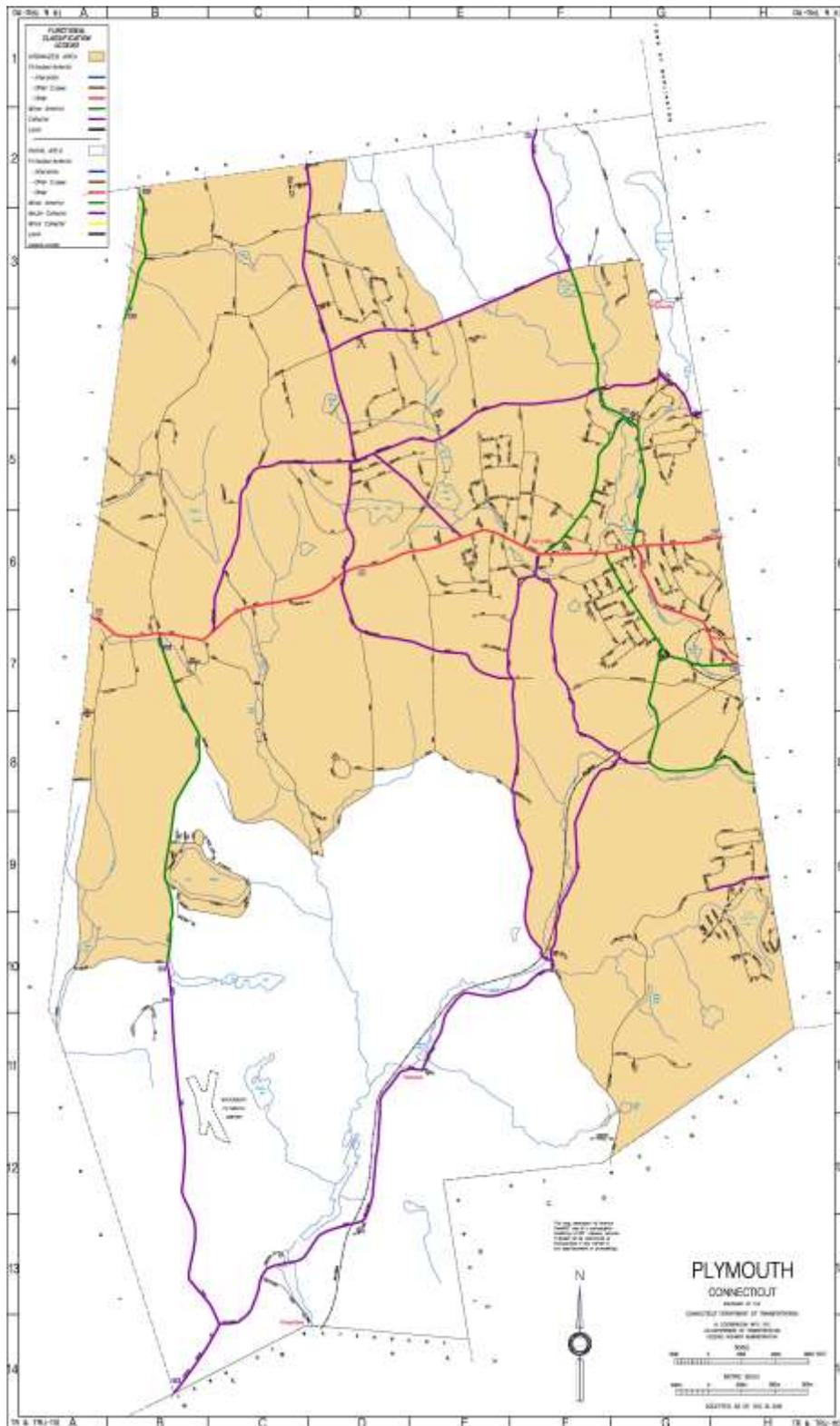
The town's major area of traffic congestion is U.S. Route 6. The majority of U.S. Route 6 is at least 10 percent over capacity and is projected to remain so through 2025 with 16200 per data according to CTDOT average daily traffic maps. Traffic congestion is not otherwise a major problem within the Town. This highly traveled corridor results in congestion at peak travel periods within the week day. Recommendations have been included to address this increasing congestion including; the coordinated signalization of traffic lights along the route 6 corridor, access management planning, intersection improvements, and an off-street parking study for Terryville.

