

GROTON

2002 PLAN OF CONSERVATION AND DEVELOPMENT



February, 2002

To Groton Residents:

This document is the 2002 Plan of Conservation and Development for Groton, Connecticut.

Following several public informational meetings and a public hearing, the Planning Commission adopted the Plan of Conservation and Development on December 11, 2001 with an effective date of February 1, 2002.

This Plan represents almost three years worth of work by the Groton Plan of Conservation and Development Steering Committee (a group of representatives from different land use commissions), the Groton Planning Commission, and the residents of Groton to draft a Plan of Conservation and Development for the community.

The recommendations in this Plan are based on sound planning principles and input from Groton residents at public meetings. The Planning Commission reviewed and discussed the various Plan strategies and believes that the recommendations in the Plan will help to:

- improve and maintain the overall quality of life in Groton
- preserve and promote the character of Groton, including its environmental, scenic, and historic resources
- guide economic development in Groton to produce maximum value

It has been the Commission's goal to develop a Plan that reflects the consensus of the community and establishes a working blueprint for the future of Groton. We hope that all Groton residents will work together to implement the recommendations of the Plan.

Sincerely,

GROTON PLANNING COMMISSION



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INFRASTRUCTURE THEMES

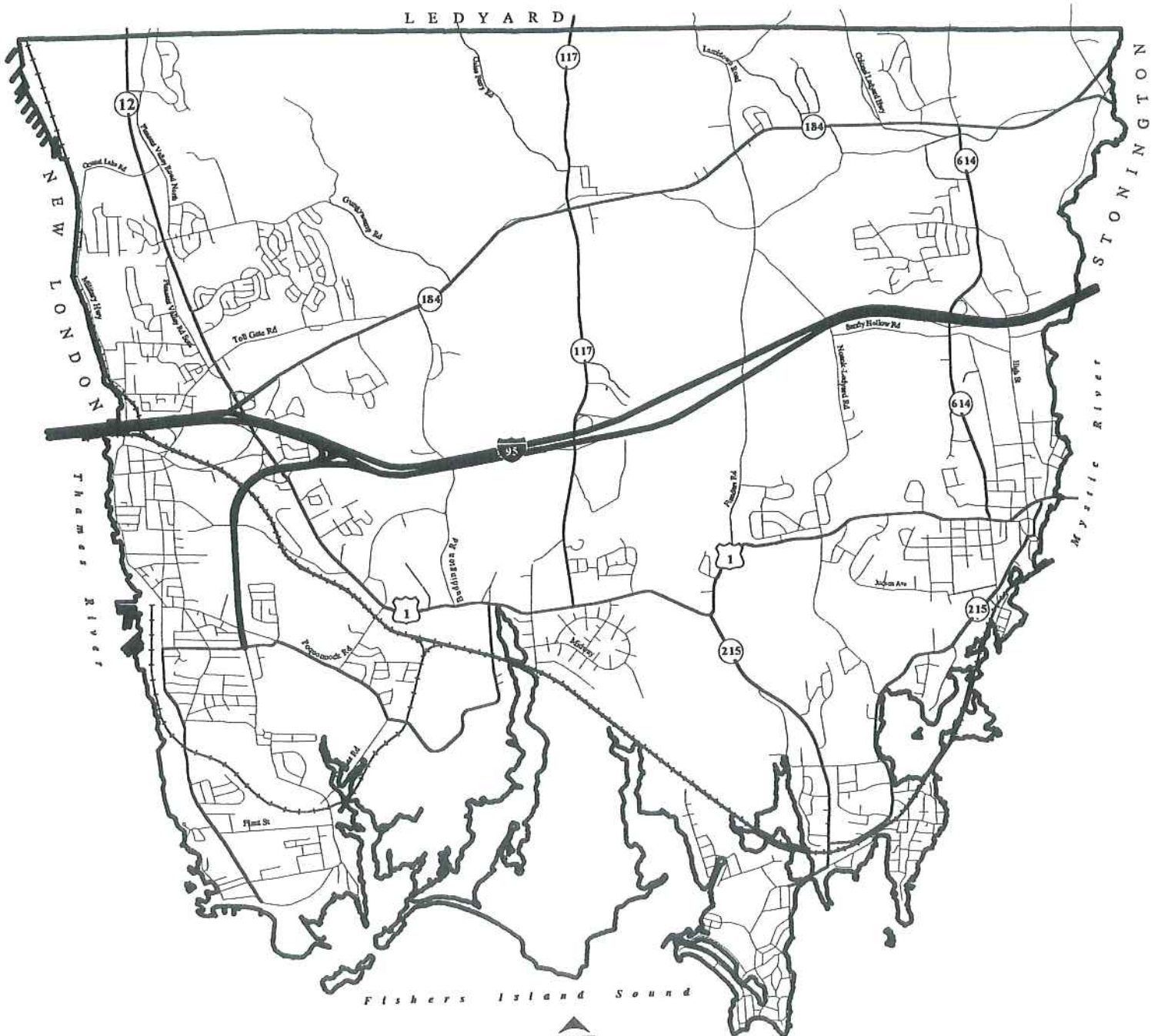
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STREET MAP



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INTRODUCTION

1

Introduction To Groton

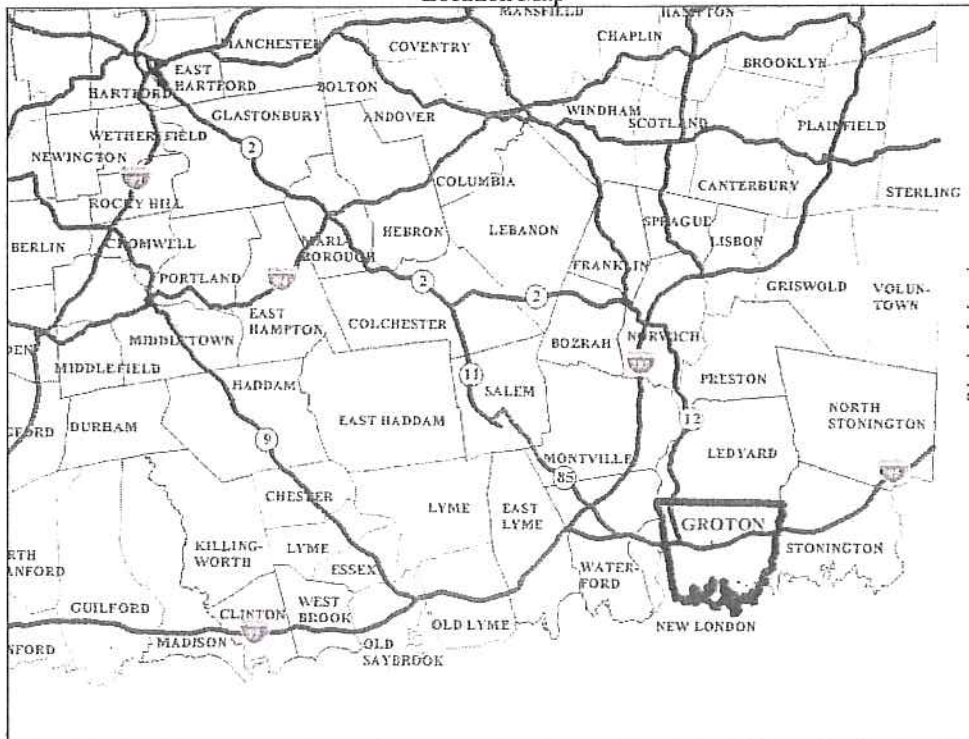
Groton is a unique community . . .

Groton is located on Long Island Sound in southeastern Connecticut, about 10 miles west of the Rhode Island border. The town is bounded on the west by the Thames River and the City of New London, on the north by the Town of Ledyard, and on the east by the Mystic River and the Town of Stonington.

The initial 2000 Census indicated that Groton contained 39,907 residents within its land area of about 31.8 square miles (20,325 acres).

Many people know Groton as the “Submarine Capital of the World” due to the U.S. Navy Submarine Base located in Groton and the submarine shipyards of the Electric Boat Corporation, a division of General Dynamics Corporation. It also includes the USS Nautilus Museum, a tribute to the world’s first nuclear submarine, which was built and based in Groton.

Location Map



Most recently, people have also come to learn of Groton due to the research headquarters for Pfizer pharmaceuticals that is located here.

People also know Groton because of the unique places and facilities that are located here. This includes the historic maritime villages of Mystic and Noank, Groton/New London airport, the Avery Point Campus of the University of Connecticut, Bluff Point Coastal Reserve, the Groton Long Point area with residences on Long Island Sound, various marinas and beaches, the Ella Grasso/Southeast Regional Vocational Technical School, and some of the commercial facilities (such as hotels, restaurants and retail stores) that serve local and regional needs.

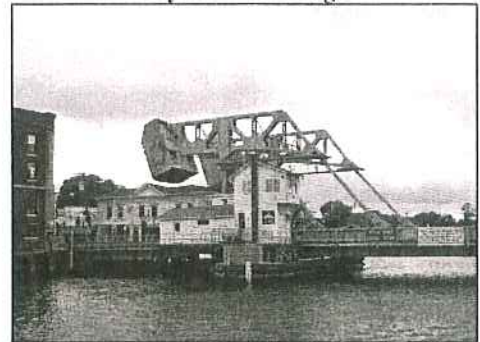
What some people do not know is that Groton has been a focal point in many of the historic events that have helped to shape the community, the region, the country, and the world. Groton was the site of the Pequot War in 1637, a battle between colonists and Native Americans that, with the defeat of the Pequot tribe, resulted in more widespread European settlement of New England and other parts of America. Surface ships built in Groton contributed to maritime trade, whaling, and the outcomes of the Revolutionary and Civil Wars as well as World War I. Submarines produced in and operated from Groton played a major role in the outcome of World War II and the “Cold War.”

Groton’s history and assets are unrivaled in Connecticut.

Submarine Capital Sign



Mystic Drawbridge



Pfizer Pharmaceuticals



Bluff Point Coastal Reserve



Groton is unique for other reasons. Within the geographic area that is Groton, there is a complicated array of different government entities.

For example, the Town of Groton provides educational, recreational, assessment, tax collection, and many other services to residents within the overall geographic extent of the town.

There is also the City of Groton. Once a borough in the town, the City now has its own charter and provides police, fire, recreation, and other services to city residents. It also exercises planning and zoning authority within the city limits. While Town services are available to city residents (since the city is part of the town), City services are only available to town residents that live in the city and pay taxes to the City.

The Noank Fire District and the Borough of Groton Long Point exercise their own zoning authority. There are also nine different fire districts within the geographic area of the town with different levels of staffing and equipment.

This information is relevant to the Plan since, while the Plan looks at overall issues within the geographic area of Groton, some recommendations will only apply to activities within the purview of the Town of Groton. For example, the Plan makes no recommendations with regards to zoning policy issues in the City of Groton, Noank, or Groton Long Point.

Town or town?

In this Plan, the term "Town" refers to the governmental entity that provides services to residents.

On the other hand, the term "town" refers to the geographic area that is located between the Mystic River, the Thames River, Fisher's Island Sound and the Ledyard border.

	Geographic Area									
	Poquonnock Bridge	Center Groton	Mystic	Old Mystic	West Pleasant Valley	Noank	Groton Long Point	City of Groton	Navy Base	
Overall Government	Town of Groton						Town & Noank	Town & Assoc.	Town & City	Navy
Education	Town of Groton									
Public Works	Town of Groton							City of Groton	Navy	
Police	Town of Groton						Town & GLP.	City of Groton	Navy	
Wetlands	Town of Groton						GLP Assoc.	City of Groton	Town	
Land Use Planning	Town of Groton						GLP Assoc.	City of Groton	Navy	
Zoning	Town of Groton					Noank	GLP Assoc.	City of Groton	Exempt	
Recreation	Town of Groton					Town & Noank	Town & GLP.	Town & City	Town & Navy	
Fire	Poquonnock Bridge	Center Groton	Mystic	Old Mystic	City of Groton	Noank	GLP Assoc.	City of Groton	Navy	
Ambulance, Rescue & Paramedic	Groton Ambulance Association (GAA)		Mystic River Ambulance Association		GAA	Mystic River Ambulance Association		GAA	Navy & GAA	

Statutory Reference

Section 8-23 of the Connecticut General Statutes requires that the Planning Commission prepare, adopt, and amend a Plan of Conservation and Development. The requirements for the Plan are presented on the facing page.

Planning Period

Since Statutes require that the Plan be updated every ten years, this Plan looks ten to twenty years into the future and is intended to guide public and private actions for the next five to ten years.

About Plans Of Conservation And Development

A Plan of Conservation and Development is a tool for guiding the future of a community. While the Plan is adopted by the Planning Commission, this Plan was prepared by the Groton Plan of Conservation and Development Steering Committee and the Planning Commission with input from Groton residents. The goals and recommendations of this Plan are intended to reflect the overall consensus of what is best for Groton and/or its residents in the future.

While it is primarily a statement of recommendations addressing the conservation and development of Groton (the physical layout), it is also intended to address the social and economic development of the community.

History of Planning in Groton

Groton has a history of land use planning and administration. The Town:

- adopted subdivision regulations in 1956
- adopted zoning regulations in 1957
- hired its first Director of Planning in the early 1960s

Over the past 40 years, the Groton Planning Commission has adopted four Town Plans to help guide community growth and change:

- a 1961 Plan prepared with the help of Technical Planning Associates of New Haven
- a 1973 Plan prepared by the Planning Commission and Town Staff
- a 1979 update of the 1973 Plan, also prepared by the Commission and Town Staff
- a 1990 Plan prepared with the assistance of Buckhurst Fish Hutton Katz of New York

In addition, other plans have been prepared for particular geographic or functional areas. Information on these reports can be obtained at the Office of Planning and Development Services at Groton Town Hall Annex.

Thus, it can be seen that Groton has a history of preparing, adopting, amending, and implementing Plans to address the appropriate conservation and development of the community. It is in that spirit that this Plan has been prepared.

Use of the Plan of Conservation and Development

This Plan of Conservation and Development is an advisory document. It is intended to guide local residents and to provide a framework for consistent decision-making with regard to conservation and development activities in Groton over the next decade or so.

**EXCERPTS FROM CONNECTICUT GENERAL STATUTES
SECTION 8-23 - PLAN OF CONSERVATION AND DEVELOPMENT**

The Planning Commission shall:

- prepare, adopt and amend a plan of conservation and development ...
- review the plan of conservation and development at least once every ten years ...
- adopt such amendments to the plan or parts of the plan ... as the commission deems necessary to update the plan ...

The Plan shall:

- be a statement of policies, goals and standards for the physical and economic development of the municipality ..
- show the commission's recommendation for the most desirable use of land within the municipality for residential, recreational, commercial, industrial and other purposes and for the most desirable density of population in the ... parts of the municipality ...
- 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 ...
- be made with reasonable consideration for restoration and protection of the ecosystem and habitat of Long Island Sound ...
- make provision for the development of housing opportunities, including opportunities for multifamily dwellings consistent with soil types, terrain and infrastructure capacity, for all residents of the municipality and the planning region ...
- promote housing choice and economic diversity in housing, including housing for both low and moderate income households, and encourage the development of housing which will meet the housing needs ...
- consider the use of cluster development to the extent consistent with soil types, terrain, and infrastructure capacity ...
- take into account the state plan of conservation and development ... and note any inconsistencies it may have with said state plan ...

The Plan may:

- show the commission's recommendation for a system of principal thoroughfares, parkways, bridges, streets and other public ways; for airports, parks, playgrounds and other public grounds; for general location, relocation and improvement of public buildings; for the general location and extent of public utilities and terminals, whether publicly or privately owned for water, sewerage, light, power, transit and other purposes; and for the extent and location of public housing projects ...
- include recommended programs for the implementation of the plan ...
- (include) such other recommendations ... in the plan as will ... be beneficial to the municipality ...

The Planning Process



Plan Workbooks

- Planning Primer
- Status of Prior Plans
- Public Meeting #1
- History of Groton
- Regional Factors
- Natural Resources
- People of Groton
- Housing in Groton
- Economy Overview
- Land Use & Buildout
- Open Space
- Infrastructure
- Community Facilities
- Transportation
- Coastal Areas
- Historic Preservation
- Regulatory Review
- Economic Development
- Public Meeting #2
- Tax Impact Analysis
- Governmental Review
- Community Assessment
- Planning Program Ideas
- Preliminary Program

How This Plan Was Developed

While the Groton Planning Commission adopts the Plan of Conservation and Development, the Commission decided to appoint a committee made up of community representatives to help in preparation of the Plan. The Groton Plan of Conservation and Development Steering Committee consisted of several members of the Planning Commission, the Zoning Commission, Economic Development Commission, Zoning Board of Appeals, Conservation Commission, representatives of other local boards, and other interested residents.

In addition, the Town's Planning and Development Services staff was very involved in assisting the Steering Committee, the Planning Commission, and the consultant prepare the Plan.

The process used by the Committee to prepare the Plan is illustrated by the adjacent flowchart. First, a comprehensive inventory and assessment of local conditions and trends was undertaken to identify needs and issues in Groton. Then, Groton residents were involved in establishing a consensus on important issues through:

- workshop meetings by the Groton Plan of Conservation and Development Steering Committee
- public presentations that generated input and discussion
- other exercises and analyses performed during the process

Finally, the various recommendations in the Plan were discussed and refined at many meetings of the Groton Plan of Conservation and Development Steering Committee and the Planning Commission.

The responsibility for final adoption of the Plan rests with the Planning Commission. Implementation takes place after the Plan is adopted.

Other Relevant Information

Other relevant information includes workbooks (booklets on different topical issues) prepared during the process, previously adopted plans, and proceedings from public meetings. The workbooks and other supporting materials were assembled into binders for each participant and additional binders were placed at Town Hall and the Groton Library for residents to review during the process.

In the case of conflict between this Plan and such other background information, the recommendations of this Plan take precedence.

Many people were involved in the preparation of the Plan over an 18-month period. While it is not possible to name them all, the major participants are listed on the inside back cover of the Plan.

EXECUTIVE SUMMARY

2

Overall Plan Philosophy

During the process of preparing the Plan, the following philosophy emerged as the foundation for this Plan of Conservation and Development:

Continue to address growth and change so that:

- **the character of the town is maintained**
- **the overall quality of life is enhanced**
- **community needs are met in the most efficient and cost-effective manner**

While there may be refinements in the goals and strategies of this Plan over time, it is anticipated that this philosophy will remain relevant during the anticipated ten-year life of this Plan of Conservation and Development.

Overall Plan Organization

Many Plans of Conservation and Development are organized on a *topical* basis. That is, they are arranged by chapters about such things as natural resource protection, open space, residential development, economic development, community facilities, transportation, and similar topics. This Plan is different.

During the planning process, it became apparent that a *thematic* structure had greater potential to highlight the most important issues in Groton and provide flexibility in guiding future actions. Participants felt that a Plan organized around a set of broad themes had greater potential to concisely organize and present the recommendations of the Plan.

In addition, the recommended strategies result in a series of *benchmarks* to guide future legislative and administrative actions and help determine that those actions are consistent with the Plan.

This Plan is intended to highlight important issues in Groton and flexibly guide future actions ...

Major Themes

The major themes contained in the Plan are outlined below. More detailed discussion of the Plan recommendations are contained in the following pages.

Conservation Themes

- Protect Natural Resources
- Preserve Open Space
- Protect Coastal Resources
- Protect Historic Resources
- Promote Community Character
- Enhance Community Pride and Spirit

Development Themes

- Enhance Physical Structure
- Encourage Appropriate Residential Development
- Encourage Appropriate Business Development

Infrastructure Themes

- Diversify Transportation Options
- Address Community Facility Needs
- Enhance Infrastructure
- Enhance Government Structure

CONDITIONS AND TRENDS

3

History Of Groton

The Groton landscape was formed over millions of years by the interaction of geologic and climatic forces. The retreat of the last Ice Age (about 15,000 years ago) left the hills and valleys and other physical features that have affected Groton's development.

The first Native Americans are believed to have inhabited this area about 10,000 years ago. Over time they organized into tribes (Pequot, Mohegan, and Narragansett) and lived as hunters, fishers, gatherers, and farmers. Seasonal settlements are believed to have been located throughout this area.

Colonial Arrival

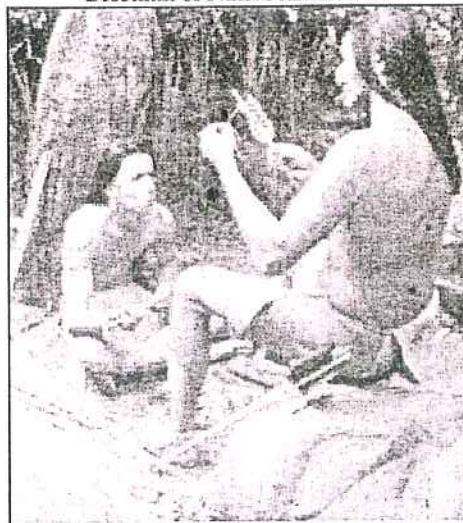
Dutchman Adraien Block sailed Long Island Sound and parts of the Connecticut River and Pequot (Thames) River in 1614. By the time the Pilgrims landed at Plymouth Rock in 1620, the Dutch and the English had developed an enormously profitable trade with Native American tribes in the "New World."

However, trading rivalries and disagreements between traders, settlers, and Native Americans eventually escalated to armed conflicts. In 1637, settlers from Wethersfield, Hartford, Windsor, and Saybrook (aided by Mohegan and Narragansett Indians) attacked a Pequot fort near the Mystic River, nearly eradicating the tribe.

With the resulting easing of tension and conflict between European settlers and Native Americans, the stage was set for increased European settlement of New England.

An understanding of current issues and trends is critical to the Plan ...

Diorama of Native Americans



Mashantucket Pequot Museum

Ancient History

There is no written history for Groton in the period before European settlement. What is "known" has been surmised from geologic and archeological data from a variety of sources.

Pequot War

In many respects, the Pequot War in 1637 was a defining event in the settlement of New England.

Native American tribes became reluctant to oppose English settlement. In addition, diseases brought by colonial settlers devastated Native American tribes.

As a result, the colonization of New England grew significantly.

Battle of Groton

In 1781, General Benedict Arnold led a British attack on Groton. The numerically superior British force seized Fort Griswold and Fort Trumbull and set fire to both New London and Groton. Colonel Ledyard and 88 other patriots were killed. An obelisk was dedicated at Fort Griswold in 1830 to commemorate the patriots who died.

Formation of Groton

In the following years, land grants for areas on both sides of the Pequot (Thames) River and inland were given by Massachusetts Bay authorities. Permanent settlement began in 1644 in a plantation on the west side of the river known as Pequot (renamed New London in 1658). The plantation concept involved a central village for security and community with planting and grazing occurring outside the village. Settlers also soon established scattered homesteads on the east side of the river (now Groton) and farming of this area began.

Settlers east of the Thames River were not pleased about making difficult and dangerous journeys over the river to New London for church, trading and town meetings, especially during the winter. Over time, efforts were devoted to establishing a separate church and town on the east side of the river. In 1705, the General Assembly approved the petition to create a separate town on the east side of the Thames River. The new town was named Groton after the English home of John Winthrop, founder of the New London settlement.

Maritime Beginnings (Shipbuilding and Fishing)

While most Groton residents were engaged in farming, maritime activities had developed sufficiently by the early 1700s to support trade and occupations at Groton Bank and along the Mystic River. Residents were drawn to the sea and soon became engaged in maritime trades, such as shipbuilding and fishing, in a major way.

The American Revolution

During the American Revolution, Groton residents played a major role in America's war for independence - providing men and supplies to support the war effort. In addition, privateers (small sailing ships) sailed from this area and raided British ships. To counter, the British patrolled the mouth of the Thames River. Fort Trumbull in New London and Fort Griswold in Groton were established to protect the area.

Groton Bank



Fort Griswold Monument



Maritime Evolution (Shipbuilding and Whaling)

At the end of the Revolution, shipbuilding was re-established at Groton Bank and Mystic. This area pioneered the construction of fast sailing vessels (such as “clipper ships”) that were desired in the competitive world of maritime trade. Other maritime activities also became lucrative. By 1830, Mystic was a well-known center for whaling, trailing only New Bedford, Massachusetts.

The Resort Era

After 1880, Groton also became a popular resort area. The railroad brought Groton within reach of city residents who wanted to be near the shore. Beach hotels and summer resort communities were created at Noank, Shenecossett, Bluff Point, and Groton Long Point due to the abundant waterfront, available land, and easy transportation access (such as rail and trolley service). Over time, different governmental entities were created in different areas to meet different needs.

Maritime Evolution (Submarines)

For good reason, Groton is known as the “submarine capital of the world.” What is now known as Electric Boat Corporation began building submarines for the United States Navy in 1933. With the onset of World War II, the company expanded to over 12,000 employees producing two submarines a month. During the war, 74 submarines were built in Groton, more than any other American shipyard.

Groton is also home to a U.S. Navy Submarine Base. In 1868, the State of Connecticut and the City of New London gave a 112-acre tract of land in Groton to the Federal Government for establishment of a Navy base. Little used until 1915, the Thames River Navy Yard eventually became a base for submarines.

With the onset of World War II and the increase in submarine production, the population of Groton exploded. Large numbers of housing units were constructed to accommodate submarine builders, sailors, and their families.

Groton’s growth continued with the start of the “Cold War” at the end of World War II. Local industrial and military operations grew to meet national defense needs and this resulted in new employment and population growth. Economic growth, transportation capabilities and lifestyle choices combined to make suburban living a reality for many families. Groton grew quickly during this period due to its expanding economy, location, attractiveness, and available land.

Settlement Changes

The Shenecossett area was one of the most well established seaside communities at the turn-of-the-century. The area had the Griswold Hotel, a golf club and beach club for the residents, and steamboat service from its own wharf.

By 1930, 400 cottages, a boardwalk and a community center had been constructed at Groton Long Point. While devastated by the hurricane of 1938, many cottages were rebuilt and more were added.

Additional Information

Additional information on the history of Groton can be found in a book by Carol W. Kimball entitled The Groton Story: Revised Edition, published by the Groton Public Library and Information Society in 1991.

Pequot Reservation

The 1644 land grant by the Massachusetts Bay Colony dictated that land east of the Thames River (now in Ledyard) be set aside for the Pequot Indians. This was the first time American colonists reserved land for Native Americans.

No one could have anticipated the implications of that decision 350 years later with the establishment of the Foxwoods Resort and Casino on the reservation.

Economic Transformation

At the end of the “Cold War” in the late 1980s, national defense spending was reduced and this had an impact on many defense-related businesses in southeastern Connecticut. Employment at Electric Boat Corporation, the largest employer in the region for several decades, declined significantly. At the same time, the federal government began reviewing naval bases for possible reconfiguration and the submarine base was included on the Base Realignment and Closure (BRAC) list.

Even though the submarine base was removed from the BRAC list and remained open, other defense-related businesses were still affected. With the economic uncertainty, the overall economy of the region suffered.

Within a few years, the economy took a surprising turn. The Mashantucket Pequot and the Mohegan Indians each received federal recognition and were permitted to operate gaming establishments on their reservations.

While this area has had a major tourism focus for many years (Mystic Seaport, Mystic Marinelife Aquarium), this focus intensified with the opening of the casinos. Employment grew as activities expanded and Foxwoods Resort and Casino in Mashantucket (a tribal nation located in Ledyard) became the largest employer in the region and Mohegan Sun Resort and Casino in the Uncasville section of Montville became the third largest employer in the region.

Meanwhile, the Pfizer pharmaceutical campus in Groton became the research headquarters for this international corporation. The company received international attention for the development of Viagra and has developed other pharmaceutical products. Pfizer continues to expand its facilities in Groton, both on and off the Pfizer campus, and has merged some operations of Warner-Lambert into this facility.

Electric Boat and Pfizer



Groton's Regional Role

As shown in the following table, Groton is a major employment center for the region. With about 1.65 jobs per local housing unit and about 1.55 jobs per local worker, Groton is more than self-sufficient in terms of the number of jobs and local businesses provide employment to people living over a wide area.

Jobs / Housing / Workers Balance

Town	Jobs / Housing / Workers Balance			Local Workers	
	Number	Number	Ratio	Number	Ratio
Groton	28,060	17,057	165%	18,072	155%
Waterford	13,440	7,910	170%	10,327	130%
New London	16,590	11,942	139%	12,733	130%
Norwich	16,860	16,573	102%	19,283	87%
Stonington	7,180	8,402	85%	9,944	72%
No. Stonington	1,450	1,990	73%	2,891	50%
East Lyme	4,690	7,380	64%	9,290	50%
Montville	9,250	6,715	138%	9,973	93%
Connecticut	1,612,700	1,374,566	117%	1,635,400	99%

Sources: Connecticut Departments of Labor and Housing, 1997

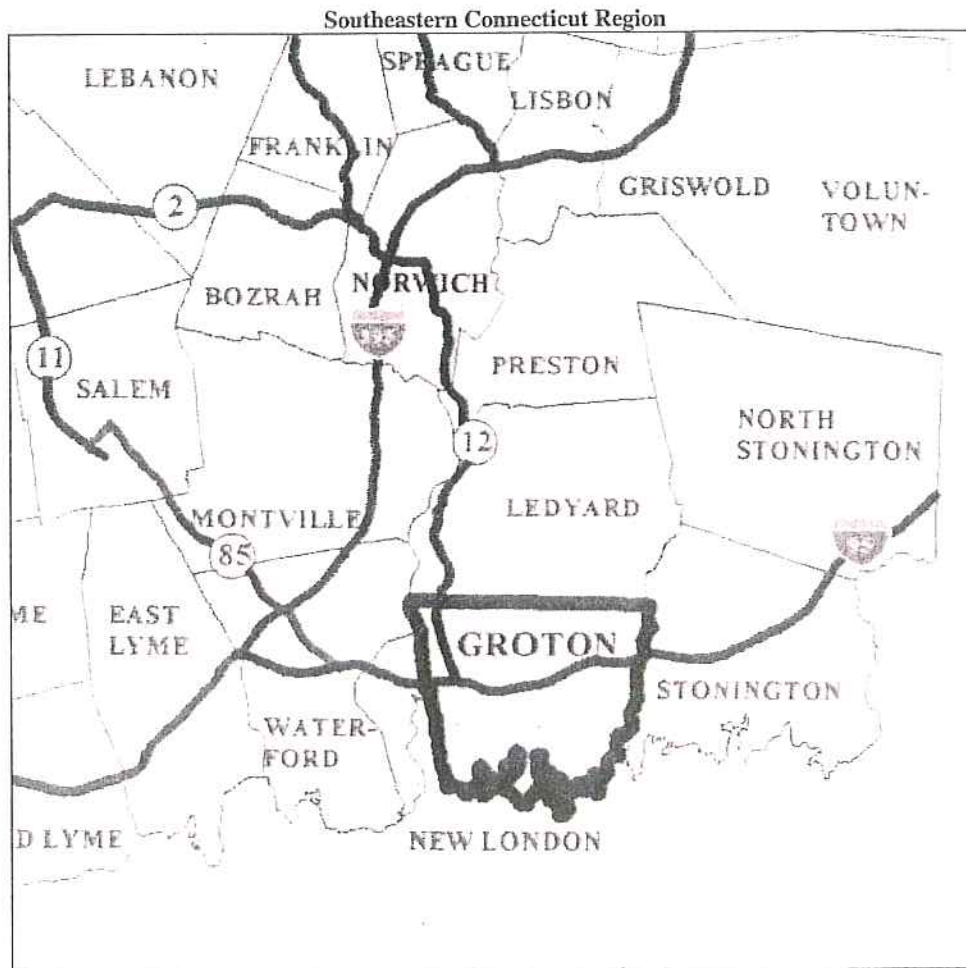
Job Ratio Relationships

In the adjacent tables, the ratios help to illustrate whether a community is:

- a "job exporter" (it has more jobs than housing units or workers), or
- a "worker exporter" (if it had more workers or housing units than jobs).

For example, the housing unit ratio shows that Groton had 1.65 jobs in Groton for every housing unit, the highest in southeastern Connecticut.

Groton is also the highest in southeastern Connecticut when the number of jobs in Groton is compared with the number of Groton residents who are working. In fact, Groton had 1.55 jobs for every local worker.



Community Attributes

Location - Groton is a shoreline community located between Boston / Providence to the east and New Haven / New York to the west.

Diverse Neighborhoods - Groton has a variety of neighborhoods ranging from more densely populated villages to less densely settled rural areas.

Housing Variety - Groton has a variety of housing types including apartments, condominiums, single-family, mobile homes, and shorefront mini-estates.

Low Tax Rates - Due to its business tax base, Groton enjoys one of the lowest effective tax rates (taxes on market value of property) in the region.

Open Space - Groton has several significant open space areas (such as Bluff Point Coastal Reserve, Haley Farm State Park, Pequot Woods, Copp Property, Groton Utilities reservoir lands).

In fact, more people are employed in Groton than in any other community in southeastern Connecticut. Groton is ranked 13th out of 169 Connecticut communities for the amount of employment.

Employment in Southeastern Connecticut

Rank	Town	Employment	Percent
1	Groton	28,060	21%
2	Norwich	16,860	13%
3	New London	16,590	12%
4	Ledyard	16,420	12%
5	Waterford	13,440	10%
6	Montville	9,250	7%
	Other Towns (14)	32,740	25%
	Total	133,360	100%

Connecticut Department of Labor, 1997 data

Employment in Connecticut

Rank	Town	Employment
1	Hartford	123,260
2	Stamford	78,020
3	New Haven	72,040
4	Norwalk	48,550
5	Bridgeport	47,580
6	Waterbury	44,080
7	Danbury	43,000
8	Greenwich	35,020
9	East Hartford	31,110
10	Milford	30,080
11	Manchester	29,730
12	Middletown	28,440
13	Groton	28,060
14	West Hartford	26,390
15	Stratford	26,360
16	Farmington	25,750
17	New Britain	25,620
18	Meriden	24,320

Connecticut Department of Labor, 1997 data

Although local employment declined somewhat between 1990 and 1997 due to defense cutbacks and the end of the "Cold War", Groton is expected to remain a major regional center for employment.

Groton is also the largest community in southeastern Connecticut in terms of population and housing units.

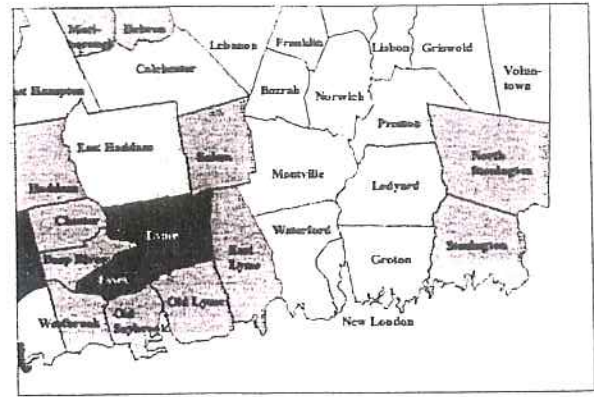
In other words, Groton is, in many ways, a leader in southeastern Connecticut.



State Average: 874.3 people per square mile Groton: 1,328

1998 POPULATION DENSITY

- Less than 250 people per square mile
- 250 to 499 people per square mile
- 500 to 999 people per square mile
- More than 1,000 people per square mile



State Average: \$156,001 Groton: \$105,000

1996 MEDIAN RESIDENTIAL SALES PRICE

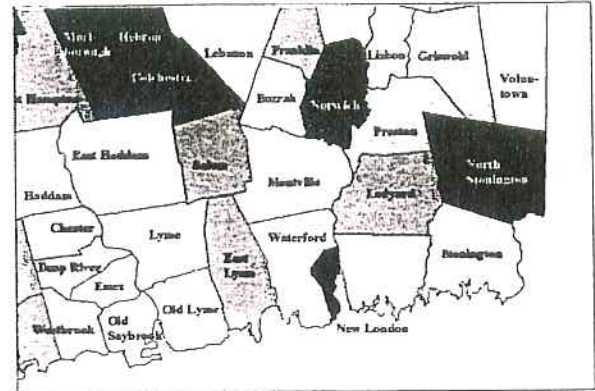
- Less than \$115,000
- \$115,000 to \$134,999
- \$135,000 to \$174,999
- More than \$175,000



State Average: \$28,325 Groton: \$21,274

1998 PER CAPITA PERSONAL INCOME

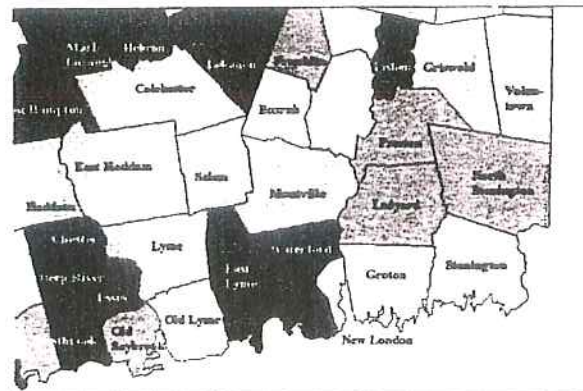
- Less than \$20,000
- \$20,000 to \$24,999
- \$25,000 to \$29,999
- More than \$29,999



State Average: 17.58 mills Groton: 14.54 mills

1998 EQUALIZED MILL RATE

- Less than 14.5 mills
- 14.5 to 16.7 mills
- 16.8 to 18.9 mills
- More than 19.0 mills



State Average: 65.36 Groton: 49.35

1999 EIGHTH GRADE TEST SCORE COMPOSITE

- Less than 50
- 50 to 67.5
- 68 to 74.5
- Higher than 75



State Average: 22.9 Groton: 22.3

1999 CRIME RATE

- Less than 13.5 crimes per 1,000 residents
- 13.5 to 19.9 crimes per 1,000 residents
- 20 to 34.9 crimes per 1,000 residents
- More than 35 crimes per 1,000 residents

Groton Population

As can be seen from the following table, Groton grew significantly after 1940 due to submarine production associated with World War II and the "Cold War".

The economic adjustments associated with the fall of the "Iron Curtain" and changing lifestyles have contributed to a population decline in Groton.

Population	
1920	9,227
1930	10,770
1940	10,910
1950	21,896
1960	29,937
1970	38,244
1980	41,062
1990	45,144
2000	39,907
2010	46,910
2020	50,560

1920-90 Census, Projections from the CT Office of Policy & Management in italics

Since these projections were done before the 2000 Census was released, they appear to overstate the anticipated growth over the next 20 years.

People Of Groton

According to the Census, Groton had a year 2000 population of 39,907 persons. This 11.6 percent decrease from the 1990 Census population is believed to be due to staffing changes associated with the Navy Base and fewer persons per occupied housing unit due to social and economic changes.

This population decrease reverses a trend of population growth that has continued since 1840. Growth accelerated during the 1940s, 1950s, and 1960s due to submarine production at Electric Boat Corporation and activity at the US Navy Base. Growth continued at a slower pace during the 1970s and 1980s although Groton still had more population growth than any surrounding community.

	Absolute Population Change			
	1960s	1970s	1980s	1990s
Groton	8,307	2,818	4,082	-5,237
New London	-2,552	-2,788	-302	-2,869
Ledyard	9,163	-823	1,178	-226
N. Stonington	1,766	471	665	107
Stonington	1,971	280	699	987
Waterford	1,836	616	87	1,222
Montville	7,903	793	218	1,873

1960 - 2000 Census

As shown in the following table, population change is made up of natural increase (births minus deaths), and net migration (move in minus move out). While natural increase has been fairly substantial, any population gain has been moderated by net out-migration.

Components of Population Change				
	1960s	1970s	1980s	1990s
Births	10,069	7,466	8,421	8,732
Deaths	2,094	2,180	2,563	2,704
Natural Increase	7,975	5,286	5,858	6,028
Net Migration	332	-2,468	-1,776	-11,265
Total Change	8,307	2,818	4,082	-5,237

Connecticut Department of Health

Overall, the population decrease can be explained by overall demographic and migration trends and recent economic events (such as the employment decline at Electric Boat Corporation). For example, with longer life expectancies and changing lifestyles (smaller families, divorce), the typical housing unit contains fewer people than before.

Although the pace of growth in Groton has declined recently due to economic adjustments, growth is expected to continue in the future as the economy moves away from its defense focus of the last several decades. While population projections presented in the sidebar (which were prepared in 1995) may overstate future population growth, recent housing construction and economic development supports the direction of an increased population in the future.

Major Influences

Groton is unique due to the presence of a U.S. Naval Submarine Base. As a result, the population living in military quarters and the workers employed by the Armed Forces are much higher than the state average.

Due to the transient nature of military positions, household turnover is common. Only about one-quarter of all households in 1990 had lived in Groton since 1980. In addition, only about one-third of the 1990 population had lived in the same unit in 1985.

Age Composition

For planning purposes, the age composition of a community can be considered to include three major age groups with differing needs or concerns -- children (ages 0-19), adults (ages 20-54), and mature residents (ages 55 and over). Due to the Navy base (with a predominance of people aged 18 to 34), the median age in Groton was much younger than for the county or the state.

Within the overall growth projection from the Connecticut Census Data Center, changes are expected to occur in the age distribution of Groton residents. In fact, the changing age composition is more significant than the overall change.

Groton Composition History and Projections by Age Groups

Ages	Actual				Projections	
	1970	1980	1990	2000	2010	2020
0-19	41%	33%	28%	28%	27%	27%
20-54	48%	52%	56%	53%	53%	51%
55+	11%	14%	15%	19%	19%	23%
Total	100%	100%	100%	100%	100%	100%

1970-90 Census, Projections by Connecticut Census Data Center (1995).. Totals may not add due to rounding.

Multiple Generations of Groton Residents



William Carlebach

Institutional Population

	Town	State
Military Quarters	12%	<1%

Occupations of Residents

	Town	State
Armed Forces	34%	1%

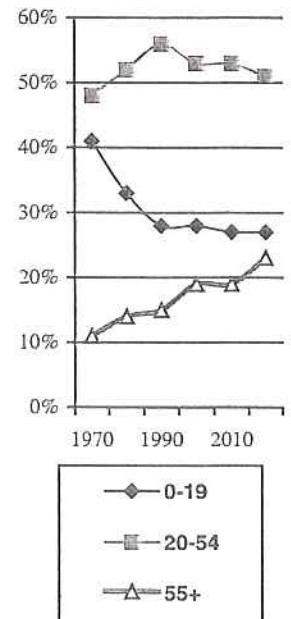
Year Moved Into Unit

	Groton	State
1985-90	61%	46%
1980-84	12%	14%
1970-79	12%	18%
1960-69	8%	11%
Pre-1960	7%	12%
Total	100%	100%

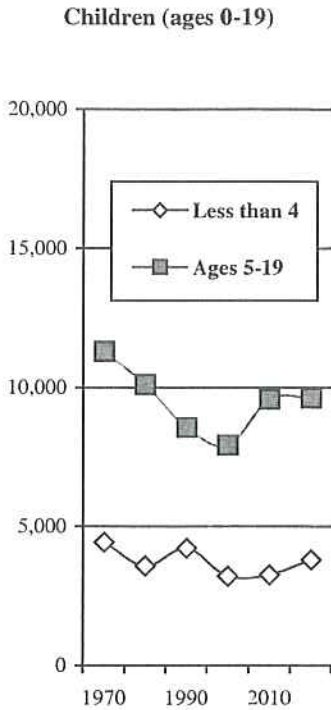
Residence in 1985

	Groton	State
Same house	36%	57%

Age Composition



Children (ages 0-19)



While the projections suggest that the school-age population (ages 5-19) will remain fairly steady throughout the planning period, this component of Groton's population has been declining steadily since 1970. For school enrollment purposes, more detailed analysis should be performed since fluctuations will occur. Around the state, a school enrollment peak is expected around the year 2005 before gradually declining. Groton may experience a different phenomenon due to the presence of the Navy base and the influx of Navy personnel.

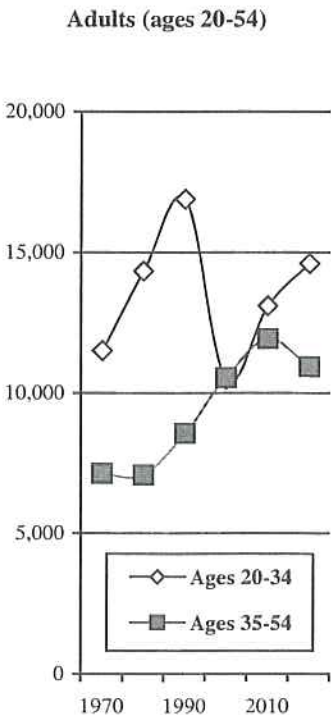
Groton Population History and Projections by Age Groups

Description	Age Range	Projection	Needs
Infants	Less than 4	Decline to 2000 then remain fairly steady with a possible increase beginning around 2015.	Child care.
School-Age	5 to 19	Decline to 2000 with a possible increase thereafter.	School facilities.

Ages	Actual				Projections	
	1970	1980	1990	2000	2010	2020
0-4	4,431	3,584	4,227	3,220	3,262	3,805
5-19	11,289	10,115	8,565	7,932	9,572	9,627
Total	15,720	13,699	12,792	11,152	12,834	13,432

1970 - 2000 Census, Projections by Connecticut Census Data Center (1995).

Adults (ages 20-54)



The 20-34 age group was expected to decline between 1990 and 2000 (due to the "baby bust" between 1965 and 1980) and personnel changes at the Navy base. A modest increase is expected in the future. The 35-54 age group is expected to increase until the year 2010 and decrease slightly thereafter.

Groton Population History and Projections by Age Groups

Description	Age Range	Projection	Needs
Young Adults	20 to 34	Decline to the year 2000 with modest increase thereafter.	Rental housing and starter homes.
Middle Age	35 to 54	Peak around the year 2010 (baby boom)with modest decline thereafter.	Family programs and trade-up homes.

Ages	Actual				Projections	
	1970	1980	1990	2000	2010	2020
20-34	11,509	14,337	16,892	10,484	13,094	14,609
35-54	7,127	7,080	8,567	10,540	11,933	10,936
Total	18,636	21,417	25,459	21,024	25,027	25,545

1970 - 2000 Census, Projections by Connecticut Census Data Center (1995).

Residents Aged 55 and over

The 55 and over age groups are expected to grow substantially to almost one-quarter of Groton's population by the year 2020. Potential increases in municipal services (social services and senior activities) might be anticipated, as well as an increased demand for smaller housing units with maintenance provided.

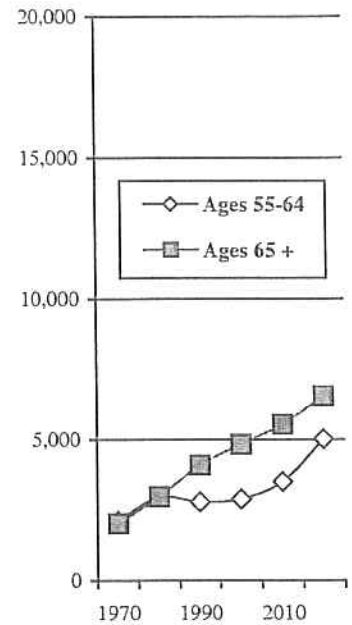
Groton Population History and Projections by Age Groups

Description	Age Range	Projection	Needs
Mature Adults	55 to 65	Expected to grow significantly from the year 2000 on (baby boom).	Housing options.
Retirement Age	65 and over	Expected to grow considerably to the year 2020 as people live longer.	Tax relief, housing options, elderly programs.

Ages	Actual				Projections	
	1970	1980	1990	2000	2010	2020
55-64	2,130	2,966	2,797	2,902	3,509	5,028
65 +	2,027	2,980	4,096	4,829	5,539	6,553
Total	4,157	5,946	6,893	7,731	9,048	11,581

1970 - 2000 Census, Projections by Connecticut Census Data Center (1995).

Elderly (ages 55+)



Parade in Mystic



William Carlebach

Definitions

Developed Land - land that has buildings, structures, or improvements used for a particular economic or social purpose (such as residential or institutional).

Committed Land - land that is used for a particular economic or social purpose (including open space).

Vacant Land - land that is not developed or committed.

Under-Developed Land - developed land that is not used to its full potential (such as a 10-acre parcel with one house in a half-acre residential zone).

Development Potential

The build-out scenario is based on natural resource constraints, zoning designations, and development practices. The analysis is used to evaluate the possible future need for community facilities and other infrastructure.

The estimates make no prediction about when development will occur on a particular property or in a specific area. The timing of development is a function of economic conditions, land availability, land suitability, location, accessibility, utility availability, market demand, and other factors.

Land Use In Groton

Groton contains approximately 20,325 acres. The land use survey found that about 69 percent of the community (14,094 acres) is occupied by residential, commercial, or institutional uses or is dedicated to a specific purpose such as public land or protected open space. Conversely, about 31 percent of the land in town (6,231 acres) is vacant or uncommitted to a specific use. These figures include the City of Groton, Noank and Groton Long Point.

1998 GROTON LAND USE SUMMARY

Use	Acres	Percent of Committed Land	Percent of Total Land
Residential	4,816	34%	24%
Commercial	660	5%	3%
Industrial	524	4%	3%
Public / Institutional Uses	1,738	12%	9%
Open Space	4,386	31%	22%
Transportation / Roads	1,969	14%	10%
Developed / Committed	14,094	100%	69%
Vacant / Under-Developed	6,231		31%
Total Land Area	20,325		100%

Planimetrics (Totals may not add due to rounding.)

Future Development Potential (Buildout)

Groton could eventually be a community of about 60,000 people and about 23,000 housing units. This is an increase of about 18,000 people and 6,000 housing units from what currently exists in Groton.

These estimates are based on:

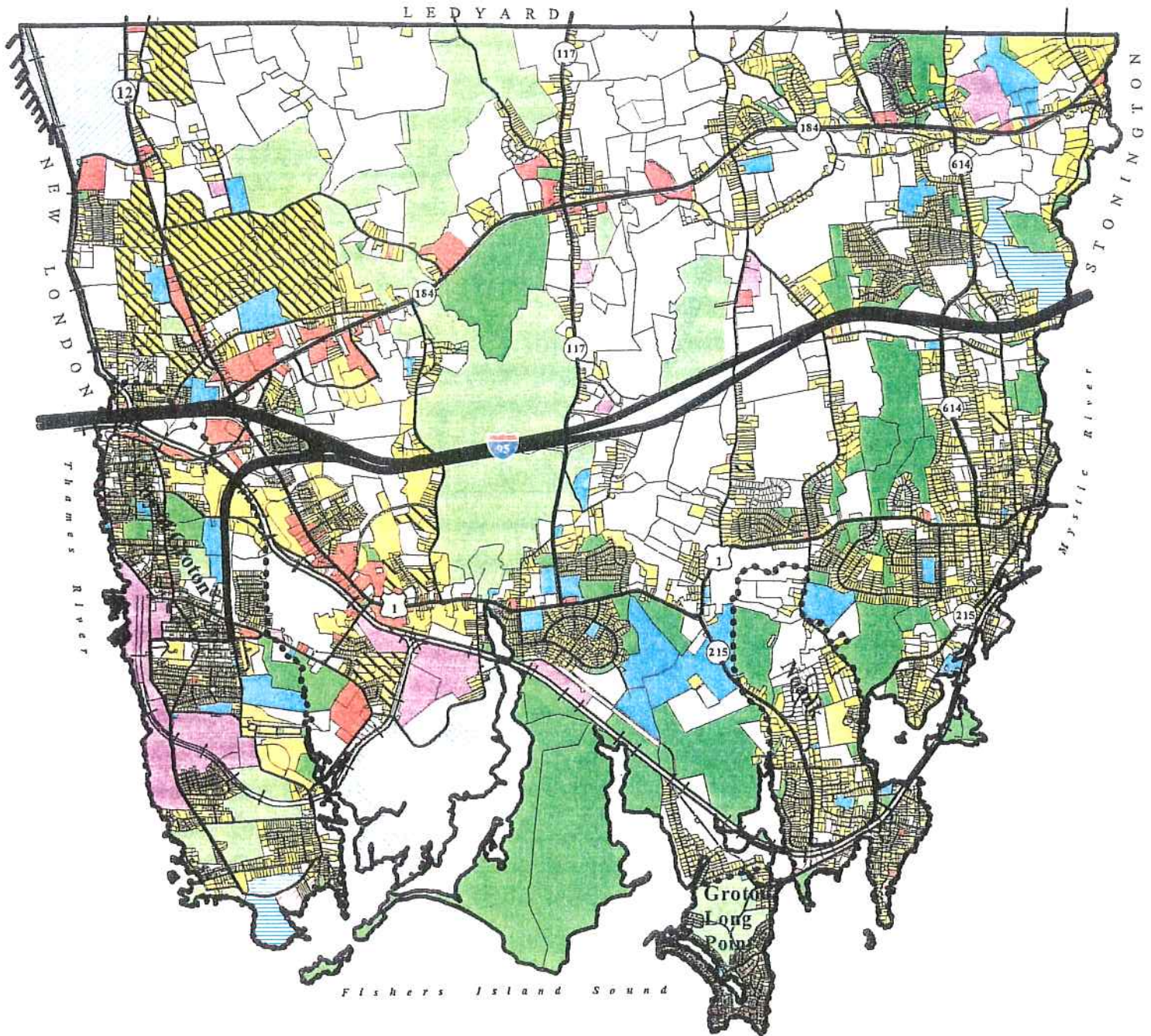
- the amount of vacant and under-developed land
- full development under current residential zoning and
- physical and environmental constraints

While prior plans estimated an ultimate population of up to 65,000 people, regulatory changes, demographic changes, development patterns, and better knowledge of environmental and other constraints has refined the estimate since that time.

During the next ten years, the population is not expected to exceed 47,000 people.

Land Use

Town of Groton, CT



Residential

- 1 - 2 Family
- Multi - Family
- Mobile Homes
- Navy Residential

Commercial

- Commercial / Retail
- Offices
- Lodging
- Marine Business

Industrial

- Industrial

Institutional

- Community Facilities
- Airport
- Naval Base
- Other State Facilities
- Other Institutional

Open Space

- Dedicated Open Space
- Managed Open Space

Other

- Vacant
- Parking
- > City of Groton
- > Noank
- > Groton Long Point

5000 0 5000 Feet



Fiscal Comparisons

The effective tax rate compares municipal taxes with the estimated market value of property (not the assessed value). It is used to compare tax rates between communities. As indicated, Groton has one of the lowest effective tax rates in southeastern Connecticut.

Effective Tax Rate	
New London	2.87%
N. Stonington	1.96%
Ledyard	1.88%
State	1.85%
Montville	1.65%
Stonington	1.43%
Groton	1.39%
Waterford	0.97%

CPEC - 1997-98 Equalized Mill Rate

The following table compares the amount of taxable property in each community on a per capita basis. It is an indication of the size of the tax base available to support local programs.

Per Capita Tax Base	
Waterford	\$302,088
Stonington	\$110,242
State	\$80,477
N. Stonington	\$75,788
Montville	\$67,676
Groton	\$64,521
Ledyard	\$58,962
New London	\$31,882

CPEC - 1996 Grand List (ENGL)

Fiscal Overview

Due to the variety of governmental organizations in Groton, it is very difficult to compare local revenues and expenditures with other jurisdictions. For example, fire protection expenditures (which may be included in other town's municipal expenditures) are levied separately in Groton and are not included in local expenditures.

However, Groton has a "typical" tax base for a community of its size based on the Equalized Net Grand List (ENGL), a measure of the market value of all property in a community.

Tax Base Comparison (1996 ENGL)
(ranked by 1996 population of 169 municipalities)

Population Rank	Town	Population	ENGL (billions)	ENGL/cap.
18	Stratford	49,068	\$3.618	\$77,244
19	East Hartford	47,700	\$2.632	\$54,848
20	Middletown	43,498	\$2.762	\$63,058
21	Enfield	43,136	\$2.518	\$55,716
22	Groton	42,922	\$2.844	\$64,521
23	Wallingford	40,671	\$3.089	\$74,718
24	Southington	38,091	\$2.746	\$71,487
25	Shelton	37,159	\$3.410	\$94,783
26	Norwich	36,190	\$1.654	\$47,061
	Average	42,048	\$2.808	\$66,783
	Median	42,922	\$2.762	\$64,521
	State Ave.	19,348	\$1.559	\$78,778

Connecticut Policy and Economic Council, 1996 data, Equalized Net Grand List (ENGL) is a measure of the fair market value of all property.

Groton is fortunate that business property makes up a larger component of its tax base than a typical Connecticut community. In fact, Groton has a higher percentage of business property than any surrounding community. As a result, Groton had a lower effective tax rate in 1998 (taxes as a percent of market value) than any surrounding community except Waterford.

Comparison Of Tax Base Composition

	Percent Business	Percent Residential	Percent Other
Groton	38%	48%	14%
New London	37%	52%	11%
Montville	20%	51%	29%
State	20%	62%	18%
Stonington	19%	72%	9%
N. Stonington	10%	69%	21%
Ledyard	9%	74%	17%
Waterford	7%	19%	74%

Planimetrics from published data from the State of Connecticut Office of Policy & Management

As can be seen, businesses make a significant contribution to the local tax base in Groton. Groton's tax base is not as reliant on residential property to supply revenues as other nearby towns. Less than 50 percent of the town's tax base originates from taxes on residential property.

Fiscal Parameters of Different Uses

During the planning process, an analysis was done of the tax impact of different land uses in Groton. Tax impact analysis is designed to determine whether the general fund tax revenues generated to the Town of Groton by a particular land use are greater than the Town of Groton expenditures associated with that use.

Residential Uses - Due to education expenses, several residential uses in Groton generally receive more in services than they pay in taxes. For example, single family dwellings, apartments, and mobile homes typically receive more in services than they pay in taxes. On the other hand, condominiums (due to low school enrollments) and undeveloped residential land and lots pay more in taxes than they receive in services. Generally, if a dwelling unit contains no school children, then it likely pays more in taxes than it receives in services.

Commercial / Industrial / Public Utility Uses - Non-residential uses typically pay more in taxes than they receive in services because they receive no direct benefit from local education expenses.

Private Open Space Uses - Land that is privately owned but assessed as farm, forest, or open space land under the Public Act 490 program (codified as CGS Section 12-107e) has a positive fiscal impact on the Town since it pays more in taxes than it receives in services.

Tax Exempt Uses - Since tax exempt uses pay no taxes yet receive some services from the Town, they typically have a negative fiscal impact. In most communities, this fiscal impact is modest.

However, Groton is unique because of the Navy Base. While Groton receives about \$6.5 million dollars in general fund revenue annually from the federal government for base impacts, the base also has about 5,000 residents and produces over 1,700 students in the Groton school system. It is estimated that these people and pupils result in direct fiscal impacts of over \$8.6 million annually (see *Booklet #20 – Groton Tax Impact Analysis* for more information on how this estimate was derived). While simple subtraction of revenues and service costs make the Navy Base appear to be a local cost, this ignores the positive economic impact of the Navy base on the community (see the sidebar).

Limitations

The analysis of the fiscal parameters of different land uses only looked at fiscal implications to the Town. It did not consider the physical, social, or economic implications of different uses.

Fiscal parameters are not the only criteria on which municipal policy, especially conservation and development decisions, should be made. Such findings need to be balanced with environmental, physical, social, and economic implications.

In the long run, the overall form and function of the community should be the overriding focus.

Navy Base Impact

While the Navy Base may require more in local services than it provides in local revenue to the Town of Groton, there is little doubt that it has a positive overall economic impact on the community.

For example, some of the payroll expense at the Navy Base makes its way into the local economy, supporting local retailers and services. This spending supports uses that also contribute to local employment and the tax base.

Some estimates gauge that each submarine based in Groton generates roughly 130 servicemen, 70 Navy families, and almost \$5 million in payroll to the area.

Fiscal Impacts

Any residential use that produces school enrollment will likely require more in service costs than it provides in tax revenue.

Conversely, any residential use that produces no school enrollment will likely provide more in tax revenue than it requires in service costs.

More Information

For more information on the fiscal implications of different land uses, see Workbook #20 – Groton Tax Impact Analysis on file at the Groton Library and at the Town Hall.

State properties in Groton include open space land (such as Bluff Point and Haley Farm) and facilities (such as Avery Point, Groton/New London Airport, DOT Facilities, etc.). Groton receives about \$0.75 million dollars annually from the state “for payments in lieu of taxes” (PILOT) for state properties. While some services are provided to these properties and facilities, the PILOT payments are estimated to cover these expenses.

Municipal facilities in Groton include all Town-owned land and facilities such as schools, Town Hall, public works, police, recreation, libraries, senior center, and other sites. While these uses require local expenditures but pay no taxes, they are the facilities that are used to provide municipal services and the costs are incorporated elsewhere in the municipal budget.

Other tax-exempt uses include educational, historical, charitable and religious land and facilities. Again, while these uses require local expenditures but pay no taxes, they are the facilities that typically enhance community character and quality of life.

The following table summarizes the “balance of payments” between different land uses:

APPROXIMATE BALANCE OF PAYMENTS

Classification	Use Category	Net Revenue	Net Expenditures
Provide Much More In Revenue Than Receive in Services	Industrial Development	\$8,231,774	
	Commercial Development	\$2,228,032	
	State Facilities	\$743,089	
	Vacant Residential Land	\$303,526	
Provide More In Revenue Than Receive in Services	Residential Condominiums	\$83,592	
	Vacant Commercial Land	\$66,932	
	Vacant Residential Lot	\$57,563	
	Comm. Condominiums	\$38,417	
	Vacant Industrial Land	\$25,427	
	Utility Facilities	\$9,701	
	Private Farm	\$2,181	
	Private Forest	\$1,739	
Wetlands	\$186		
Require More In Services Than Provide in Revenue	Municipal Facilities		\$0
	Private tax-exempt Facilities		\$5,797
	Mobile Homes		\$242,885
Require Much More In Services Than Provide in Revenue	Federal Facilities		\$1,986,681
	Apartments		\$3,243,824
	Single Family Dwellings		\$6,312,972

Planimetrics

Community Input

Several public meetings were held during the process of preparing the Plan in order to learn what issues were important to Groton residents and to encourage their participation in the planning process. While these results are not scientific, they can be assumed to capture the opinions of people who chose to attend.

On October 29, 1998, an informational meeting for all Groton residents was held at the Groton Senior Center. Each person was asked to identify places in Groton that they were particularly proud of and particularly sorry about. Responses were then grouped to understand the major issues of importance to residents.

"Prouds"	"Sorrys"
Open Space (50 votes)	Commercial Uses/Areas (28 votes)
Historic Resources (18 votes)	Specific Issues (25 votes)
Community Facilities/Services (17 votes)	General Community Issues (20 votes)

At the same meeting, people were given planning points to "spend" on issues that were important to them as part of the Plan of Conservation and Development.

Planning Points Topic	Percent of Total Vote
1 Tie Business and Industry	17%
1 Tie Preservation of Open Space	17%
3 Conservation of Natural Resources	15%
4 Community Character	11%
5 Land Use Regulations	8%

Other categories included Coastal Areas, Transportation, Community Facilities, Historic Resources, Housing and Residential Issues, Improvement of Utilities, Community Centers

Prouds and Sorrys



Public Input

From a survey at the initial public meeting, residents indicated those programs or activities where they felt the Town was doing too little, just right, or too much.

Topic	Too Little
Controlling residential development	74%
Enhancing community character	69%
Protecting natural resources	70%
Providing trails, bike-ways, and sidewalks	67%
Protecting important open space (location)	61%
Controlling business development	57%
Meeting commuter needs	53%
Preserving historic resources	53%

Topic	Just Right
Providing for affordable housing	55%
Expanding the variety of housing types	68%
Providing educational quality	69%
Providing community services or facilities	79%
Providing public safety	85%
Maintaining local roads	87%

Another public meeting was held on July 12, 1999 at the Groton Senior Center to present the Community Assessment to Groton residents. The assessment covered work to date on the Plan of Conservation and Development, a rating by Planimetrics, and a survey of residents as to whether they agreed. A low score would indicate that residents feel that more work needs to be done in these areas.

The following table groups different topics by:

- the rating assigned by residents from the public meeting
- the primary agency responsible for addressing that issue

Primary Responsibility

Rating	Land Use Agency	Other Municipal Agency	Other Organization
Excellent		Police Facilities	Interstate Highway
Very Good	Variety of Business Types Open Space Preservation Coastal Area Management Env. Protection Residential Variety Historic Preservation Wireless Communications	Public Housing Facilities Recreation Facilities Open Space Preservation Public Works Facilities Library Facilities Public Sewer Historic Preservation	Rail Service Availability Airport Availability Ambulance Services Fire Services Cable Communications Electric Marine Availability Telephone Service
Good	Implementation of Plans Land Use Regulations Community Character Community Structure Residential Regulations Guiding Residential Patterns	Social Service Facilities Bikeways Current Econ. Dev. Sidewalks Town Hall Community Character Education Facilities Storm Drainage Roadways	Natural Gas Public Water
Fair	Guiding Business Patterns Business Regulations	Future Econ. Dev. Community Spirit / Pride	Air Service Transit Services,
Poor	None	None	None

These and other public comments were incorporated into the planning process and formed the basis for many of the recommendations in the Plan. In addition, these comments were also used to identify some of the priority issues in the Plan.

PROTECT NATURAL RESOURCES

4

Overview

Natural resources are important to community character and the pride and spirit of residents. Protecting natural resources is an important issue in the Plan since such efforts help:

- guide development in harmony with the natural environment
- preserve vital natural functions
- improve the quality of life for existing and future generations

Protection of such resources will not happen without some effort. If Groton residents are to be successful at preserving the things that matter most to them and that enhance the community, we must take positive steps to identify and protect important resources.

The Plan recommends that the Town seek and use every possible means that will enable Groton to identify and protect important natural resources.

Natural resources make a significant contribution to community character and quality of life ...

Poquonnock Cove



Water Quality Protection

To protect water quality, Groton has established a Water Resource Protection District as part of the Zoning Regulations. The regulations, which regulate or prohibit certain types of uses or activities, apply to reservoir watershed lands and aquifer areas.

Non-Point Pollution

For many years, water quality protection focused on eliminating “point” sources of pollution (such as industrial discharges).

With the progress that has been made in reducing or eliminating pollution from these sources through various governmental regulatory programs, attention has now turned to “non-point” sources. This includes storm drainage discharges, lawn fertilizer, septic systems, agricultural runoff, and similar sources.

Protecting water supply resources is also important. Groton has incorporated a Water Resource Protection District in the Zoning Regulations in order to protect public water supply watersheds and water quality in watershed areas.

Protect Water Quality and Water Resources

Protection of water quality is Groton’s most important natural resource preservation priority.

While this strategy is especially important given the need to protect the drinking water supply for Groton residents, it is also significant in terms of protecting overall environmental health. Each of Groton's water resources (rivers, streams, lakes, ponds, water supply reservoirs, Long Island Sound, wetlands, swamps, marshes, vernal ponds, aquifers and bedrock fractures) plays an important role in Groton's ecosystem and lifestyle.

Protecting water quality must involve concerted efforts on several levels. First, local activities designed to protect and enhance water quality should continue and be enhanced where feasible. Second, public education and involvement must be essential elements of any strategy to protect water quality.

Educational programs must address such issues as residential, commercial, and municipal hazardous wastes, lawn and garden fertilizers/chemicals, sediment runoff, septic maintenance, yard composting, resource recovery/recycling, and similar issues. Such programs must be continually promoted due to the “turn-over” of Groton’s population.

Specific actions to address water quality include:

- incorporating stormwater management provisions in the Towns zoning regulations
- retrofitting antiquated stormwater systems at and near redeveloped sites
- using “best management practices” such as vegetative buffers and bio-infiltration islands
- establishing minimum standards for stormwater treatment systems
- establishing standards for “zero net increase” in total suspended solids, runoff rates, and volumes
- redefining lot coverage to include all impervious surfaces
- restricting the clearing of steep slopes
- instituting road standards that encourage curbless and narrower roads, shared driveways and parking, and alternative pervious parking surfaces
- retrofitting existing stormwater systems
- regular street sweeping
- storm drain stenciling projects

Recommendations

1. Continue to monitor and protect water quality in Groton.
2. Strive to preserve and/or acquire extensive wetland and streambelt systems.
3. Continue to implement watershed protection regulations in public water supply watersheds.
4. Examine the amount of impervious surfaces allowed in all zones and areas.
5. Establish strict standards for impervious coverage in significant watersheds.
6. Continue to reduce pollution from septic systems.
7. Continue to reduce pollution from marine waste.
8. Continue careful review of septic designs by all departments prior to approval.
9. Encourage the Ledge Light Health District to develop a program to guide property owners on acceptable practices in non-sewered areas.
10. Continue to reduce pollution from storm drainage systems, including trapping, removing, and suitably disposing of sediment from storm drains.
11. Upgrade the location, construction, and operation of salt storage areas (such as the DOT location on Welles Road and the Town facility at Fort Hill) to minimize the potential for contamination of ground or surface water.
12. Implement educational programs for Groton residents about:
 - the nature and value of water resources in Groton (such as Long Island Sound, inland and tidal wetlands, streams and rivers, and aquifers)
 - programs on how to protect them (such as hazardous waste disposal and septic system maintenance)
13. Take other appropriate actions to reduce diffuse (non-point) sources of pollution.

Groton Utilities Reservoir



Preserve or Conserve?

Preservation means:

- to protect from harm
- to maintain intact or unchanged

Conservation means:

- to save from loss or depletion
- to avoid wasting

Webster's Dictionary

Unique Habitats

The unique habitats and special areas identified on the map on the facing page are sites that have been recognized by the State Department of Environmental Protection (CTDEP) for:

- known occurrences of state or federal endangered or threatened species
- state special concern species
- significant natural communities
- unique natural or cultural areas

When development or other activities are proposed in these areas, the applicant and/or the Town should contact CTDEP for additional information.

Protect Other Important Natural Resources

While protecting water quality is the most important natural resource priority, there are also other resources that deserve protection.

Some resources are so significant for preserving environmental quality or community character that efforts must continue to ensure that these resources are preserved. Preservation generally means to avoid altering these areas to the extent feasible and prudent.

Resources For Preservation

- Watercourses
- Inland and tidal wetlands
- Floodplain (100-year, 1.0% probability)
- Coastal "V" flood hazard area

On the other hand, some important functions of other natural resources can be maintained while compatible activities take place nearby. In other words, the natural resource functions of these areas could be conserved in an environmentally sensitive way.

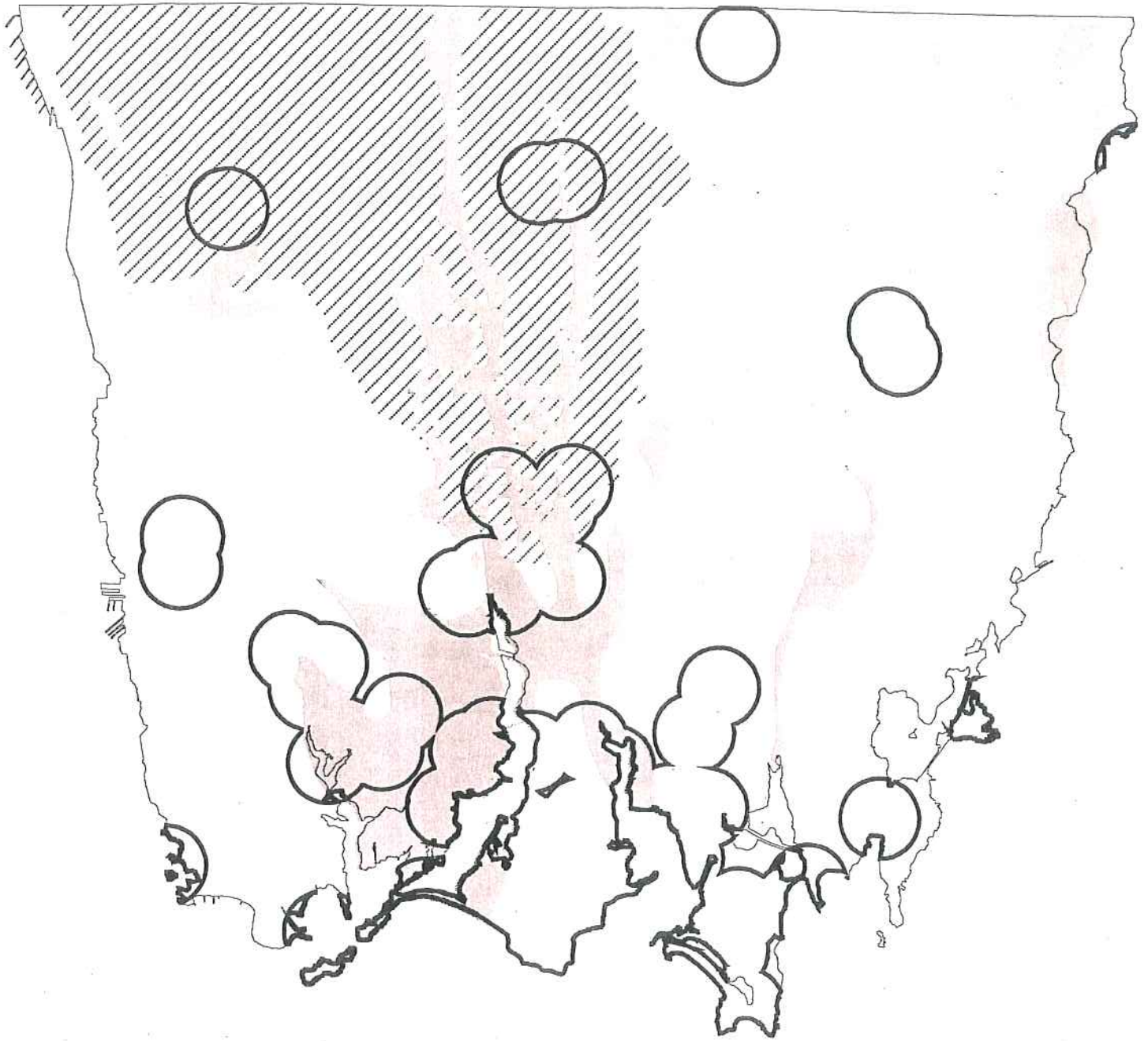
Resources For Conservation

- Slopes exceeding 25 percent
- Floodplain (500-year, 0.2% probability)
- Coastal "A" flood hazard area
- Watersheds for public water supplies
- Areas of high groundwater availability
- Unique or special habitat areas




Split Rock off Bluff Point



Areas Sensitive to Development

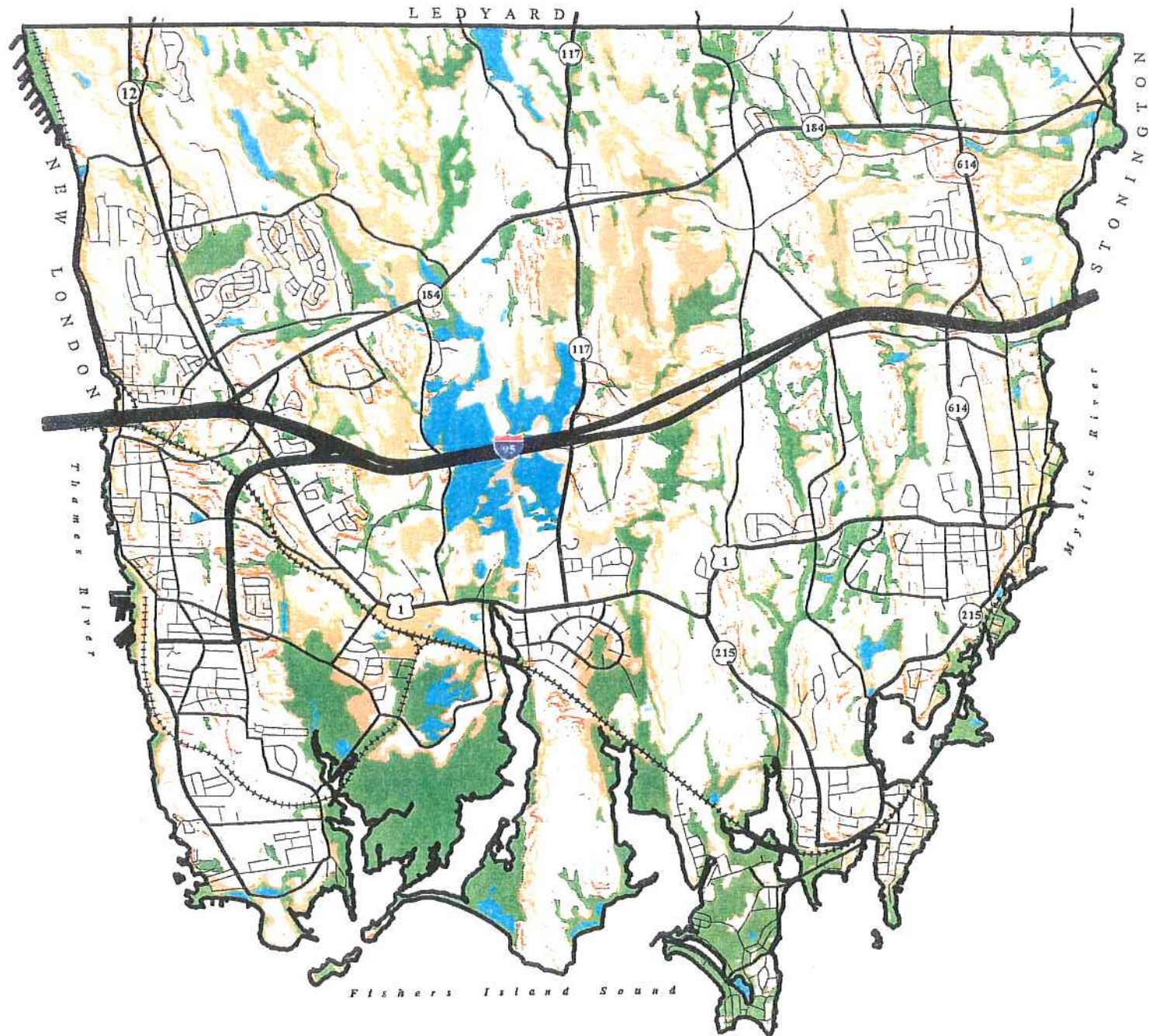


Legend

-  Areas of high groundwater availability
-  Public water supply watershed
-  Natural Diversity Database Sites

Natural Resource Conservation Plan

Town of Groton, CT



Significant Conservation Areas

- > Poorly drained soils (wetlands)
- > Watercourses
- > Floodplain (100- year, 1.0% probability)
- > Coastal flood hazard areas
- > Water

Important Conservation Areas

- > Any soil with slopes in excess of 15%
- > Floodplain (500-year, 0.2% probability)



Recommendations

1. Continue to protect and preserve:
 - watercourses
 - inland and tidal wetlands
 - inland and coastal floodplains
 - natural diversity database sites
 - critical coastal resource areas (such as beaches, dunes, rocky shore-fronts, bluffs, and escarpments)
2. Expand the definition of regulated area in the wetland regulations to include areas within a certain distance from inland wetlands and watercourses.
3. Establish regulations or policies requiring non-disturbance buffer areas around inland wetlands, coastal wetlands, watercourses, and critical coastal resources.
4. Conserve steep slopes, public water supply watersheds, areas of high groundwater availability, and unique or special habitat areas.
5. Continue to provide and enhance provisions for local fish and wildlife.
6. Encourage informational activities involving natural resources (such as shellfishing, crabbing, hiking, bicycling) to educate residents on the importance of conserving the resources unique to Groton.

North End of Beebe Cove



PRESERVE OPEN SPACE

5

Overview

Open space when permanently preserved in adequate quantities and appropriate locations can help protect community character, enhance the quality of life for residents, conserve important natural resources, provide wildlife habitat, provide fiscal and economic benefits, shape development patterns, and preserve lands for recreational uses.

While most people perceive “open space” as any land that is not built upon, it is important to stress that the Plan defines open space as land that is permanently preserved for or dedicated to open space uses.

Groton is fortunate that about 22 percent of all the land in Town has already been preserved as open space. This includes open space owned by the State of Connecticut, City of Groton Utilities, and other entities.

Yet more can, and should, be done. Since open space makes a significant contribution to community character and quality of life, efforts to preserve open space in Groton should continue.

Preserving open space is important to maintaining community character ...

Open Space Greenway



Greenbelt History

Groton has been a leader in the identifying greenbelts as a major organizing feature in the community.

The 1961 Plan of Development identified an open space system focused on stream-belts. The 1969 Conservation Plan expanded this to identify three major “green-breaks” in the community. The 1990 Plan of Development and the 1990 Conservation Plan continued these concepts.

Greenbelts and Greenways

A greenbelt or a greenway is a corridor of open space that:

- may protect natural resources, preserve scenic landscapes and historical resources or offer opportunities for recreation or non-motorized transportation
- may connect existing protected areas and provide access to the outdoors
- may be located along a defining natural feature, such as a waterway, along a man-made corridor, including an unused right-of-way, traditional trail routes or historic barge canals
- may be a green space along a highway or around a village

General Assembly
Public Act 95-335

Establish Greenbelts

While the amount of preserved open space is important, the configuration of the open space system should be the critical consideration in open space planning for Groton. If parcels of open space can be interconnected into a cohesive overall “greenbelt” system, the value of the open space to residents and the impact on community character will grow exponentially.

There are many greenbelt opportunities in Groton. For example, the large amount of open space that already exists in the Poquonnock River valley presents an opportunity to create a “greenbelt” that could lead from the Bluff Point Coastal Reserve on Long Island Sound to the Ledyard town line. This opportunity is particularly apparent because much of the land in this “greenbelt” is already in public ownership or the few remaining linkages could be obtained. Many other opportunities also exist to create greenbelts that will enhance community character and the quality of life for Groton residents.

As a result, it is a goal of this Plan that a comprehensive greenbelt system which interconnects preservation, conservation, open space and recreation areas should be the major coordinating element in the future conservation and development of Groton. Such a system would provide a linkage between existing open spaces and protect important resources from future development pressures.

In addition to protecting Groton’s character, a greenbelt open space system will:

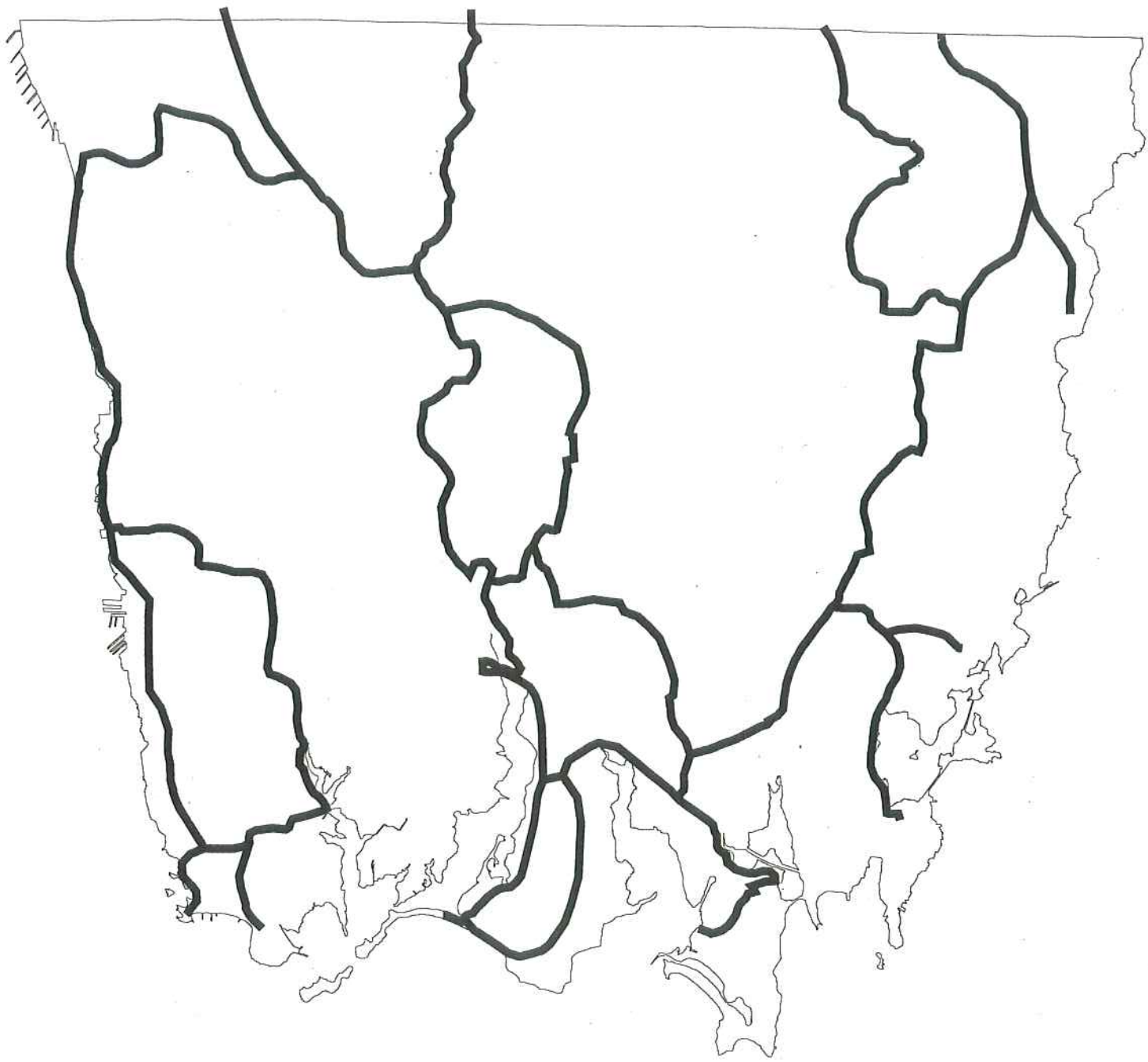
- protect important natural, scenic, or other resources
- allow for a trail system that interconnects different areas
- contribute to the enjoyment and quality of life for residents
- provide for contiguous wildlife habitat and corridors

Recommendations

1. Maintain the Conservation Commission as the appropriate entity to develop an action plan for open space preservation.
2. Develop an action plan to establish, expand, and connect greenbelts in Groton.
3. Continue to coordinate efforts with neighboring towns to create greenbelts, which protect common resources (such as wetlands and waterways).
4. Strive over the long term to establish a “Shoreway” in Groton to take advantage of Groton’s biggest asset.

Possible Future Trails

Town of Groton, CT

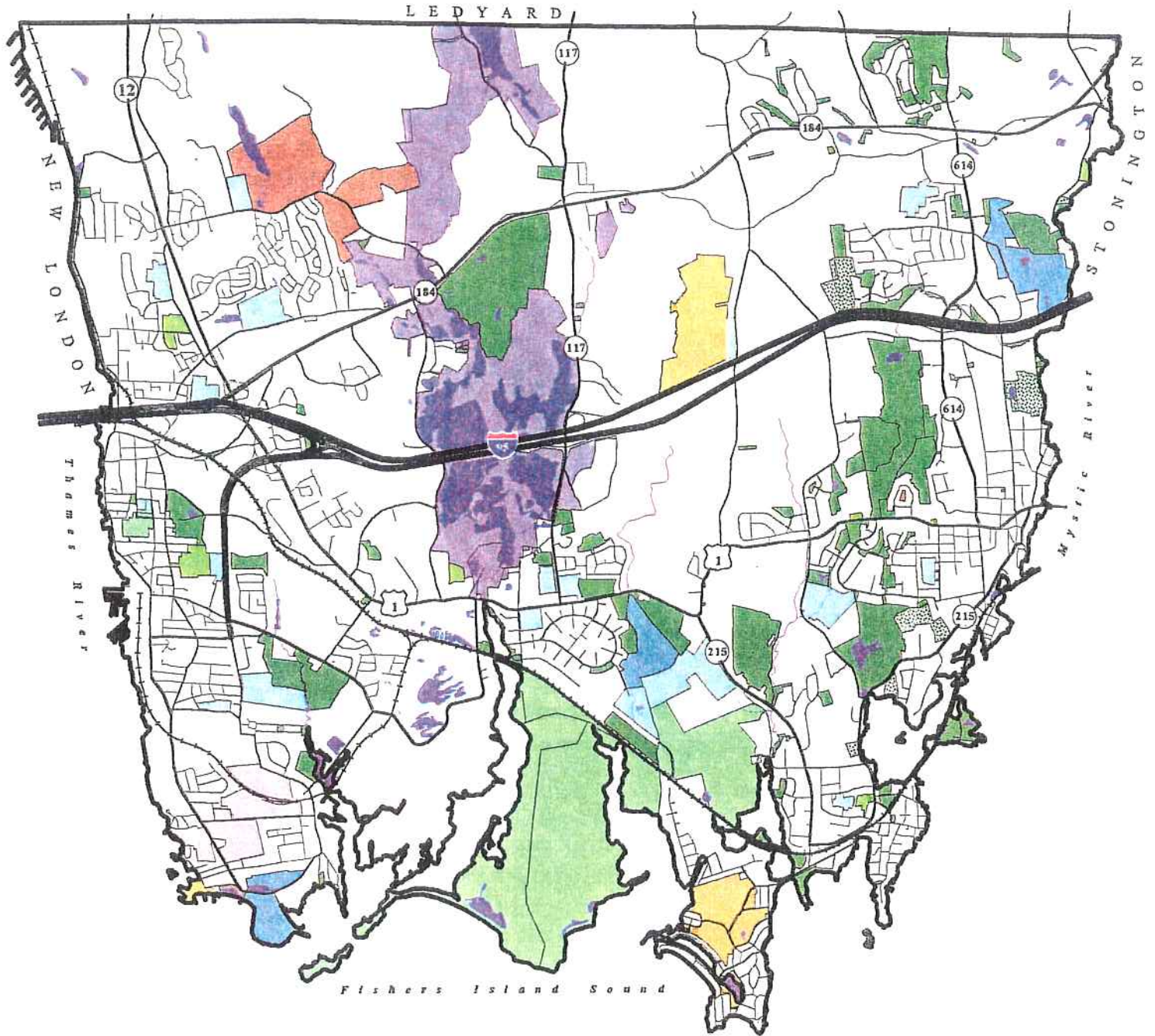


Legend

N Possible Trails

Existing Open Space

Town of Groton, CT



Dedicated Open Space

- Municipal Dedicated Open Space
- State Dedicated Open Space
- Private Land Trust Dedicated Open Space

Managed Open Space

- Public Managed Open Space
- Private Managed Open Space
- Groton Utilities Land
- Cemetery
- Golf Course

Facilities

- Municipal Facilities
- State Facilities

Other

- Water

5000 0 5000 Feet



An excellent way to increase the awareness and use of open space is to create and maintain trails and inform people through a trail guide.