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 fixed-route public transportation in Plymouth.

Some residents do not have access to an automobile. In Plymouth, .07% (429 out of 6,142 total) workers have no access to a vehicle. This is significantly less than the statewide average of 3.6% of the working population who does not have access to a vehicle. This means most workers in Plymouth do have access to at least one vehicle⁵.

⁵ Source: U.S. Census Bureau, 2011-2013 3-Year American Community Survey

Figure 54-Map: Functional Classification



Bridges

Plymouth has forty-one bridges (41) that are part of its transportation network. Nine (9) of these are maintained by the state and either part of the National Highway System or are over 20 feet in length. The remaining thirty-two (32) are maintained by the town of Plymouth. These structures are critical to the performance and safety of the system.

Several projects are underway, being planned, or are in design. These include the rehabilitation of the bridge at the intersection of route 6 and 72 (Main Street at the intersection of North and South Riverside Ave), the recently rehabilitated North Riverside Bridge, and the planned North Main Street bridge project. These are major repairs that will prolong the life of these structures.

The Connecticut Department of Transportation's (CTDOT) Bridge Safety and Evaluation Section inspects all State bridges, and all municipally owned bridges with spans greater than 20 feet, on a regular basis (every 2 years or less). Inspections of municipally-owned bridges with spans of less than 20 feet are the responsibility of the respective municipality; they are not routinely inspected by CTDOT.⁶

During the inspections, the bridge inspectors carefully evaluate each component of a bridge, and then assign a numerical rating to each component. The ratings range from 0 to 9, with "9" being the best, and "0" being the worst rating (see the Sufficiency Rating section below for more explanation).

In general, bridges are considered to be "structurally deficient" if the physical condition rating of any of the major structural components (deck, superstructure and substructure) are rated as "poor" or below (a numerical rating of 4 or less), or if the appraisal ratings for the structure condition or waterway adequacy are rated as requiring a high priority for replacement (a numerical rating of 2 or less). There are number of programs, both at the Federal and State Department's of Transportation made available to assist municipalities with the required maintenance of their structures. Most notably in Connecticut, at the Federal Local Bridge Program, State Local Bridge Program, the Small Town Economic and Assistance Program, the newly created Local Transportation Capital Improvement Program

⁶ 2015 CTDOT Local Bridge Program Manual

Figure 55-Table: Municipal Maintained Roadway Bridges

Bridge No	Feature Carried	Feature Crossed	Year Built (27)	Structure Length (49)	Structural Evaluation (67)
01670	North Main Street	Poland River	1931	39.0	4
06129	Napco Drive	Pequabuck River	1950	22.0	4
110011	Todd Road	an unnamed brook	1925	16.0	4
03715	Judd Road	Poland River	1955	27.0	6
05044	Wilton Road	Wilton Pond	1998	43.0	6
05899	Marsh Road	Bristol Reservoir Spillway	1940	65.0	6
06543	Preston Road	Poland River	1996	32.0	6
110009	East Orchard Street	an unnamed brook	1930	11.0	6
110017	South Eagle Street	Hancock Brook	1910	19.0	6
110018	South Main Street	an unnamed brook	1930	16.0	6
03714	Bemis Street	Pequabuck River	2004	26.0	7
04428	Greystone Road Ext.	Todd Hollow & Hancock Brook	1998	76.0	7
05046	Greystone Road #1	Greystone Pond	1964	57.0	7
05490	Canal Street	Pequabuck River	2008	84.0	7
110001	Sawmill Road	an unnamed brook	1960	8.0	7
110005	Mathen Street #2	Poland Brook	1945	16.0	7
110007	Eagle Street	an unnamed brook	1955	18.0	7
110008	South Main Street	an unnamed brook	1945	22.0	7
110015	South Street Ext.	an unnamed brook	1934	17.0	7
110019	Fall Mtn Lake Road	Fall Mountain Lake Outlet	1930	8.0	7
110020	Greystone Road	an unnamed brook	1956	0.0	7
110006	Harwinton Avenue #2	an unnamed brook	1960	12.0	8
110010	Makara Street	an unnamed brook	1955	6.0	8
110012	South Main Street	Hancock Brook	1995		8
110013	Town Line Road	Hancock Brook	1950	8.0	8
110014	Todd Hollow Road	an unnamed brook	1934	14.0	8
110016	Plymouth Blvd.	Outlet of Lake Plymouth	1955	15.0	8
110021	Greystone Road #1	an unnamed brook	1960	6.0	8
110022	Preston Road	an unnamed stream	1996	10.0	8
110002	Preston Road	Pequabuck Brook	1996	10	8