The guide would contain maps and text describing the trails located throughout Groton.

Establish A Trail System

As open space is preserved and greenbelts are established in Groton, it will greatly increase their utility if opportunities are provided for the public to access these areas. Trails for pedestrians and bicycles are one way to do this. Trails greatly enhance the value of open space and are becoming very popular throughout Connecticut for hiking and other recreational activities. Significant opportunities exist to establish, expand and enhance the trail system in Groton and make it one of the premiere trail networks in the state.

For example, coastal access opportunities (such as at Bluff Point) differentiate Groton from many other communities and are a major amenity for the community. Moreover, Groton has also been a leader within the State in obtaining coastal public access opportunities. These efforts should continue and be integrated into the open space greenbelt and trail system so that more of the 18 miles of coastline along the Thames River, Long Island Sound, and the Mystic River are available for public access.

In addition, connections to trails and open space lands in adjacent communities will create opportunities to establish a greenbelt of regional and statewide significance.

During the planning period, the use of Groton Utilities land in Groton for trails needs to be pursued. This land, comprising over 1,300 acres of land for water supply and protection, is currently unavailable for use by residents. This land along the Poquonnock River from Long Island Sound to the Ledyard Town Line provides the opportunity for a greenway of regional significance.

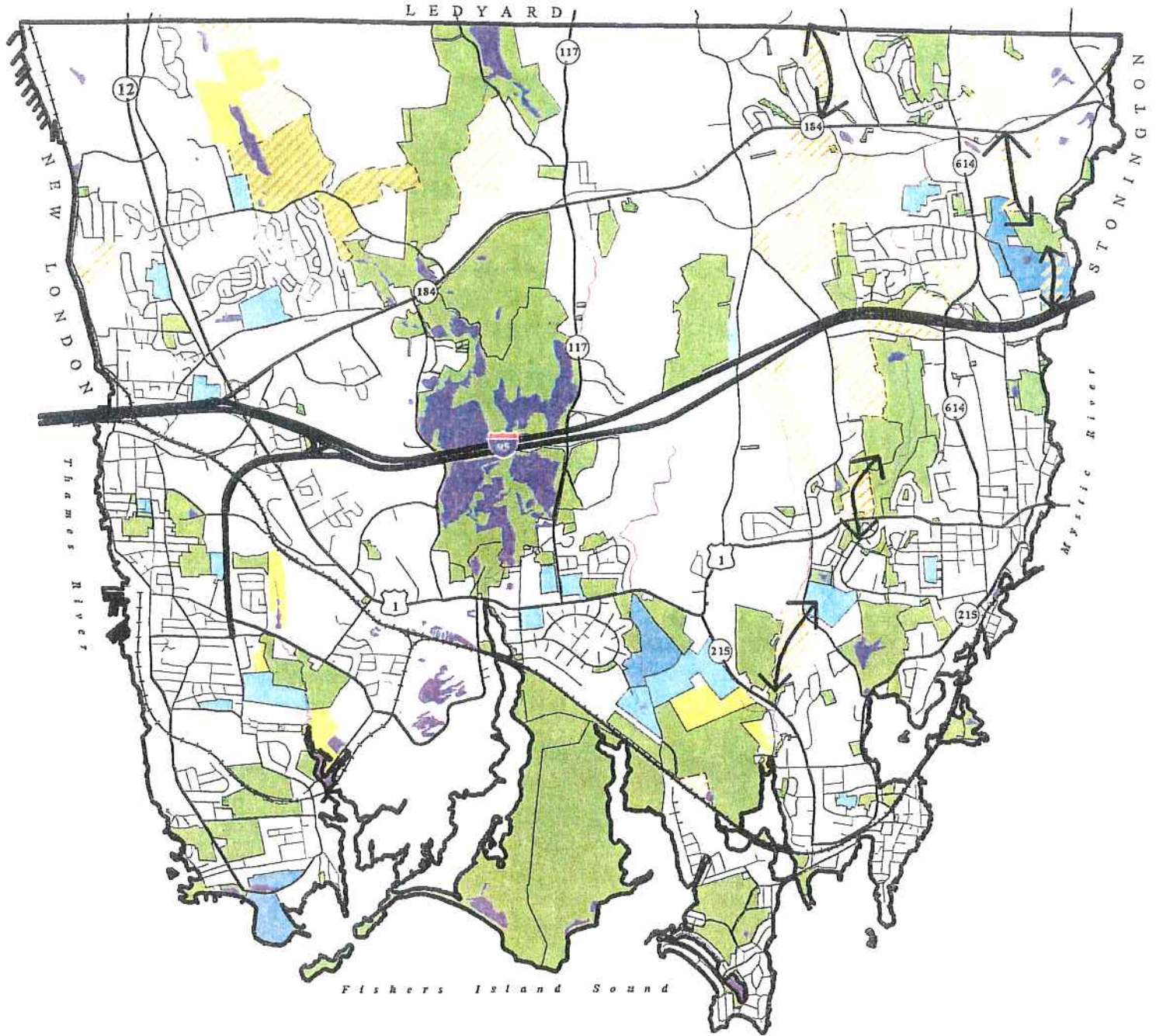
During the process of preparing this Plan, it was determined that gaining public access to the Groton Utilities land could be the most significant accomplishment of the Plan and an important legacy for future residents. Efforts to gain public access to this land should be pursued through whatever means are available.

Recommendations

1. Work with Groton Utilities to obtain reasonable public access to their properties.
2. Work with major property owners (such as the State DEP, Groton Utilities, local land trusts, and other groups) to create an overall trail network on their combined land holdings that interconnect open space areas.
3. Acquire and open up additional public access opportunities to Long Island Sound, the Thames River, and the Mystic River.
4. Continue to implement the signage plan to identify coastal access points.
5. Work with local and regional open space organizations, as necessary, to expand and maintain the local trail network.
6. Require the identification and consideration of trails as part of any land use application.

Possible Future Open Space Plan

Town of Groton, CT



Existing Open Space

- Existing dedicated and managed open space
- Municipal facilities
- State facilities

Possible Future Open Space

- Desirable acquisition by public entity
- Connections
- Preservation through land trusts, conservation easements open space development

Other

- Water

5000 0 5000 Feet



Possible Action Plan

A possible open space action strategy could include:

1. Creation of greenbelts that interconnect existing open spaces.
2. Protection of, and/or access to:
 - Fishers Island Sound
 - Thames River
 - Mystic River
 - important streambelts and watercourses.
3. Acquiring land adjacent to existing preserved open space.
4. Preservation of non-dedicated open space (such as the YMCA property).
5. Location for more accessible linked trails.
6. Protecting significant views within and at "gateways" to Groton.

Implement The Open Space Plan

Groton has exhibited leadership in open space preservation efforts. More than 30 years ago, the Groton Conservation Commission adopted a plan for the establishment of greenways that pre-dated the current trend towards greenways. In the late 1980s, the Town of Groton authorized bonding up to \$8 million for open space acquisition to purchase and preserve important open space parcels. Only about \$6 million was spent.

What is remarkable about these efforts is that they occurred many years prior to the current statewide interest in open space protection. Groton was truly a leader in identifying open space protection as an important issue.

However, Groton has not always followed through on its open space planning efforts. The 1969 greenway plan was never implemented. In addition, not all the open space funds authorized in the 1980s were expended and the authorization expired. In many respects, Groton's grand open space visions have not come to fruition, efforts have recently languished, and momentum has been lost. While there remains strong interest in open space protection in Groton, there has been little acquisition of property or appropriation of funds.

Groton should set aside municipal funds for open space acquisition so that important open space parcels can be purchased and preserved. Such efforts can be funded through annual contributions, capital campaigns for the acquisition of specific properties, or a bond issue. Annual contributions will provide a baseline spending program for open space acquisition.

Walkway Along Poquonnock Cove



Many organizations can and will play a critical role in the preservation of open space land. The Town should, along with land trusts and other open space and conservation organizations, undertake a multi-faceted effort to identify:

- properties for acquisition (an action plan)
- type of acquisition (such as conservation or access easement)
- priorities for acquisition (an action strategy)
- sources of funds

In addition, Groton should continue to preserve open space at the time of development of properties. The subdivision regulations currently provide for the preservation of 10 percent of a parcel as open space at the time of development.

Now is the time for Groton to set up appropriate open space preservation programs, implement a measured plan for the permanent protection of open space, and avoid the “feast” or “famine” that has seemed to characterize past efforts.

Greenway Trail at Bluff Point



Recommendations

1. Establish an open space acquisition fund within the Town funded by an annual line item in the budget.
2. Amend subdivision regulations to allow payment of fees-in-lieu of open space dedication with funds deposited in an open space acquisition fund.
3. Strive to implement the recommendations of the open space plan.
4. Strive to convert managed open space to dedicated open space.
5. Maintain subdivision regulations that require open space be deeded to the Town, a land trust, or other open space organization.
6. Strive to ensure that open space areas preserved as part of development are not comprised entirely of wetlands, steep slopes, or other unbuildable areas unless such open space is critical to preserving these resources.
7. Consider amending subdivision regulations to require a greater percentage of land be preserved for open space dedication.
8. Amend subdivision regulations to allow donation of land elsewhere in Groton to meet the open space requirements of a development.
9. To help maintain existing open space resources, consider acquiring a priority right to purchase land owned by City of Groton Utilities should the land become available.
10. Develop an open space management plan that contains an inventory of the resources on existing open space and provides a guide for future uses (such as trails, fields, community facilities) and management strategies (such as selective tree cutting, meadow mowing).
11. Continue to encourage the efforts of land trusts.
12. Support enactment by the General Assembly of a conveyance tax on the sale of property to support open space acquisition.

PROTECT COASTAL RESOURCES

6

Overview

Groton is one of only 24 municipalities in Connecticut that directly abut Long Island Sound and one of 41 communities that are considered part of the coastal area of Connecticut. Due to the importance of the coastal area to Groton's character and quality of life, Groton has an important obligation to carefully manage these areas.

The Connecticut Department of Environmental Protection - Office of Long Island Sound Programs (CTDEP-OLISP) oversees activities within the land area of coastal communities and seaward to the limits of the State's jurisdiction in Long Island Sound. The Town of Groton is also responsible for managing areas seaward of the "coastal boundary" through coastal site plan reviews and harbor management.

Coastal areas and their resources also make Groton unique ...

Groton Long Point Area



Coastal Area

The Connecticut coastal area shall include the land and water within:

- the area delineated by the westerly, southerly and easterly limits of the state's jurisdiction in Long Island Sound
- the town of Groton (*and other coastal municipalities*)...

Within the coastal area, there shall be a coastal boundary which shall be delineated on the seaward side by the seaward extent of the jurisdiction of the state and on the landward side by a continuous line delineated by whichever is farthest inland; of the following:

- the interior contour elevation of the one hundred year frequency coastal flood zone, as defined and determined by the National Flood Insurance Act
- a one thousand foot linear setback measured from the mean high water mark in coastal waters
- a one thousand foot linear setback measured from the inland boundary of tidal wetlands

CGS Section 22a-94

CGS SECTION 22a-93 – COASTAL MANAGEMENT – Coastal Resources

Coastal resources means "the coastal waters of the state, their natural resources, related marine and wildlife habitat and adjacent shorelands, both developed and undeveloped, that together form an integrated terrestrial and estuarine ecosystem" and includes the following:

- coastal bluffs and escarpments
- rocky shorefronts
- beaches and dunes
- intertidal flats
- tidal wetlands
- freshwater wetlands and watercourses
- estuarine embayments
- coastal hazard and flood hazard areas
- developed shorefront
- island
- nearshore waters
- offshore waters
- shorelands
- shellfish concentration areas

CGS SECTION 22a-92 – COASTAL MANAGEMENT – Legislative Goals and Policies

Overall Policies

- To preserve and enhance coastal resources
- To manage the ... coastal area in a manner consistent with the capability of the resources
- To give high priority and preference to uses which are dependent upon proximity to the water;
- To give high priority and preference to uses that minimize ... impacts on ... coastal resources
- To consider the potential impact of coastal flooding and erosion patterns
- To encourage public access to the waters of Long Island Sound
- To conduct, sponsor and assist research in coastal matters
- To coordinate the activities of public agencies
- To insure adequate planning for facilities and resources which are in the national interest

Resource Management Policies

- To preserve natural beach systems and tidal wetlands
- To manage coastal bluffs and escarpments, rocky shorefronts, intertidal flats, coastal hazard areas, and undeveloped islands
- To promote the use of existing developed shorefront areas for marine-related uses
- To regulate shoreland use and development in a manner which minimizes adverse impacts upon adjacent coastal systems and resources
- To maintain the natural relationship between coastal landforms through the promotion of nonstructural mitigation measures
- Minimize adverse impacts on:
 - water quality
 - circulation patterns of coastal waters
 - patterns of shoreline erosion/accretion
 - alteration of drainage patterns
 - coastal flooding
 - visual quality
 - wildlife, finfish, and shellfish habitat
 - water-dependent uses

Development Guidelines

- To give highest priority and preference to water-dependent uses ... in shorefront areas
- To guide infrastructure only to areas which are suitable for development ...
- To promote reasonable commercial and recreational fishing and boating uses
- To require that structures minimize adverse impacts on coastal resources
- To ... minimize the risk of oil and chemical spills at port facilities
- To use existing facilities as the main means of meeting transportation needs in the coastal area
- To encourage increased recreational boating use of coastal waters,
- To protect coastal resources by managing such boating uses and facilities
- To protect facilities serving the commercial fishing and recreational boating industries
- To require reasonable mitigation measures where development would adversely impact historical, archaeological, or paleontological resources

Update Coastal Planning

A municipal coastal program for the Town of Groton was adopted in 1982 and this has served as the coastal portion of previous Plans of Conservation and Development. While much of the information regarding coastal resources is still applicable, a separate planning effort should be undertaken to review and update the 1982 Municipal Coastal Program, either for specific topics, specific areas, or in its entirety.

Recommendations

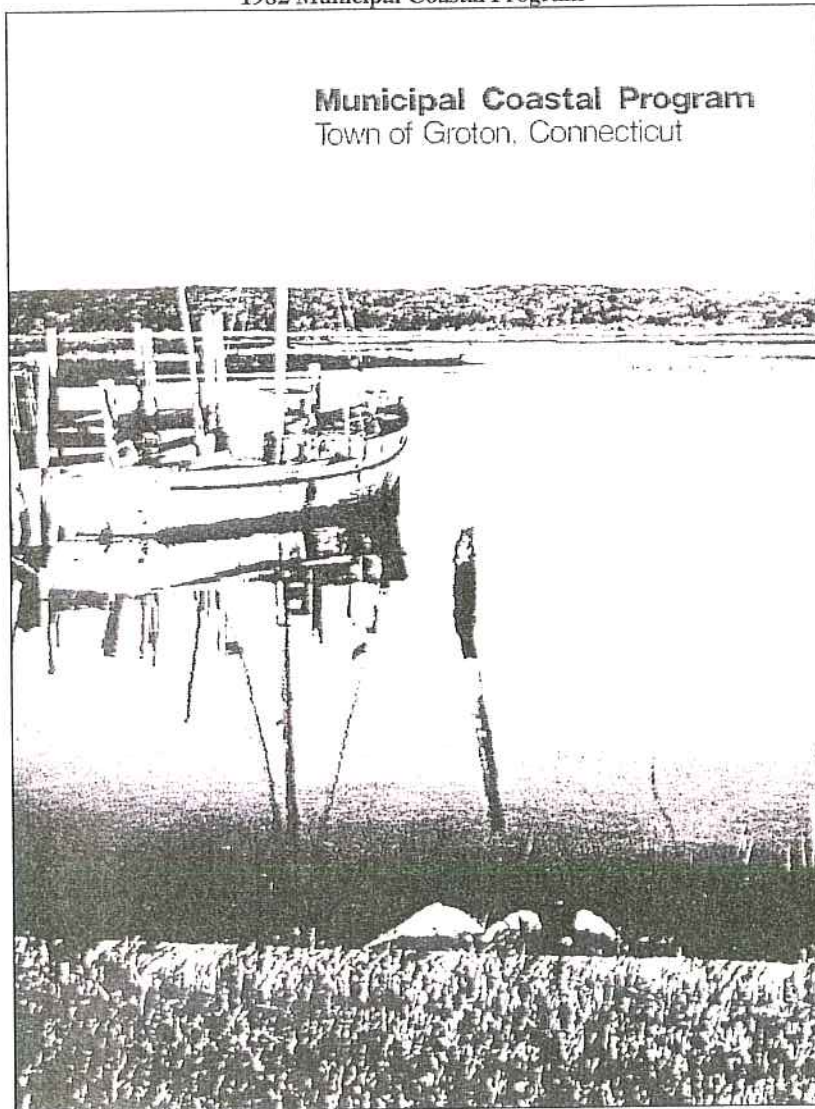
1. Undertake a separate planning effort to review and update the 1982 Municipal Coastal Program, as needed.

Coastal Resources

The 1982 Municipal Coastal Program contains a map showing the location of coastal resources in Groton.

While that map has not been included here because it is too small to be legible, a copy of the original resource map is available at the Planning and Development Department at the Town Hall Annex on Groton Long Point Road.

1982 Municipal Coastal Program



Coastal Requirements

Groton completed and adopted a Municipal Coastal Plan (MCP) in 1982. Noank developed and implemented one of the state's first harbor management plans in 1992.

Within the coastal boundary, all significant private and municipal development projects must conform to coastal site plan review requirements administered in Groton by the Planning Commission, the Zoning Commission, and the Zoning Board of Appeals.

State and federal coastal zone management acts contain policies for:

- coastal resource protection
- coastal land and water uses
- facilities in the national interest

Protect Coastal Resources

Groton enjoys the many benefits of a coastal location, being situated directly on Long Island Sound. Groton's shoreline extends more than 20 miles from the Ledyard Town Line on the Thames River around the City of Groton, Groton Long Point, Noank, and in the Groton portion of Mystic to the Ledyard Town Line on the Mystic River.

This location significantly enhances community character and the overall quality of life. However, such location also carries with it the responsibility and authority for wise use of coastal resources.

Analysis of Groton's coastal management efforts indicates that the Town has done a commendable job of managing its coastline and coastal resources. In particular, the Town has established a number of key public access improvements, improved coastal water quality, adopted harbor management plans, promoted water dependent uses, and helped clean up coastal areas.

While Groton has done an excellent job, these efforts must continue in order to maintain and enhance coastal resource areas.

Recommendations

1. Continue to carefully manage activities in the coastal boundary in conformance with state law and with consideration of state policies and guidance.
2. Continue coastal management programs to maintain and enhance coastal resource areas.

Coastal Wetland Area



Protect Coastal Water Quality

Coastal water quality in Groton is generally very good and has improved with the expansion of sewage treatment facilities and the relocation of the discharge from the treatment plant to the Thames River. Good water quality is important since it promotes recreational use of the coastal area (swimming, boating, and shellfishing), enhances aesthetics, and enhances community character and quality of life. It also supports recreational and commercial fishing, shellfishing, and aquaculture.

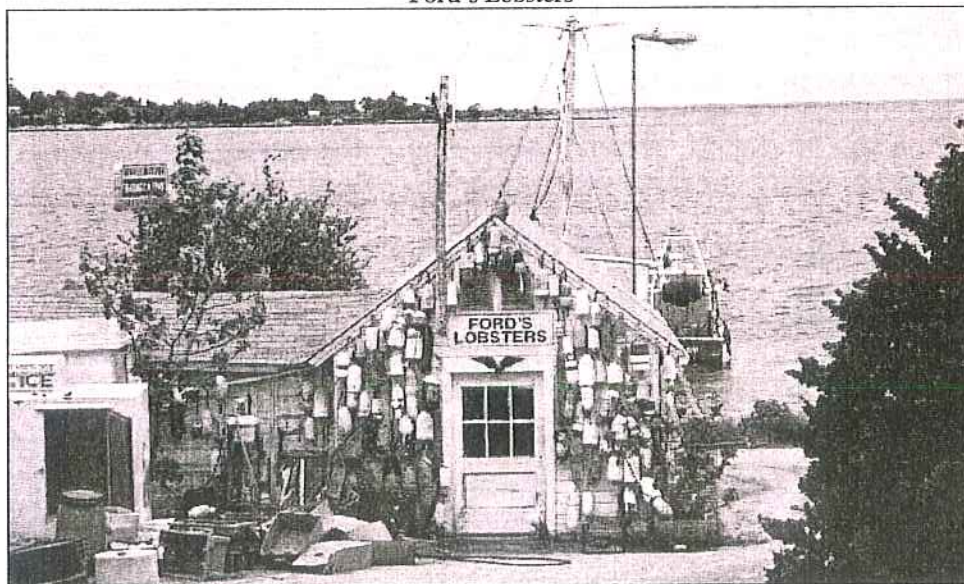
While sewage treatment plant and industrial discharges historically had the most visible and significant impact on coastal water quality, pollution from stormwater runoff is currently recognized as one of the most significant problems with regard to coastal water quality. For example, some shellfish areas in Groton may be temporarily closed after a heavy rainfall due to pollution from stormwater runoff.

Efforts to improve coastal water quality should continue. Programs to pursue could include adopting relevant parts of CTDEP's model stormwater management ordinance, reducing impervious surfaces, monitoring the proper disposal of marine sanitation pump-out wastes, and conducting investigations to determine the cause of water quality problems (such as intermittent problems from Birch Plain Creek).

Recommendations

1. Continue efforts to protect and improve coastal water quality.

Ford's Lobsters



Shellfish Resources

There are a total of seven areas available for recreational shellfishing:

- Poquonnock River
- Vixen Ledge / Horseshoe Reef
- Groton Long Point (Seaflower and Outer Palmer's Cove)
- Mumford Cove (winter)
- West Cove (winter)
- South of Morgan Point

Most areas are "conditionally open" which means that they may be closed temporarily after heavy precipitation due to pollution from stormwater runoff.

Coastal Considerations

During the process of developing this Plan, the Commission considered:

1. the character and distribution of the coastal resources within its coastal boundary,
2. the capacity of and limitations on such resources to support development,
3. the types and methods of development compatible with the wise use, protection and enhancement of such resources,
4. the nature and pattern of existing development,
5. the need for public services.

CGS Section 22a-102(b)

Improve Coastal Public Access

Groton is a leader statewide, both in terms of available public access and access gained through the water-dependent use standards set forth in the Connecticut Coastal Management Act. In addition, Groton has a number of full-service marina facilities that provide excellent boating access opportunities.

The Town should continue to encourage and enhance the use of waterfront sites for public access and, in particular, consider acquiring any waterfront site that can provide for community benefits.

Recommendations

1. Continue successful efforts in obtaining, marking, mapping and aggregating public access.
2. Identify and acquire sites and parcels that would contribute to a contiguous greenbelt/riverbelt access system or provide for community benefits.
3. Consider acquiring any waterfront site that can provide for community benefits.
4. Establish a waterfront land acquisition strategy to ensure that the Town can act swiftly when key coastal properties come to market.

Provide For Water Dependent Uses

Since available waterfront land is relatively scarce, a key principle of coastal management is to preserve waterfront lands for water-dependent uses (such as the Navy Base, Electric Boat, and other marine facilities in Groton). Water dependent uses are uses that are functionally dependent upon proximity to coastal waters.

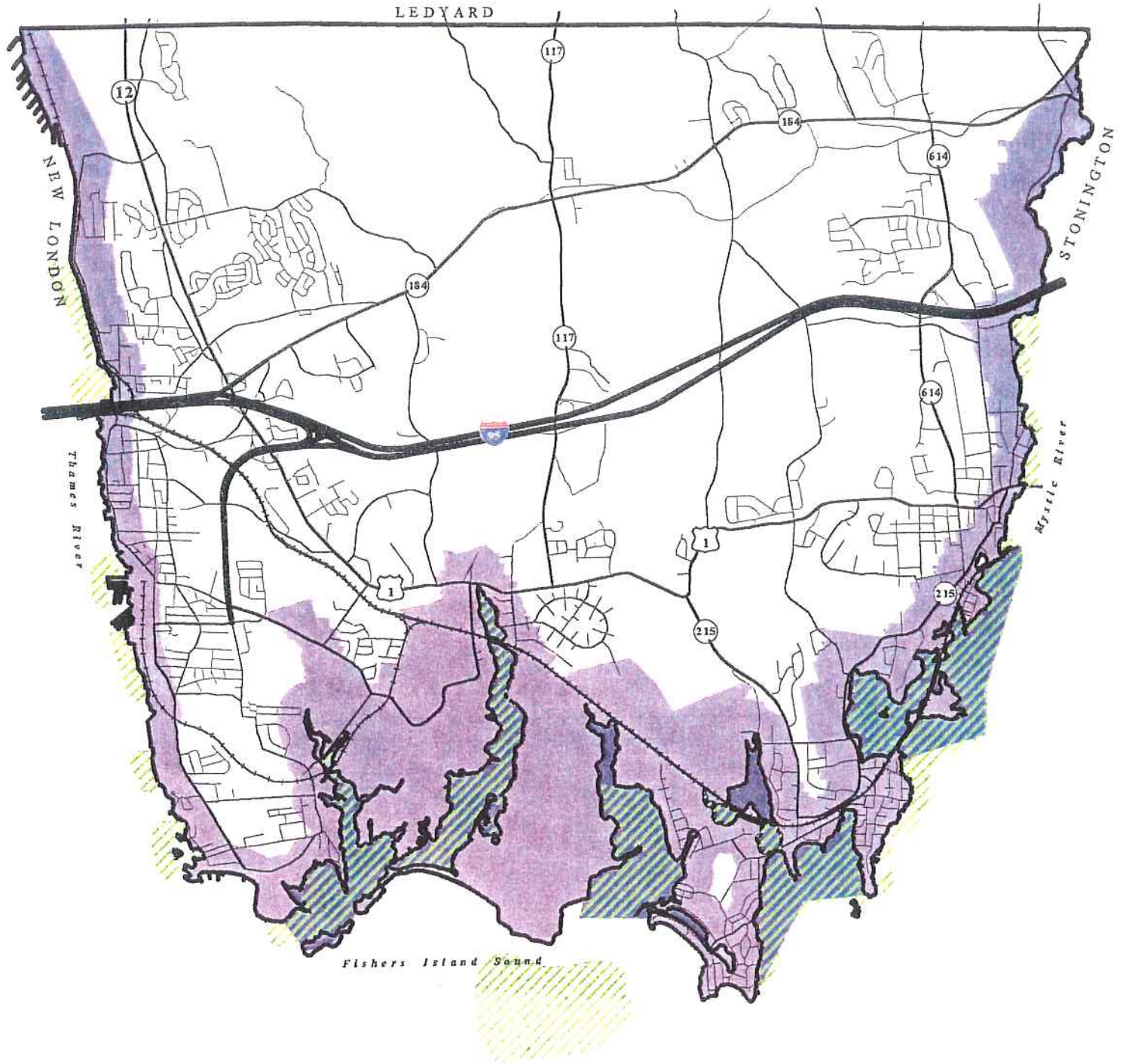
Water-dependent uses can include marinas, commercial fishing facilities, recreational beaches, and industrial or commercial uses dependent upon water for processing or cooling. In some cases, a non-water-dependent use (such as a restaurant or housing development) may be rendered water-dependent by providing reasonable coastal access to the general public, provided the site is not uniquely suited for a more active water-dependent use.

Recommendations




1. Continue to place highest priority and preference on the use of waterfront sites for water-dependent uses through the coastal site plan review process.

Coastal Area Resources Plan

Town of Groton, CT



Legend

-  Coastal boundary
-  General location of shellfish beds
-  Areas for special water quality protection

For detailed information on the location of coastal public access points, contact the Town of Groton for a Coastal Public Access Map.

5000 0 5000 Feet



Flooding Damage

Flooding damage can be aggravated by the placement of structures, particularly near or below the waterline.

For example, seawalls can exacerbate problems during floods by deflecting wave energy onto adjacent property or accelerating sand loss.

Since much beach-front property in Groton would be flooded in a repeat of the 1938 hurricane, the community must remain cognizant of the threat of coastal flooding and the need to minimize the danger to life and property.

While man-made structures such as groins, jetties, breakwaters, and bulkheads can slow erosion in some areas, they can also increase sand loss at other locations and threaten people, structures, property, and infrastructure.

Carefully Manage Coastal Development

Development activities continue in the coastal areas on numerous small parcels and major sites. Development in coastal areas can affect coastal resources and the cumulative impacts of development and redevelopment need to be considered. Opportunities should also continue to be explored for ways to provide public access and protect tidal wetlands and other coastal resources.

Efforts should continue to encourage or require buildings to be built as far back as possible from eroding shorelines and vulnerable beach areas. This includes the careful review of variance applications to the Zoning Board of Appeals for any activities proposed in coastal areas. Efforts should also continue to encourage "non-structural" erosion control measures and to oversee any structure to ensure that secondary or cumulative shoreline impacts will not result.

Recommendations

1. Continue to manage the cumulative impacts of development and redevelopment in coastal areas.
2. Continually review regulations affecting coastal areas to ensure that:
 - there are adequate controls for development, individually and cumulatively,
 - siting of development within coastal flood hazard areas (A- and V-zones) is discouraged, and
 - hazards to life and property are minimized.
3. Encourage or require property owners to build as far back from eroding shorelines and vulnerable beach areas as possible.
4. Consider flexible yard requirements to allow for and encourage larger separations of buildings from coastal high hazard areas (like FEMA "V" zones).
5. Develop a protocol to address redevelopment of buildings severely damaged or destroyed after a major coastal storm.
6. Continue to carefully review all coastal site plans for coastal flood and erosion control structures.
7. Discourage or prevent use of flood or erosion control structures except when unavoidable and necessary to protect infrastructure, a water-dependent use, or an inhabited residential structure that pre-dates January 1, 1980.
8. Strive to ensure that structural measures will not cause secondary or cumulative shoreline impacts.
9. Encourage or require use of "non-structural" erosion control measures (such as vegetated slopes and elevated foundations) when and where appropriate.
10. Continue to ensure that all coastal flood and erosion control structures are in compliance with appropriate state and federal requirements.
11. Consider purchase of shoreline properties at critical locations after significant hurricane or other storm events.

PROTECT HISTORIC RESOURCES

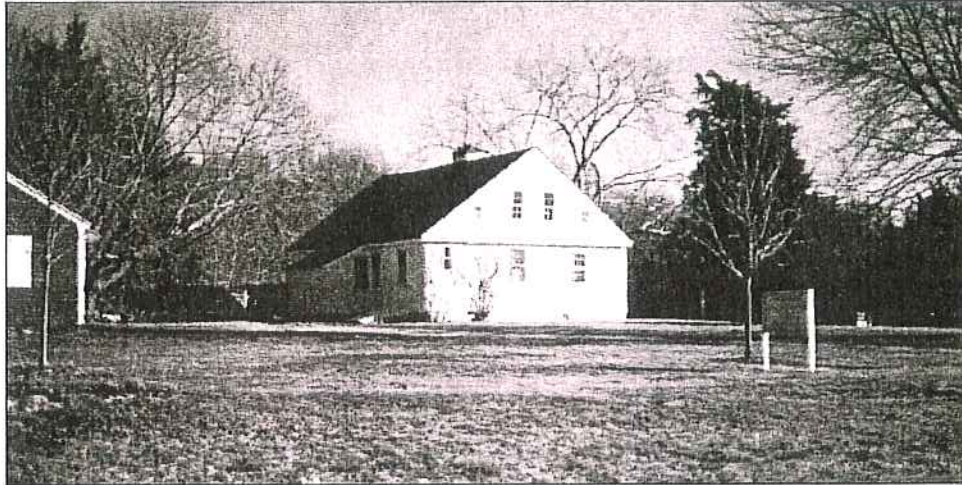


Overview

Preservation of historic resources is an important way for Groton to provide a sense of identity and stability, preserve community character, and maintain the Town's historical heritage.

Groton is a community rich in historic resources ...

Jabez Smith House



Local Cemetery



William Carlebach

Historic Importance

Groton is significant for the wealth of historic resources from different eras, some that are national in significance:

1. **The Pequot War**
The first major conflict between a Native North American people and colonists.
2. **America's Navy**
Actions during the Revolutionary War and War of 1812 that helped establish America's naval presence.
3. **Maritime Enterprises**
The entire fishing and maritime activities of the nineteenth century.
4. **Submarine Evolution**
The manufacture and deployment of the United States naval submarine force through most of the twentieth century.

More Information

Additional information on local historic resources can also be obtained at the Library, from the Municipal Historian, from the Groton Historic District Commission, Mystic River Historical Society, and from the Connecticut Historical Commission.

Continue to Identify Historic Resources

Groton contains many recognized historic resources and has undertaken extensive local programs to identify and protect these resources. Groton has clearly shown its commitment to historic preservation through:

- preparation of five historical and architectural surveys since 1992 identifying hundreds of buildings, structures, sites, and districts that may be eligible for listing on the State and National Registers of Historic Places
- preparation of a Historic Preservation Plan (1996) which identified potential new or expanded National Register Historic Districts and recommended strategies for historic preservation

In fact, Groton's local historic preservation efforts have been recognized through the Certified Local Government program administered by the Connecticut Historical Commission. This program provides financial assistance to communities that participate and Groton has used these grants to study historic resources.

Groton has twelve listings on the National Register of Historic Places (NRHP), five districts and seven individual sites. Entries on the National Register are also on the State Register of Historic Places (SRHP). The 1996 Historic Preservation Plan identified other locations with potential for designation as state or national historically significant sites or areas.

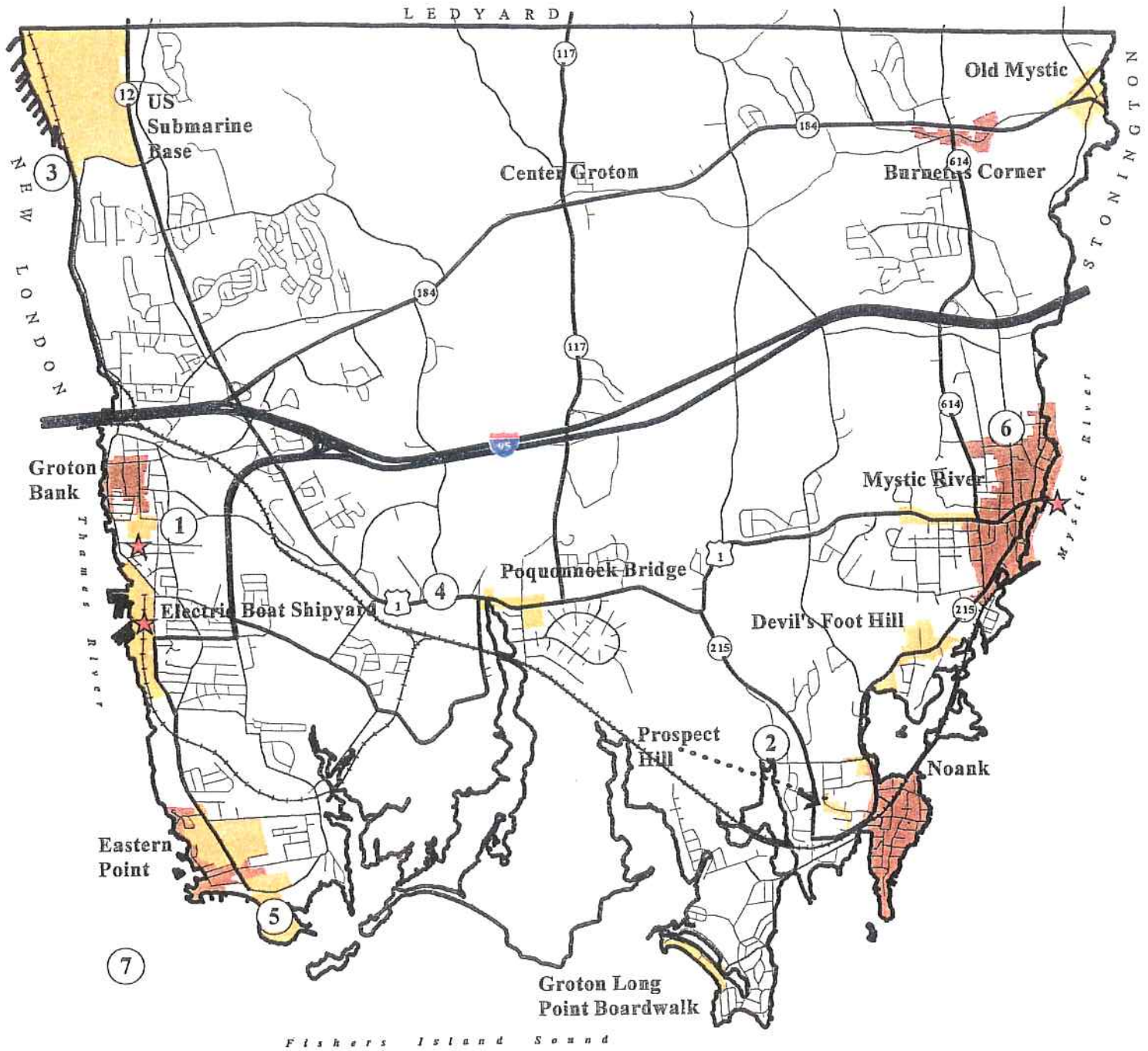
Resources on the National and State Register of Historic Places

<u>Existing NRHP Districts</u>	<u>Existing NRHP Sites</u>
A. Mystic River Historic District	1. Fort Griswold
B. Noank Historic District	2. Yeoman House (Cove Nook Farm)
C. Eastern Point Historic District	3. USS Nautilus (Submarine-SSN-571)
D. Groton Bank Historic District	4. Jabez Smith House
E. Burnett's Corner Historic District	5. Branford House
	6. Pequot Fort
	7. New London Ledge Lighthouse
<u>Potential Districts</u>	
Eastern Point expansion (Avery Point)	Devil's Foot Hill
Groton Bank expansion	Groton Long Point Boardwalk
Mystic expansion	Prospect Hill
Noank expansion	Poquonnock Bridge
US Submarine Base	Old Mystic
Electric Boat Corporation Shipyard	
<u>Potential National Landmarks</u>	
Electric Boat Corporation Shipyard	Fort Griswold
Mystic Bascule Bridge	

Other areas that may have significance for state or national recognition include the Gungywump area, the former railroad house in the Bluff Point area, and the World War II worker housing in the Midway Oval area.

National Historic Preservation

Town of Groton, CT



National Register of Historic Places

- Existing historic areas
- Potential future area designations and expansions
- 5 Existing sites (see text)
- ★ Potential national landmarks

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Existing Regulations

Groton's zoning regulations already contain several provisions that promote historic resource protection:

- the WDD zone which is intended to enhance the historic qualities of the Mystic area
- provisions for the reuse of historic properties as provided in Section 7.1-38

In addition, the Town of Groton has four local historic districts (LHD). The 1996 Historic Preservation Plan also identified locations with potential for designation as local historically significant areas.

Local Historic Resources

<u>Existing Districts</u>		<u>Potential New Districts</u>
W.	Center Groton Historic District	Old Mystic
X.	Mystic River Historic District	Fort Hill
Y.	Eastern Point Historic District	Poquonnock Bridge
Z.	Burnett's Corner Historic District	

Recommendations

1. Implement the recommendations of the 1996 Historic Preservation Plan, as appropriate, including nominating sites for state or federal recognition.
2. Continue to budget or obtain funds to prepare historic resource surveys and document specific resources.
3. Undertake efforts to identify archeological resources in Groton.

Continue to Protect Historic Resources

It is important to realize that designation of a historic resource on the National or State Register of Historic Places only recognizes historical merit and only affects activities involving federal or state funding. Designation may not prevent unreasonable destruction of important resources. In other words, these designations provide recognition but carry no special protection.

Local historic districts differ from State or National districts in that a local Historic District Commission regulates activities in local districts. The construction or demolition of buildings or structures or the alteration of external architectural features in districts require a Certificate of Appropriateness.

A new tool that is available for protection of historic resources is village district zoning (as authorized by Public Act 00-145). This act enables a zoning commission to develop regulations to protect village areas, an important distinction from a local historic district that must be endorsed by the property owners.

Thus, the most effective means of protecting historic resources include:

- ownership by preservation organizations or societies
- establishment of local historic districts with a governing board
- establishment of a village district in historically significant areas

A local *historic* district may be most appropriate in residential areas since it requires a two-thirds vote of those affected. A *village* district may be more appropriate in commercial areas where business owners may be less concerned with protection of historic buildings or character.

Village Districts

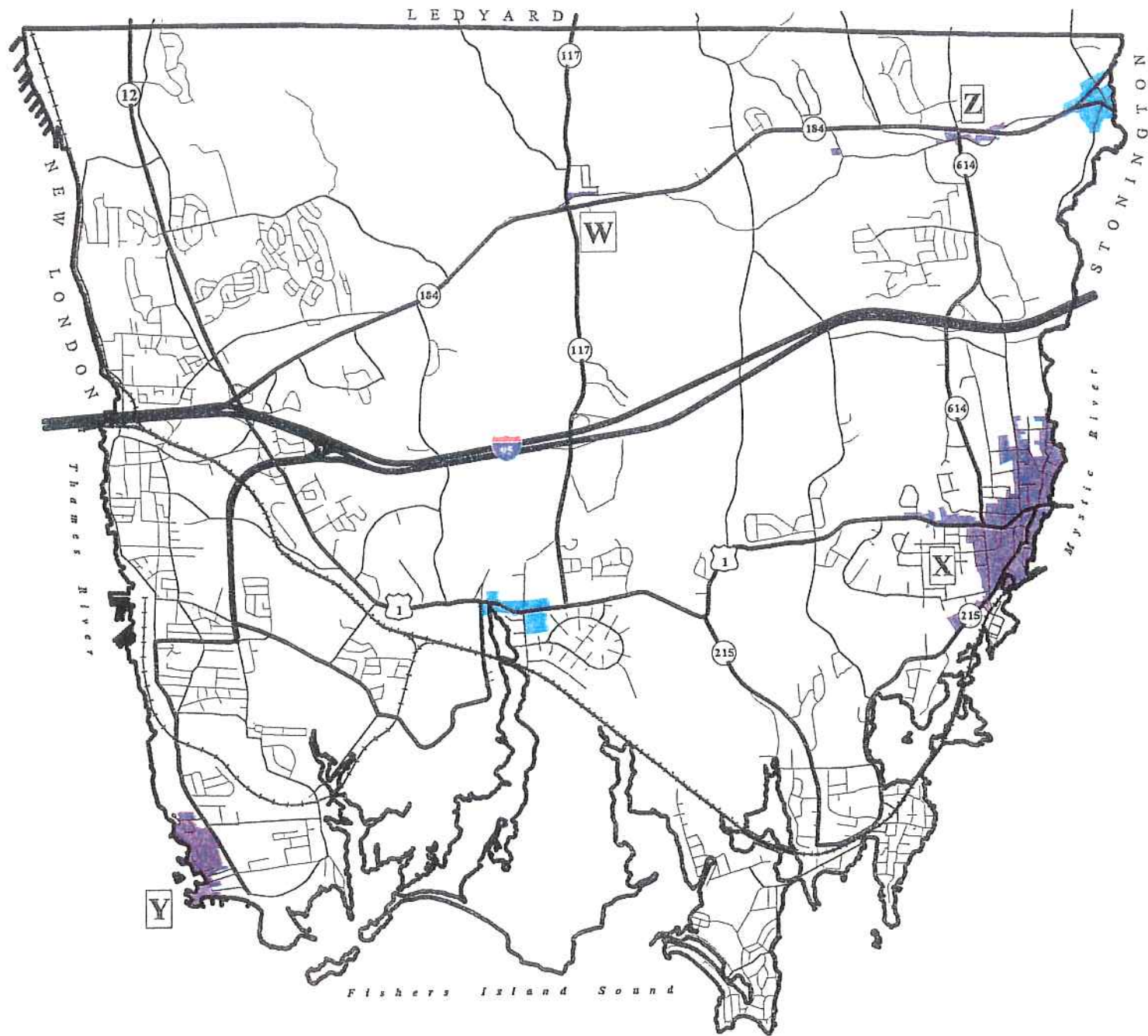
Zoning regulations establishing village districts shall protect the distinctive character, landscape and historic structures of such areas and may regulate:

- (1) alterations and improvements in such areas;
- (2) substantial reconstruction and rehabilitation of properties within the district and in view of public roadways.




CGS Section 8-2j

Local Historic Preservation

Town of Groton, CT



Local Historic Districts

-  Existing district
-  Potential new districts
-  Text reference (see page 52 for detail)

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Additional protection can come from adoption of local ordinances to promote historic preservation:

- a demolition delay ordinance (that allows time for exploring alternatives to demolition or for historical documentation)
- a tax abatement ordinance (that reduces or abates taxes on a historic property if taxes are a factor that threaten the structure)

As shown on the preceding maps, the boundaries of the National Register Historic Districts and local historic districts differ in certain areas. This situation can arise since:

- the National designation is largely ceremonial and its primary purpose is to identify significant historic resources
- the local designation involves a local ordinance that property owners must vote on and agree to be subjected to

In other words, the National/State designation best reflects the location of identified historic areas and the local designation best reflects the historic areas that have some measure of protection.

In addition, protection of historic resources can be promoted through education of property owners and other Groton residents about the importance of these resources to community character and overall quality of life.

Recommendations

1. In areas with historic significance, encourage establishment of local historic districts overseen by a Historic District Commission.
2. When appropriate, consider establishing village districts within the Town of Groton regulatory jurisdiction overseen by the Zoning Commission in:
 - business areas with historic significance or character
 - where no local historic district has been established
3. Consider adopting ordinances to provide for demolition delay, substantial rehabilitation delay, and/or tax abatement, when appropriate, for preserving historic properties.
4. Coordinate preservation activities of various jurisdictions on a town-wide basis so that all historic resources are managed and protected.
5. Encourage the efforts of local organizations that promote historic preservation.
6. Establish educational programs for homeowners to promote awareness of historical resources on their properties.
7. Encourage owners of archaeological and historical resources to give special consideration to preserving and protecting them.
8. Continue to maintain a municipal historian to preserve historic information.
9. Seek a central repository for historical information about Groton.
10. Amend zoning and subdivision regulations to allow the Commissions to require archeological surveys prior to construction
11. Maintain designation as a Certified Local Government in order to be eligible for funding assistance for historic preservation.

PROMOTE COMMUNITY CHARACTER

8

Overview

Community character and community spirit are intangible, but important, elements of Groton and the overall quality of life in the community.

Community character is a large part of what makes Groton special ...

Protect and Enhance Character Resources

While the elements of what comprises community character are different for each person, physical attributes are an important component. Physical character elements discussed elsewhere in the Plan include:

- **Natural Resources and Open Space** - Natural features and open space contribute to community character and strategies related to preservation of these resources are identified in the Plan.
- **Historic Resources** - Local historical and archeological features contribute to community character and strategies related to the preservation of these resources are identified in a special chapter of the Plan.
- **Village Areas** - The villages of Mystic and Noank are often cited for their character and are a source of pride for local residents.

Mystic in Winter



William Carlebach

Trees and Vegetation

Trees and vegetation are an important part of community character.

In some communities, tree protection ordinances have been used to protect significant or specimen trees, prevent unreasonable removal or damage, or manage tree clearing.

Other elements that contribute to the physical character of Groton include:

- **Scenic Features and Areas** - Scenic roads, panoramic views, and other scenic areas that enhance the character of Groton.
- **Architectural Characteristics** - The architecture of buildings in Groton significantly contribute to overall community character.
- **Undeveloped Land** – Undeveloped land, which leaves the perception of open space and contributes to community character.
- **Local Facilities** - Community character is also enhanced by local facilities such as recreation facilities and libraries.
- **State Facilities** – Such as Bluff Point Coastal Reserve, Haley Farm State Park, and other State facilities.
- **Agricultural and Rural Features** - Groton contains stone walls, barns, and other features that contribute to community character.
- **Vegetation** – Vegetation is another important aspect of community character.

Recommendations

1. Continue to protect natural resources, open space, coastal resources, and historical resources in order to enhance their scenic value and overall community character.

Protect Scenic Resources

Scenic Road Designation

State statutes (CGS Section 13b-31) allow the Department of Transportation to designate State Scenic Roads if they meet certain criteria.

Groton has adopted a local scenic road ordinance in accordance with statutory guidelines (CGS 7-149a).

Recognized scenic roads in Groton include:

- Sandy Hollow Road
- River Road

Scenic resources are one of the factors that contribute to community character. Scenic resources are considered to include areas (scenic areas that are viewed from elsewhere), and vistas (locations affording scenic views from them).

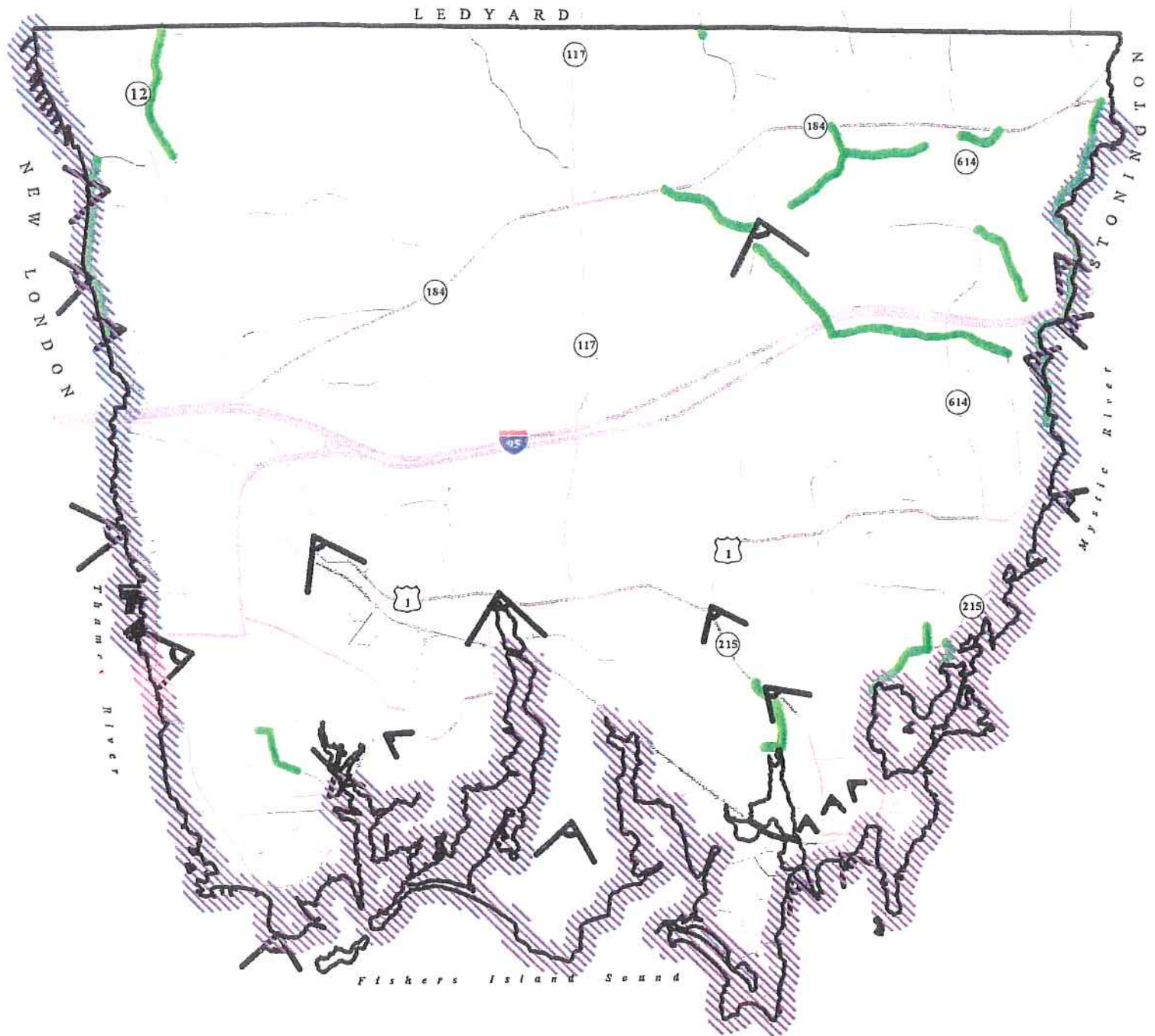
Some major scenic resources, such as ridgelines or coastal areas, are located on the map on the facing page. Other scenic resources include stone walls, barns, fences, tree canopies, and scenic roads (discussed in the Transportation chapter). Since these resources enhance the character of Groton and would compromise the unique beauty of the Town if not given special consideration, efforts to identify and preserve scenic resources must continue.

Recommendations

1. Continue to identify scenic views, scenic vistas, scenic roads, and other scenic resources in Groton.
2. Preserve or relocate scenic resources such as stone walls, barns, fences, and other scenic resources that are visible from public streets.
3. Amend land use regulations to include protection of scenic views, scenic vistas, scenic roads, and other scenic resources, especially in coastal areas.
4. Protect tree canopies from unreasonable destruction from utility pruning.

Scenic Character Map

Town of Groton, CT



Roads of Scenic Value

Primary

Cedar Road (part)
Cold Spring Road
Godfrey Road (part)
Haley Farm Lane
Military Highway (part)
Noank-Ledyard Road (part)
Oral School Road (part)
Pleasant Valley Road North (part)
Sandy Hollow Road (part)
Shennecossett Road (part)
Stanton Lane (part)
Yetter Road (part)




Secondary

Brook Street (part)
Lambtown Road (part)
Noank Road (part)
Packer Road (part)
Rogers Road (part)

Scenic Viewpoints

Brook Street, views south over Palmer Cove
Elm Street, views east over Beebe Cove
Fort Hill Road, views south toward Long Island Sound
Gravel Street, views toward Mystic Seaport
High Street, views east over Mystic River
Lestertown Road, views over Thames River
Long Hill Road, views south toward Bluff State Park
Military Highway, views over the Thames River at various points
New London Road, views south over Fisher's Island Sound
Prospect Hill Road, views south toward Long Island Sound
River Road, views looking south down the Mystic River
Runway Lane, views east over airport toward Bluff Point State Park
Tanglewood Area, views south over Long Island sound
Thomas Road, views over marshes on either side
Westview Avenue, views south over Long Island Sound
Williams Street, views looking east

Legend

-  Scenic coastal areas
-  Locations with scenic views
-  Roads of scenic value

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Sense of Place

A “sense of place” is enhanced when areas have:

- identifiable focal points
- defined edges
- strong structures

Areas, such as Mystic and Noank, that have such features are easily distinguishable from other areas, both in Groton and around the country, that have development patterns that do not exhibit these attributes.

In many respects, the current debate about “suburban sprawl” is a recognition that some areas do not have any real sense of place.

Enhance “Sense of Place”

Unlike many other communities, Groton already has a basic community structure that contributes to community character. In addition, Groton already has a number of places that are attractive and inviting to people because of the types of uses and activities that occur there. The reason that places such as Mystic and Noank are widely recognized to have community character is that they have a “sense of place.”

Groton should continue to encourage development patterns that contribute to, and enhance, the “sense of place” that exists in parts of the community.

While a “sense of place” is important, it would be inappropriate to simply copy elements that may contribute to a sense of place in other areas. In essence, if all places were to look or feel the same, none of these areas would have any real sense of place. As a result, care must be taken to develop a sense of place that is unique and appropriate for each area of Groton. Diversity in “sense of place” will also contribute to community character.

Maintaining a “sense of place” is also important. Some basic level of property maintenance should be encouraged or required. In addition, abandoned buildings should be addressed as promptly as possible (through renovation or improvement to make them ready for development) so that the property becomes ready for occupancy or development and the “sense of place” is maintained or enhanced.

Noank



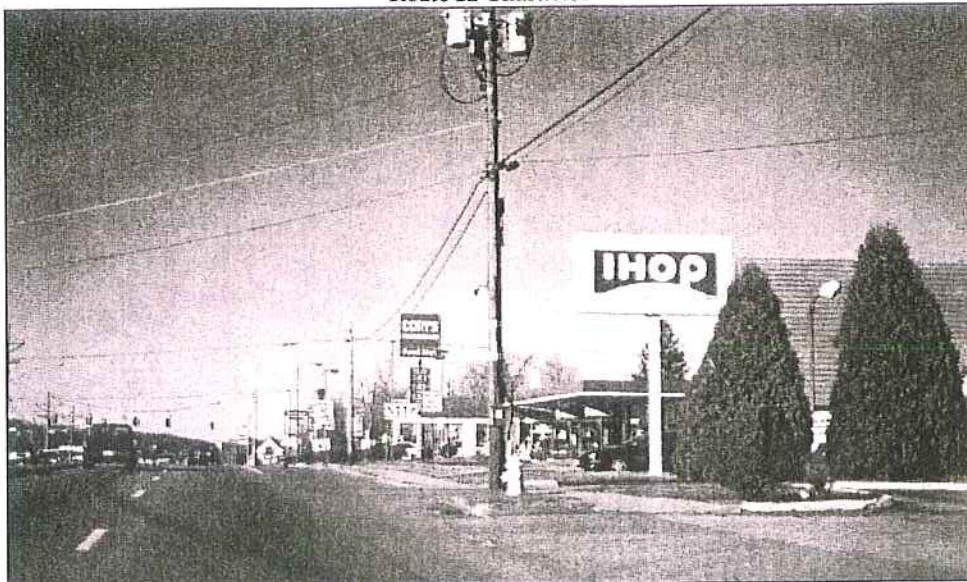
Recommendations

1. Continue to encourage development patterns that contribute to, and enhance, the “sense of place” that exists in parts of the community.
2. Encourage a diversity in “sense of place” in order to promote the unique and appropriate character of each area and the overall community.
3. Recommend adoption of a property maintenance code.
4. Address abandoned buildings as promptly as possible so that the property becomes ready for occupancy or development and the “sense of place” is maintained or enhanced.

Mystic Character



Route 12 Character



Design Review

At some time in the future, Groton may wish to consider establishing a design review process with members appointed from the community at large.

The design review process would not generally be applied to the development of single-family houses.

On the other hand, the process would be utilized for development of:

- multi-family uses
- business uses
- institutional uses
- special permit uses
- other uses that could have a significant overall impact on the community

Members would review plans and provide formal comments to the Planning Commission and/or the Zoning Commission about how to improve the design of buildings and sites.

Since the design review comments occur during the time period between receipt of an application and action by a Commission, it should not extend the decision timetable for an applicant. In addition, since the comments from the design review process are advisory, a Commission could choose to not impose conditions that it considered impractical or unrealistic.

In the future, the process could also be applied to other types of applications (such as subdivisions) if the Planning Commission felt it would be desirable.

Promote Good Design

While zoning is primarily concerned with land uses and intensity, community residents typically care most about the design of a particular proposal. It is this “disconnect” between perception and reality that causes a lot of anxiety about new development.

However, design and character are subjective issues. What some see as “good design”, others see as visually incompatible or inappropriate. In addition, design is relative -- what is appropriate in one area may not be appropriate in another simply because it does not relate well to the context of the buildings that surround it. In other words, good design is not absolute. Good design requires an understanding of context and scale and community character. It is hard to teach good design.

This is why Groton should establish design review guidelines within the community as a whole and for specific areas (since a different development character may be appropriate in Mystic as compared to the Drozdyk Drive area). Experience in other communities has shown that when developers understand what design standards are expected or encouraged, they are more likely to provide what the community has indicated that they want.

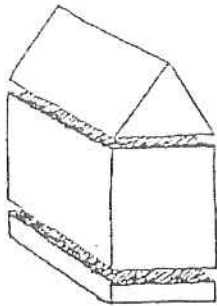
As discussed in the sidebar, Groton may also choose to establish a design review process in the future to enhance design guidelines and/or to review specific applications. Such a process would involve residents in guiding the physical design of their community and help promote more and better discussion about community design.

Recommendations

1. Establish and maintain design review guidelines for commercial, multi-family residential and other development and activities to promote design consistency and overall appropriateness.
2. Consider establishing a design review process at some time in the future, if appropriate.

Sample Design Guidelines

Basic Building Form



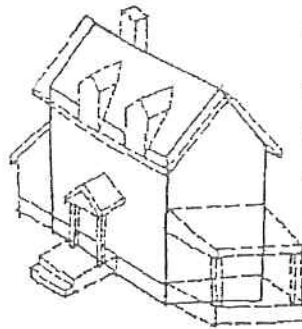
BASIC FORM

ROOF AND GABLES

MASS BULK OF THE BUILDING

FOUNDATION

Building Enhancements



MODIFIERS TO THE FORM

CHIMNEY

PORCH

ROOF AND GABLE

ADDITIONS

ENTRY COVER

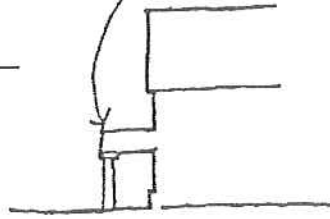
PORCH/ROOM

Appropriate Use of Building Enhancements

CORNERS ADD INTEREST TO A LARGE UNBROKEN ROOF LINE

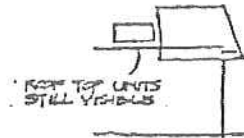


PORCHES AND COLUMNS CREATE MORE DEPTH AND INTEREST TO BUILDINGS



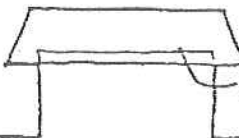
Inappropriate Use of Building Enhancements

ROOF LINE IS CLEARLY AN ADD-ON



ROOF TOP UNITS STILL VISIBLE

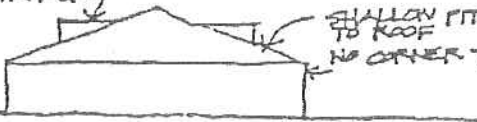
ROOF STILL NOT ATTRACTIVE TO EYE



ORIGINAL ROOF LINE

CORNERS ARE CLEARLY AN ADD-ON

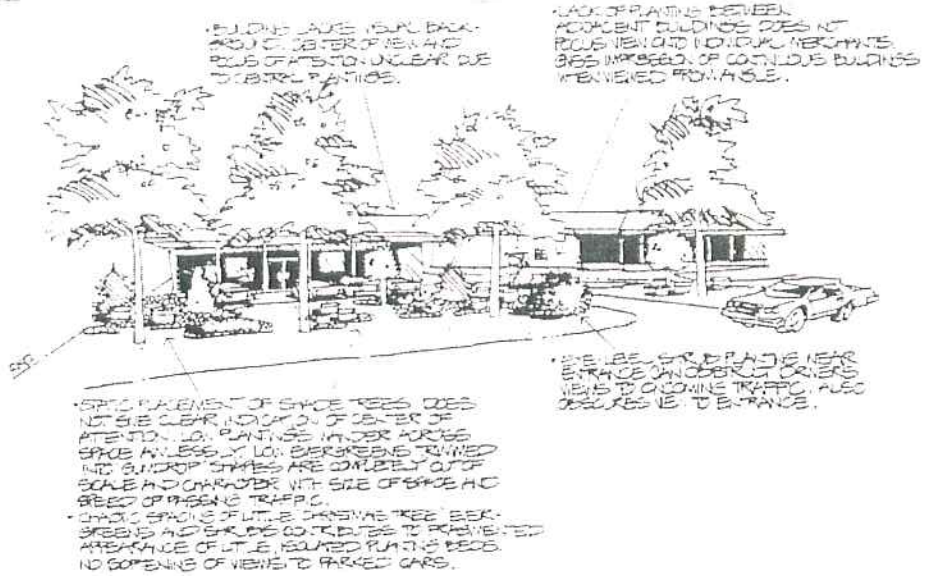
USUALLY BUILT OF METAL OR DRUM-TYPE MATERIALS



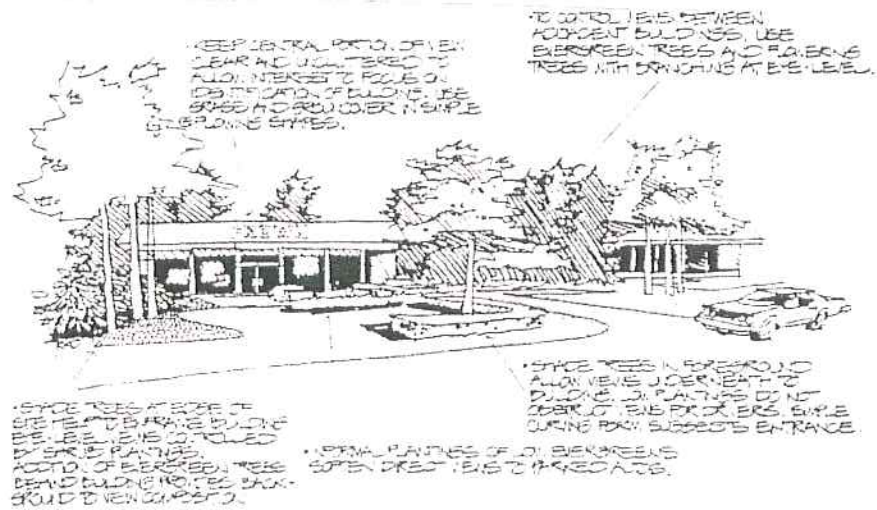
SHALLOW PITCH TO ROOF
NO CORNER TREATMENT

Sample Design Guidelines

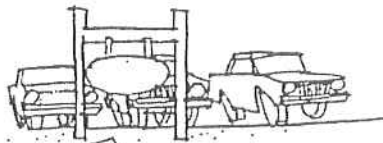
Typical Planting Mistakes



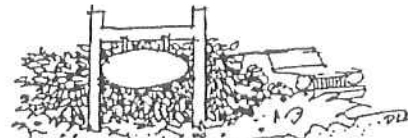
Recommended Planting Arrangement



Recommended Signage Landscaping



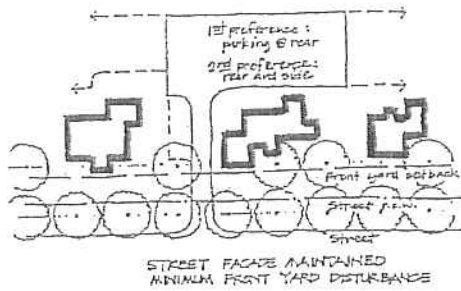
SIGN WITH OPEN SUPPORTS CAN BE CONFUSING AND DIFFICULT TO READ WHEN SEEN AGAINST "BUSY" BACKGROUND.



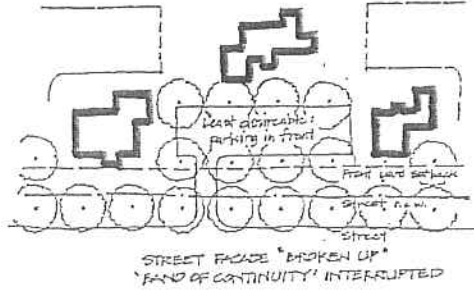
PLANTING IMMEDIATELY BEHIND SIGN ELIMINATES COMPETITION FROM BACKGROUND FOCUSES ATTENTION ON SIGN.

Sample Design Guidelines

Desirable Building Location For Streetscape Continuity

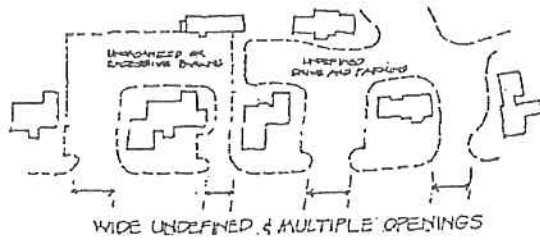


Undesirable Building Location For Streetscape Continuity

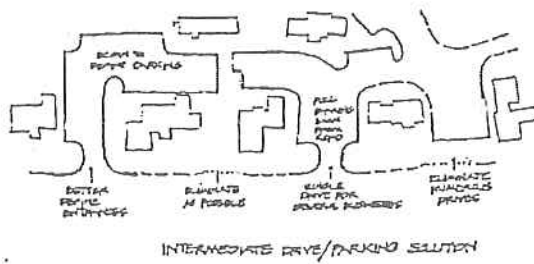


Recommended Consolidation of Buildings, Parking, and Access

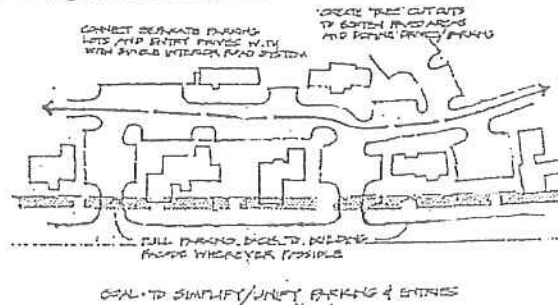
Initial Condition - Individual Parking Lots With Multiple Driveways



Intermediate Condition - Consolidated Driveways



Ultimate Condition - Integrated Parking Lots and Pedestrian Improvements



Perceived Open Space

Undeveloped land promotes community character since it is also “perceived open space”. Retaining undeveloped land can have positive fiscal implications for the community if it might otherwise be developed residentially.

Some land in Groton currently participates in the PA-490 program. Forest lands, which are designated by the assessor, are the largest category of PA-490 lands. Farm lands, which are also designated by the assessor, are much less extensive.

If the open space assessment were used in Groton, it would be based on criteria established by the Planning Commission and adopted by the legislative body.

Retain Undeveloped Land

Undeveloped land also adds to community character since it is perceived as “open space”. As more and more land is developed, it is the loss of “perceived open space” that is typically the greatest concern to residents. However, there are strategies available to preserve undeveloped land.

For example, the Public Act 490 program (CGS 12-107e) is an assessment policy that encourages land to remain undeveloped as “perceived open space.” The program helps to reduce development pressure by assessing land as farm, forest, or open space, reducing the tax burden on those parcels and making such land more affordable to own.

In order to encourage the retention of undeveloped residential land, the Plan recommends that the Representative Town Meeting adopt the following policy for open space assessment:

1. For any residentially zoned parcel that is more than two times the minimum lot size for the zone in which it is located, that portion in excess of the minimum lot size shall be eligible.

OR

2. For any residentially zoned parcel that is owned separately from any adjoining land and has an area of at least ten acres.

While the PA-490 program does not result in permanent open space preservation, it does reduce the local property tax burden as a reason that property might be developed in the future and promotes land ownership strategies that enhance the perception of open space in Groton.

Recommendations

1. Establish an open space assessment policy in order to promote the retention of undeveloped land in residential zones.
2. Consider establishing a local tax abatement program (similar to Public Act 490) for residential property that stays undeveloped for an extended period of time (more than 10 years).
3. Consider establishing a program to purchase development rights to preserve farmland.

ENHANCE COMMUNITY PRIDE AND SPIRIT

9

Overview

Community pride and spirit is also something that is important to Groton. Community character and quality of life will be maximized when residents are proud of Groton and what it has to offer.

Community pride and spirit are important to the overall quality of life in Groton ...

Groundbreaking



Promote Community Spirit

Successful “communities” have a pride and spirit that permeates local events and activities. This attitude, when nurtured, creates an on-going culture of positive results. People want to contribute to making such communities successful and this energy becomes self-perpetuating. Groton needs to assure that this positive energy is cultivated and continues to grow.

Elements that contribute to community spirit in Groton include:

Local Organizations - Local organizations also build community spirit. These include religious institutions, charitable organizations, sports leagues, and other organizations where people help each other and their community accomplish important priorities.

Volunteer Contributions - Volunteer contributions have a lot to do with what makes Groton special. Over the years, it is the tireless devotion of residents to making Groton a better place that has helped preserve community character, built community spirit and made Groton the place that it is today. It is simply not possible here to recognize everyone that has contributed to Groton’s evolution over the years.

Local Programs Or Events - Events (such as community festivals, art or antique shows, fireworks displays, and community concerts) are important occasions when citizens of all groups join in a common activity that contributes to community spirit and character.

Local Recognition - Community spirit and pride is enhanced by positive publicity of local events and activities. This includes those things important to residents such as educational quality, community appearance, local excellence, and other factors.

Unique Local Sites And Facilities – Sites such as Mystic, Noank, Groton Long Point, Avery Point, Bluff Point, the libraries, historic sites (such as the USS Nautilus and the Groton Memorial), and similar facilities that people recognize as being “Groton” build community pride and spirit.. Community pride and spirit can also be enhanced through broader recognition of factors such as educational quality, community appearance, local excellence, and other factors.

Recommendations

1. Continue to coordinate and promote unique local programs or events that promote community pride and spirit.
2. Maintain and enhance unique local services or facilities that promote community pride and spirit.
3. Continue to promote recognition of Groton’s special qualities in order to promote community pride and spirit.
4. Encourage other actions and programs that promote a sense of community.

Enhance Neighborhood Identity

One of the most interesting features of Groton is the diversity of neighborhoods and identities. Groton should try to find ways to recognize and enhance the unique features of each part of the community. These efforts will help promote a diverse community and enhance community pride and spirit.

However, this diversity must also occur in a balanced way that makes it clear that each neighborhood is a part of the larger community that is Groton.

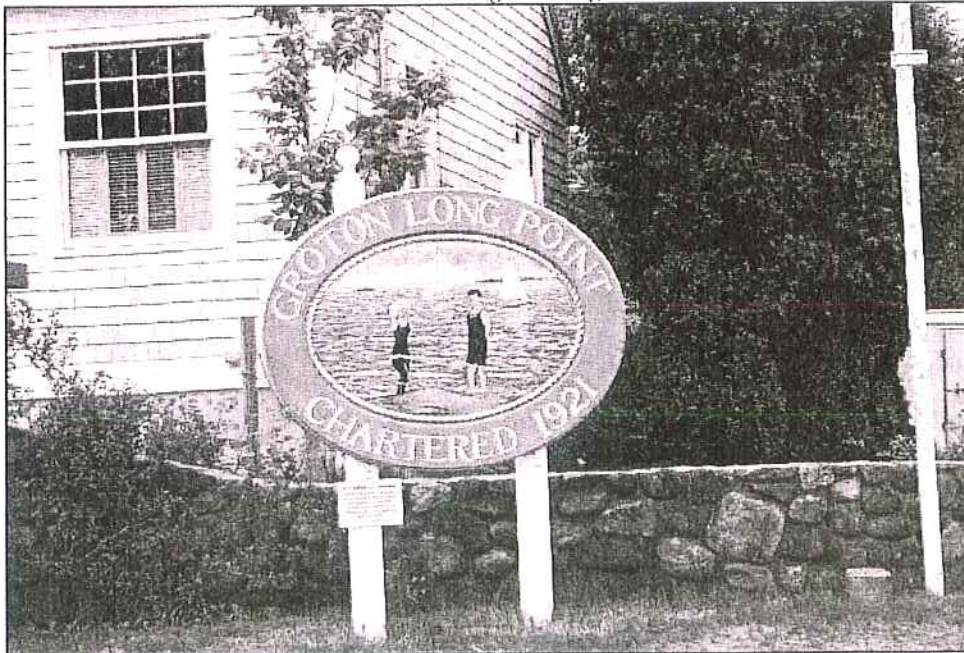
The philosophy should not be to promote the neighborhood over the community or the community over the neighborhood. In reality, each must work with the other and with other local organizations if Groton is to promote itself most effectively.

Strong neighborhoods all working together will help make a strong community.

Recommendations

1. Recognize that strong neighborhoods all working together will help make a strong community.
2. Find ways to recognize and enhance the unique features of each part of the community while making it clear that each neighborhood is a part of the larger community that is Groton.
3. Encourage each neighborhood to work effectively with other neighborhoods and with other local organizations.

Groton Long Point Sign



Promote Community Involvement

Volunteers have a lot to do with what makes Groton special. Over the years, many past and present residents have worked to make Groton a better place. This has helped preserve community character, built community spirit, and made Groton the place that it is today. Efforts need to be devoted to recognizing and encouraging these significant contributions.

In addition, efforts must be devoted to having people become actively involved in their community. When people sit back and criticize local activities rather than contribute in meaningful ways, community pride and spirit are eroded.

Groton's unique government structure presents a special challenge to involving residents in the larger community. For example, Groton residents have tended to identify their location as "the City" or "Mystic" or "Noank" or other areas as if these areas were not part of the overall community of Groton. While it could be helpful to organize "neighborhood" events (like "A Taste of Mystic" or "Navy Week" or "No Anchor Days"), it must be stressed that they are activities intended for all Groton residents and the region.

Recommendations

1. Continue to encourage volunteers who promote community activities and the overall quality of life in Groton.
2. Establish a more active program to develop volunteers.
3. Continue to promote and encourage volunteer organizations.
4. Recognize local volunteers (through such annual events as a picnic, a "hometown heroes" plaque, and/or "volunteer of the year" designation).
5. Strive to involve neighborhoods in the overall community that is Groton.
6. Encourage "neighborhood" events that involve all Groton residents in celebrating what makes Groton special.

Planning Department Open House



William Carlebach

Improve Communications

Communication within a community is an important component of involving residents and maintaining community pride and spirit. There is little doubt that communication will continue to be a challenge that will require attention and resources. With the growing use of the Internet and community television, there are several avenues available to inform residents about current issues and important community priorities.

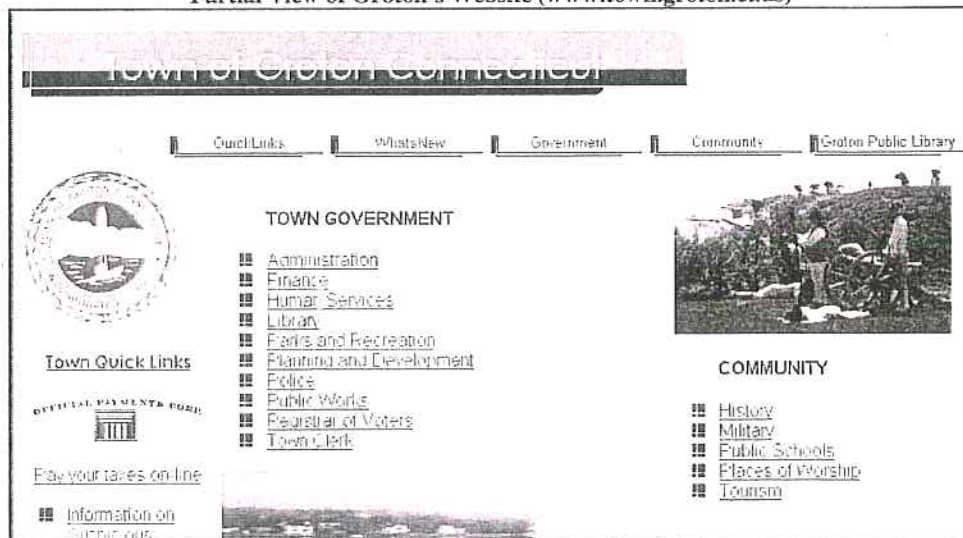
A regularly updated community “web page” which provides information on meeting agendas and current issues and allows for e-mail would be an important method of community involvement. Similarly, special issue shows on community television providing three to five minute issue summaries and opportunities for community feedback and editorials would also facilitate community involvement in important issues.

Maximum use should be made of these resources to keep residents aware of community activities and events. If additional resources - either human or financial - are required, those resources should be directed towards community education and involvement.

Recommendations

1. Educate and communicate information about all community activities.
2. Publish a “community calendar” to inform people of coming events.
3. Maintain a Groton “website” to provide information on community activities and allow for e-mail and other communications with Town departments.
4. Continue to use Community Television to provide information on local issues and events to residents.
5. Continue to publish local newsletters and other information.
6. Promote better coverage by local newspapers.

Partial View of Groton’s Website (www.town.groton.ct.us)



Promote And Market Community Assets

Groton is a unique and special place but many people do not know what Groton has to offer. To overcome this, Groton should undertake a program to market Groton to a broader audience. This will have a number of community benefits:

- it will make Groton more visible in terms of economic development
- it will bring visitors to Groton businesses
- it will promote community spirit among Groton residents

This program should highlight Groton's "sense of place" in both existing and new nodes, the coastal resources that exist here, the major employers located here, the incredible history that took place in Groton, and other resources.

Recommendations

1. Undertake a program to market Groton to a broader audience.

ENHANCE PHYSICAL STRUCTURE

10

Overview

Community structure addresses the overall physical organization of Groton. Structure is an important consideration in the Plan since it addresses how people, both residents and visitors, perceive and understand the community. One only need look at communities with no discernible structure to realize that community character has been adversely affected.

Developing and enhancing a strong community structure will enhance community character and the establishment and maintenance of a meaningful community structure can be an important legacy of the planning process.

Structure is also an important guide for land use regulations and decisions. Regulations can be designed and implemented to reinforce the community structure and enhance community character.

A sense of desirable community structure will help guide local actions ...

Node At The Navy Base



What Are Nodes?

Nodes are areas of more intense activity that serve as a focal point for the surrounding areas. Nodes can be defined as including office, retail, and institutional uses at a scale appropriate for the location.

Mystic Node

In the Mystic area, the node would most likely include the areas along Route 1 from High Street to the Mystic River and extending along Water Street.

Downtown Node

At the present time, the area on Route 1 between Meridian Street Extension and Poquonock Road appears more “strip” oriented than “node” oriented.

However, the Lane, Frenchman and Associates study of this area entitled Downtown Development Program (1984) shows how the character of this area could be configured more like a node.

Reinforce Community Structure

In Groton, residents and visitors all identify most strongly with the mixed use village pattern that exists in Mystic and Noank and, to some extent, in the City of Groton. People feel comfortable when they are in areas like these with a “sense of place”.

Yet, the most prevalent form of development in Groton these days is not like this. Most current residential development in Groton is occurring in subdivisions that, when viewed in their totality, are contributing to the pattern of “suburban sprawl” that people are averse to. These development patterns are not contributing to overall community character. In addition, these subdivisions are not always occurring in ways that protect natural resources or open space in the areas where they are being developed.

Similarly, most business development in Groton is occurring in strip fashion along major roads with separate curb cuts and limited architectural character. These areas also do not contribute to meaningful community character or add to the quality of life in Groton.

What is of greatest concern is that the type of development that does not enhance community character is exactly what Groton’s land use regulations require. While Groton, unlike some other areas, has a wonderful foundation of “places” to work from, recent development patterns have diluted those development patterns that contribute most to community character.

The Plan recommends that efforts be devoted in Groton to promoting development that is more in keeping with the best elements of the historical structure of the community with more “nodes” than “strips”.

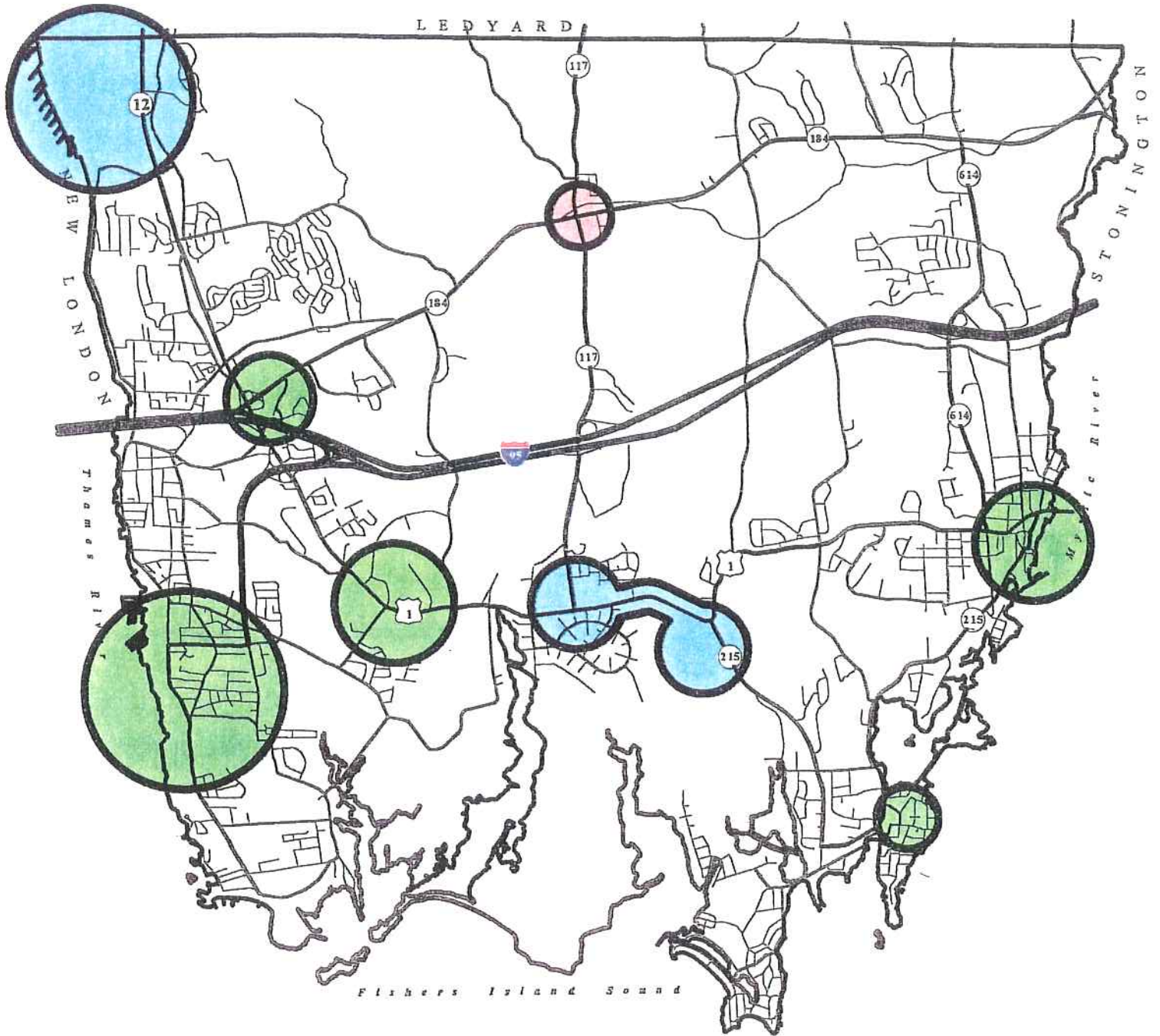
In order to address these issues and help turn the tide back to development patterns that enhance or contribute to community character, the Plan recommends encouraging the development and enhancement of mixed use nodes at appropriate places within the community. Village district zoning (as allowed by Public Acts 98-116 and 00-145) could be considered for use in each of the mixed use nodes.

Recommendations




1. Recognize that many of Groton’s historic villages have a strong “sense of place” that should be enhanced in order to promote community character.
2. Recognize that these areas constitute identifiable “nodes” with diverse uses and densities that enhance community character.
3. Review and revise land use regulations to promote and enhance existing nodes and establish new nodes in appropriate areas.
4. Use mixed-use nodes as a major organizing feature in the future development of Groton.
5. Educate Groton residents about “nodes” to overcome possible resistance.

Community Structure Plan

Town of Groton, CT



LEGEND

-  Mixed use node / concentration
-  Institutional node / concentration
-  Commercial node / concentration

5000 0 5000 Feet



Connecting Centers

While one central focal point will help further community identity and cohesiveness, such goals may also be accomplished through the establishment of more than one major focal point.