Source: Connecticut Department of Transportation

Figure 56-Table: State Maintained Bridges

Bridge No	Feature Carried	Feature Crossed	Structure Length (49)	Year Built (27)	Structural Evaluation (67)
01109	ROUTE 72	MARSH BROOK	23	1927	4
01111	ROUTE 72	POLAND RIVER	30	1927	6
05430	US ROUTE 6	PEQUABUCK RIVER	24	1986	6
00471	U.S. ROUTE 6	PEQUABUCK RIVER	51	1957	7
01110	ROUTE 72	POLAND RIVER	39	2007	7
01985	U.S. ROUTE 6	TODD HOLLOW BROOK	6	1929	NA
02467	ROUTE 72	POLAND RIVER	16	1927	NA
02468	ROUTE 72	POLAND RIVER	24	1927	NA
02855	ROUTE 222	BROOK	9	1960	NA
Source: CT Dept. of Transportation					

DAMS

There are twenty-six (26) dams in Plymouth. Three (3) of these dams are owned by the town, three (3) more are owned by the Bristol Water Company. The leaves 20 privately owned dams within the town to be maintained by private citizens or corporate entities. It is essential that these dams be maintained and rehabilitated as necessary to prevent damage to public and private property. The State of Connecticut Department of Energy and Environmental Energy have a number of programs to assist with the maintenance of dams, both public and private. Additionally, the State Economic Assistance Program also allows dams as an eligible capital expense.

Figure 57-Table: Dams

CT Dam#	Dam Name	Pond Name	Hazard Class	Size class
11101	DANIELLE FALLS DAM	Enter pond name(s)	BB	
11105	OLD MARSH POND DAM	BRISTOL RES #7	C	MEDIUM
11108	BRISTOL RESERVOIR #3 DAM	BRISTOL RESERVOIR #3	B	
11114	MINOR POND DAM	MINOR POND	BB	
11111	BROPHY POND DAM	BROPHY POND DAM	BB	SMALL
11124	TOMLINSON LAKE DAM	TOMLINSON POND	BB	SMALL
11115	FALL MOUNTAIN LAKE DAM	FALL MOUNTAIN LAKE	B	SMALL
11118	PRATT POND DAM	PRATT POND	BB	
11102	McCOY POND DAM	Enter pond name(s)	BB	
11121	LAKE PLYMOUTH	LAKE PLYMOUTH DAM	BB	SMALL
11102	McCOY POND DAM	Enter pond name(s)	BB	
11135	PEQUABUCK RIVER DAM	OZ GEDNEY LOWER HORSESHOE FALLS DAM	BB	
11113	SERRA POND DAM	SERRA POND	B	SMALL
11119	SHEPPARD POND DAM, aka Masterbone Dam	MASTERBONE POND	B	SMALL
11109	INDIAN HEAVEN POND DAM	INDIAN HEAVEN POND	B	
11110	HART POND DAM	HART POND	BB	
11103	UPPER POND DAM	TERRYVILLE FISH AND GAME UPPER POND	BB	Small
11112	MIDDLE POND	EMMIT POND 00000470	BB	SMALL
11106	PLYMOUTH RESERVOIR DAM	PLYMOUTH RESERVOIR	C	SMALL
11104	WILTON POND DAM	WILTON POND	B	SMALL
11116	ZEINER POND	LAKE WINFIELD DAM	B	SMALL
11117	TERRYVILLE RESERVOIR #3 DAM	TERRYVILLE RESERVOIR #3	BB	SMALL
11137	UNNAMED		BB	
11134	HANCOCK BROOK DAM	HANCOCK BROOK LAKE	C	SMALL
11120	EUGENE PARK POND	Enter pond name(s)	BB	
11104	WILTON POND DAM	WILTON POND	B	SMALL