Resolution of the number and location of focal points will need to evolve over time.

Efforts should be made to provide thematic connections between nodes that could include the following components:

- Transportation / transit system links
- Bikepaths and sidewalks
- Urban design consistency
- Streetscape amenities
- Signage
- "Gateway" identification
- Public art

Seek A Central Focal Point For Groton

Since Groton developed from the outsides in (due to the early maritime focus), it has no real town center. In recent years, whatever town center may have evolved has been diluted with the dispersion of community and other facilities to diverse locations that do not support an overall focal point.

Groton should strive to develop a community focal point in the future that will serve as a gathering place for the community and a node for a variety of uses and activities. The areas that seems to present the best opportunities for development of a community focal point are along Route 1 near:

- Meridian Street Extension and Drozdyk Drive
- Route 117
- Groton Long Point Road

Each of these locations already contains some commercial or institutional uses that might provide a foundation for a community focal point.

Groton should work towards establishing and nurturing a central focal point in these general areas. These locations should be explored before any other location is selected.

Recommendations

1. Seek to establish a central focal point for Groton.

"Downtown" Groton



Aerial Photograph of Town Center Area



Strip Development

Strip-type development typically refers to non-residential development that occurs along major roads in a linear fashion and is generally characterized as:

- having wide and shallow lots
- individual or strips of stores that orient towards parking areas between the building(s) and the street
- having one-story buildings with very simple architectural features
- multiple curb cuts
- limited pedestrian interconnections between sites
- uncoordinated signage
- sparse landscaping

Nurture Each Node

During the planning period, detailed study of each node and the surrounding areas should be undertaken in order to:

- identify and reinforce the important characteristics of each area
- encourage appropriate mixed uses and maintain an appropriate balance among different uses
- promote the compatible development of these areas, and
- avoid “strip” type development, enhance overall pedestrian and vehicular circulation, and address parking and circulation issues

The studies should consider how Groton could:

- enhance each existing and proposed node and preserve the character of each area.
- improve the appearance and function of each node by better integrating parking and developing a streetscape plan.
- provide incentives for property owners to preserve and maintain their properties (such as tax, loan/grant, and code incentives).
- increase marketing and tourism for nodes through public awareness, education, and the creation of tourism amenities.
- balance tourism with residential needs.
- connect nodes with pedestrian walks, trails, and transit.

One way to encourage mixed uses where appropriate in each node would be to adopt a regulation that requires that a certain percentage of each development within a defined area (the center of the node) be devoted to business and residential uses. By collecting information on the existing mix of residential and business uses, an appropriate percentage for each area could be determined. Alternatively, a range of desirable percentages could be established for each area and development that did not upset these parameters could be allowed.

The studies should evaluate the residential and business zoning and consider alternative zoning patterns. Certain areas might be considered for rezoning based on the prevailing lot sizes and adjustments to some zoning designations and/or boundaries could be considered so that zoning boundaries follow property lines wherever possible. A detailed sidewalk inventory and Plan should be included. The studies should also review and take appropriate advantage of P.A. 98-116 authorizing the creation of village districts.

Recommendations

1. Undertake detailed study of each node and the surrounding areas during the planning period as outlined above.
2. Promote the uniqueness of each node individually and as an important component of the entire community.
3. Consider adopting regulations to encourage mixed uses when and where appropriate within each node.

ENCOURAGE APPROPRIATE RESIDENTIAL DEVELOPMENT

11

Overview

While the previous discussion of nodes is important to the overall form and function of Groton, it only addresses some limited land areas in the community. This raises the question as to how Groton should address future growth and change in these other areas. Most of these other areas are zoned residentially.

Groton should continue to carefully guide residential development ...

Residential Development



1990 Percent Single-Family

No. Stonington	91%
County	65%
State.	62%
Groton	57%
New London	31%

1990 Renter Occupied

New London	57%
Groton	55%
County	35%
State.	34%
No. Stonington	12%

1990 Seasonal Occupancy

County	5%
Groton	3%
State	2%

Changing Household Sizes

	1980-90 Change
1 to 2 people	+1,709
3+ people	+240
Total	1,949

The Connecticut Department of Housing estimated that the Town of Groton contained 17,057 housing units in 1998. While Groton led the region in housing growth in the 1970s and 1980s, growth has slowed significantly in the 1990s due to economic changes.

**Comparison of Housing Growth
(ranked by 1990-96 growth)**

	1970 - 80	1980 - 90	1990-96
Waterford	869	952	455
Montville	988	732	406
Stonington	859	1,177	381
Groton	2,557	2,734	334
Ledyard	1,079	835	168
N. Stonington	338	424	108
New London	863	546	-28

Groton has a diverse mix of housing types. Groton contains fewer single-family units and more multi-family units than county or state averages. In addition, Groton is unique because it contains a large number of Navy housing accommodations (about 16 percent of all housing units in Groton).

In terms of occupancy, many of the housing units in Groton are renter-occupied due to the presence of the Navy Base and the nature of employment at Electric Boat Corporation. In addition, some units in Groton are used only for seasonal occupancy.

More than half of all housing units in Groton in 1990 were occupied by one or two people. In fact, the number of one- and two-person households surpassed the number of three- or more person households for the first time in 1990.

In terms of future development potential, it is estimated that Groton could eventually be a community of about 60,000 people and about 23,000 housing units. This is an increase of about 18,000 people and 6,000 housing units from what currently exists in Groton. This portion of the Plan looks at how to manage this future growth to encourage the most appropriate residential development.

Promote Open Space Development Patterns

Groton's current zoning and subdivision regulations promote a pattern of residential development that, in the long run, will likely detract from the character that residents of the community have indicated is important to them. For example, many subdivisions result in homes strung out along roads with little sensitivity to the character of each parcel of land and its natural resources and with little preserved open space.

There are several reasons for this. While current regulations are designed to ensure that building lots contain usable areas for home sites, the dimensional and other requirements in some zoning regulations result in a mechanical approach to subdivision design. This results in a "cookie cutter" approach to subdivision design rather than in response to the natural capabilities of the parcel.

Open Space Development Pattern in Groton



The Plan recommends that Groton consider modifying local regulations to encourage what are known as open space development patterns. The graphics on the following pages illustrate the difference between "conventional" development patterns and "open space" development patterns.

The recommended program includes:

- adopting a definition of buildable land
- using a density regulation to regulate development yield
- requiring a specific percentage of a parcel be preserved as open space
- providing flexibility in minimum lot size requirements within acceptable Health Code standards

Single Family Development Patterns

Conventional

A parcel of land is divided into residential lots with little or no dedicated open space.

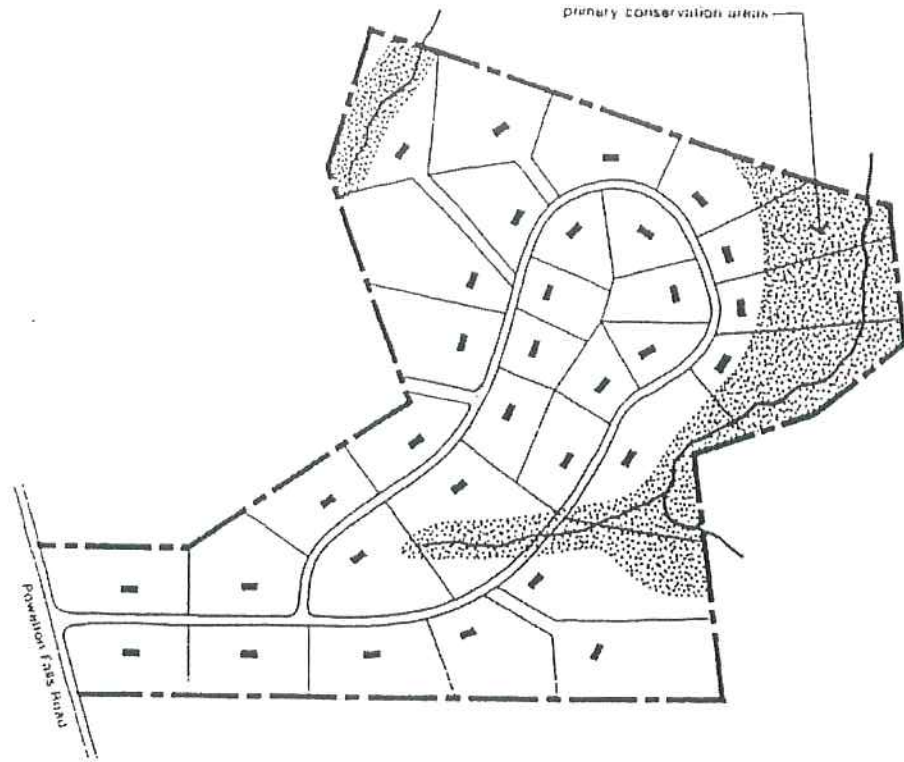
Open Space

A parcel of land is divided into roughly the same number of residential lots that are smaller in area than in a conventional development and the remaining area is preserved or dedicated as open space.

Conventional Subdivision Design

Plan View

32 lots on 41 acres with 10% preserved open space



Oblique Aerial View

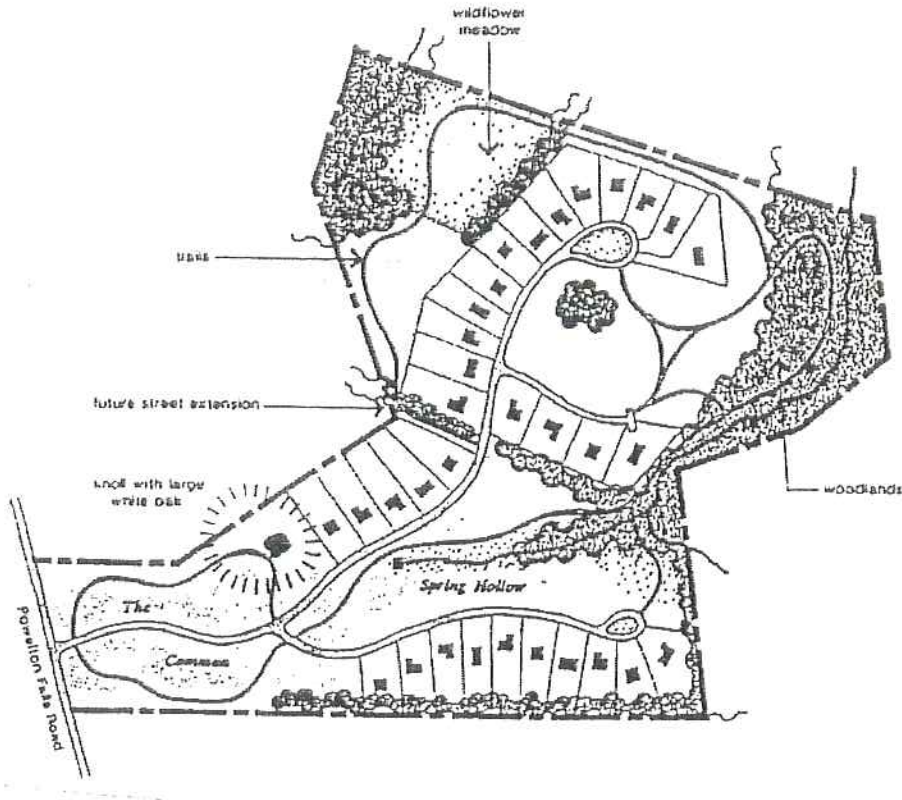


Source: *Conservation Design For Subdivisions*, Randall G. Arendt, Published by Island Press, Washington, DC.

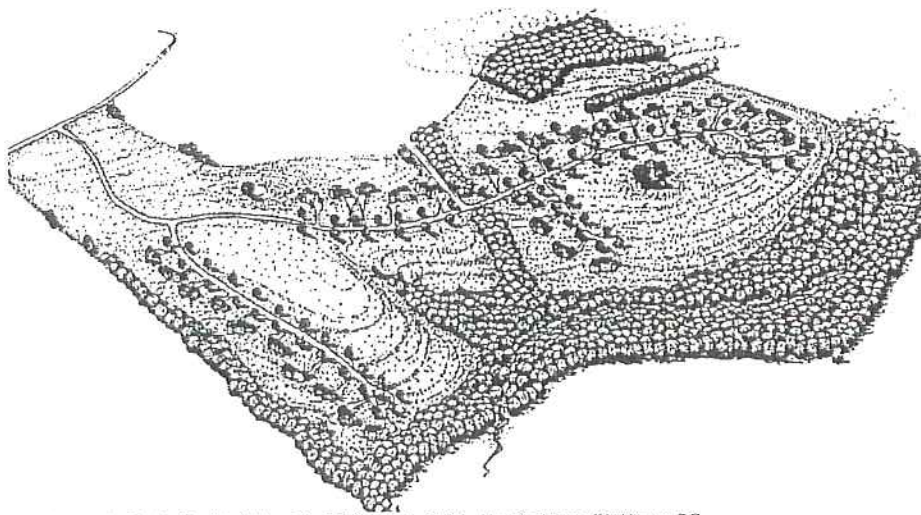
Open Space Subdivision Design

Plan View

32 lots on 15 acres with 65% preserved open space



Oblique Aerial View



Source: *Conservation Design For Subdivisions*, Randall G. Arendt, Published by Island Press, Washington, DC.

Buildable Land

A buildable land regulation excludes or discounts areas that contain serious constraints to development (such as wetland, watercourse, floodplain, and steep slope areas) when determining the number of units that can be built. For example, a 25 acre parcel with 5 acres of wetlands and steep slopes may have a total of 20 buildable acres.

This definition would apply to any land proposed for subdivision or multi-family development.

Density Definition

A residential density regulation (units per acre) regulates the number of homes that can be created in a development based on the amount of buildable land. For example, a parcel with 20 buildable acres at a density factor of 0.70 units per acre would result in a maximum of 14 units that could be built on that property.

Density is used to regulate development yield from a piece of property.

Density Standards

Prior to adoption, density standards should be compared to actual development experience in Groton, and be reviewed to ensure design flexibility.

It will be important to place a note on approved subdivisions that oversized lots cannot be further subdivided, and preserve a set of assessor maps that show the configuration of property at the time the residential density regulation was adopted.

Since the maximum yield (number of lots) is determined by the density regulation, the regulatory review process then focuses on determining the *best overall plan* for the development and conservation of the parcel. The resulting development pattern will help preserve natural resources, be compatible with the neighborhood, promote an open space system, and protect the character of the community.

By using residential density to regulate the number of lots and by allowing smaller lot sizes, more of a parcel can be preserved as open space. This open space can be located on a parcel to conserve sensitive natural resources, buffer adjacent uses, protect scenic views, and contribute to the overall open space pattern in Groton.

An open space development program will not result in any additional lots being built on a particular parcel, but it will encourage development patterns that are more in keeping with people's perception of, and desires for, Groton.

The Commission should also consider allowing other flexible development types that preserve meaningful open space.

Recommendations

1. Modify local regulations to encourage open space development patterns.
2. Adopt a definition of buildable land and a density regulation that is applied to the amount of buildable land on a site.
3. Require a specific percentage of land area be preserved as open space.
4. Provide flexibility in minimum lot size requirements within acceptable Health Code standards.
5. Consider allowing other flexible development types that preserve meaningful open space.

Conventional Residential Subdivision



Guide Multi-Family Development

In terms of multi-family development, the Plan suggests that sites in and near the “nodes” that are serviced by public water and public sewer system are the best sites for multi-family development. Location of multi-family uses in these areas will help to promote development of active and vibrant nodes with a variety of land uses.

Groton has already established a multi-family node near the intersection of Route 1, Route 12, and Interstate 95. This is a convenient location for residents to access local employers and the highway system and helps meet local housing needs. For these reasons, this “node” should be maintained. Multi-family (and/or higher density) developments should be discouraged in other areas unless there is some significant community benefit that will result.

In addition, the Plan suggests that the most appropriate types of multi-family units for Groton are moderate density developments in smaller scale projects. Such developments can:

- help maintain Groton’s appearance and character
- blend more effectively with nearby residential areas
- be more consistent with the level of services available in town
- be preferred by those seeking multi-family housing in the area

Overall, it will be in Groton’s best interests to strongly guide multi-family developments to appropriate sites where they can serve as a transition between business and industrial uses (or major travel routes) and adjacent residential neighborhoods. As listed below, various provisions of the RMF zones should be re-evaluated.

Recommendations

1. Guide multi-family development to sites in and near “nodes” that are serviced by public water, public sewer, and transportation systems.
2. Guide multi-family developments to sites where they can provide a transition from activity centers to adjacent residential neighborhoods.
3. Discourage multi-family (and/or higher density) developments in other areas unless there is some significant community benefit that will result.
4. Discourage multi-family developments that are not moderate density developments in smaller scale projects.
5. Reevaluate multi-family (RMF) zones to consider whether the:
 - permitted uses should continue to include single-family, duplex, and multi-family uses
 - design standards in the RMF zones are appropriate
 - zone locations are appropriate
 - standards should provide for special permit review and approval

Multi-Family Locational Criteria

1. Multi-family developments should:
 - be located in or near “nodes”
 - be served by public water and public sewer
 - be served by local transit facilities
 - be located to provide a gradual transition in density or use to adjoining areas
 - be designed to be compatible with the area proposed
 - use appropriate topographic, vegetative, or other transitions to provide a buffer to adjacent uses and streets
2. Roadways serving the site should be capable of safely and conveniently handling traffic generated by the development as well as provide easy and direct access to major thoroughfares serving Groton.
3. The site should be of adequate size and suitable terrain to establish an attractive and functional layout of buildings and site improvements.

To ensure compatibility of location and design before significant funds are expended, a two stage approval process is recommended:

- conceptual design where the location, density, and design is addressed
- final plan approval

A design review process could be involved in both stages.

Limit Two Family Development

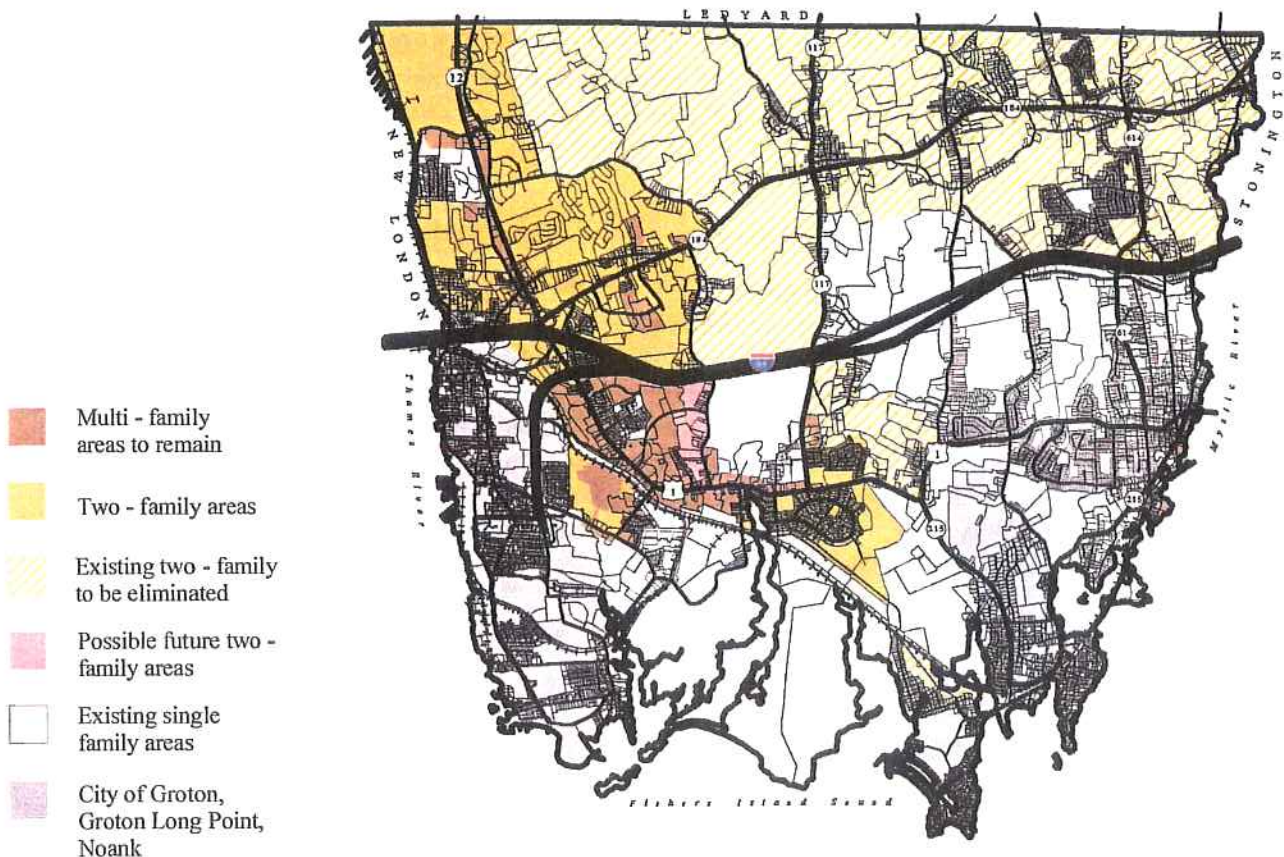
Five of the residential zones that are presently contained in Groton's zoning regulations (R-12, R-20, RU-20, RU-40, and RU-80) allow for both single-family and two-family (or duplex) development. These zones comprise about 65 percent of all residentially zoned land in Groton and about 53 percent of all land within the zoning purview of the Town.

Most people who buy a lot or a single-family home in the above zones probably do not anticipate that a two-family home could be built adjacent to them. While allowing duplex homes may be appropriate in some areas of Groton, it is not necessary in 65 percent of all residential zones.

During the planning period, Groton should review all residential zones with a view towards redefining permitted uses in the zoning districts or the zone locations to limit where two family homes could be located.

Recommendations

1. During the planning period, review all residential zones to limit where two family homes could be located.



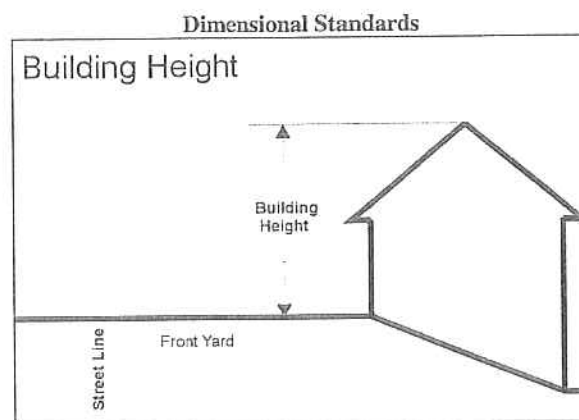
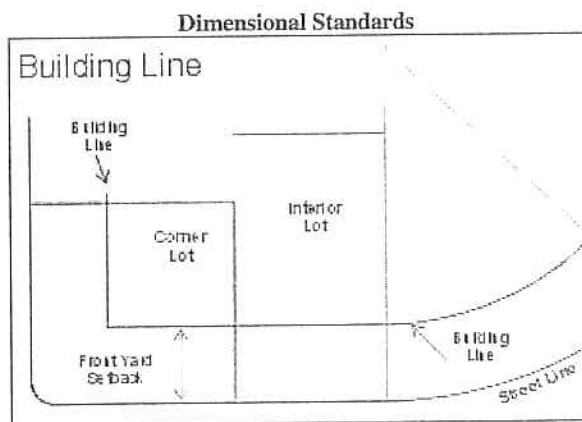
Review Bulk and Dimensional Standards

The Zoning Commission should review residential zones to ensure that the dimensional or bulk standards (setbacks, areas, height) are appropriate given the prevailing development patterns in each area. For example, it may make sense in some of the historic neighborhoods to provide some flexibility of these standards to reduce the number of variance applications that result.

In some areas of Connecticut, houses are being built that are much larger compared to their site area than is found on surrounding properties. In other words, the floor area (or bulk) of the house is much higher in relation to the lot area than other properties. These houses look out of scale and may negatively affect neighboring properties and community character. This trend has the ability to occur in Groton and should also be considered when reviewing bulk and dimensional standards in the zoning regulations.

Recommendations

1. Review residential zones to ensure that the dimensional or bulk standards are appropriate given the prevailing development patterns in each area.
2. Consider the need for adopting a maximum floor area ratio (floor area divided by lot area) regulation in Groton.



Energy Considerations

In updating the zoning and subdivision regulations and reviewing bulk and dimensional standards, the Commission should consider the objectives of energy efficient patterns of development, the use of solar and other renewable forms of energy, and energy conservation.

These types of considerations can include road orientation, house orientation, solar access, and wind breaks.

Other energy conservation measures might best be addressed at the building permit level.

Conditional Uses

Conditional uses are uses, such as churches or day care centers, which may be permitted in residential zones provided that they comply with specific conditions.

In Groton, the criteria that are used to review these uses are contained in Section 8.3-8 of the Zoning Regulations. However, these criteria provide little guidance as to which locations might be acceptable.

Some of the most unfortunate zoning issues occur because an applicant has invested a lot of time and money in a proposal to develop a site that is not compatible with what the neighbors and/or the Zoning Commission believe is appropriate.

Guide Conditional Uses (Special Permit)

During the process of preparing the Plan, Groton residents commented about applications for certain activities that residents felt were inappropriate in residential zones and/or the selected location.

To help address these concerns, some conditional uses in residential zones should be restricted to locations on arterial or collector roads where:

- traffic characteristics may make them less suitable for single-family residential development or
- the proposed use would serve as a transition between more intensive development (such as commercial or industrial) and less intensive development (such as single-family residential development)

In the overall context of community structure, it makes little sense to allow a non-residential use in the middle of a residential neighborhood when there is not some major justification for the proposed location other than the fact that the site was available.

Groton should review the conditional uses in the various residential zones and classify them as to what sorts of locational criteria might be appropriate for each use. These criteria should then be placed in the regulations in order to guide applicants and property owners. While these criteria could be placed within the text allowing each type of conditional use, the Plan recommends that additional Special Permit Objectives be included in Section 8.3-8 of the Zoning Regulations as well.

Recommendations

1. Review the conditional uses allowed in residential zones and classify them as to what sorts of locational criteria might be appropriate for each use.
2. Adopt additional Special Permit Objectives in Section 8.3-8 of the Zoning Regulations to guide applicants and property owners.

POTENTIAL CONDITIONAL USE CRITERIA

Suitable Location for Use

The Commission shall determine that the location and size of the proposed use and the nature and intensity of use in relation to the size of the lot will be in harmony with the orderly development of the area and compatible with other existing uses.

Suitable Structures for Use

The Commission shall determine that the kind, size, location and height of structure and the nature and extent of landscaping on the lot are appropriate for the use and will not hinder or discourage the appropriate use of adjoining property nor diminish the value thereof.

Neighborhood Compatibility

The Commission shall determine that the design elements of the proposed development are attractive and suitable in relation to the site characteristics and style of other buildings in the immediate area, and that the proposed use will not alter the essential characteristics of the area or adversely affect property value in the neighborhood.

Adequate Parking And Access

The Commission shall determine that the parking and loading facilities are adequate and properly located and the entrance and exit driveways are laid out to achieve maximum safety.

Adequate Streets For Use

The Commission shall determine that streets providing access to the proposed use are adequate in width, grade, alignment and visibility, and have adequate capacity for the additional traffic generated by the proposed use.

The Commission shall determine that the proposed use will not pose undue inconvenience to pedestrian and vehicular circulation nor impede implementation of the Traffic Circulation Plan.

Adequate Emergency Access

The Commission shall determine that the proposed use shall have easy accessibility for public safety, fire apparatus and police protection, is laid out and equipped to further the provision of emergency services, and allows for flood evacuation should it be necessary.

Adequate Public Utilities

The Commission shall determine that the water supply, the sewage disposal, and the storm water drainage shall conform with accepted engineering criteria; comply with all standards of the appropriate regulatory authority; and not unduly burden the capacity of such facilities.

Environmental Protection and Conservation

The Commission shall determine that the proposed plans have provided for the conservation of natural features, drainage basins, the protection of the environment of the area, and sustained maintenance of the development.

Consistent with Purposes

The Commission shall determine that the proposed use will not have any detrimental effects upon the public health, safety, welfare, or property values, and that the proposed use will not conflict with the purposes of the Regulations.

Statutory Reference

“The Plan shall make provision for the development of housing opportunities, including opportunities for multifamily dwellings consistent with soil types, terrain and infrastructure capacity, for all residents of the municipality and the planning region.”

“The Plan shall promote housing choice and economic diversity in housing, including housing for both low and moderate income households, and encourage the development of housing which will meet the housing needs.”

CGS 8-23

Continue To Address Housing Needs

Groton is a diverse community and, as a result, needs a diverse housing stock to meet the needs of its residents. While housing opportunities are already available in the community to meet most housing needs, there are some housing needs that can be anticipated in the future.

Elderly Housing Needs

The Conditions and Trends section of the Plan indicated that an increase in the number of elderly people can be anticipated in the future as people live longer. While some people will continue to live in their current residence, other people will choose to relocate to smaller units in Groton and elsewhere for lifestyle, health, or economic reasons.

To address these needs, Groton should continue to provide for:

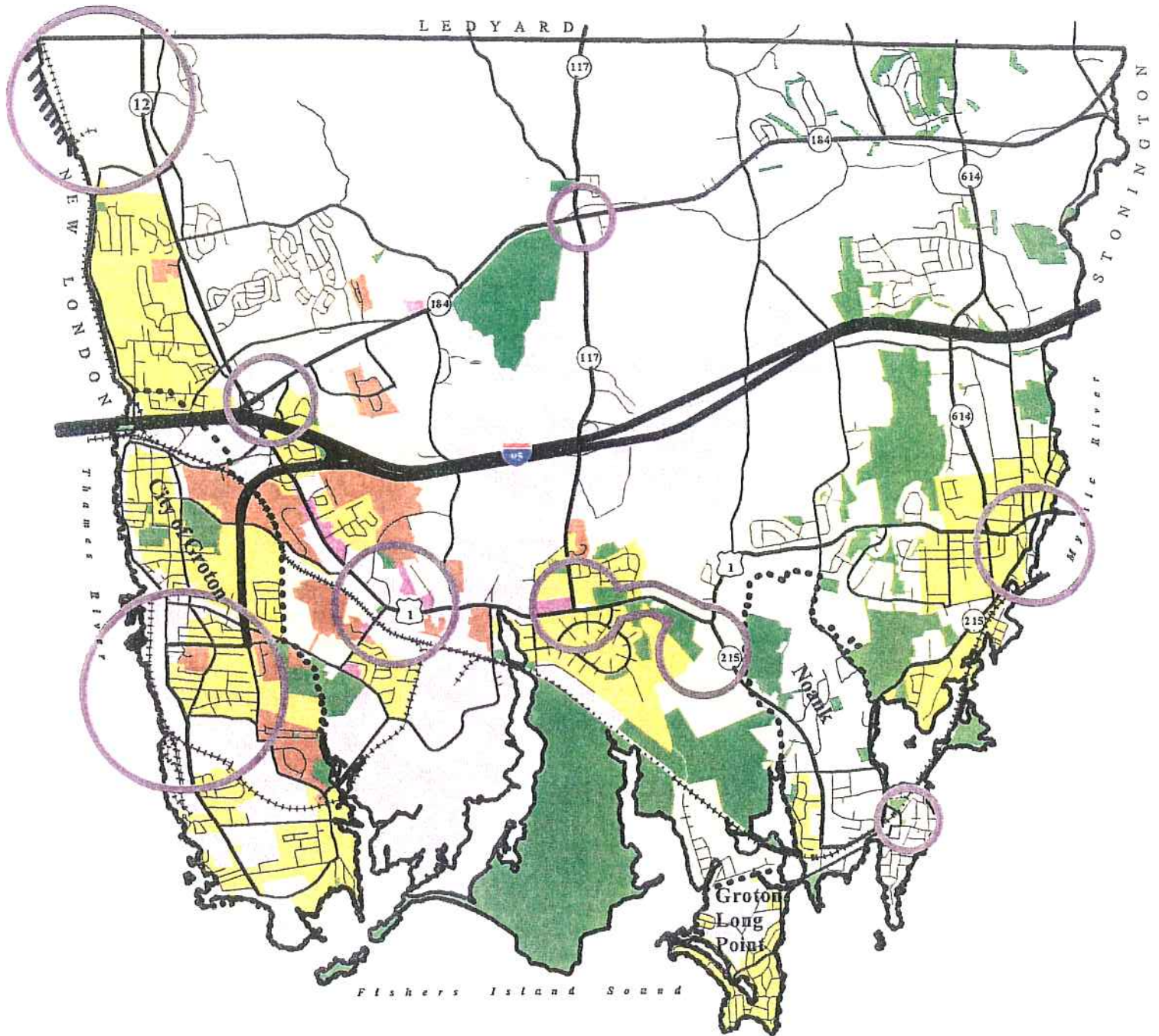
- elderly tax relief
- accessory apartments
- “empty-nester” housing
- congregate, assisted living, and nursing home facilities
- publicly assisted elderly housing

Grasso Gardens



Future Residential Densities Plan

Town of Groton, CT



Legend

- | | | | |
|---|-------------------------------------|---|-------------------------------|
|  | <1 Unit/Acre (R-40, R-80 Zone) |  | Existing dedicated open space |
|  | <2 Units/Acre (R-20 Zone) |  | Non - residential areas |
|  | >2 Units/Acre |  | Non - Town regulated areas |
|  | > 6 Units/Acre (Multi-Family Zones) |  | Proposed nodes (see page 73) |
|  | Residential / Mixed Use | | |

5000 0 5000 Feet



1996 Affordable Housing

	#	%
Assisted Housing	3,193	19%
CHFA	350	2%
Financed Deed Restricted	0	0
Total Affordable	3,543	21%
Total Units	16,932	100%

Affordable Comparison

Groton	21%
New London	18%
Norwich	17%
State	11%
Montville	6%
Ledyard	5%
Stonington	4%
Waterford	4%
Preston	3%
No. Stngton	1%

Affordable Housing

Housing affordability is a public policy concern since it can affect economic development potential and community diversity. Housing units in Groton are relatively affordable compared to region and state averages.

State statutes are concerned with housing units that are price-restricted to affordable levels. According to data from the Connecticut Department of Economic and Community Development, Groton had about 3,543 housing units in 1996 that were considered to be "affordable housing".

With more than ten percent of all housing units in Groton meeting these criteria, Groton has a more diverse housing stock than many other communities in Connecticut and is exempt from the Affordable Housing Appeals Procedure (Section 8-30g of the Connecticut General Statutes).

While Groton has the highest percentage of "affordable housing" units of any community in the region, opportunities to encourage the development of less expensive housing should be explored.

Recommendations

1. Continue to provide for a diversity of housing types throughout Groton.
2. Continue to address identified local needs for elderly housing and affordable housing.
3. Continue to guide such developments to areas that support and complement community structure and are adequately served by the water, sewer, and transportation infrastructure.

Pequot Village



ENCOURAGE APPROPRIATE ECONOMIC DEVELOPMENT

12

Overview

Economic development is important to most every community. Whether it is because of goods and services offered, employment provided, or net tax benefits contributed, economic development is often sought after by communities, regions, states, and countries.

Economic development is an especially important issue in Groton since the community lost about 15,000 jobs due to defense downsizing.

Well-managed communities plan and manage their economic future rather than merely take what comes by accident or happenstance. This is particularly important in Groton where a long-established economic base is being affected by a transition in the regional, national, and global economies. One only need look at the downsizing at Electric Boat Corporation and the substantial growth at Pfizer to clearly see the former economic foundation of defense manufacturing being reduced by pharmaceutical research and development.

In public meetings on the Plan, economic development was identified as one of the primary issues of concern to Groton residents. This concern was two-fold. First, there is an interest in attracting economic development in order to reduce local taxes to residents, provide funds for additional services in the community, and enhance employment opportunities. Second, there is concern over the characteristics of current types of business development and a desire to improve the aesthetics and function of these areas so that they are more compatible with community character.

This section of the Plan is directed towards accomplishing both objectives.

Economic development is a key component of Groton's past, present, and future ...

Involvement

Economic development is one topic that extends well outside of the jurisdiction of the Planning Commission and the Zoning Commission. In fact, making economic development happen involves a wide variety of boards, agencies, and staff within the town.

It is important to note that the Town of Groton benefits from economic development that occurs within the City of Groton since the Town still receives tax revenue from that development.

Groton can also benefit, although to a lesser degree, from economic development that occurs in the region.

1997 Region Employment

Groton	28,060
Norwich	16,860
New London	16,590
Ledyard	16,420
Waterford	13,440
Montville	9,250
Other Towns	32,740
Total	133,360

1997 Composition

	<u>Groton</u>	<u>State</u>
Manufactur'g	49%	18%
Trade	17%	22%
Services	16%	30%
Government	12%	14%
Other	5%	13%
Construction	1%	3%

1990 Occupations

<u>Armed Forces</u>	<u>%</u>
Groton	34%
County	10%
State	1%

Context

The major economic "clusters" in southeastern Connecticut include:

- defense-related businesses (such as Electric Boat Corporation and the US Navy)
- pharmaceuticals (such as Pfizer)
- tourism and leisure (including the attractions in Mystic and the nearby casinos)

Groton is a major employment center. In fact, more people are employed in Groton than in any other community in southeastern Connecticut. Groton is ranked 13th out of 169 Connecticut communities for the amount of employment.

Groton also has a strong manufacturing focus and a strong Navy presence. In 1990, about half of all jobs were in manufacturing businesses, a level significantly higher than that for the region or the state. In 1990, the Navy Base employed about one-third of all Groton residents in the labor force.

However, after growing significantly for some time, employment in Groton peaked around 1990. Overall, the 1997 employment (28,060 jobs) represents a decrease of 5,980 jobs over the amount of employment reported for 1990 (34,040 jobs). In addition, from 1980 to 1997, the local economy also changed from primarily producing goods to also providing services. Much of this can be attributed to "downsizing" at Electric Boat Corporation (builders of submarines) due to defense cutbacks.

Fortunately, this employment loss has occurred during a time of major job growth in the region, particularly due to employment at the two major casinos. Overall the region experienced net job growth of 20 percent from 1990 to 1997. However, many of these new jobs are less skilled and pay lower wages than the former skilled manufacturing positions.

Of all of the land area in Groton, only about six percent is used for business and industrial purposes. Yet, these uses comprised about 38 percent of the Grand List in Groton. This business component of the tax base is among the highest in southeastern Connecticut.

Groton residents have indicated that they want more economic development to provide employment, goods and services, and tax revenue.

Develop A Strategic Economic Development Plan

Economic development will not happen just by wishing it so. Economic development is very competitive because every community wants uses that provide employment or enhance the tax base.

To succeed at economic development, a community has to adopt an economic development mindset and conscientiously address the following key issues:

- what are Groton's strengths and weaknesses?
- what kind of economic development does Groton want?
- where should this development be located in Groton?

To answer the first two questions, a full economic development strategic plan is necessary. Groton must critically appraise its existing attributes, maximize potential strengths, reduce potential weaknesses, and address the issues of what, where and how economic development should happen.

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none"> • central location in the Boston to New York corridor • good transportation network (road, rail, air) • strong business heritage and tourism industry • large and skilled regional labor force • good business concentration • one of Connecticut's Enterprise Zones • highly desirable quality of life 	<ul style="list-style-type: none"> • perceptions of a difficult, time consuming approval process • lack of use flexibility in business zoning districts • few zoned, fully serviced, accessible lots and buildings for business uses • retail vacancy and appearance • high cost of doing business compared to some other parts of the country. • weak transit system to support economic development • labor supply

In terms of economic development, a critical part of implementing this Plan of Conservation and Development is preparation and maintenance of an economic development strategic plan. That plan can address these issues and formulate ways to maximize local strengths and minimize weaknesses.

Recommendations

1. Prepare an economic development strategic plan to guide future activities.
2. Update such strategic plan on a regular basis.

Critical Attributes

Attributes critical to attracting economic development include:

- timing (the ability to produce decisions and supporting materials quickly, expedited permit and approval procedures)
- locational advantages (adequate labor supplies and skills, good transportation availability)
- site/building availability (an inventory of available, fully serviced sites and buildings)
- documentation (data on the community)
- incentives (tax abatement and business assistance programs)
- a positive business climate that shows the community is seriously interested in the project

Current Provisions

At the time the Plan was being prepared, the Town had thirteen different zoning districts that allowed commercial and/or industrial development.

In addition, the zoning regulations contained 12 pages of detailed use descriptions identifying where and how certain uses might be permitted in different zones. Some of the distinctions between these uses are so fine that it can be difficult to rationalize:

- why certain uses are permitted in one zone but not another zone, and
- why some uses are permitted in certain zones but other similar uses are not permitted in the same zone

Simplify Business Zoning And Procedures

An important economic development issue that came out of the planning process was the complicated business zoning in Groton.

The Town of Groton currently has 13 different business or industrial zones with very fine detail for the uses permitted in each zone and some of these zones have subtle distinctions between the uses permitted in them. Overall, it seems that Groton would be better served by simplifying:

- the number and variety of business zones in the community and
- the description of uses permitted in each zone

A review of Zoning Regulations should be undertaken to reduce the number of business districts, assure flexibility of uses, and facilitate understanding of permitted uses. To avoid any negative repercussions, a section on Performance Standards should be added to Groton's Zoning Regulations.

The key issue is not how many (or few) zones that there are, but the types of uses permitted in each. A separate zone should only be created when there are meaningful physical or other distinctions between it and another zone that would preclude some sort of land use. Even then, a special permit process may be a preferable way to proceed. In this way, a property might have more permitted uses and the permitting requirements could be reduced. This could help simplify some of the permitting issues that currently arise.

All business and industrial zones should then be evaluated as to location and requirements. This will help promote compatible development.

Finally, opportunities to streamline or improve land use procedures would also pay dividends with regard to economic development. While there are many decisions that will require Commission review, the timeframe for acting on these issues could be reduced and other issues could be deferred to staff.

Recommendations

1. Simplify the list of uses permitted in each zone by using broad classes rather than detailed descriptions.
2. Establish a new hierarchy of business zones in Groton to simplify the business structure of the community.
3. Review all business and industrial zones and areas as to location and requirements.
4. Investigate ways to streamline or improve land use procedures to reduce timeframes and uncertainty.
5. Empower staff to make more permit and approval decisions.

Continue Economic Development Efforts

The best way to expand economic development involves efforts to:

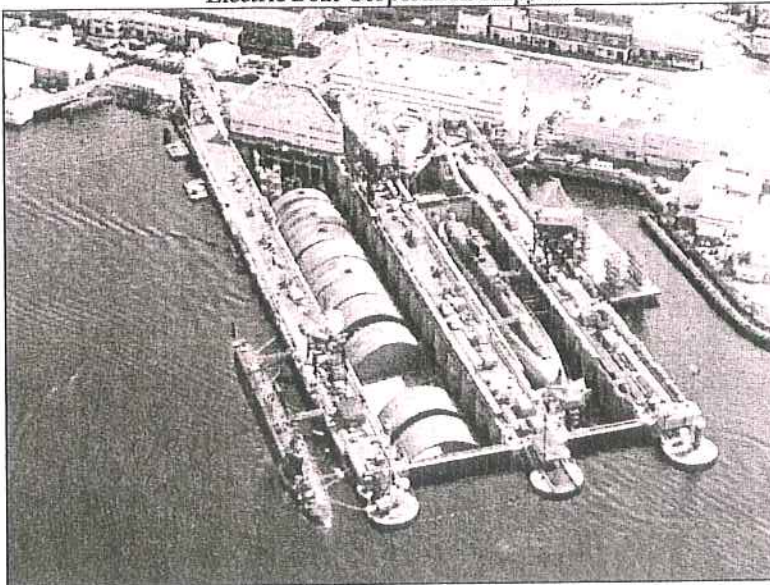
- nurture existing businesses in Groton
- enhance use of existing business sites
- recruit clean business and industry

Groton already has a highly qualified economic development staff that works to retain existing businesses and attract new businesses to the community. With completion of the strategic economic development plan and an overall review of local zoning regulations and procedures, such efforts can be targeted in ways that will reinforce the overall community structure and encourage economic development activity consistent with the intent of the Plan

Recommendations

1. Continue efforts to expand the tax base by using Groton's highly qualified economic development staff to retain existing businesses and attract new businesses to the community.
2. Continue to ensure that business development supports the overall community structure and complements the character and quality of life in Groton.
3. Continue to work with existing organizations (such as the Chamber of Commerce) in order to help create a business-friendly environment.
4. Reactivate joint meetings between the Planning Commission, Zoning Commission, Economic Development Commission, and other Town commissions, as appropriate, to enhance economic development activities.
5. Continue to work with neighboring municipalities and regional agencies in order to promote economic development in the region.