Source: CT DEEP Records

Traveler Behavior

The vast majority- nearly 90%- drive alone while less than one percent use public transportation. A comparative large amount of people walk or bicycle.

Figure 58-Table, Commute to Work

	Estimate	Percent
COMMUTING TO WORK		
Workers 16 years and over	6,302	6,302
Car, truck, or van -- drove alone	5,522	87.6%
Car, truck, or van -- carpooled	429	6.8%
Public transportation (excluding taxicab)	24	0.4%
Walked	112	1.8%
Other means	17	0.3%
Worked at home	198	3.1%
<i>Source: American Community Survey 2013</i>		

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. However, this list is only inclusive of State-maintained roads. Care should be taken to assure that all roads are safe.

Safety is a top priority for the Town. This includes safe roads, bridges, and all components of the transportation infrastructure.

Zoning Code Off-Street Parking Requirements

Inclusion of parking requirements in the zoning code is necessary to assure that a use anticipated parking needs are met. Plymouth has the following parking requirements in its zoning code:

- Single family detached residencies: At least two spaces per dwelling unit plus one spaces for an accessory apartment, home occupation (1 per employee)
- Farm Stands: At least one space for each five feet of frontage for sheltered display
- Churches, places of worship: At least one space for every five seats or 1/500 s.f. of gross floor area.
- Schools: as determined by the Commission

- Theaters: At least one space for each five seats.
- Restaurant: At least one space for every 75 s.f. of gross floor area
- Offices: At least one space for each 300 s.f. of gross floor area
- Manufacturing: At least one space for each 750 square feet of gross floor area or one space for each 1.25 employees, whichever is greater.

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 also serves as the primary place for elections, public meetings, and most Board and Commission Meetings. The Plymouth Town Hall houses many governmental functions and services such as:

- Assessor
- Building Department
- Police Department
- Fire Marshal
- Comptroller's Office
- Land Use Department
- Mayor's Office
- Parks and Recreation Department
- Public Works Department
- Senior Center
- Tax Collector
- Town Clerk

The 2005 Plan of Development cited space concerns on the lower level of town hall between the Senior Center and Police Department. The 2005 Plan recommended a study be initiated to review the needs for the senior facilities in one to three. 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.

Public School System

The Plymouth Public School system currently consists of four schools:

- Harry S. Fisher School (grades PK-5)- 10/1/2012 Enrollment 334
- Plymouth Center School (grades Pre K-5)- 10/1/2012 Enrollment 360
- Eli Terry J. Middle School (6-8) -10/1/2012 Enrollment 422
- Terryville High School (grades 9-12) -10/1/2012 Enrollment 490



Photo Courtesy-Plymouth Webmaster

Another statistic researched by the Department of Education is the SAT Participation and Performance. In 2013 63% of eligible high school students took the SAT test. This is slightly down from the prior year's percent. This statistic tracks the number of SAT takers compared to the total number eligible takers.