Electric Boat Corporation Shipyard



Future Directions

Future economic development efforts should be directed towards the economic clusters that are important to southeastern Connecticut. This would include the medical / pharmaceutical field (such as Pfizer) and other high technology businesses.

It is no secret that, while Groton has a highly skilled manufacturing workforce, the number of manufacturing companies looking to expand in New England is not high.

This does not mean that efforts to attract manufacturing companies should cease. Rather, these efforts should and must continue. It simply means that such efforts are likely to:

- be more difficult in the emerging technology economy and
- become increasingly important

Further, in Groton's case, this effort is made more difficult by the lack of a well-planned and fully-serviced business park.

Business Park or Industrial Park?

When Groton first started considering the creation of an industrial park in the early 1970s, it was appropriate to call it that. The Connecticut and national economy has changed substantially in the nearly 30 years since then.

It may be useful to change the term used for the area, and the Zoning Regulations for it, to a business park or some other term that clearly demonstrates the mixture of uses (light manufacturing, corporate offices, research and development, distribution) intended for the area.

Not only will this be a more accurate and understandable term for marketing the area, but may also be helpful in conveying to residents that the development of the area will not be unsightly, heavy, potentially polluting industries as occurred many places in the past.

Encourage Development of Fully Serviced Sites

Even a well-executed strategy will not make economic development happen. Groton needs to have fully serviced and available sites that are ready for businesses to utilize.

While there are areas zoned for business park development, some of these areas are not “ready” for development since they are not serviced by roads and utilities. Companies looking for a location in a business park typically want to buy an existing lot, on an existing street, with existing utilities. While there are some companies that have the time and budget to install their own roads and utilities, they are increasingly rare. The “business park” on Route 117 is a case in point.

Route 117 Business Park

Groton has been talking for some time about the development of a business park between Route 117 and Flanders Road, near Interstate 95. However, little progress has been made in development of this park with the exception of the recent construction of a Marriott hotel.

With regard to encouraging development of this Business Park, Groton needs to make the political and financial commitment to initiate or assist the necessary infrastructure construction. If the community waits for infrastructure to be installed by private developers, the development of this area will be delayed (due to the large scale project that would be needed to fund the infrastructure investment) and the net present value of the future tax revenue could be reduced.

By becoming an investment partner in development of the Business Park, the community could anticipate more rapid development and increased tax payments to the community in a shorter time frame.

The Town should prepare guidelines establishing the most important or useful infrastructure elements (roads, drainage, water, sewer, etc.) for the Business Park in order to guide the Town Council in future consideration of infrastructure improvements for particular areas.

The Southeastern Connecticut region has a very small inventory of top-quality business lots. Groton has the opportunity to significantly increase its desirability as a business location, by making a business park a reality.

While there is interest in expanding the tax base, this must also be balanced with the desire to enhance Groton's character and quality of life. Business development should support the overall community structure in Groton (see page 73) and complement the community character. In the long term, business development for the sake of business development has the potential to detract from Groton's character and erode the overall quality of life. Well-planned and located business development can support other desirable community services and add to an attractive environment in which to live and work.

Recommendations

1. Develop guidelines to assist the Town Council in considering whether to fund infrastructure improvements at the Business Park.
2. Change the Industrial Park District designation to Business Park.
3. Find ways to enhance the use of existing business sites.
4. Continue to ensure that business development supports the overall business structure and complements the character and quality of life in Groton.
5. Consider developing "vision" plans for potential economic development areas in order to obtain conceptual approval that will help guide potential businesses and developers.
6. Consider identifying other appropriate locations for economic development.

Marriott Hotel In Groton



William Carlebach

Development Incentives

The move away from strip development to node development will also allow for greater flexibility in the design of business developments.

For example, reinvestment in existing business areas can be encouraged by relaxation in strict dimensional zoning standards and allowing for increased floor area in those areas.

Downtown Groton

The area on Route 1 near Drozdyk Drive and Meridian Street Extension is considered to be “downtown” Groton.

In 1984, Lane, Frenchman and Associates prepared a study addressing development patterns and potential reuse in this area.

The study is an excellent example of how development examples could be modified to support community structure and enhance community character.

This is the type of study that will help the Town encourage appropriate patterns of development in “nodes.” While this study should be updated to reflect current conditions, it serves as a good model of how to guide future development in appropriate ways. Studies such as this should be continued and maintained.

Modify Commercial Development Patterns

Most of the business development that has occurred in Groton over the past 40 to 50 years has not occurred in the “nodes” discussed previously. Rather, most business development has occurred along major arterial roads in a “strip” type development pattern. This type of development pattern results in:

- linear strips of retail development with little architectural variety that detract from community character
- a large number of driveways and turning movements that cause traffic congestion
- large parking lots adjacent to the street that detract from the streetscape and pedestrian circulation
- pressures to rezone adjacent areas along the street to additional business development (thus continuing the development pattern)
- long portions of street frontage consumed by fairly sterile uses
- competition for signage so that retailers feel they can stand out in the clutter of the corridor

The overall pattern of mixed use nodes proposed in the Plan presents an opportunity to guide business development to the places that are most suitable for it given the prevailing traffic patterns, infrastructure availability, and community character.

This will have several important benefits for Groton. First, it will slow the pattern of “strip” development that has characterized Groton in recent decades and this will stem any new detractions from community character. Second, by confining business growth to specific areas, there will be an incentive to reinvest in existing areas rather than continue to expand to “greener pastures”. Over time, this will establish meaningful business nodes that meet residents needs and enhance community character.

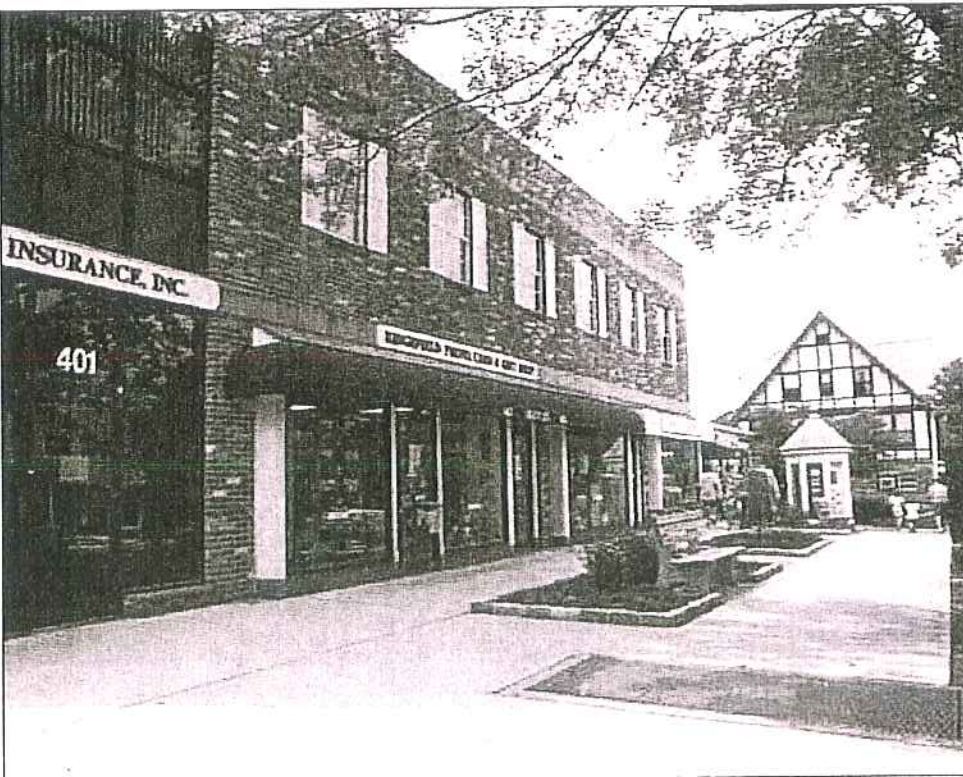
There is another important consideration. There was time in the 1950s, 1960s and 1970s when Groton was the primary regional center for retailing in southeastern Connecticut. However, with the evolution of the interstate highway system and development of regional shopping malls in other areas, Groton no longer occupies the same role in terms of regional retailing. Since there are few sites in Groton that would be considered appropriate for development of regional malls, Groton’s retail future is more likely to be in the realm of neighborhood and community based retail facilities rather than regional or auto-oriented retail facilities.

These types of facilities are actually more compatible with Groton’s character and will help to reinforce the overall community structure discussed previously.

“Strip” Development Patterns



“Node” Development Patterns



While the businesses in commercial areas provide goods and services, employment, and tax revenue to Groton and its residents, most of these areas lack character. This is why these business zones should be restricted to their present extent unless significant community benefits can be demonstrated.

During the planning period, the zoning designations of these areas should be reviewed in order to encourage development and land use that is most in keeping with Groton's character. Permitted uses, setbacks, lot coverage, landscaping, building design, and site design requirements should all be reviewed to ensure the most appropriate development and redevelopment of these areas. Incentives should be built into the regulations to encourage:

- mixed uses (including residential units)
- commercial uses that are consistent with the plan
- architecture that is more in keeping with Groton's character
- consolidated development where adjacent parcels integrate parking, access, and vehicular and pedestrian circulation
- enhanced landscaping

Recommendations

1. Encourage business developments in "nodes" and discourage "strip" type business development patterns.
2. Consider undertaking a special study of each commercial area in order to help guide the appropriate future development of these areas, especially the Downtown Development District.
3. Consider using design districts to encourage the development of "nodes" with the possible use of village district zoning where appropriate.
4. Evaluate current zoning designations and requirements to determine if uses, setbacks, and other requirements are appropriate.
5. Continue to encourage consolidated development with shared access, parking, and circulation.
6. Modify zoning regulations to create incentives for consolidated and compatible development and redevelopment of commercial areas.
7. Encourage architectural character as part of new business development rather than prototypical or "franchise" architecture.
8. Develop an overall traffic plan for business areas rather than rely on individual driveways serving business uses.
9. Discourage parking lots adjacent to the street that detract from the streetscape and pedestrian circulation.
10. Resist pressures to rezone additional areas along the street that would create a strip business development pattern.
11. Encourage business uses to enhance the streetscape by landscaping, pedestrian amenities, and modest signage.
12. Encourage reinvestment in existing business areas rather than allow continued expansion to "greener pastures".
13. Seek ways to encourage development of neighborhood and community based retail facilities rather than regional or auto-oriented retail facilities.

Maintain or Reduce Commercial Zoning

During the planning process, many residents commented on the proliferation of retail areas, the lack of character of existing commercial businesses, and the lack of maintenance and investment at older establishments. In addition, residents (and property owners and managers) were concerned about the vacant retail space in Groton, particularly in the downtown shopping area.

Much of this has to do with how Groton has zoned for commercial uses. By zoning more land than needed for commercial uses and by rezoning land to commercial use, the Town has hurt the market for commercial zoned land. This has negatively affected commercial development since it has:

- made it easier for new commercial businesses to expand into “greener pastures” rather than maintaining and improving existing locations
- expanded the number of businesses competing for local spending (the same number of dollars are spent in more places) which reduces the dollars available for maintenance and investment
- encouraged more establishments that are not financially prepared to deal with the economic fluctuations that come in the retail sector

While there may be increased commercial development that resulted from this zoning practice, there can come a point (as it appears to in Groton) where it is easier to vacate an existing center and build a new store. While this may work well for the retailer, it harms the local economy, community character, and quality of life.

Route 184 Commercial Uses



Retail Requirements

Retail requirements are an inexact science. However, consider the following:

The 1992 Economic Census reported that retail spending in Groton was about \$320 million per year. After deducting automobile sales, retail sales were about \$250 million. If sales averaged about \$200 per square foot (a national average for a healthy retail market), existing sales in Groton could support about 1,250,000 square feet. This works out to about 30 square feet per capita.

Information from the Town indicates that there are about 1,565,000 square feet of retail space in Groton. In other words, Groton may have about 300,000 square feet more of retail space than it can support at a healthy level.

Retail experts report that there are about 15 square feet of retail space per capita in Connecticut. Assuming that this is an average level that the state can support, the approximately 38 square feet per capita in Groton is more than double the average amount of retail space per capita in Connecticut.

Retail development typically occurs at a yield between 8,000 and 10,000 square feet per acre.

Based on all of the above, it is unlikely that Groton can support much more than 250 acres of commercial land.

The land use analysis found that Groton has over 900 acres of commercial zones and almost 500 acres of commercial uses.

Retail Planning

A comprehensive study of the local and regional retail market will help to determine whether there is a demand for more retail space in Groton or whether retail space should be converted to other uses.

It is important to consider “signals” from the marketplace. The initial inclination with higher vacancy rates is to make a maximum effort to find new retail users. However, there is a limited amount of retail spending potential and filling such vacancies is often a short-term solution. As the retail focus shifts in the community, more retailers want to be in the “hot spot” and this increases pressures to rezone new lands and increases the vacancies in existing centers.

Groton should resist this trend. There is some indication that Groton may already have more retail space than its population warrants. As a result, the best option for Groton to consider may be to reduce (or maintain) the amount of commercial zoning in the community. This will help guide commercial development back to the desired “nodes” and, over time, help restore some vitality to the commercial market in Groton.

Eventually, a comprehensive inventory of existing retail space should be performed along with an analysis of local and regional retail trade areas, spending patterns and changing retail trends. Such a study will help determine whether Groton needs additional retailers, additional retail space, or should concentrate on converting vacant retail space to other uses.

Recommendations

1. Resist the desire of property owners and retailers to rezone new lands to commercial use.
2. Prevent commercial “creep” along major roads.
3. Strive to reduce (or maintain) the amount of commercial zoning in Groton.
4. Guide commercial development back to the desired “nodes” in order to, over time, help restore some vitality to the commercial market in Groton.
5. Perform a comprehensive study of the retail market to help determine whether Groton needs additional retailers, additional retail space, or should concentrate on converting vacant retail space to other uses.

Route 1 / Downtown Node Area



Address Other Economic Development Issues

As the Plan was being prepared, a number of economic development issues were identified. During the planning period, these issues should be investigated in more detail to determine how compatible economic development can be created in these areas. In addition, the Town should be ready to capitalize on other opportunities that may present themselves. Greater attention should be paid to these areas in the Town's economic development strategic plan.

Area	Considerations
1. Nautilus Memorial Design District	This District was created in the early 1980's in anticipation of the USS Nautilus/Submarine Library and Museum. Since development activity has been minimal, the purpose and requirements of the District should be re-evaluated.
2. Military Highway	Last studied as part of the 1982 coastal area management program, this area may be ripe for future planning and additional attention should be put into identifying potential future public access.
3. Dolphin Gardens Area	Developed as Navy Housing, this area has potential for redevelopment due to changes at the Navy Base. Since the current single-family residential zoning may not support desirable uses of this site, the Town should investigate available options.
4. Route 12 Commercial Area	Since redevelopment opportunities may exist in the future, special attention needs to be given traffic improvements and aesthetic improvements.
5. Western Route 184 Commercial Area	Since part of this area is located within the Town's Water Resource Protection District, a number of uses are not allowed. Future development or redevelopment must consider aesthetic and roadway improvements.
6. Winding Hollow Road Area	Given the location of this area and the availability of utilities and access, this area maybe suitable for additional development activity including commercial, office and multi-family uses.

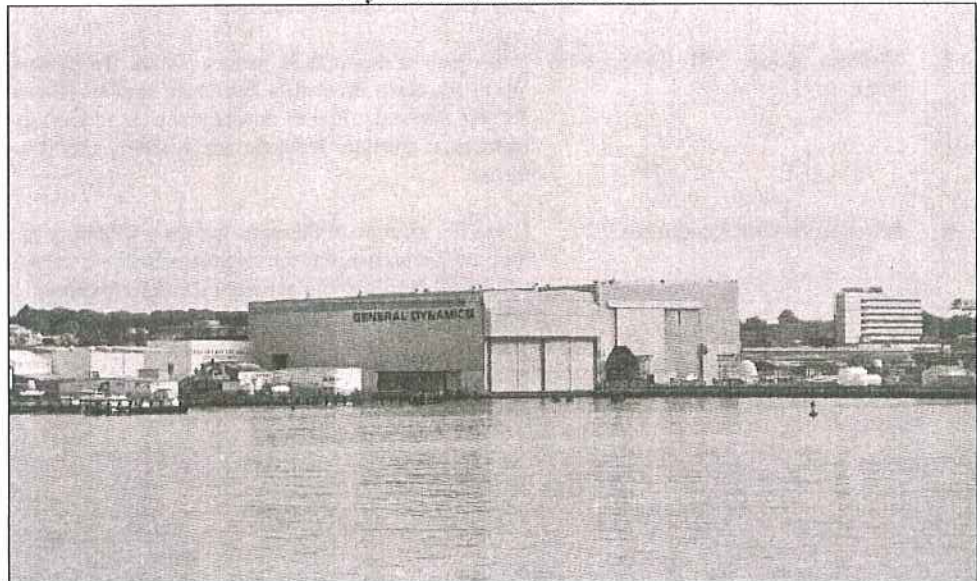
Other Issues

The opportunity areas discussed in this section of the Plan may modify the Economic Development Plan presented on page 107.

In other words, the investigation of these issues and areas may increase or decrease the areas identified on the Plan or may result in new classifications or designations.

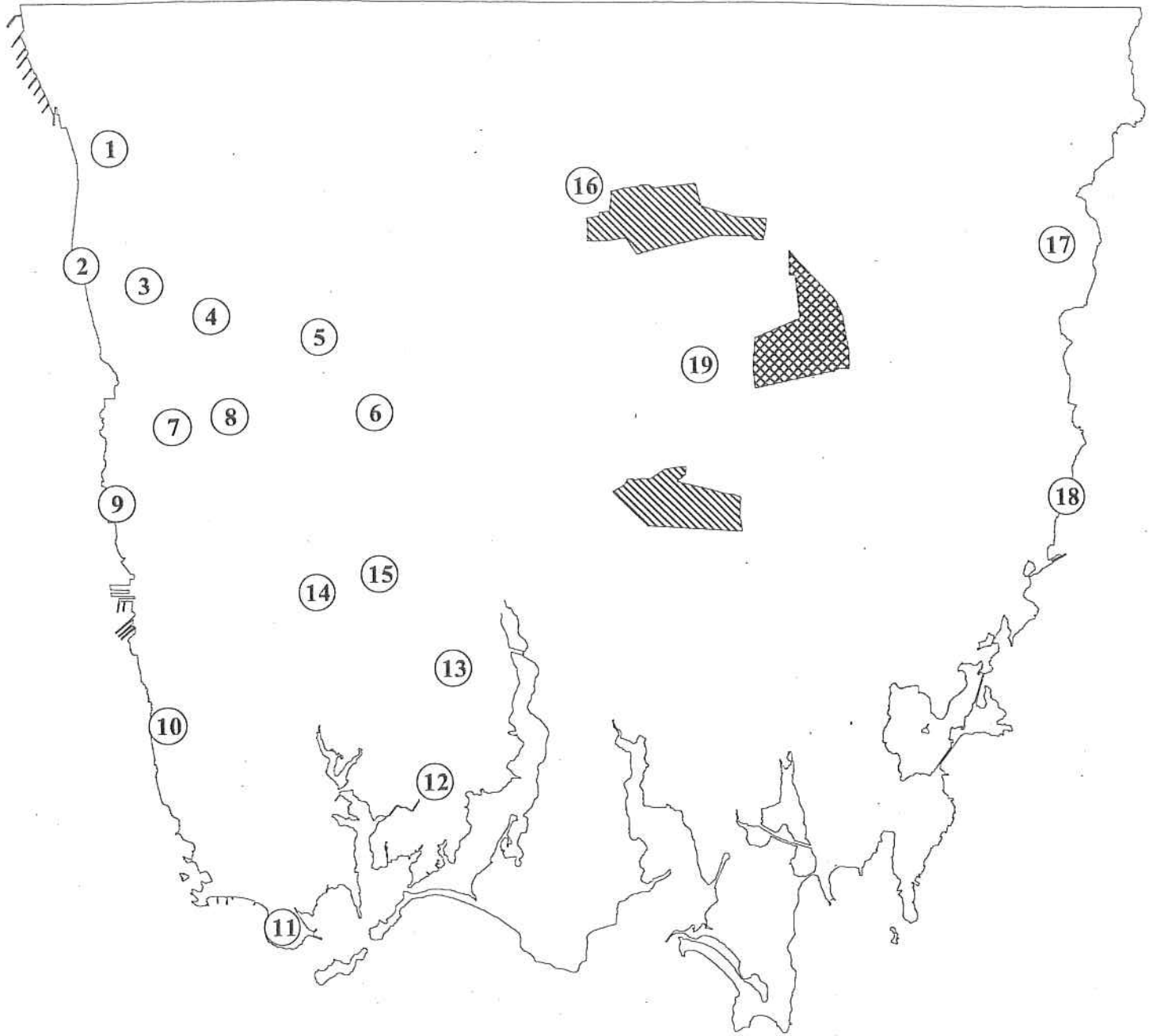
Area	Considerations
7. Bridge Street Area	This area, one of the major gateways into Groton is zoned general commercial (GC) and restricted industrial (RI). Many of the properties are underutilized and the area provides an opportunity for renewal activity.
8. Former Caldor Site	If combined with State of Connecticut land to the west and other properties (by possible closure of a portion of Kings Highway) , approximately fifty acres of land could be assembled with utilities in place and excellent access to 1-95 and Route 1. The future non-retail redevelopment of this and adjacent sites at this strategic location should be considered.
9. Thames Street And Riverfront	Build on recent development projects and streetscape improvements and encourage redevelopment of vacant or underutilized parcels for office or multi-family use at this "gateway" to the City. Continue with streetscape enhancements. Consider creating a Thames Riverfront Development Plan as a joint effort of the Town, the City, and area property owners.
10. City Industrial Area	Should opportunities arise for redevelopment of this area (on property of Electric Boat Corporation, Hess Oil, or Pfizer), the community should be prepared to support efforts to diversify and expand Groton's economic base.

City of Groton Industrial Area



Area	Considerations
11. Avery Point / Incubator Space	With Avery Point being transformed a world class Marine Science Center., additional opportunities and spin-offs may be possible. The Town should continue working with the University to capitalize on the Marine Science initiative.
12. Groton-New London Airport	The airport is recognized as an underutilized asset and the airline operations there have not been well developed. Should this property be considered for an alternative use, the community should have considered alternative uses that might be appropriate in this location. Making this land available for economic development activities could be encouraged.
13. Tilcon / Terra Firma Properties	Continue to facilitate development of this area given its existing industrial character, availability of utilities and proximity to the airport.
14. King Property / Poquonnock Road	With good access to Route 1 and I-95, numerous uses could be considered for this 150-acre site including office/research and/or multi-family. Any future plan must provide for open space to augment the Birch Plain Creek open space area.
15. "Downtown" Route 1	A comprehensive review of the Downtown area should be undertaken with respect to the role it plays in the local and regional economy and what initiatives the Town should undertake to ensure its continued viability.
16. Route 184 / Route 117 Intersection	Given the location and traffic volume, it is envisioned that additional commercial activity will occur. Future development and redevelopment must consider the Water Resource Protection District, traffic management and improving the aesthetics of the area.
17. Mystic Education Center	This facility, owned by the State of Connecticut, is being considered for alternative use. With the area involved and the proximity of the property to I-95, the best future use may include a business incubator, small campus, open space, or residential.
18. Village of Mystic	Continue efforts to manage a successful area, capitalize on tourist traffic, better meet residents' needs, and support local merchants.

Area	Considerations
19. Business Park Area	Specific recommendations related to the Business Park are presented below:
South of I-95 Connector Road	<p>The provision of adequate infrastructure between Route 117 and Flanders Road is important to the successful development of this area. For example, water and sewer infrastructure need to be made available to support development. A potential road connection would, if placed south of I-95, ensure that the residential properties on Hazlenut Hill Road are not disturbed as a result of industrial development. In addition, providing this linkage to Flanders Road would allow additional development opportunities to occur in areas that are presently zoned IP-80.</p> <p>It should be noted that the Town owns approximately 17 acres of land immediately west of Flanders Road that could be used for development purposes.</p>
North of I-95	<p>By combining parcels on the eastern and western sides of the industrial park area, close to 500 acres of business zoned land could be made available to a single user. While the topography is dramatic, the opportunity does exist to develop a campus-like environment. Public water and sewer are available though both systems would have to be enhanced in order to support full development.</p>
Expansion	<p>Despite its difficult topography the Industrial Park area is the largest and most meaningful opportunity area that the Town of Groton presently has. Additional consideration should be given to extending the IP zone to the north and to the south since both areas are undeveloped at this time.</p>
Development Approvals	<p>Since development of a park-like Business Park could conceivably extend over a decade or more, consideration should be given to modifying the Zoning Regulations to allow large-scale, multi-year projects with some master approvals (i.e.- Planned Group Development) or other techniques that might address this issue.</p>



Possible Zone Changes



Rezone areas to economic development



Rezone areas from economic development

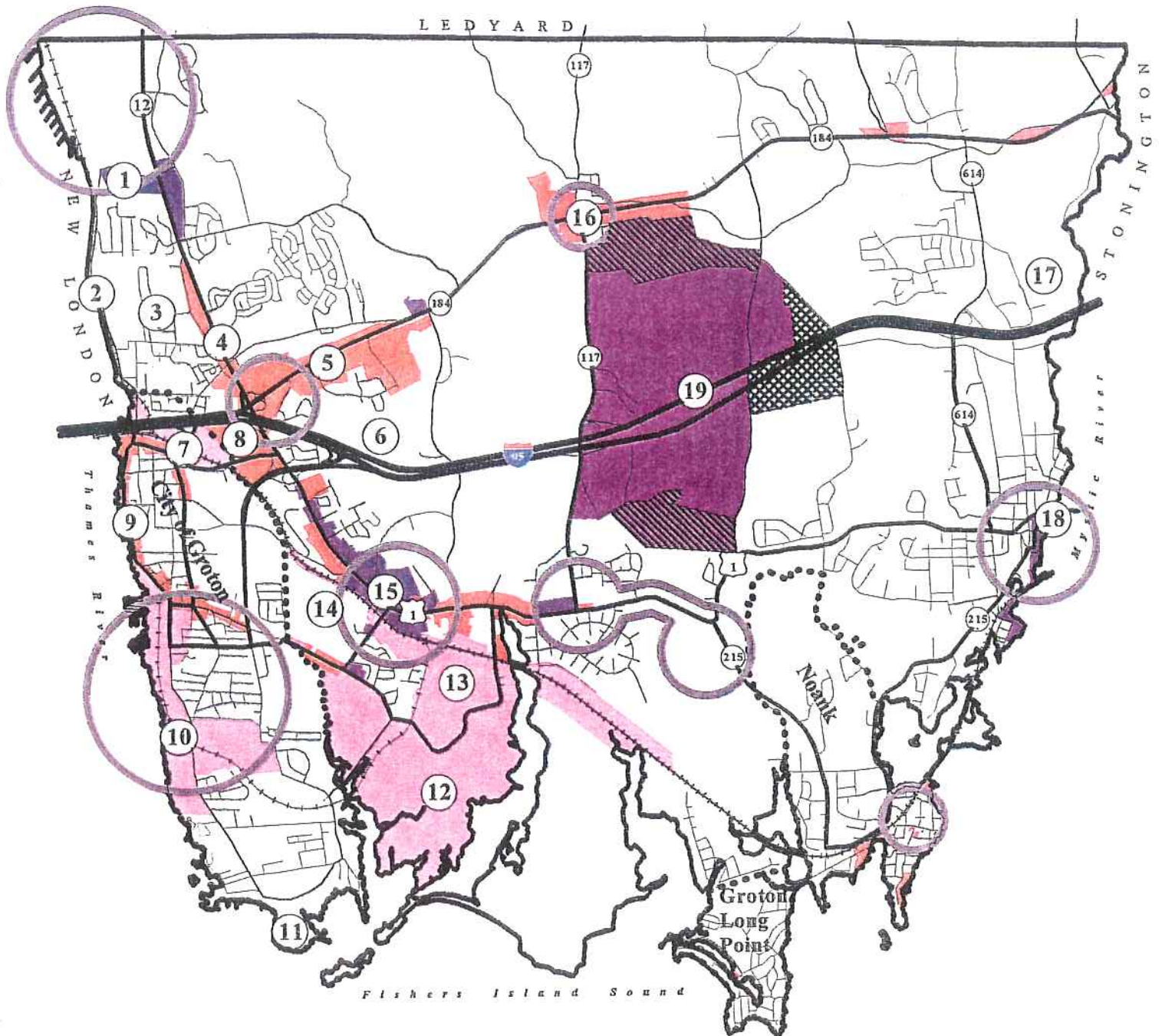
Possible other Economic Development Areas



See text for descriptions

Economic Development Plan

Town of Groton, CT



Legend

- Commercial zones
- Industrial zones
- Business park zones
- Design districts (to be encouraged)
- Non business uses
- Non - Town regulated areas
- Proposed nodes (see page 73)

5000 0 5000 Feet



Continue to Provide For Home Occupations

For the past several years, there has been an entrepreneurial explosion occurring. In 1997, more than 1.3 million new businesses were created in the United States, and for the first time, more than half were home-based. This trend, expected to continue, makes the availability of reasonable home occupation regulations important. Regulations should consider including a registration process to assure that the host community receives applicable tax revenues.

Recommendations

1. Review home occupation regulations to ensure they provide for reasonable accessory use and protect community interests.

Home Occupation



PhotoDisc

ENHANCE TRANSPORTATION OPTIONS

13

Overview

For most of the past century, the transportation system in Groton has been dominated by the automobile. There is little doubt that the automobile is largely responsible for most of the development patterns that exist in Groton today.

While there may not be major changes in the dominance of vehicular circulation during the planning period, the time has come for a better balance in the transportation network in Groton. That balance can be promoted through more emphasis on transportation alternatives such as walking, bicycles, and transit.

At the same time, programs should continue to be implemented to maintain and improve the overall vehicular circulation network.

The transportation network must meet the needs of the residents and the community ...

New Road and Sidewalk Construction



Carefully Manage The Existing Roadway System

Groton is a major roadway hub for the southeastern Connecticut region due to:

- the Gold Star Bridge on Interstate 95 (the only bridge over the Thames River between Long Island Sound and Route 2A in Montville/Ledyard)
- the US Navy Base
- Electric Boat Corporation, Pfizer and other major employers
- the tourist traffic to the casinos, Mystic, and other area destinations

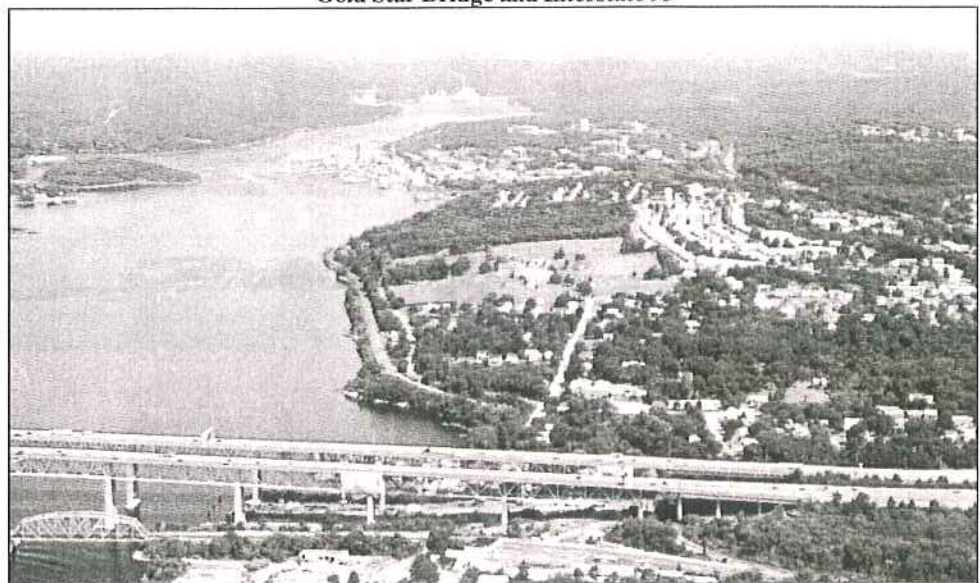
As shown in the following table, traffic volumes on State highways in Groton can be significant. The table below lists the top ten traffic locations on local streets in Groton in 1996-97 (Interstate 95 excluded).

1996-97 Major Traffic Locations

Route	Location	1996 ADT	1987 ADT
1	From Route 12 to Route 349 NB	27,400	27,200
12	From Route 184 to Crystal Lake Road	26,300	29,200
12	From Route 1 to Route 184	24,800	23,800
349	From Meridian Street Extension to Route 1 Exit	24,300	22,700
12	Between ramps to WB Route 184	23,700	27,400
184	From Interstate 95 to Route 12 ramp	23,700	27,400
1	From Exit to Route 349 to Meridian St Extension	21,800	24,400
349	From Rainville Avenue to Meridian Street Extension	21,400	19,700
349	From Route 1 Exit to Interstate 95	18,500	n/a
184	From Kings Highway to Route 117	18,200	15,300

Groton is served by four interchanges on Interstate 95 and this interstate highway provides an important east-west travel route for Groton residents. Traffic volumes on Interstate 95 range from 62,000 vehicles per day at the Stonington line to 117,000 vehicles per day on the Gold Star Bridge.

Gold Star Bridge and Interstate 95



Overall Circulation

Groton has a good hierarchy of roads to meet the needs of residents and businesses. However, due to historical development patterns, Groton has many more north-south roads than east-west roads.

East-west traffic is restricted to Route 1, Route 184, and Interstate 95. Potential east-west connections to provide additional traffic circulation are shown on the map on page 113.

Capacity, Congestion and Access Management

Congestion occurs when traffic volumes exceed the capacity of a roadway (or an intersection). The main capacity deficiencies in Groton are located along Route 12 and at the junction of Interstate 95, Route 184, Route 12 and Route 1. While improvements are being planned to address these and other areas in Groton, there is a limit to how much can be accomplished through continued widening.

It may surprise some people to realize that Groton's road network is essentially fixed since few major new roads will be built in Groton in the future. At the same time, expanding roadway capacity (roadway widening or intersection improvements) is very expensive and can have significant community impacts.

Thus, a challenge of the Plan will be to manage the existing roadways effectively in order to preserve their capacity. Access management is an approach that seeks to manage driveways and intersections on state highways and other major roads in Groton to maximize roadway capacity and reduce congestion.

Since access management is becoming a priority for CTDOT, funding is available for access management studies of major corridors. Such studies might be considered for sections of Routes 1, 12, and 184. Groton should request funding for an access management study of these routes from the Southeastern Connecticut Council of Governments and CTDOT. The Planning Commission and the Zoning Commission should implement recommendations from the study as part of any land use approval in these areas.

Recommendations

1. Develop east-west connectors, where feasible and desirable.
2. Maintain traffic capacity to accommodate future traffic volumes through correction of existing deficiencies and management of existing roadways while striving to maintain community character.
3. Make intersection improvements where needed on Routes 1, 12, and 184.
4. Undertake one or more access management studies on Routes 1, 12, and 184.
5. Implement recommendations from the access management study as part of any land use approval in these areas.
6. Encourage access management strategies along major roadways in Groton.

Traffic Congestion

Rules-of-thumb indicate that two-lane arterial roadways can handle up to about 17,000 vehicles per day before congestion becomes apparent and that four-lane arterial roads can handle up to about 26,000 vehicles per day.

On the basis of traffic volumes alone, it can be seen that several roads have the potential to be congested, particularly at peak hours.

Access Management

Access management is an approach based on the premise that since road capacity is limited and driveways and streets can reduce road capacity, access to arterial roadways should be managed in order to preserve the capacity of the roadway.

Access management techniques can include:

- interior connections between parking lots
- access from secondary streets
- shared parking
- sidewalks
- driveway alterations

Access management techniques should continue to be applied in commercial areas on Routes 1, 12, and 184.

Consolidated Parcels

One way to encourage access management is to allow abutting parcels to be considered as one lot for zoning purposes. This often allows for greater lot coverage, reduced setbacks on the common property line, shared parking, and fewer driveways. Some communities allow for a lot coverage or other bonus if two or more parcels are consolidated.

Road Classifications

Federal, state, and regional transportation planning organizations use regional road classifications to identify and prioritize road projects for funding under the Transportation Improvement Program (TIP).

Local road classifications are used to establish road construction standards. For example, an industrial access road would be wider and straighter than a residential dead end street.

Revise Roadway Classifications

For evaluating roadway networks, roads are typically classified based on their function (through traffic versus access), major land use (business or residential), traffic volumes, and overall location. Local roads and their recommended classifications are identified below and on the map on the facing page.

Local Road Classifications and Segments

Limited Access Highways - Roads that serve regional traffic and have limited access.

- Interstate 95
- Route 349 from I-95 to Rainville Ave

Arterials - Highways which carry both regional and local traffic from the collectors.

- Route 1
- Route 12
- Route 27
- Route 117
- Route 184
- Route 649
- Route 215 (Groton Long Point Road, Mystic-Noank Road, and Water Street)
- Route 614 (Allyn St., Mystic St., Cow Hill Rd)
- Route 349 (Rainville and Eastern Point Rds to Shennecossett Road)

Collectors - Take traffic from local streets and direct it to arterial highways system.

- Antonino Road
- Benham Road (city)
- Brandegee Ave (city)
- Bridge St. (city and Town)
- Brook St. (GLP Road to Elm Street)
- Col. Ledyard Highway
- Cow Hill Rd: from Mystic St. to High St.
- Crystal Lake Road
- Depot Road
- Eastern Point Road: from Poquonnock Rd to Rainville Ave (city)
- Fairview Ave (city)
- Fish Town Road
- Flanders Road
- Gales Ferry Road
- Gungywamp Road
- High St. (Mystic)
- John St. (city)
- Kings Hwy
- Lambtown Road
- Main Street (Noank)
- Meridian St. (city)
- Military Hwy
- Mitchell Street (city)
- Mosher Ave (Noank)
- Noank – Ledyard Road
- North St. (city)
- Ocean View Ave
- Plant St. (city)
- Pleasant Valley Road North
- Pleasant Valley Road South
- Poquonnock Rd from Rt 649 to Rte 1
- Poquonnock Rd from Thames to Rainville (city)
- Pumpkin Hill Road
- Sandy Hollow Road
- Shewville Road
- Shore Avenue (Groton Long Point)
- Terrace Ave
- Thames Street (city)
- Thomas Road (Town and city)
- Toll Gate Road
- Walker Hill Road
- West Mystic Ave
- Winding Hollow Road

Local - Roads providing access to neighborhoods and individual properties

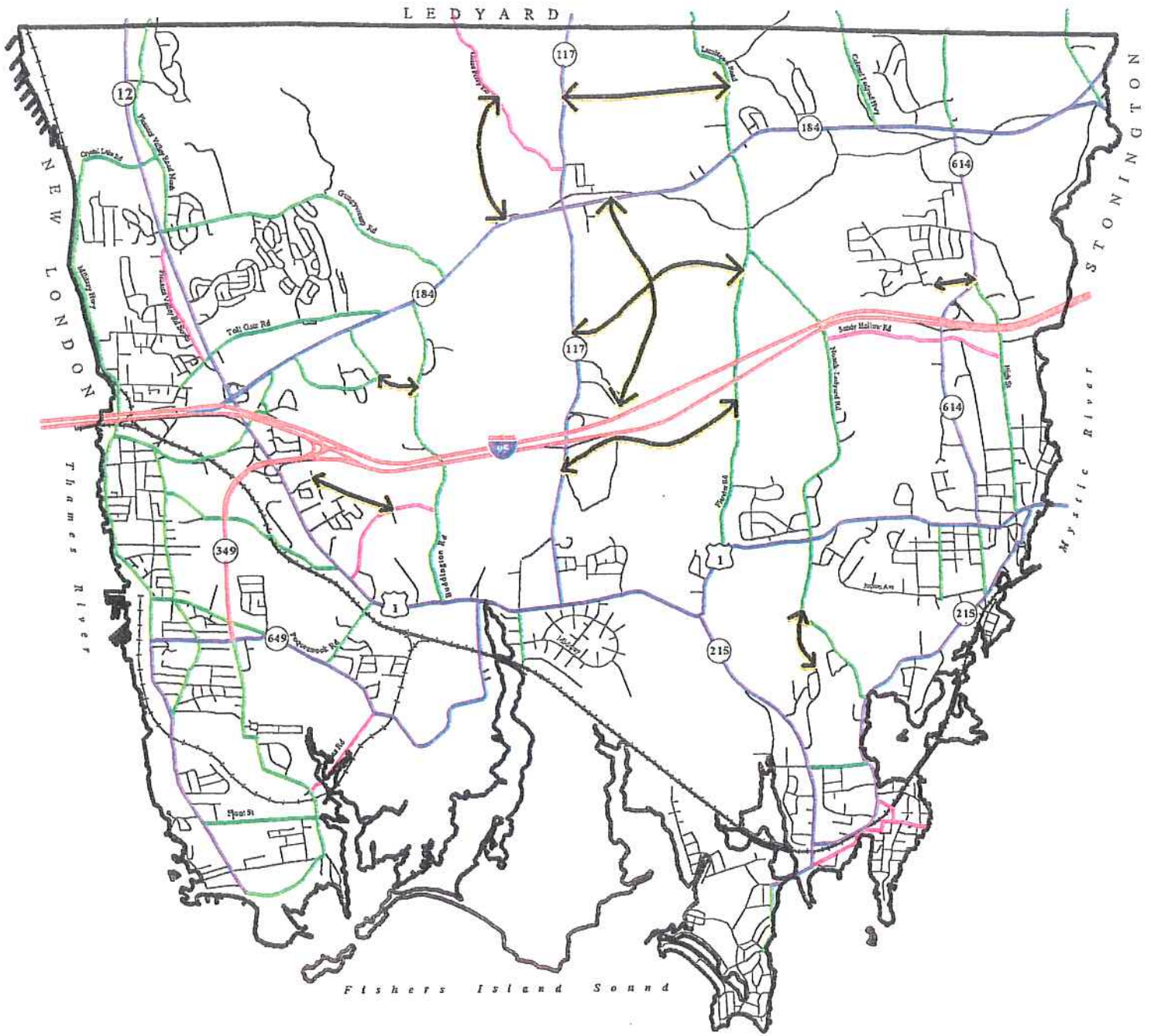
- Other roads and streets in Groton.

Recommendations

1. Update subdivision and other regulations to incorporate the roadway classification scheme, as necessary.

Transportation Plan

Town of Groton, CT



Note:
 Potential connections are only shown conceptually;
 detailed engineering and environmental analysis
 will be required to determine specific locations.
 These roads are intended to be built as development occurs.
 Potential connections could be either public roads
 or appropriate private connections.

LEGEND

- Limited Access Highway
- Arterial Road
- Major Collector Road
- Minor Collector Road
- Local Road
- Potential Connections
- Other
- Rail

5000 0 5000 Feet



Scenic Road Elements

Scenic road elements include narrow road width, tree canopies, stone walls, scenic vistas, agricultural lands, historic buildings, and notable natural features.

Sources: CGS 7-149a, CGS 13b-31b

New Scenic Roads

Strategies to make new roads or reconstructed roads more scenic and enhance Groton's community character could include:

- narrower paved widths
- slower design speeds
- steeper grades
- not clearing trees and grading flat for the full width of the road right-of-way
- retaining or building stone walls
- street tree planting
- providing landscaped center islands in cul-de-sacs to minimize paved areas, provide additional snow storage area, and provide an amenity in the roadway

Encourage Roads That Are More Scenic

Transportation engineering has typically focused on removing road hazards and moving cars as efficiently as possible. This has tended to result in roads that are wide, flat, and straight - the very characteristics that encourage speeding and detract from community character.

In recent years, the focus has turned more towards balancing traffic efficiency with community character. More attention is being paid to ensure that roadways (which comprise only about 10 percent of all land area in Groton) do not dictate the overall character of the community. In other words, efforts are being devoted to making roads that serve their purpose and are more scenic.

The following pictures illustrate the difference between a road that is out of character with a local residential street in Groton (primarily due to paved width) and a collector road that has been recognized as a scenic road in Groton. Each road provides for safe overall traffic circulation. It is ironic that the road that carries more traffic volume has more character than the residential street.

Sandy Hollow Road (Collector Road)



Judson Avenue (Local Street)



It should be our goal to make all roads in Groton as scenic as possible while providing for safe and efficient circulation. The best way to do this is through modifying the road construction standards (primarily design speed and paved width).

The design speed of a road is the speed that the road is designed to be capable of handling. It is typically higher than the posted speed limit. A higher design speed results in roads that are wider, flatter, and straighter. As a result of the road design speed, motorists often feel that it is safe to exceed the posted speed limit. Still, roads must meet some minimum design standards to allow for traffic safety.

Road Standard Recommendations

	Current Design Speed	Current Right-of-Way Width	Current Pavement Width	Proposed Recommendations
Arterial (Thorough-fare)	50 MPH	60-100'	40-44'	None
Collector	45 MPH	60'	34-40'	Reduce design speed to 35 MPH and allow paved width of 30'
Access	30 MPH	50'	30'	Reduce design speed to 25 MPH and allow paved width of 24'
Village Road	25 MPH	50'	26'	Reduce design speed to 20 MPH and allow paved width of 22'
Sub-Village Road	25 MPH	40'	20'	Reduce design speed to 20 MPH and allow paved width of 18'

While it is important to recognize existing scenic roads, efforts also need to be devoted towards ensuring that new roads built in Groton are the scenic roads of the future. During the planning period, current road construction standards should be reviewed and revised to allow streets to follow existing terrain more closely and create the potential for more scenic roads. Possible changes to allow more scenic roads in new developments are identified in the sidebar.

Recommendations

1. Review local road construction standards to promote the construction of more scenic roads as part of new developments.
2. Continue to designate local roads as scenic roads in order to protect and enhance community character.
3. Publicize and promote the “adopt-a-road” program with local organizations in order to promote litter control and enhance community character.

Scenic Roads

Scenic roads are one element that significantly contribute to Groton’s character. As development of the community continues, scenic roads may be increasingly threatened by adjacent development or increasing traffic volumes.

Groton adopted a scenic road ordinance in 1989 and two roads have since been designated by the Town Council as scenic roads:

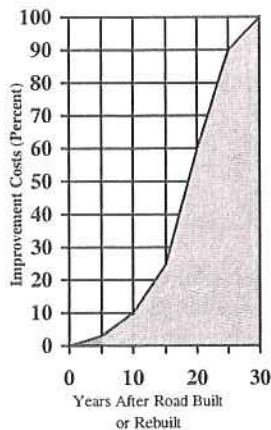
- River Road
- Sandy Hollow Road

For a local road to be designated as a scenic road, it must not have intensive commercial development or high volumes of traffic and meet one or more of the following criteria:

- unpaved
- bordered by mature trees or stone walls
- no more than 20 feet in width
- have scenic views
- blend naturally into the surrounding terrain
- parallel or cross over brooks, streams, lake or ponds

See the map on page 57 for a listing of roads classified as scenic roads in Groton.

Continue to Maintain and Improve Roads



Roadway maintenance is similar to tending a garden. Regular maintenance minimizes the total amount of work required and its cost. On the other hand, deferred maintenance means that significant efforts and expenditures are required to restore the original integrity.

For this reason, Groton should continue to make regular road improvements on local roads. Incremental maintenance (as and where needed) helps to efficiently and cost-effectively maintain road conditions and helps avoid expensive road reconstruction projects that can result from deferred maintenance.

In addition, Groton should continue to work closely with the Southeastern Connecticut Council of Governments (SCCOG) and Connecticut Department of Transportation (CTDOT) regarding transportation issues and improvements in town. In particular, continued spot improvements to state highways should be encouraged.

The Town is currently using a pavement management system for planning road reconstruction and repairs on the 93 miles of roadway it maintains (this excludes Navy, City of Groton, and Groton Long Point streets). The system has been in place for the past two to three years. The key issue with regard to the pavement management system is that it be adequately funded in order to maintain the local road system.

Recommendations

1. Continue to make roadway improvements to address safety and capacity issues.
2. Increase the funding for road maintenance and improvements in order to adequately maintain existing roads.
3. Continue to work closely with the SCCOG and CTDOT regarding transportation issues and improvements.
4. Encourage continued spot improvements to state highways, where necessary.
5. Continue to evaluate how possible future transportation projects may benefit the community.

Address Unaccepted and Private Streets

Despite efforts over the years, Groton still has some unaccepted streets that have houses along them. This can be an issue for both the Town and the property owners along the road in terms of maintenance responsibility, liability, and other issues.

A 1989 task force recommended a policy toward these roads, a priority list for their improvement, and suggested funding for the paving of these streets and the installation of drainage improvements. Twenty-four of the unaccepted streets at that time were placed on the priority list, generally ranked by the number of houses along them. In addition, the Task Force suggested allowing roads to be accepted by the Town with a lower level of improvements (paved width, pavement depth, right-of-way width) than is required for new roads.

While little progress on this issue has been made in the last ten years, efforts to address unaccepted streets should continue. In addition, the standards for acceptance of such streets should be reviewed to ensure they are reasonable for both the community and the neighborhood.

While all unaccepted streets are privately-owned (i.e. they are not owned by the Town of Groton), the term “private street” can also be used to identify streets built to public standards that are owned by the abutters for privacy or other reasons.

Although some communities allow private ownership of streets provided they are built to public standards, the long-term implications of this are unclear. For instance, if the abutters do not adequately maintain these roads, there may be pressure on the Town to accept these roads into the Town road system at a later date.

Since this may pose a future liability for the Town, private roads should be discouraged in Groton unless this future liability can be placed upon the abutters. A “development marketing strategy” should not become a future liability for other Groton residents when it is convenient to do so.

Recommendations

1. Continue efforts to address unaccepted streets, including standards and procedures.
2. Discourage establishment of private streets unless issues of liability for future improvement are clearly specified.

Road Acceptance

To become part of the Town of Groton road system, a street must be accepted as a public street by the Representative Town Meeting (RTM), after recommendation for acceptance by the Directors of Planning and Public Works and the Planning Commission.

Some roads in Groton have not been accepted over the years since they predate current regulations and do not comply with current standards. As a result, the current property owners must maintain these roads.

Sidewalk Requirements

Unless waived by the Planning Commission:

- four-foot wide sidewalks are required on local roads
- five-foot wide sidewalks are required on arterial and collector roads or any road classification bordering industrial, commercial or multi-family housing

The current policy is to only consider waiving the installation of sidewalks on one or both sides of local streets in low density subdivisions (RU-40 and RU-80) depending on:

- the number of lots along the road
- the length of the road
- whether a through street or a cul-de-sac

Sidewalks are required on collector and main streets serving these areas and where the Commission determines that a linkage is necessary for the overall sidewalk network.

Opportunities to receive fees-in-lieu of sidewalks should be explored before any sidewalk installation is waived.

Create an Overall Pedestrian Network

An important transportation recommendation in the Plan is to increase efforts to create an overall pedestrian network. Sidewalks and trails provide for safe pedestrian circulation, an important element in creating and maintaining an active and vital community. In addition, these pedestrian routes provide an alternative to vehicular transportation. With more sidewalks and trails, the number of trips that require automobiles may be reduced and the opportunities for recreational use increased.

Sidewalks

Groton has a concentration of sidewalks in the City and the Mystic section of town. In addition, there are sidewalks along one or both sides of Route 1 from Interstate 95 to Groton Long Point Road. Sidewalks also exist in other areas of Groton where they have been installed as part of commercial developments or residential subdivisions.

In Groton, the installation of sidewalks occurs in two main ways:

- the zoning and subdivision regulation require the installation of sidewalks for new projects
- the Town undertakes sidewalk construction projects, through the Capital Improvement Program, to extend and connect sidewalks throughout the community

These policies and efforts should be continued. To help guide these efforts, a sidewalk inventory and improvement plan should be established and maintained so that opportunities for pedestrian circulation are maximized in accordance with the following community priorities:

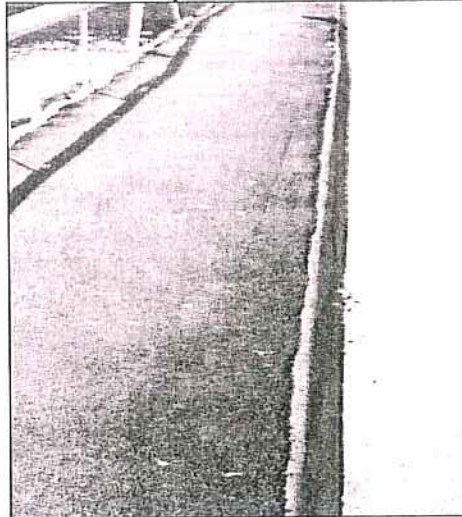
- install sidewalks within and between activity nodes (identified on the map on page 73)
- complete the sidewalk network on arterial roads as opportunities present themselves
- establish sidewalks on collector roads
- establish sidewalks in commercial and multi-family areas
- establish sidewalks (and/or trails) in residential and industrial areas

It will also be important to select the appropriate type of sidewalk for the appropriate location. While some communities have a standard concrete sidewalk design, Groton is too diverse a community for such a simple standard.

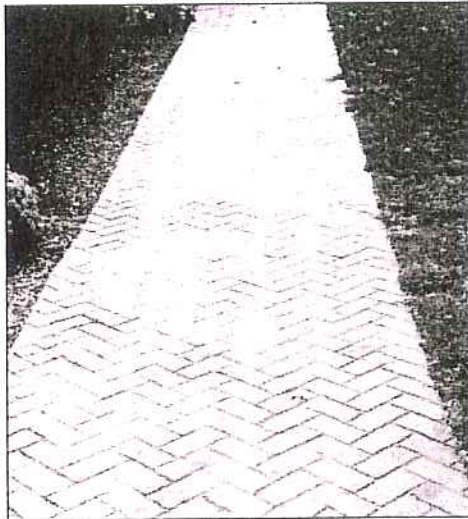
Concrete Sidewalk



Asphalt Sidewalk



Brick/Stone Pavers



Gravel/Stonedust Paths



Photos by William Carlbach

Trails

As previously indicated in the Open Space section of the Plan, trails within open space and greenbelt areas will greatly enhance the value of these areas and provide transportation and recreation opportunities. In fact, Groton has the opportunity to establish one of the premiere trail networks in the state.

Opportunities to create less formal walkways (such as stonedust paths) should also be explored where feasible and desirable. The eventual goal should be to interconnect all of the pedestrian walkways in Groton (sidewalks, paths, trails) into a cohesive overall system.

Sidewalk Standards

The Historic District Commission has looked at different types of sidewalk placements in historic areas to help enhance the overall character of these areas. They have suggested the following:

Country Lanes with Rural Vistas – no sidewalks or curbs

Contoured Land such as Antique Victorian Berms – minimal blacktop pathways with no curbing is preferred and the land contours should not be disturbed.

Downtown Residential or Commercial Area – prefer concrete sidewalks with cut granite curbing. Cast concrete curbing may be an acceptable alternative. Brick or cobblestone is generally not an appropriate historic sidewalk material in Groton.

Private Property with Public Access – should be treated as above if visible from a public way or be reviewed by the Historic District Commission.

Recommendations

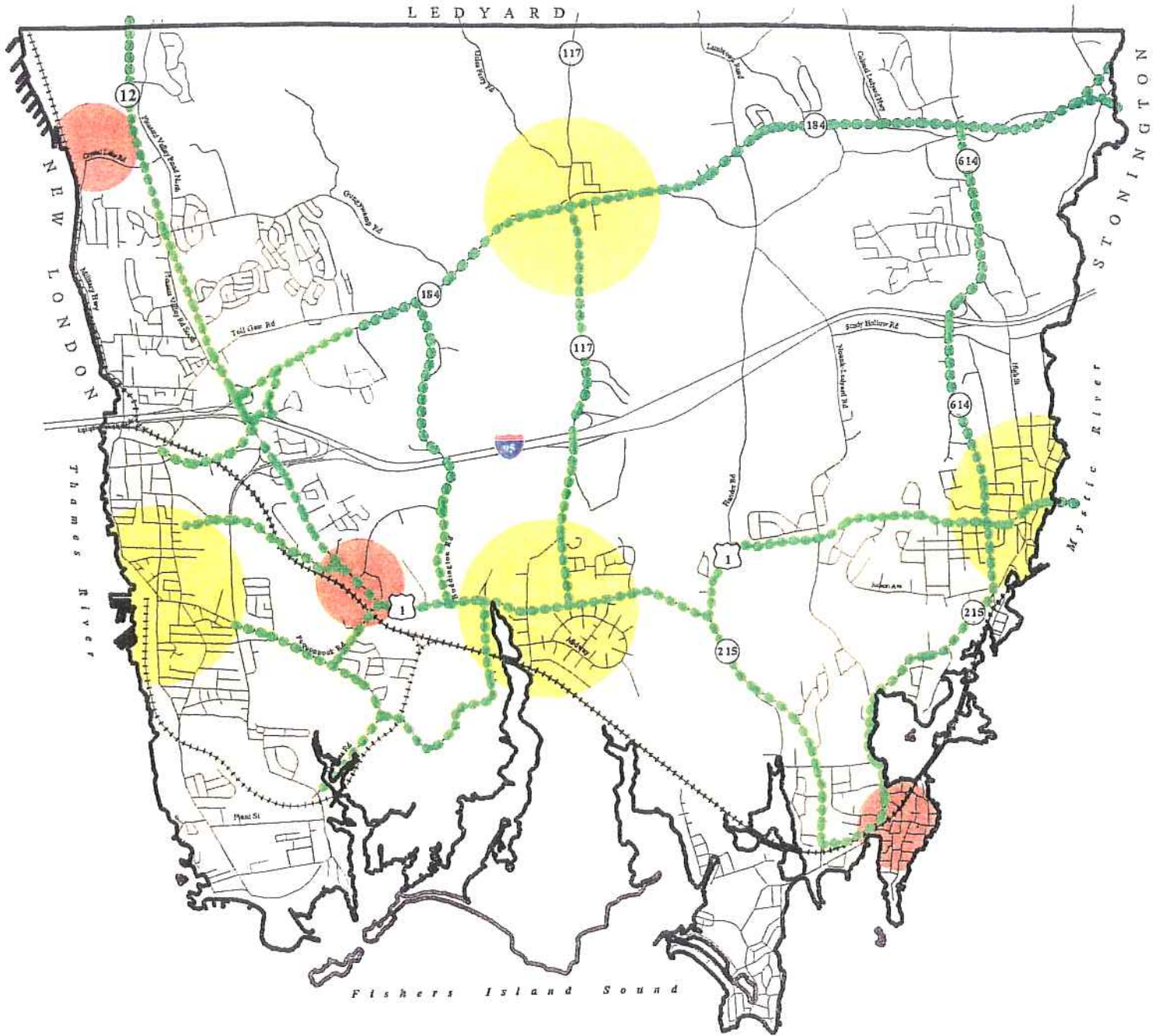
1. Continue to improve and extend the sidewalk network in and around Groton.
2. Maintain the zoning and subdivision regulation that require the installation of sidewalks for new projects.
3. Continue to appropriate municipal funds to extend, connect, and repair sidewalks throughout the community.
4. Consider the possibility of enacting a “fee-in-lieu-of sidewalk” regulation to support the overall development of sidewalks in Groton.
5. Establish and maintain a sidewalk inventory and improvement plan to extend and connect sidewalks where most needed (such as within major activity areas and on the major travel routes that lead to those centers).
6. Continue to develop, improve and extend the trail network throughout Groton.
7. Allow for multi-use trails (bicycles, pedestrians, rollerblades, etc.).
8. Modify the zoning and subdivision regulations to require the installation of trails in new projects.
9. Appropriate municipal funds to extend and connect trails throughout the community.
10. Establish and maintain a trail inventory and improvement plan to extend and connect trails where most needed.
11. Explore opportunities to create less formal walkways where feasible and desirable.
12. Strive to interconnect all of the pedestrian walkways in Groton (sidewalks, paths, trails) into a cohesive overall system.

Sidewalk In Mystic







Sidewalks and Walkways Plan

Town of Groton, CT



Legend

Sidewalks / Walkways

-  Priority network
-  Neighborhood sidewalk infill
-  Community sidewalk infill
-  School walking distance infill

5000 0 5000 Feet



Bicycle Facilities

Bicycle routes can include “transportation” routes (for specific trips) and “recreational” routes. While there may be more initial interest in recreational routes, focus should also be directed towards establishing transportation routes.

The types of bicycle facilities that may be appropriate in Groton include:

- shared roadway
- wide curb lane
- shoulder bikeway
- bike lanes
- multi-use path

Better signage and marking of bicycle routes is an important step towards reducing conflicts and encouraging more bicycle use.

Shared Roadway Lane



Multi-Use Path



Establish a Bikeway Network in Groton

A Bikeway Plan for Groton was adopted in 1975 that detailed a number of routes contained within existing road rights-of-way. The 1990 Plan of Conservation and Development identified a need to expand the network of bikeways in Groton. This has not been done.

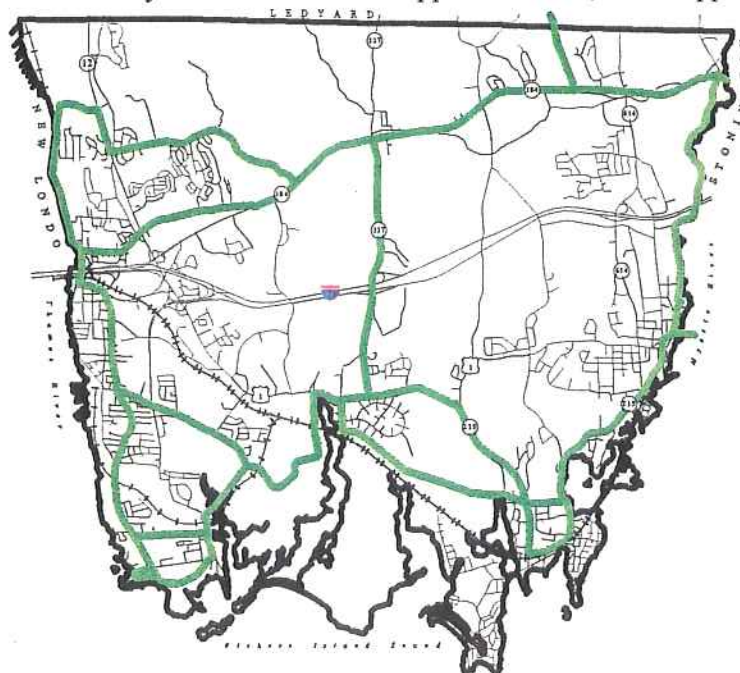
At the present time, there are few formal bicycle routes in Groton. Any existing bicycle routes rely predominantly on roads and streets and conflicts can arise between bicycle and vehicular use. Groton should develop a network of bicycle trails along major streets and in open space and greenbelt areas.

When improvement work is undertaken on major roads, bicycle use should be considered and the suitable type of bicycle facility (as indicated in the sidebar) provided, where appropriate. Priority consideration should be given to establishing bike trails along major roads that service areas of local activity (business areas, schools, parks, etc.).

The eventual development of a system of bicycle routes appropriately designed, signed and marked to ensure the safety and enjoyment of Groton residents will be facilitated by the preparation of an overall concept plan as soon as possible.

Recommendations

1. Develop an overall concept plan for bicycle routes in Groton.
2. Provide appropriate, safe, convenient bicycle facilities (including signage, pavement marking, and Town maps) when improvements are undertaken on major roads in Groton.
3. Give priority to bicycle trails along major roads that service areas of local activity (business areas, schools, parks, etc.).
4. Provide for bicycle racks and other support facilities, where appropriate.



Enhance Transit Service

As previously indicated, a better balance is needed in Groton between different forms of transportation. Groton is fortunate that several alternative forms of transportation are available in the community. During this planning period, efforts need to be devoted to supporting and enhancing transportation options.

Transit service in and near Groton is provided:

- by the Southeast Area Transit (SEAT)
- by the Town's dial-a-ride service for the elderly and disabled
- by Pfizer to transport employees between their facilities
- by local hotels and assisted living facilities for residents and guests
- in downtown Mystic via a shuttle service
- by Foxwoods Resort and Casino for employees

In addition, there is discussion of providing a trolley system to interconnect tourist attractions in Mystic (aquarium, seaport, downtown) in the future.

Despite all these transit services, the quantity and quality of transit for Groton residents are modest. The SEAT service is infrequent and follows a fixed route. The other transit services are generally unavailable to the general population.

Local and regional transit services should be supported and enhanced where feasible to help meet the needs of Groton residents and businesses and to help achieve Groton's housing, employment, and economic development objectives. During the planning period, the Town should work with SEAT and other local transit providers to enhance local bus services and explore ways to provide better service that meets the needs of the community.

During the planning period, consideration should be given to supporting and expanding other bus transportation services (vehicles, hours, days) to serve:

- residents (youth, workers, shoppers, commuters) and visitors
- the anticipated increase in the number of senior citizens

Recommendations

1. Devote efforts to supporting and enhancing transportation options.
2. Coordinate and integrate the various public and private transportation systems operating in Groton.
3. Encourage preparation of a multi-modal transportation study in Mystic.
4. Create, support, and enhance local bus transportation that helps achieve Groton's housing, employment, and economic development objectives.
5. Continue to work with SEAT to enhance local bus service for residents, commuters, tourists, and others.
6. Explore expanding other bus transportation (Pfizer, Foxwoods, Town dial-a-ride) to more days and to serve more residents.
7. Consider enacting a "fee-in-lieu-of-parking" regulation to help support transit development in major activity areas.

Bus Transit

SEAT provides transportation service that is available to the most people in Groton. Local service is provided south of, and including, Route 184. Express bus service runs along Route 12, Route 184 and Route 1.

Overall ridership on SEAT has been modest due to the limited schedule (one bus per hour) and fixed routes.

While more frequent bus service has been discussed, low ridership levels make it difficult and it is unclear what type of improvements will be made in bus service by SEAT during the planning period.

Address Parking Needs

Parking Requirements

Groton has a variety of parking requirements for different land uses. Overall, many of these standards appear fairly reasonable given available information about parking utilization, both in Groton and nationally.

However, as was pointed out in the Lane, Frenchman and Associates study of Downtown Groton (1984) and parking studies in the Mystic area (1982 and 1992), inappropriate parking requirements can hinder the appropriate development of an area and detract from community character.

In order to promote the most appropriate patterns of development, especially in the proposed nodes, a comprehensive review of parking requirements should be undertaken during the planning period to ensure that appropriate standards are in place. In particular, it may make sense to evaluate whether reduced parking requirements (similar to the “5/8ths rule” in Mystic) may be appropriate in other mixed use areas (such as Downtown Groton). Where required, parking should be incorporated at the rear (and possibly side) of buildings and minimized so that buildings can be brought closer to the sidewalk and the street.

Reducing the amount of paved surface can also reduce negative impacts on water quality. While reducing parking standards may be the most obvious way to reduce water quality impacts, innovative approaches also include the use of grass or other pervious surfaces for overflow parking, utilization of shared parking to minimize parking areas, use of tire stops instead of curbs at parking area edges, and the use of vegetated islands and more shade trees throughout parking lots.

Commuter Parking

Groton has one State-owned commuter parking lot for car-pooling and van-pooling located near the Interstate 95 and Route 117 interchange (Exit 88). This commuter parking lot should be maintained in order to facilitate carpooling and vanpooling by Groton residents. Additional commuter parking lots, with amenities such as bus shelters, telephones, portable toilets, and newspaper racks, should be considered for locations that are appropriate within Groton.

Recommendations

1. Undertake a comprehensive review of parking requirements during the planning period to ensure appropriate standards are in place for different uses and areas and water quality impacts are minimized.
2. Consider allowing or providing stand-alone parking lots where they will meet a need, facilitate transit, not hinder the appropriate development of an area, and not detract from community character.
3. Maintain and, if necessary, expand commuter parking lots to facilitate car-pooling and vanpooling by Groton residents.

Monitor Rail and Airport Operations

Rail Service

While the main Northeast Rail Corridor travels through Groton, the nearest stations are in New London and Stonington. This rail line was recently changed from diesel service to electric (with catenary poles and wiring) for the introduction of high-speed Amtrak rail service between Boston and New York.

Providence and Worcester (P&W) provides freight rail service to Pfizer and Electric Boat Corporation within the City and along the Thames River north of Interstate 95. However, this service is presently underutilized. There is the potential for passenger rail service on the P&W line for excursions and commuters. Any efforts to bring visitors and employees to or from Groton along this route should be encouraged.

Rail services should be carefully monitored due to the potential impacts (both positive and negative) on local residents and businesses.

Airport

The Groton - New London Airport, operated by the Connecticut Department of Transportation (CTDOT), is the fourth largest airport in the state. With recent service improvements at Bradley International Airport (Hartford) and T.F. Green Airport (Providence), it is unlikely that there will be a market to expand scheduled passenger service at the airport. On the other hand, efforts should be devoted to maintaining the level of service presently offered.

While the Master Plan recommends reconstruction of runways and taxiways, these plans are being evaluated. While the airport continues to provide a valuable service to area residents and businesses, activities at the airport tend to be controversial since about half of its operations involve flight paths over residential areas. Due to the potential impacts (both positive and negative) on local residents and businesses, activities at the airport should be closely monitored.

Recommendations

1. Support maximum passenger rail service to the Mystic and New London stations.
2. Encourage efforts to reduce fares for local Amtrak service to reduce vehicles using I-95.
3. Support revival of passenger service on the P&W line.
4. Continue to closely monitor rail service activities due to the potential impacts (both positive and negative) on local residents and businesses.
5. Continue to closely monitor activities at the airport due to the potential impacts (both positive and negative) on local residents and businesses.
6. Undertake partnerships with the airport and CTDOT to enhance the economic potential of the airport facilities.

Airport Benefits

Groton - New London Airport offers scheduled passenger service to Philadelphia and connections from there to over 80 destinations. The airport is also home to National Guard, corporate aviation, charter, and general aviation operations.

CTDOT estimates that the airport provides about \$167 million of economic benefits to the southeast Connecticut region each year.

Maritime Transportation

Groton has a great maritime tradition and the Thames River and Mystic River are still used for commercial and recreational maritime transportation.

Support Marine Transportation Services

Groton has a tradition of maritime operations that continues to the present day.

Without question, the biggest marine operations in Groton are the United States Navy and the Electric Boat Corporation, a division of General Dynamics on the Thames River. Groton is often referred to as the Submarine Capital of the world due to the presence of these two operations. The Thames River channel has been dredged to provide adequate depth for submarines and other vessels.

In addition, the Thames River is still heavily used by the following operations:

- Hess Oil
- Pfizer
- Block Island Ferry
- Martha's Vineyard Ferry
- Long Island Ferry
- Fishers Island Ferry

The Mystic River was another location for maritime operations in Groton's history. While once a center for shipbuilding and fishing, the primary use of this area today is for moorings and marinas for pleasure craft.

With Groton's strategic maritime location and varied resources, there is the potential for water taxi services for recreation and other purposes. The potential for this service should be explored and be balanced with the potential land-side impacts.

Marine businesses are an important part of Groton's history. While Groton does not really manage the maritime transportation needs of these businesses, attention should be paid to their land-based transportation needs as well.

Recommendations

1. Continue to monitor the land-based transportation needs of Groton's marine businesses.
2. Encourage waterfront uses for maritime commerce, not residential or other uses that are not water-related.
3. Explore the concept of water taxi services (in areas such as Noank, Mystic, New London, Groton, Ledgelight lighthouse) and carefully manage any land-side activities.
4. Support regional efforts to increase usage of the State Pier in New London as a way to reduce truck traffic on I-95.

ADDRESS COMMUNITY FACILITY NEEDS

14

Overview

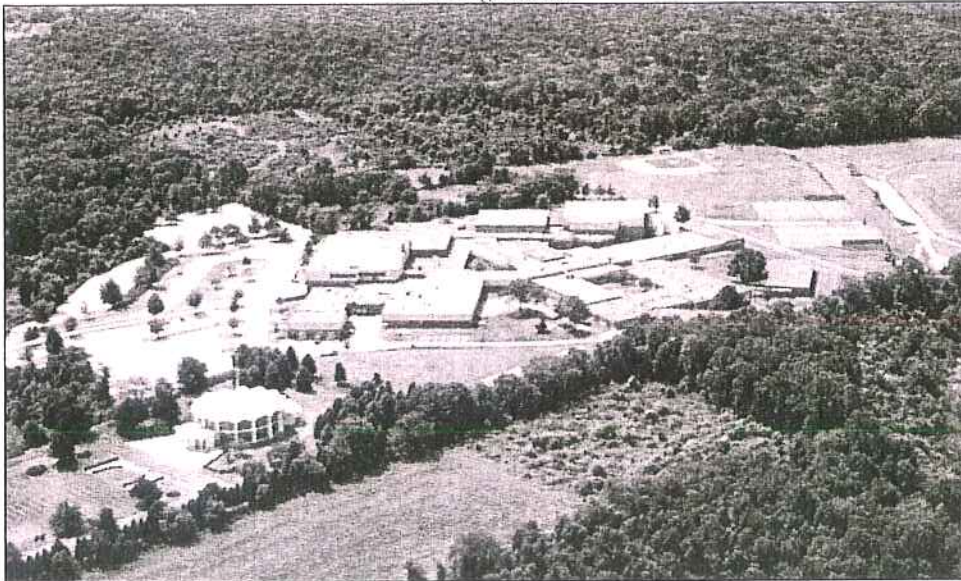
Community services and facilities include such governmental functions as education, public works, public safety, and recreational services. Such services contribute significantly to Groton's community character and its quality of life. The Plan reviews these facilities to ensure they are appropriately located and sized to meet community needs during the planning period and beyond.

Groton is unique because there are multiple organizations and agencies that provide services for different geographical parts of the community. While information is provided for most operations, the primary focus of this booklet is service providers to the Town of Groton.

While specific locations for future community facilities are not mapped at this time, the Community Structure Plan (page 73) and the Future Land Use Plan (page 151) provide guidance as to potentially appropriate locations.

Community facilities and services are important to the overall quality of life in Groton ...

Fitch High School



Future Education Needs

In addition to the current need for educational facilities, Groton will need additional school facilities in the future as the community grows towards 60,000 residents.

Additional information on planning for future school sites is presented on page 135.

Address Current Community Facility Needs

Educational Facility Needs

While many other towns in Connecticut are in the middle of a major enrollment increase, school enrollments in Groton have been relatively stable since the mid 1980s. However, the school system is very close to capacity and constraints on programs and space have been identified. Educational planning is constrained by the fact that enrollments are planned only one year in advance rather than the ten years that is customary.

Groton School Facilities Summary

Type	No. of Schools	Grades	00-01 Enrolled	Capacity Range	Enrollment/ Capacity
Pre-Kindergarten	-	PK	120	-	-
Elementary	10	K - 5	3,193	2,930 - 3,453	92% - 109%
Middle	3	6 - 8	1,320	1,240 - 1,460	90% - 106%
High School	1	9 - 12	1,277	1,241 - 1,460	87% - 103%
Total	14	PK-12	5,910	5,411 - 6,373	93% - 109%

School capacity information from memorandum titled Groton Public School Capacities, December 3, 1998.

The Town of Groton established a Blue Ribbon Facilities Task Force to look at school buildings and other facilities in Groton. The Task Force found that, while school buildings are generally well maintained given the age of some of the buildings, there are a number of maintenance and enhancement issues that should be addressed during the planning period.

In addition, the Blue Ribbon Task Force has recommended changes in school configurations and construction of additional space.

Recommendations

1. Undertake longer term enrollment planning (10 years, for example) and better understand the dynamics behind local enrollment (owners, renters, Navy personnel).
2. Continue to evaluate educational facility needs and implement recommendations of the Blue Ribbon Facilities Task Force supported by residents.

Fire and Emergency Medical Response

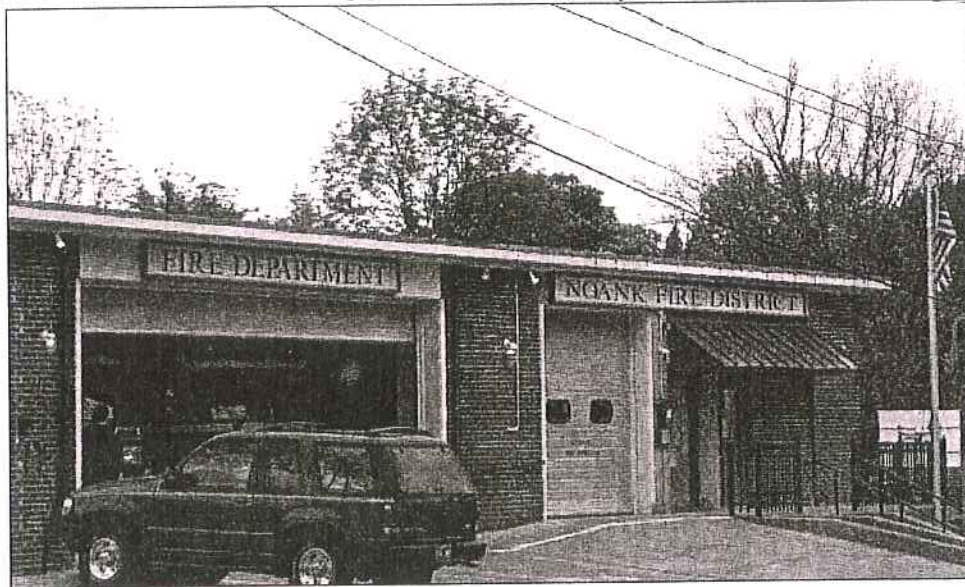
The Town of Groton has ample fire protection to meet the community's needs. The Town has nine separate fire districts, ten station houses, over 30 fire-fighting vehicles, and over 200 paid and volunteer firefighters. In addition, Groton has two ambulance services.

Volunteer staffing is the biggest issue in all districts. Due to training requirements, it is becoming increasingly difficult to attract volunteer firefighters and ambulance personnel. Day-time response is the biggest concern. A reliable volunteer department is more cost-effective than a paid fire or ambulance department. Volunteer compensation plans and similar programs should be considered for all fire and ambulance districts.

Recommendations

1. Undertake programs to attract and retain volunteer public safety personnel (fire and ambulance).

Noank Fire District Facility



Groton Fire Services

The nine fire districts in Groton include:

- Center Groton Fire District
- City of Groton Fire District
- Groton Long Point Fire Department
- Mystic Fire District
- Noank Fire District
- Old Mystic Fire District
- Poquonnock Bridge Fire District
- US Navy Base Fire Department
- West Pleasant Valley Fire District

Fire services are also provided by:

- Pfizer fire service
- Electric Boat fire service
- Airport fire service

On separate occasions, local fire staff reported that Groton had more fire equipment than Providence, Hartford, or New Haven.

Volunteer Assistance

In order to encourage and maintain local volunteer programs and services, the General Assembly recently passed legislation that allows a community to provide a tax rebate or credit or other compensation to local public safety volunteers.

Town Beach

During public outreach portions of the planning process, the “lack” of a Town beach was the most significant community facility issue that arose.

Of course, the Town of Groton already has a Town beach at Esker Point but it is generally considered unacceptable due to weed growth, bottom texture, and water characteristics. The City of Groton has a beach at Eastern Point but its use has been restricted to City residents. It is ironic that, in a community with more than 20 miles of coastline (the most in Connecticut), there is no acceptable community beach for all Groton residents.

Some of this has to do with the type of shoreline in Groton. Along Long Island Sound, where residents most want a Town beach, land areas are already committed to other uses, there are few areas for a sandy beach, or the water characteristics are not acceptable.

At one time, a Town Beach was located on the east side of the Poquonnock River near the old railroad trestle. While many residents have fond memories of this location, its use was lost due to airport expansion.

To address this issue, the most appropriate step may be to establish a Groton Beach Committee to evaluate all options for a beach location and determine the steps required to establish an appropriate Town Beach.

Recommendations

1. Establish a Groton Beach Committee to identify and prioritize all options for a beach location and determine the steps required to establish an appropriate Town Beach.

Town Beach at Esker Point



Plan For Mid-Range Needs

Recreation Facilities

An analysis of local recreation facilities indicates that additional recreational facilities will be needed in the future. At the present time, the Recreation Department is restricted in its programming due to space conflicts at school facilities and a lack of facilities to meet program interest.

While the use of indoor space can be resolved through coordination between the Recreation and Education Departments, the lack of outdoor field space can be a larger issue. This results in less time for maintenance and “field rotation” at facilities. Additional fields could be constructed (such as at the Copp property) or lighting could be installed on existing fields to address this issue. Expanded use of school facilities may also be warranted.

During the planning period, research should continue into how to best meet the recreational needs of residents and how and where to provide additional facility space (time and/or location).

Recommendations

1. Provide additional recreational facilities to meet local needs.
2. Continue to coordinate facility usage with the schools to meet local needs.
3. Explore the possibility of cooperation with other facilities in Groton (such as Grasso Tech) that will allow the Town to use existing facilities and contribute to their maintenance and improvement.
4. Consider developing a recreation center with pool, gym, fitness center, and youth area.

Playing Soccer



William Carlebach

Specific Recreation Needs

The Recreation Department has identified the following facility needs:

- baseball and little league fields
- football and soccer fields
- a running track
- skating pond
- additional picnic areas
- a Town beach

However, these are primarily active recreation facilities.

Over the planning period and beyond, there is expected to be increased demand for individual and passive activities such as:

- Walking
- Riding
- Rollerblading
- Multi-purpose trails

In fact, a survey conducted regarding future use of the Copp Property found that the facilities most wanted by residents were for passive activities.

These survey results seem to indicate that residents want a balance between active recreational facilities (the historic focus on ballfields) and passive recreational facilities (such as trails).

Public Works

The public works complex is located on Groton Long Point Road. The site contains a vehicle maintenance garage, a vehicle storage garage, the public works building, and the Town refueling station. Construction of a new vehicle maintenance facility is recommended due to the inefficient layout of the existing building. Additional sand and salt storage facilities are recommended to provide the Town with the ability to store adequate materials for local needs.

In terms of waste disposal, the current disposal arrangements with the regional resource recovery facility in Preston will continue for the next 20 years. Recommendations in the recent study related to bulky waste disposal should be evaluated and implemented.

Recommendations

1. Construct a new vehicle maintenance facility at the public works facility.
2. Establish additional sand and salt storage facilities at the public works facility and at satellite locations.
3. Address the long term policy issue of proper disposal of road sand sweepings.
4. Undertake programs to educate residents about waste management (recycling, household hazardous wastes).
5. Establish facilities for composting, bulky waste disposal, and a “swap” facility to help meet community needs.
6. Consider establishing a more permanent facility for household hazardous waste collection where chemical spills can be contained.
7. Address the animal shelter, including the possibility of inter-municipal or regional sharing of a facility.
8. Promote waste stream reduction, re-use, and recycling of materials.

Housing Authority

The Housing Authority maintains 175 units of affordable housing for elderly and disabled citizens at:

- Grasso Gardens (70 units) located on Route 117
- Pequot Village (105 units) located on Poquonnock Road

Since there is a waiting list for both facilities and demographic projections point toward an increasing elderly population, study of the need to construct additional units should be undertaken during the planning period.

Recommendations

1. During the planning period, investigate the need to construct additional affordable housing units for elderly/disabled persons.

Community Center/Campus

At several points in the planning process, strong interest was also expressed in establishing a community center / recreation center facility. Groton already has the basic foundation for such a facility that could be expanded to meet this need.

The Groton Public Library and the Senior Center already share a site and parking area on Route 117. While the library was expanded in 1996, additional expansion may be desirable as the community grows. Recent expansion of the Senior Center provided handicapped bathrooms, a revised fitness area, an improved computer lab, storage, dance and aerobics areas.

The Library/Senior Center site could be configured to meet future needs and provide space for indoor recreation facilities, indoor swimming pool, gym, a health club / fitness center, a youth center, meeting rooms, performing arts space, and other facilities. Such facilities would provide for a Town-wide community center at the site.

Careful planning will be required at this site to maximize the opportunities for establishment of such a complex. While the site has adequate space for future expansion of each facility, acquiring adjacent property may be prudent in order to allow expansion of the community center / campus at this site.

Recommendations

1. Investigate establishing a community center / recreation center complex on Route 117.
2. Undertake careful planning to maximize the opportunities for establishment of such a complex at this site.
3. Consider acquiring adjacent property in order to allow expansion of the community center / campus at this site.

Libraries

Groton has three libraries with different levels of funding from the Town:

- the Groton Public Library on Route 117 (95% Town funded)
- the Bill Memorial Library in the City (10% Town funded)
- the Mystic and Noank Library in Mystic (33% Town funded)

Governance is different for all three libraries. It may be beneficial in the long term if all three libraries coordinate to avoid unnecessary duplication of services and help meet community needs.

Recommendations

1. Investigate and implement opportunities to coordinate all three libraries to avoid unnecessary duplication of services and help meet community needs.

Social Services / Youth and Family Services

The Social Services Department administers the General Assistance program, two State-funded block grants, energy assistance, housing and outreach programs, discretionary funds and a food locker for the City and the Town.

Youth and Family Services is a social service agency that provides intervention and prevention services for at-risk children, youth, and families. The department operates family support centers on Central Avenue and at Colonial Manor in the City of Groton.

Both agencies have indicated the need for additional meeting and storage space. The need for a family shelter in Groton was addressed with the opening of a church-sponsored shelter in the spring of 2000.

Recommendations

1. Investigate ways to provide additional meeting and storage space for the Social Services and the Youth and Family Services agencies.

Fire and Emergency Medical Response

Groton has nine separate fire districts, ten station houses, over 30 fire-fighting vehicles, and over 200 paid and volunteer firefighters. In addition, Groton has two ambulance services.

With the amount of fire and emergency medical equipment and facilities, it will make sense in the future to move towards consolidation of fire districts and ambulance associations. This will help assure that community needs are met in the most cost-effective way and that equipment, personnel, and facilities are utilized in the most efficient manner.

Recommendations

1. Investigate and implement opportunities to consolidate fire districts and ambulance associations in order to meet community needs in the most efficient and cost-effective way.

Prepare For Future Needs

Develop An Overall Land Acquisition Strategy

As Groton grows, there will be many situations where the community will need land area for community facilities and activities. It will be more cost-effective to acquire land as soon as possible for future needs. In addition, Groton is more likely to reserve the best sites for future facilities if they are acquired now.

Consider possible future school needs in Groton. School enrollments are a function of overall demographic trends such as the “baby boom” (peak in 1970) and the “baby bust” (low in 1990). If Groton becomes a community of 60,000 people and if the school enrollment ratio increases to 17 percent, school enrollment might exceed 10,000 pupils. This represents a significant increase over the 6,000 students in the system today.

Thus, while additional school space may need to be added for short-term enrollments during the planning period, additional school facilities will be needed for eventual enrollment peaks in the long term. Acquisition of future school sites should be considered during the planning period.

Open space is another example. If Groton waits until a property is proposed for development or it is decided that more open space is needed, the community may miss the best open space parcels or pay excessively for them. A prudent overall land acquisition strategy can help to avoid this situation.

Recommendations

1. Develop an overall strategy to identify possible future facility needs.
2. Strive to acquire land as soon as possible for future facility needs.
3. Identify and acquire future school sites during the planning period.
4. Use the Community Structure Plan (page 73) and the Future Land Use Plan (page 157) to provide guidance as to potentially appropriate locations.

School Enrollment Ratios

School enrollment ratio is calculated by dividing school enrollment by total population. It indicates the percentage of population enrolled in local schools.

Year	Groton	State
1970	24%	22%
1980	17%	17%
1990	14%	14%
2000 (proj.)	13%	16%

Another “baby boom echo” is not expected until after the year 2010 and another enrollment peak is not expected until after the year 2010.