Another performance statistic is based on student SAT scores relative to the SAT College and Career Readiness (CCR) Benchmark score of 1550 (critical reading, mathematics and writing sections combined) for the graduating classes of 2012 and 2013. According to research conducted by the College Board, a score of 1550 indicates that a student will have a 65 percent or greater likelihood of achieving a B- average or higher during the first year of college. These participation rates are considered an estimate because the grade level of the

SAT test-taker is self-reported by the student at the time of registration for the SAT while the total number of seniors enrolled in the school is reported to the Connecticut State Department of Education (CSDE) by the district. These are the best available estimates of SAT participation rates. The Benchmark Performance reflects the results of only those who participated in the SAT to establish the baseline. Because participation rates vary from school to school, the CSDE provides both the estimated Participation rates together with the Benchmark Performance in order to promote fair and valid comparisons across schools⁷.

Figure 59-Table: SAT Participation

District	Participation Rate (estimate): 2012	Participation Rate (estimate): 2013
Watertown	80.0%	90.0%
Oxford	80.0%	89.0%
Seymour	82.0%	88.0%
Southbury	91.0%	86.0%
Woodbury	82.0%	83.0%
Cheshire	91.0%	80.0%
Wolcott	77.0%	78.0%
Shelton	77.0%	73.0%
Beacon Falls	71.0%	69.0%
Waterbury Arts Magnet School	85.0%	69.0%
Bristol	68.0%	65.0%
Thomaston	62.0%	65.0%
Plymouth	68.0%	63.0%
Ansonia	67.0%	61.0%
John F Kennedy High School (Waterbury)	50.0%	56.0%
Derby	66.0%	51.0%
Crosby High School (Waterbury)	48.0%	51.0%
Naugatuck	56.0%	49.0%
Wilby High School (Waterbury)	43.0%	45.0%

Source: CT DOE, SAT School Participation and Performance: 2012-2013

Figure 60-Table: SAT Benchmark

District	Percent Meeting Benchmark: 2012	Percent Meeting Benchmark: 2013
Thomaston	61.0%	67.0%
Waterbury Arts Magnet School	63.0%	62.0%
Beacon Falls	50.0%	56.0%
Shelton	39.0%	44.0%

⁷ CT Department of Education, CT Data Portal

Wolcott	38.%	43.%
Bristol	46.%	43.%
Ansonia	39.%	42.%
Seymour	47.%	41.%
Cheshire	38.%	40.%
Plymouth	36.%	38.%
John F Kennedy High School (Waterbury)	33.%	36.%
Woodbury	31.%	33.%
Wilby High School (Waterbury)	15.%	24.%
Southbury	31.%	23.%
Watertown	18.%	18.%
Derby	27.%	18.%
Oxford	27.%	15.%
Naugatuck	5.%	12.%
Crosby High School (Waterbury)	9.%	4.%

Source: CT DOE, SAT School Participation and Performance: 2012-2013

Net Current Expenditures (NCE) per Pupil represent the combination of local, state and federal dollars spent on public elementary and secondary education. NCE excludes expenditures for: regular education pupil transportation, debt service, land and capital costs, nonpublic expenditures, and expenditures supported by tuition revenue. This data is published annually by the CT Department of Education.

Figure 61-Table: Expenditure per child

District	Net Current Expenditures Per Pupil 2008
Wolcott	\$ 9,554.00
Watertown	\$ 9,783.00
Thomaston	\$ 10,293.00
Ansonia	\$ 10,311.00
Seymour	\$ 10,397.00
Plymouth	\$ 10,465.00
Oxford	\$ 10,688.00
Cheshire	\$ 10,803.00
Beacon Falls	\$ 10,818.00
Shelton	\$ 10,913.00
Bristol	\$ 10,989.00
Derby	\$ 11,279.00
Southbury	\$ 11,357.00
Naugatuck	\$ 11,838.00
Waterbury Arts Magnet School	\$ 12,712.00
John F Kennedy High School (Waterbury)	\$ 12,712.00
Wilby High School (Waterbury)	\$ 12,712.00
Crosby High School (Waterbury)	\$ 12,712.00
Woodbury	\$ 12,858.00

Source: Municipal Fiscal Indicators: Office of Policy and Management, 2004-2008

Parks and Recreation

Recreational facilities and parks can house opportunity for passive and/or active recreation. In Plymouth recreational facilities 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 (NPR). The NPR 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 NPR standards with recommended Parkland service areas.

Figure 62-Table: National Parks & Recreation Standards, parks

NPR STANDARDS FOR PARKLAND			
Park Type	Acres/1000 Population	Minimum Size	Service Area Radius
Mini-Park	0.25-0.50	1 acre or less	< .25 mile/5 minute walk
Neighborhood Park	1.0-2.0	15 acres	.5 mile/12 minute walk
Community Park	5.0-8.0	25 acres	1-2 miles/5 minute drive
Regional Park	Variable	200+ acres	30 miles/1 hour drive
Source: Interim Community Facilities and Programming, The Johnson Hill Land Ethics Studio. 2002			

The NPR 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.

The addition of a soccer field adjacent to the Hancock Brook Dam added to the mix of recreational opportunities in the community. The following table illustrates the more popular activities from the NPR standards with recommended Recreational Standards and Service areas.

Figure 63-Table: National Parks & Recreation Standards, facilities

NPRA Recreational Standards and Service Areas		
Activity	Facility/Population	Service Area
Baseball	1/5,000 or 1 lighted/30,000	% to Y2 mile
Basketball	1/5,000	% to Y2 mile
Football	1/20,000	15-30 minutes travel time
Ice hockey	1/100,000 (indoor)	~ to 1 hour travel time
Soccer	1/10,000	1-2 miles
Softball	1/5,000	% to Y2 mile
Swimming pool	1/20,000	15-30 minutes travel time
Tennis	1/2,000	%to ~ mile
Volleyball	1/5,000	% to Y2 mile

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

Figure 64-Table: School Recreation Facilities

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

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:

Figure 65-Table: Parks with Recreation Facilities

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
North Street Reservoir	177	Passive Recreation	Walking, Boating, Fishing
Community Garden	2+/-acre	Active	Gardening
Veterans Memorial Playground	3	None	Children's playground
Source: Municipal Records			

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:

Figure 66-Table: Fire Department Facilities

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: Plymouth Town Hall	

The Current Equipment Includes:

- 1 - 2000 gallon Engine/Tanker
- 4 - 1000 Gallon Engines
- 2 - 750 Gallon Engines
- 1 - Heavy Rescue Truck
- 1 - 75 ft. Tower Truck
- 1 - Mini Pumper/Mini Rescue
- 1 - ATV
- 1 - Utility Truck
- 3 - Rescue Boats
- 1 - Command Vehicle

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

Police Protection

The Town has been considering the needs of Plymouth's Police Department for many years. Currently, the Town is considering relocating the Department to either other municipality



owned facilities, or other options. 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.

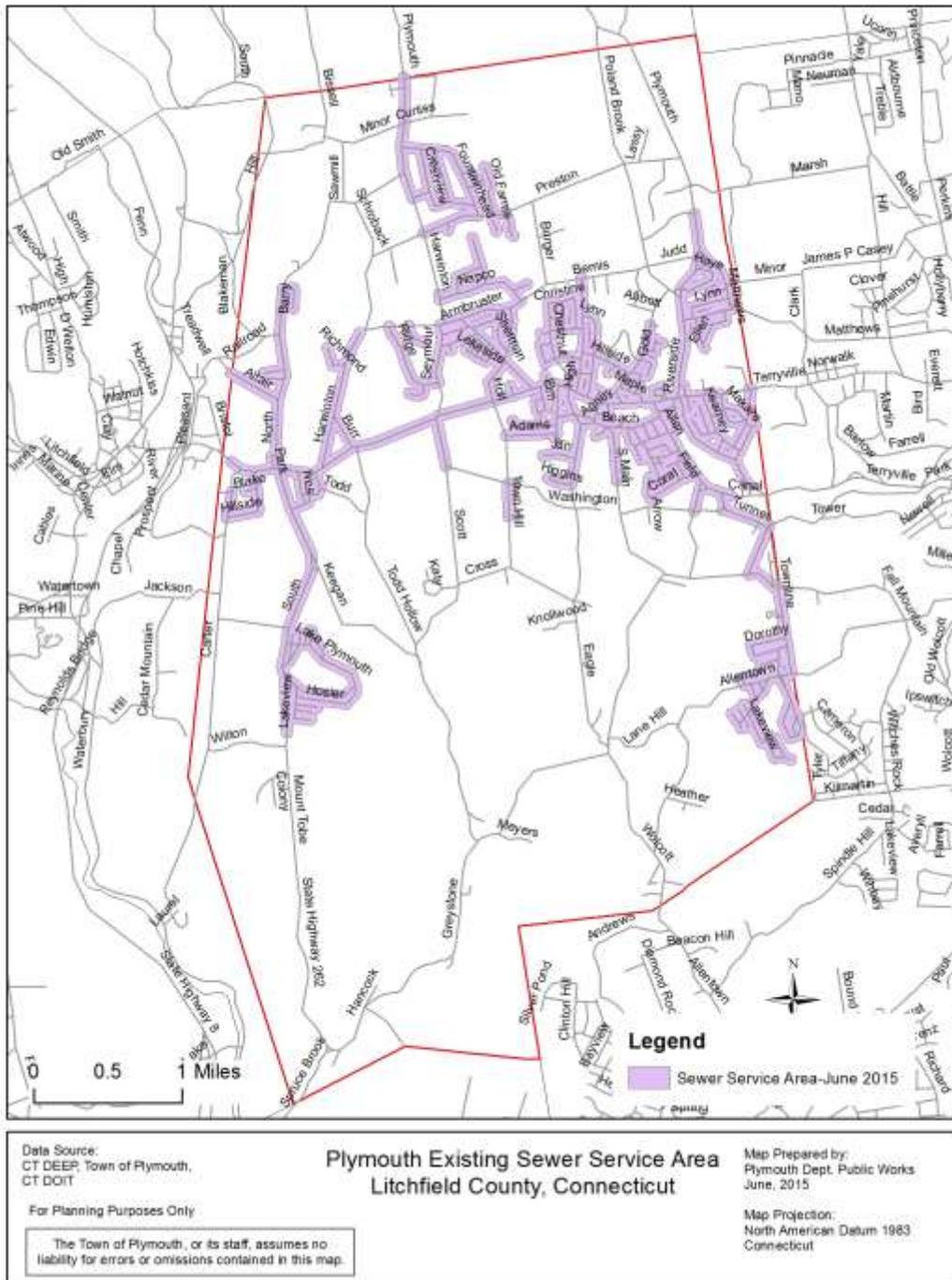
Water Pollution Control Authority

The Plymouth Water Pollution Control Authority (WPCA) was established in 1979 and consists of a seven member volunteer board which has all the powers and duties set forth in Chapter 103 of the Connecticut General Statutes. The WPCA establishes policy and budget setting measures for the efficient operation of the treatment facility, collection system including eight pumping stations located throughout Town. The Water Pollution Control Facility, known as the "sewage treatment plant" is located at 35 Canal Street in the Pequabuck section of Plymouth. Originally built in the 1960's and upgraded in 1991 to existing operations.

The facility is designed to treat 1.75 mgd with pretreatment primary and secondary waste treatment processes. The collection system and treatment facility is governed by the State of Connecticut, Department of Energy and Environmental Protection (DEEP), and the United States Environmental Protection Agency (USEPA) through the National Pollutant Discharge Elimination System (NPDES) permit, which is designed to control pollutant discharges, and regulate the manner, nature, volume and frequency for the final effluent discharge from the Treatment Plant to the Pequabuck River.

The WPCA has taken proactive steps to inventory and assess the existing treatment facility and components of the collection systems to assist with capital planning. WPCA is developing a capital improvement priorities list to assist in prioritizing major investments and financially plan. These improvements are required to maintain a safe and properly functioning system as well as ensure the compliance with National Pollutant Discharge Elimination System (NPDES) permit, which allows them to operate.

Figure 67 Existing Sewer Service Area (DRAFT)



Municipal Technology and Energy

Plymouth is poised to take advantage of emerging technologies and opportunities for energy supply. Employing new technologies and taking advantage of alternative energy choices can reduce costs, increase productivity, and create efficiencies. While basic utilities, including electric, cable, gas, 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 but this still has not occurred.

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 and the landfill site on Tunnel Road has been remediated and is currently the brush and organic debris collection site.

CULTURAL, HISTORIC AND RECREATIONAL RESOURCES

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. 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.

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 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:

Figure 68 Arts & Culture Facilities

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

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, located at 572 Main Street, organized for historic preservation, maintains headquarters in Plymouth Center. 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. Additional information can be found on their website <http://plymouthhistoricalsociety.org/>

The Historic Inventory

Plymouth has recognized that responsible planning must include consideration of important archaeological and historic structure resources within the town's boundaries. 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.



Old Cemetery-Courtesy- Plymouth Webmaster, Historic Society

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.

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.

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 Tunxis Indians whose principal residence was in Farmington (Ryan 1976:7) Some early historic records indicate at least one Tunxis Village along the Pequabuck River in Plymouth. Later present day Plymouth was settled as Northbury, a



Plymouth Memorial Day Parade, Copyright CT Sons of the American Revolution

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.

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 archaeologists 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 predictable 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, and 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.

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.

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.

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. This vicinity also includes 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.

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).

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.

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.

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.

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.

Easements

Historic easements are legal agreements in which a property owner enters into an agreement with a nonprofit 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.

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 (now Eversource Energy). It has a four-point approach to economic revitalization.

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

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.

Village District Act

The Village District Act is described in Connecticut Public Act No. 98, now CT CGS, 8-2j. This enabling statute 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:

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

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 as such a site since it is adjacent to a Federal Highway Route 6.

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.

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.

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.

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 nonprofit organizations that own and operate a historic property are eligible for a 50 percent matching grants-in-aid.

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.

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.

- 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-i03.
- Atwood, Katherine A. 1999 Historic Properties Management Plan, Thomaston Dam, Thomaston, Litchfield, Harwinton, and Plymouth Connecticut. New England District Corps of Engineers, CHPC # 888.
- Raber, IV 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
- Schafer, David K. Kerrylynn Soire, Timothy Binzen and Jennifer Macpherson 1997 Historical and Archaeological Reconnaissance Survey, Hancock Srook Lake, Plymouth, Connecticut. Ms., PAL Inc., CHPC # 746

Recreational Trail Inventory

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 cuts 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, which 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



Mattatuck Trail. Copyright CTEplorer 2013

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



Mattatuck Trail, Copyright CTEplorer 2013

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 Plymouth Land Trust, Inc. is a local, non-profit organization formed to permanently protect land in Plymouth, Connecticut for its natural, recreational, scientific, scenic, historical, or agricultural value. The Land Trust is not a town agency. It depends on volunteers who want to make a difference and care about conserving land for future generations. The Plymouth Land Trust, Inc. is a 501 c (3) charitable organization under the Internal Revenue Service tax code. The Land Trust originated in 1967 with the donation of 25 acres. The Trust now has almost 125 acres, all through donations by individuals who wish to leave a legacy of permanently protected land <http://www.plymouthlandtrust.org/>. 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.

Town Forest

This town-owned parcel is maintained by the Conservation Commission. It was created out of the residential subdivision of Watchtower Road. 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. Feasibility of other trail linkages, such as with the Mattatuck Trail should be explored. As is the



Buttermilk Falls, Copyright CTEplorer 2013

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.

Buttermilk Falls

The trail circuit in the Buttermilk Falls preserve is maintained by the Nature Conservancy. It is worthy to note that the trail circuit around Buttermilk Falls connects directly with the blue-blazed Mattatuck Trail.

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