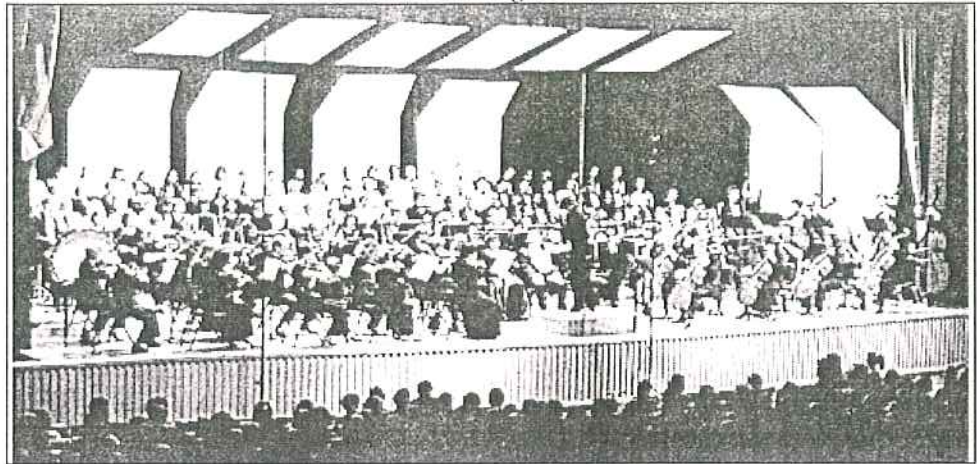
Cultural Facilities

In the longer term, facilities that will contribute to Groton's character and quality of life could include cultural facilities such as a performing arts center, a theater, and similar facilities. Such facilities can be used to provide for plays and concerts on a year-round basis for residents of Groton and the surrounding area.

Recommendations

1. Investigate ways to establish cultural facilities such as a performing arts center, a theater, or similar facility.

Possible Performing Arts Center?



ENHANCE INFRASTRUCTURE

15

Overview

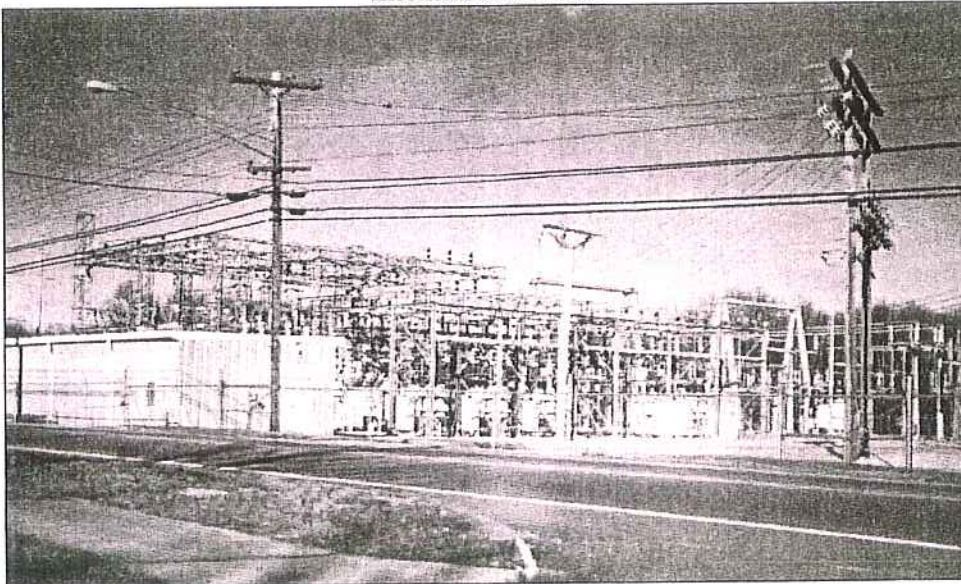
Webster's Dictionary defines infrastructure as "the basic facilities needed for the functioning of a system." In the Plan of Conservation and Development, the term infrastructure refers to utility services such as:

- piped utilities (public water, sewer, storm drainage, and natural gas)
- wired utilities (electric, telephone, and cable)
- wireless communications

Groton's overall infrastructure philosophy is that these facilities should serve, support, and encourage the current and desired future land use pattern for Groton rather than a rationale for a major change in Groton's land use structure.

Adequate infrastructure will help support the desired structure and land uses of Groton ...

Electrical Sub-Station



City of Groton Utilities

The City of Groton water system was established when the most intensive development was located in the City and the surrounding areas did not need or want to participate in developing a public water supply.

In fact, the water system is one of the reasons for the formation of the City of Groton as a separate governmental entity.

Water Providers

Groton is presently served by four different water companies:

- City of Groton Utilities
- Connecticut-American Water Company
- Groton Long Point
- Noank Water Company

However, the City of Groton and the Connecticut American Water Company are the main water providers with the City providing water to Noank and Groton Long Point by contract.

Sewer Expansion

The Town's Water Pollution Control Facility presently treats an average of about 4.0 million gallons per day (MGD) of wastewater.

Plans are underway to upgrade and expand the facility to accommodate an average flow of 7.5 MGD.

This is expected to be adequate for a 20-year period.

Guide Piped Utilities To Meet Community Needs

Public Water

Public water service can supply adequate potable water for fire protection, residential, and business needs, and support the desired development pattern.

In terms of the adequacy of the water supply, both major water companies (City of Groton Utilities and Connecticut-American Water Company) will need to identify and develop additional water sources during the planning period or decrease consumption to accommodate long range needs. The Connecticut American Water Company (serving parts of Mystic) is in the process of identifying and developing new water supplies in Stonington and North Stonington to ensure an adequate supply.

While City of Groton Utilities feels they have excess water at the present time, they are in the process of identifying additional supply sources to support uses in their service area and possible expansions into Ledyard. The most feasible solution appears to be diverting stream flow and/or developing well sites on Haley Brook.

Recommendations

1. Continue to encourage the provision of adequate potable water for fire protection, residential, and business needs.
2. Make public water expansion decisions on the basis of supporting the desired development pattern rather than vice versa.
3. Encourage efforts to identify and develop adequate sources of water supply to the extent consistent with community needs.

Public Sewer

Public sewer service can provide safe and efficient sewage disposal for residential and business needs, protect public health, and support the desired development patterns.

Groton is presently served by two different sewer systems. Sewage service in the City is provided by City of Groton Utilities with a sewage treatment facility located on the Thames River. Sewage service is provided in some other parts of Groton (including the Navy Base) by the Town. The Town's Water Pollution Control Facility is located on Gary Court and discharges through a five-mile main routed through the City of Groton to the Thames River.

Planned upgrade and expansion of the Town's Water Pollution Control Facility will provide adequate capacity for anticipated growth over a 20-year period.

Water Service Area

Town of Groton, CT

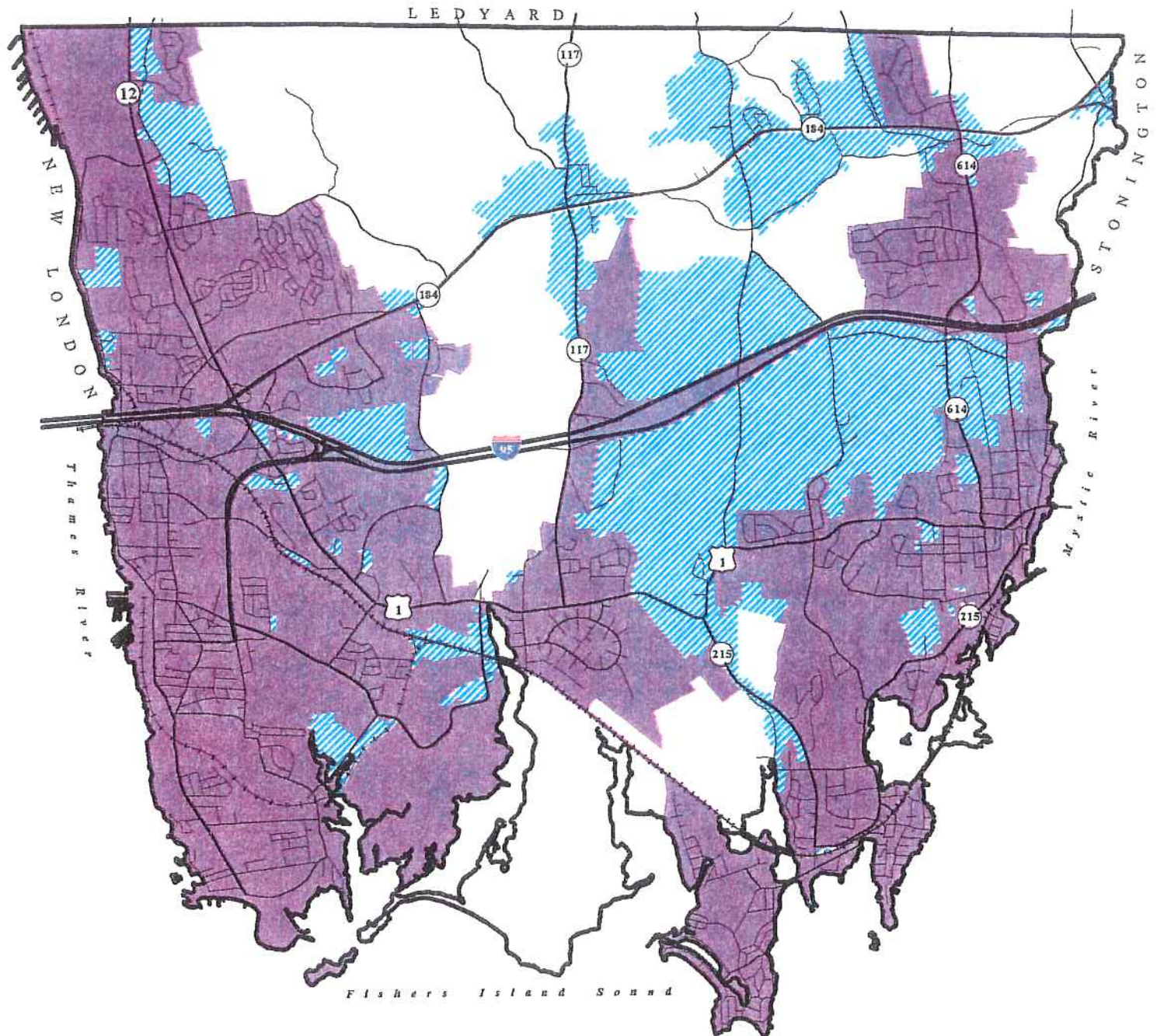


Legend

■ Existing water service area

Sewer Service Area

Town of Groton, CT



Legend

- Existing sewer service area
- Possible future service area
- Sewer avoidance area



In addition, the Plan of Conservation and Development supports the recommendations of the 1995 Master Sewage Plan:

- Sewer avoidance and sewer service areas should be clearly defined.
- All industrial areas should be developed with sewers rather than on-site systems.
- Sewer pipes with significant sources of inflow (unwanted water entering the sewer system) should be corrected and repaired.
- More frequent inspection and cleaning of sewer pipes to avoid capacity problems.
- Capacity improvements at pump stations to avoid capacity problems.
- Review of septic designs by all departments prior to approval.
- Encourage the Ledge Light Health District to develop a program to guide property owners in sewer avoidance areas.

Recommendations

1. Continue to encourage the provision of safe and efficient sewage disposal to protect public health and address residential and business needs.
2. Make public sewer expansion decisions on the basis of supporting the desired development pattern rather than vice versa.
3. Complete the planned upgrade and expansion of the Town's Water Pollution Control Facility.
4. Continue to implement the recommendations of the 1995 Master Sewage Plan:
5. Clearly define sewer avoidance and sewer service areas (including all industrial areas).
6. Address capacity issues related to inflow, pipe inspection and cleaning, and pump stations.

Sewage Treatment Facility



Storm Water Drainage

While most major storm drainage issues have been addressed, the management and control of storm water drainage and water quality is important in Groton.

During the planning period, a Town-wide program to enforce EPA's Phase II stormwater regulations should be undertaken. In particular, an assessment should be made of ways to improve water quality at storm drainage outfalls (such as sedimentation basins or other techniques) since water quality can be adversely affected.

Recommendations

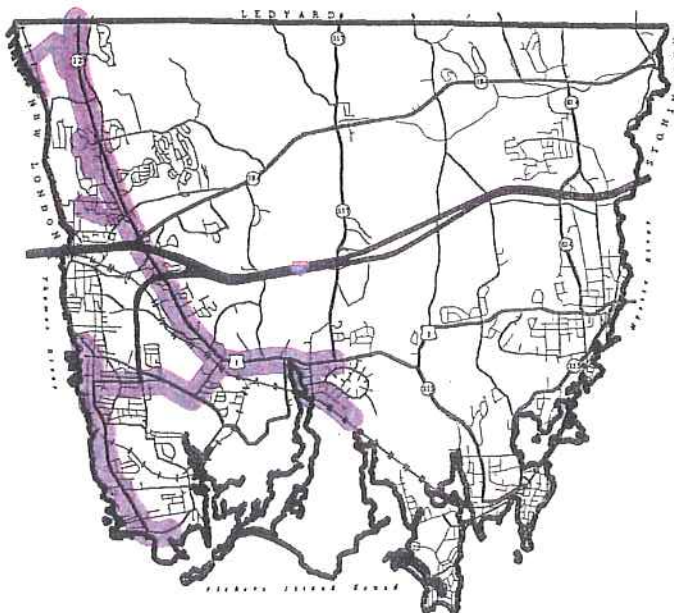
1. Implement a Town-wide program to enforce EPA's Phase II stormwater regulations.
2. Perform an assessment of ways to improve water quality in storm drainage systems (such as source reduction of pollutants) to protect water quality.


Natural Gas

The Yankee Gas Company provides natural gas service to the Navy Base, Pfizer, Electric Boat Corporation and areas along Route 12, Route 1, Eastern Point Road, Rainville Avenue, Chester Street, and Depot Road. Service capacity and pressure are good to excellent and the system has the capability to support substantial expansion.

Recommendations

1. Continue to encourage the provision of natural gas service for residential, business, and industrial needs and to support the desired development pattern.



 Existing natural gas service area

Drainage / Water Quality

Storm drainage systems convey rainfall and groundwater to storm drainage outfalls. While concern has been expressed about these outfalls, it is the drainage area as a whole that must be the focus of concern.

For example, the entry of road sand into catch basins and storm drainage systems has resulted in sedimentation in the boat basin at Steamboat Wharf in Mystic.

Similarly, high nutrient levels at a drainage outfall may signify septic failures or excessive fertilization in upstream areas.

Underground Utilities

The idea of burying overhead utility lines in Groton has been raised in the past.

Utility companies will bury their utility lines provided that the company is reimbursed for the cost of work. Since the costs to retrofit an area are typically high, such work has usually only been done in conjunction with major redevelopment projects.

Street Lights

The Road and Drainage Standards require street lights in all new subdivisions at every street intersection, at the end of cul-de-sacs, and at intermediate distances that vary depending on the road classification.

In addition, the pole height and illumination levels vary depending on the road classification.

Guide Wired Utilities To Meet Community Needs

Electric Service

Groton is also unique because it is served by two electric utility companies - the City of Groton Utilities Department and the Connecticut Light and Power Company. The City of Groton does not generate its own power but purchases power on a wholesale basis from generators. The City does maintain the electrical network and service connections within their service area.

Electrical capacity and reliability are key considerations. Capacity on individual circuits in Groton is not reported as a major problem and system upgrades are continually being planned to address such issues. Conservation strategies are also available to reduce electrical use and maintain capacity. Reliability involves reducing electrical outages associated with equipment malfunctions, weather, accidents, or intrusions. Local providers are also addressing these issues as well through circuit breakers, automatic reclosers, system upgrades, and tree trimming.

As electricity deregulation begins, it is difficult to anticipate how these changes will affect the residents and businesses of Groton. As a municipal utility, Groton Utilities may enjoy some special protection preventing other electricity providers from coming in and serving customers (such as Electric Boat Corporation or the Navy Base). While Groton electric customers may enjoy a competitive advantage today in terms of lower electrical costs, it is unclear whether these costs may increase in the future and become a competitive disadvantage.

The important objective is to ensure that residents and businesses are able to obtain ample, reliable electrical service at competitive prices wherever development exists or is planned.

For residents, one of the biggest issues related to electrical services is the use of overhead wires and poles to support much of their distribution network. As development occurs and electrical needs increase due to new technologies, more wires are being strung on poles throughout Groton (and elsewhere). As a result, local streets are becoming "cluttered" with poles and wires. This is an unfortunate side-effect of technological growth that can be minimized by encouraging or requiring that all new or replacement utility services be placed underground.

A corollary issue relates to the tree-trimming that is practiced by utility companies in efforts to maintain reliability. Such work is done on an occasional basis to minimize cost to the utility companies and, as a result, aggressive tree-trimming can be done to avoid the need for re-trimming within a five- to ten-year period. Such activities can have a significant impact on community character and the Town should work with utility companies to establish a reasonable tree-trimming schedule that balances reliability and community character issues. In addition, the Town should work with utility companies to select plantings that can be installed in new developments that will be compatible in proximity to overhead power lines.

Recommendations

1. Promote overall energy conservation to reduce energy needs and maintain capacity.
2. Amend existing regulations to require that all new wired utility services be placed underground.
3. Encourage all replacement wired utility services be placed underground.
4. Work with utility companies to establish a reasonable tree-trimming schedule that balances reliability and community character issues.
5. Work with utility companies to select plantings that can be installed in new developments at locations compatible with overhead wires.
6. Encourage electrical system improvements for capacity and reliability in accordance with the above criteria.

Telephone/Cable Communications

Telephone and cable communications typically have less impact on land uses and development intensity. However, the availability of communications is becoming increasingly important to quality of life and community character.

Telephone and cable communication (television) service is available to serve new development as it is proposed and developed in Groton. However, a high priority for the Town should be to encourage the development and implementation of the highest capacity and quality communications technology to meet the needs of local businesses and residents.

With the expansion of the Internet, the Town should encourage that high-speed Internet access be made available to all businesses and residents in Groton. In addition to encouraging economic development, this would also enhance the quality of life for Groton residents. City of Groton Utilities is in the process of establishing a 32-mile network of fiber optic cable for this purpose and they or other cable communication companies (such as SNET/SBC or CATV) should be encouraged to continue this network throughout Groton.

Recommendations

1. Encourage improvements in communication infrastructure to meet the needs of residents and businesses.
2. Encourage the implementation of the highest capacity and quality communications technology to meet the needs of local businesses and residents.
3. Encourage local utilities to make high-speed Internet access available to all businesses and residents in Groton.
4. Continue to monitor changes in communications technology.

Communications Issues

An interesting issue to observe during the planning period will be the anticipated competition between:

- traditional telephone companies as they expand into entertainment programming
- cable companies as they expand into communications

The Town should continue to monitor these developments.

Why Wireless?

Communications are evolving to a system of "where people are" rather than "where a phone is".

It is all a matter of convenience. While already strong among young people, demand is also increasing among older people as well.

As a benchmark, consider that wireless communications have reportedly achieved a 30 percent market penetration in the United States while countries in Europe have reportedly achieved a 70 percent market penetration.

Address Wireless Communications

Wireless communications are another important development that Groton needs to consider and address. Just as telephones have evolved from wired handsets to portable phones within homes and businesses, the next major evolutionary change will be the expansion of cellular phones and personal communication services (PCS).

As more people learn of the convenience of wireless communications, there will be an increasing demand for such services and a proliferation of towers and equipment. While there is some resistance to tower aesthetics at the present time, increasing market penetration may cause people to be more concerned with call quality and system capacity.

While cellular communications (analog technology) and tower siting decisions are presently regulated by the Connecticut Siting Council at the Department of Public Utility Control, tower siting for personal communication services (digital technology) occurs at the local level. To address these issues, Groton needs to monitor technological changes in cellular communications and maintain reasonable regulations related to the siting of communications towers.

Recommendations

1. Anticipate the growth in wireless communications and the corresponding interest in providing more antennas.
2. Continue to monitor evolving technologies to efficiently address local needs.
3. Maintain and enhance local regulations related to the siting of communications towers and other wireless communication facilities, especially with regard to co-location on communication towers.

Wireless Communication Towers



ENHANCE GOVERNMENT STRUCTURE

16

Overview

Of all the 169 municipalities in Connecticut, Groton has to be one of the most intricate in terms of its overall government structure. As an amalgamation of different organizations established over the years, Groton represents an interesting case study on local government organization.

Appropriate government structures will help Groton achieve important goals ...

Enhance Government Coordination

During the planning process, many residents commented on the current government organization and lack of coordination. Some people feel that Groton has "too much government."

Review of available information found that there are over 400 elected and appointed officials in Groton serving a population of about 44,000 people. As has been previously stated "Groton is both too large and too small to support that kind of government."

The greatest impact may be the duplication of services which adds cost and inefficiency into the government process. A compilation of the budgets of all of the local governmental service units found that there is a considerable local expense associated with all of these organizations. In fact, a comparison with similarly-sized communities found that Groton residents may be spending as much as \$8 million more per year than residents of other communities.

Information from other similarly-sized communities does not allow for a complete comparison of whether the costs of government in Groton are unreasonable. If it was possible to objectively measure service levels across different communities, the comparisons could be made. Does a community that is spending more get better service or just pay more for it?

Despite this difficulty, it is pretty clear that the taxpayers in Groton pay more money for having at least nine separate governments rather than a lesser number. This finding is relevant to this Plan since it may be possible for Groton residents to have up to \$8 million annually available for spending on important community projects without raising taxes.

Government Entities

Unlike most other communities in Connecticut, Groton is not one governmental unit. There are, in fact, at least ten governmental units within the Town of Groton:

- the Town of Groton,
- the City of Groton,
- the fire districts of Old Mystic, Mystic, Noank, Center Groton, Poquonnock Bridge, and West Pleasant Valley,
- Groton Long Point Association
- the United States Naval Base.

The Town refers to the entire geographic area of what is known as Groton. The City, which was established as a borough in 1903 and re-designated as a City in 1964, is a sub-area of the Town.

The fire districts and associations are distinct geographic sub-areas, exclusive of the City, which provide services.

The Navy Base is a separate area that provides many of its own services.

Groton Long Point and Noank also provide some services.

Consider Alternative Governmental Structures

While many features of existing governmental arrangements are attractive to local residents and taxpayers, there appears to be dissatisfaction with other features. Realistically, there are only five options that appear to be available:

- separation
- maintain the current structure
- intra-municipal cooperation
- inter-municipal cooperation
- consolidation

Separation is not a realistic option in that it would introduce greater inefficiencies than presently exist.

Maintaining the current structure entails continuing the current arrangements into the foreseeable future. It has worked in the past and there is no reason apparent why it cannot continue to work in the future.

Cooperation (whether within the community or with other communities) involves sharing those governmental functions that can benefit the most from shared resources. The process can be approached incrementally and the benefits that result will accrue to everyone in the community.

Consolidation may represent the most opportunities for efficiency and economy but also creates the most fear in people. Although there is precedent in Groton for consolidation (ten separate school districts were consolidated in 1941), it is unclear whether there is adequate support at the present time in any of the sub-areas to initiate the process.

Based on the combined costs of local government and the overall duplication of services, there is little doubt that cost savings would result from more cooperation or consolidation. For example, consolidation of police and/or public works and/or park and recreation services might result in significant cost savings.

Find Effective Solutions

The current governmental structure in Groton is inefficient, but it works. Certainly more efficient structures are available. Whether the structure should be changed is a question for Groton residents.

Other communities around Connecticut have consolidated in order to improve the overall structure or efficiency of local government. Recent examples include Colchester, Putnam (1983) and Willimantic/Windham (1983).

Summary of Inter-Governmental Options

	Potential Advantages	Potential Disadvantages
SEPARATION		
Community	<ul style="list-style-type: none"> • resolve inter-jurisdictional conflicts 	<ul style="list-style-type: none"> • small governments acting separately may not efficiently and effectively address future issues
Sub-Areas	<ul style="list-style-type: none"> • control over local issues and taxes. 	<ul style="list-style-type: none"> • may increase cost or deteriorate service quality with loss of economies of scale • loss of access or use of certain facilities by other sub-areas
Synopsis	<ul style="list-style-type: none"> • often talked about but not considered realistic due to cost and service level issues 	
MAINTAIN CURRENT STRUCTURE		
Community	<ul style="list-style-type: none"> • overall entity finances and delivers community-wide services not economical for sub-areas (education and assessment) 	<ul style="list-style-type: none"> • inefficiency from lack of coordination • inter-jurisdictional differences, • multiple governments.
Sub-Areas	<ul style="list-style-type: none"> • sub-areas provide for local control over local issues • services are more localized • residents determine the type and level of services that they desire and can afford 	<ul style="list-style-type: none"> • cost of services may be higher • level and quality of services may be lower • inter-jurisdictional squabbles occur • sub-areas cannot use services of other sub-areas (such as parks)
Synopsis	<ul style="list-style-type: none"> • Not the most efficient but may allow for “tuning” of local service levels • residents appear willing to accept tax, service efficiency, and/or lack of responsiveness 	
COOPERATION (intra-municipal or inter-municipal)		
Community	<ul style="list-style-type: none"> • may result in lower costs and/or higher service level and quality • relatively easily to implement 	<ul style="list-style-type: none"> • benefits that require an investment may be deferred due to temporary nature of agreement
Sub-Area	<ul style="list-style-type: none"> • more efficient and cost-effective services in areas considered appropriate 	<ul style="list-style-type: none"> • may remove some issues from neighborhood control • may “homogenize” service levels between sub-areas
Synopsis	<ul style="list-style-type: none"> • Can occur voluntarily to explore the level of benefits available 	
CONSOLIDATION		
Community	<ul style="list-style-type: none"> • should result in lower costs and/or higher service level and quality 	<ul style="list-style-type: none"> • may have lengthy transition, both before and after consolidation occurs
Sub-Area	<ul style="list-style-type: none"> • should get more efficient and cost-effective services with one-stop shopping 	<ul style="list-style-type: none"> • may remove some issues from neighborhood control • may “homogenize” the level of services between sub-areas
Synopsis	<ul style="list-style-type: none"> • Must occur cooperatively due to enabling legislation • may not occur until a crisis occurs (loss of tax base, reductions in revenue) • Town charter provides that any sub-area can propose a consolidation (governing body or resident petition) 	

It is ironic that, in this day and age of mergers and consolidations of private corporations for greater efficiency and shareholder value, the opportunity for greater cooperation between municipal corporations in Groton that share so many interests have not been achieved.

The private sector would never accept the type of inefficiencies that surely result from the current structure. Why do Groton residents accept it? The bottom line is that the perceptions, personalities, and politics affect people's perspectives. Clearly, if it were easy, it would have been done already.

It is unlikely that the current structure will be changed until some major crisis causes reconsideration. While these crises could include losses in tax base or revenue in any of the sub-areas, it may also result over time from the incremental increase in the costs of providing services in small sub-areas.

Unfortunately, the greatest losses from not cooperating or consolidating may never be fully appreciated until the various jurisdictions have an opportunity to work together. Only then will the direct and indirect savings in costs and improvements in services be realized. For example, with a more coordinated approach to service delivery and policy implementation, a focused strategy of economic development could be pursued that would result in additional benefits to all Groton residents.

The Plan makes no recommendations of what sort of structure should be established. After all, that is a decision to be made by Groton residents and leaders. However, the greatest opportunities for building a successful community are likely to be realized when the organizational and governmental structure is configured to respond quickly and efficiently. This type of structure can prevent resources from being squandered and opportunities being lost.

This issue is relevant to both existing operations and future operations. If a new program or service is to be established, efforts should be devoted between the different governmental units to provide services in the most efficient way. Conversely, the Town government should seek to avoid supporting services that could benefit from some sort of consolidation.

Recommendations

1. Strive to enhance government efficiency.
2. Consider alternative government structures.
3. Strive to find effective solutions to organizational and governmental issues.
4. Reduce or minimize duplication of services.

FUTURE LAND USE PLAN

17

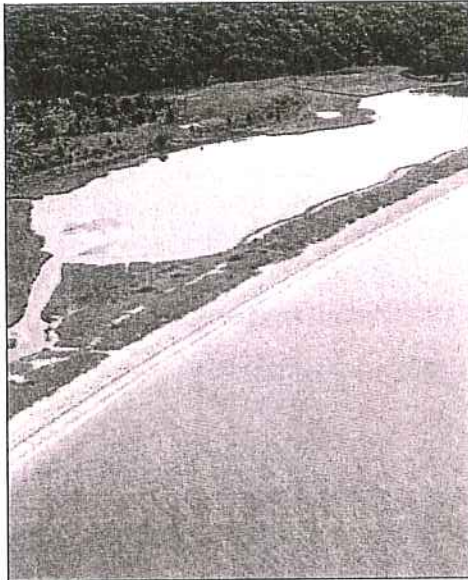
Overview

The recommendations of each of the preceding chapters can be combined to present an overall Future Land Use Plan for Groton. The Future Land Use Plan is a reflection of the stated goals, objectives, and recommendations of the Plan as well as an integration of the preceding elements of the Plan of Conservation and Development.

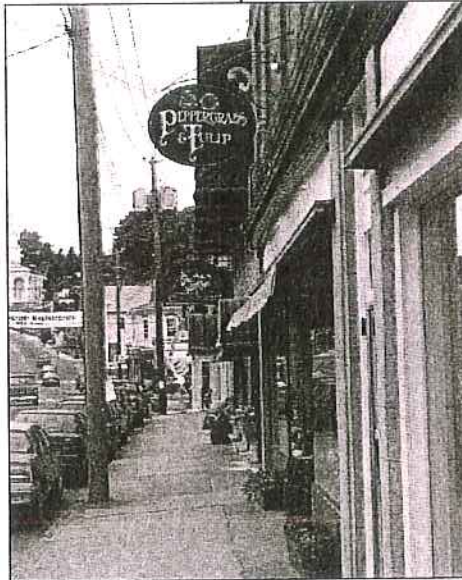
In essence, the Future Land Use Plan is a statement of what the Groton of tomorrow should look like.

The Future Land Use Plan summarizes the desirable directions for Groton to pursue ...

Conservation



Development



Land Use Maps

The Existing Land Use Map on page 21 is a map of the actual land uses in Groton in 1998.

The fold-out map on the facing page is a future land use plan for Groton.

As required by statute, it shows "... the commission's recommendation for the most desirable use of land within the municipality for residential, recreational, commercial, industrial and other purposes and for the most desirable density of population in the ... parts of the municipality."

In the event of conflict between any of the maps in this Plan, the future land use plan was intended to resolve those conflicts.

DESCRIPTIONS OF FUTURE LAND USE CATEGORIES

Open Space

Existing Open Space

Areas that are currently preserved (dedicated open space) or used (managed open space) for open space purposes. (See Chapter 5 for additional information)

Natural Resources

Wetland, watercourse, steep slope, and floodplain areas that represent the highest priorities for conservation. (See Chapter 4 for additional information)

Desirable Open Space

Areas that would make a significant contribution to Groton's open space network and greenbelt/trail system. (See Chapter 5 for additional information)

Residential (based on natural resource or infrastructure limitations and desired development patterns)

Low Density

Areas where typical density less than one unit per acre would be expected.

Medium Density

Areas where residential development is expected to occur at a density between one and two units per acre and some existing residential development may occur at higher densities.

High Density

Areas where residential development is expected to occur at a density exceeding two units per acre.

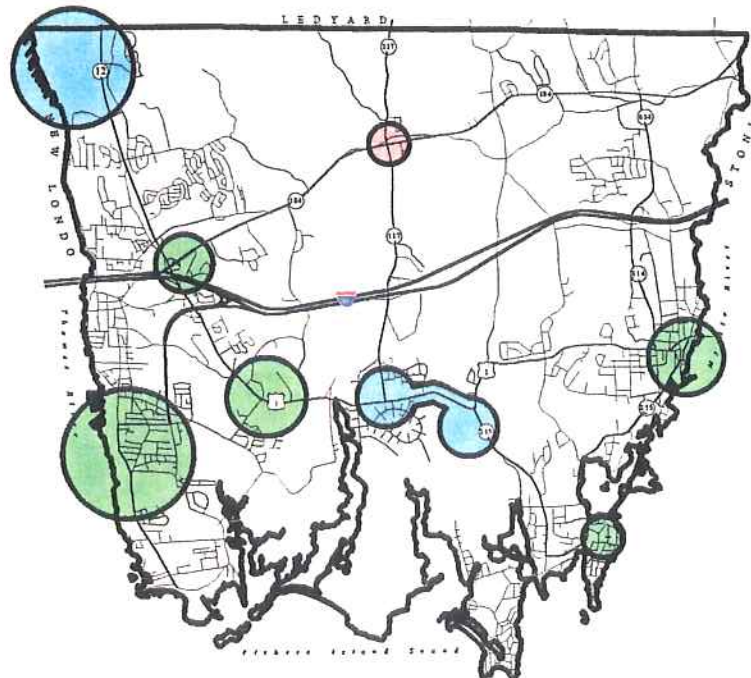
Multi-Family Development

Areas where multi-family residential development exists or is expected to occur.

Community Structure Map (for reference relative to Future Land Use Plan)

LEGEND

- Mixed use node / concentration
- Institutional node / concentration
- Commercial node / concentration



Business

Design Districts

Areas that have developed or are intended to develop with significant guidance of use, intensity, and design characteristics.

Commercial Areas

Areas that have developed or are intended to develop with commercial facilities.

Industrial Areas

Areas that have developed or are intended to develop with industrial facilities.

Business Parks

Areas that have developed or are intended to develop with corporate offices, research and development, light manufacturing, and distribution facilities.

Other Uses

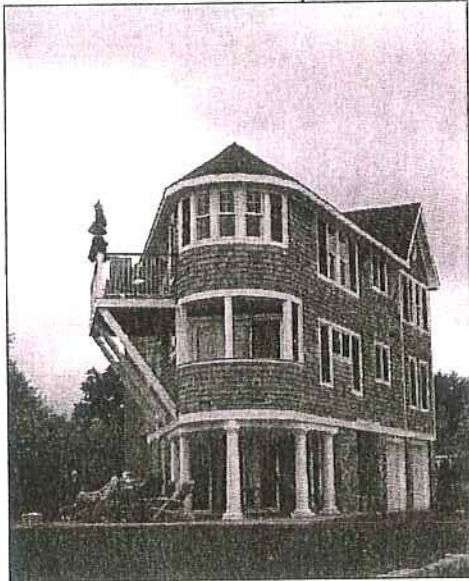
Government and Institutional Facilities

Areas containing existing government, institutional, and community facilities.

Non-Town Regulated Areas

Areas in the City of Groton, Noank, and Groton Long Point where land use decisions are made by those respective entities.

Residential Development



Economic Development



Future Land Use Plan

(flip page over)

Plan Consistency

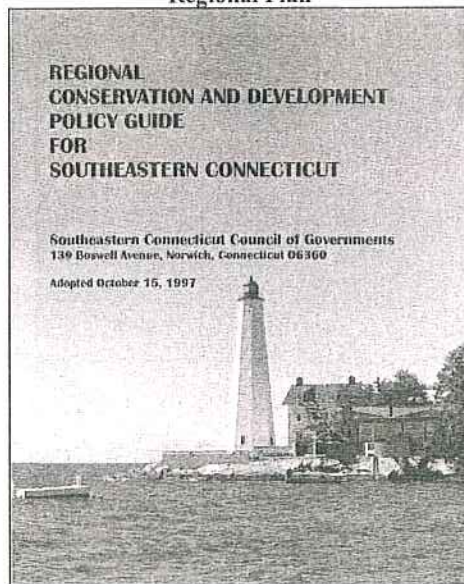
This Plan was compared with the Locational Guide Map in the 1998-2003 State Plan of Conservation and Development and found to be generally consistent with that Plan.

In addition, this Plan was compared with the 1997 Conservation and Development Policy Guide prepared by the Southeastern Connecticut Council of Governments and found to be generally consistent with that Plan.

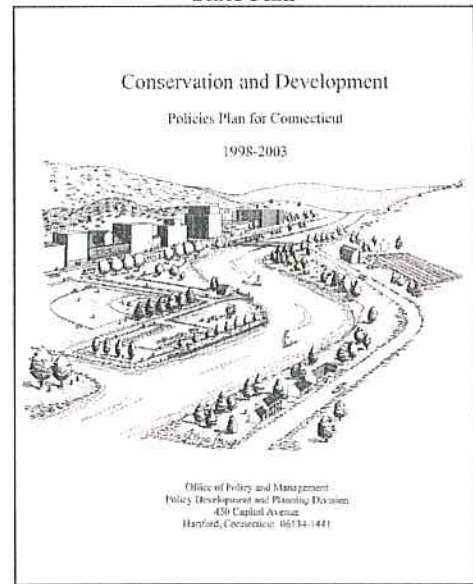
Any inconsistencies can be generally attributed to:

- differences in definitions of desirable uses or development densities
- local (as opposed to State or regional) desires about how Groton should grow and change in the coming years
- the fact that the State Plan and the Regional Plan make policy recommendations for land use intensity and environmental sensitivity while this Plan suggests specific land use types

Regional Plan



State Plan



IMPLEMENTATION TOOLS AND SCHEDULE

18

Overview

Many of the recommendations in the Plan of Conservation and Development can be implemented by the Planning Commission through regulation amendments, application reviews, and other means. The Commission is the primary entity responsible for implementing the Plan's recommendations.

Other recommendations require the cooperation of, and actions by, other Town boards and commissions such as the Zoning Commission, Town Council, Representative Town Meeting, and similar agencies. However, if the Plan is to be successfully realized, it must serve as a guide to all residents, applicants, agencies, and individuals interested in the orderly growth of Groton.

Implementation is the most important part of the planning process ...

Tools

There are several tools available to implement the Plan's recommendations:

- community involvement
- an annual implementation program
- annual update program
- activity checklists
- Zoning and Subdivision Regulations
- Capital Improvements Program
- referral of Municipal Improvements (CGS 8-24)

Community Involvement

Education about the Plan recommendations is an important first step in implementing the Plan. With the growing use of the Internet and Community Television, there are several avenues available to inform residents about current issues and important community priorities.

A regularly updated community "web page" which provides information on meeting agendas and current issues and allows for e-mail would be an important method of community involvement. Similarly, special issue shows on community television providing three to five minute issue summaries and opportunities for community feedback and editorials would also facilitate community involvement in important issues. These programs should be pursued.

Implementation Committee

Oversight of implementation can be coordinated by the Planning Commission or another committee.

An "ad hoc" committee made up of residents and representatives of local boards identified in the implementation schedules would be a significant step towards including a variety of Town agencies in implementing the Plan and monitoring progress. This Committee could provide status reports to the Planning and Zoning Commissions, Town Council, and others.

Such a committee could meet quarterly to review implementation and coordinate local activities.

Annual Update Process

An appropriate way to regularly update the Plan may be to update major sections of the Plan every year by:

- holding a public informational meeting to summarize the Plan recommendations and receive feedback from the community
- holding a workshop session for local boards and other interested persons to discuss Plan strategies and suggest alternative language
- revising Plan sections, as appropriate
- re-adopting the Plan (even if there are no text or map changes)

This Plan has been printed in a loose-leaf format to facilitate updating.

Annual Implementation Program

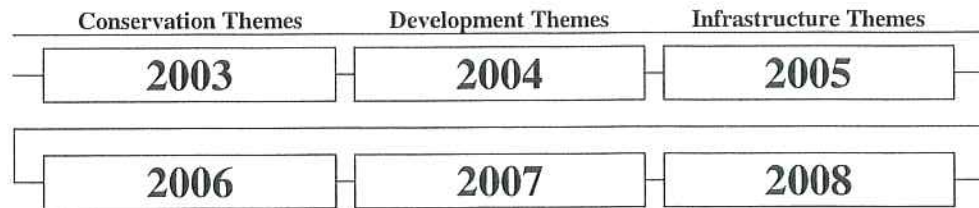
While the Planning Commission has the primary responsibility for implementing the Plan's recommendations, successful implementation involves participation by a number of different agencies. The implementation schedules that follow can be used by an oversight committee to develop an annual implementation program of issues to be addressed by boards and commissions.

The oversight committee could meet two to four times a year to establish priorities and guide implementation of the Plan's recommendations. In addition, the committee could assess the status of specific recommendations, establish new priorities, and suggest new implementation techniques.

Annual Update Program

At the present time, it is the practice in Groton to update the Plan of Conservation and Development once every decade. However, during the intervening years, there can be situations where the Plan is silent on emerging issues, does not reflect current policy objectives, or does not reflect current conditions, trends or opportunities. When a Plan is considered a reference document rather than a working document, its effectiveness in guiding the community is hindered.

Groton should consider keeping this Plan current and not waiting to update it every ten years. A preliminary schedule might be as follows:



The process of annual updating would be continued in subsequent years until the community felt that a comprehensive update was required. A work program for annual updates of the Plan is discussed in the sidebar. A Plan Implementation Committee could also assist in this effort.

Consistency Checklists

Activities proposed in the Town of Groton can and should be reviewed for consistency with the major recommendations of the Plan. The checklists presented on the following pages are intended to help evaluate public actions and private activities to determine consistency.

In particular, the Plan of Conservation and Development should be used as a basis for land use decisions by the Planning and Zoning Commissions. Applicants should be encouraged to address how their proposal is consistent with the Plan's recommendations and the Planning and Zoning Commissions should do the same.

CONSISTENCY CHECKLIST



PROPONENT

PROPOSAL

COMMUNITY PARTICIPATION

- The proposed public action is proposed by or supported by the responsible agency as identified in the implementation tables.
- The proposed private activity is supported by other community groups and/or agencies.
- The proposed activity has been the subject of a public hearing.

SPECIFIC CONSISTENCY

- The proposed public action addresses a specific recommendation in the Plan, either a task or a strategy.

Land Use Regulations

The Zoning Regulations provide specific criteria for land uses and the Subdivision Regulations provide specific criteria for land subdivision, road layout, and open space. As a result, these regulations are an important tool for implementing the recommendations of the Plan.

In order to implement the recommendations of the Plan, the Planning Commission should, in the near future, undertake a comprehensive review of the subdivision regulations and make whatever revisions are necessary to:

- make the regulations more user-friendly
- implement Plan recommendations
- promote consistency between the Plan and the regulations

Likewise, the Zoning Commission should, in the near future, undertake a comprehensive review of the zoning regulations and zoning map and make revisions to accomplish the same objectives.

Enforcement of regulations is an important related issue. It makes little sense to plan for the future of Groton and develop regulations to encourage positive results if a lack of enforcement or implementation means that little progress is made. Special efforts should be made to support enforcement of local regulations and programs.

Capital Budget

The Capital Budget (or Capital Improvement Program) is a tool for planning major capital expenditures of a municipality so that local needs can be identified and prioritized within fiscal constraints that may exist. The Plan recommends that capital expenditures be included in the Town's Capital Improvements Program and that funding for them be included as part of the Capital Budget.

Referral of Municipal Improvements

Municipal improvements, by statute, are to be referred to the Planning Commission for a report regarding consistency with the Plan before any Town action is taken. Town boards and agencies should be notified of Section 8-24 so that proposals can be considered and prepared in compliance with its requirements.

Responsibility Legend

ID	Reference
BOE	Board of Education
CC	Conservation Commission
COG	Council of Governments
Comm.	Town Committees
DEP	CT Dept. of Env. Protection
DOT	CT Dept. of Transportation
EDC	Economic Development Comm.
HDC	Historic District Commission
HMC	Harbor Management Commission
IWA	Inland Wetlands Agency
LLH	Ledgelight Health District
Other	Other Agencies, or Persons
P	Police
PC	Planning Commission
PRC	Park and Recreation Comm.
PW	Public Works
Res.	Residents
RTM	Representative Town Meeting
Staff	Planning and Development Staff
TA	Traffic Authority
Tax	Tax Assessor
TC	Town Council
Town	Town Officials and Staff
ZC	Zoning Commission

Priority Legend

Priority	Description
1	High priority for implementation
2	Moderate priority for implementation
3	Lower priority for implementation

Responsibility and Priority

Implementation of the Plan is a gradual and continual process. While some recommendations can be carried out in a relatively short period of time, others may only be realized towards the end of the planning period, and some may be even more long-term in nature. Further, since some recommendations may involve additional study or a commitment of fiscal resources, their implementation may take place over several years or occur in stages.

The following implementation charts identify both strategies and tasks. Strategies are long-term and continuing policies that do not readily lend themselves to a specific schedule or measurement. As a result, priorities have not been assigned in the implementation tables since they are principles and policies intended to guide actions.

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
	Strategy									

Tasks, on the other hand, are specific actions that can typically be scheduled and measured and their implementation can be readily identified. Tasks are identified by asterisks in the implementation tables and priorities are assigned for their implementation. Most work effort in implementing the Plan is dedicated to completing the identified tasks.

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
★	Task				2					

The charts assign primary responsibilities and preliminary priorities to the Plan recommendations. In many instances, the responsibilities are shared by a number of entities. A shaded box indicates those entities that have or share responsibility for implementation of each strategy or task.

Protect Natural Resources

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Protect Water Quality and Water Resources										
	1. Continue to monitor and protect water quality in Groton.	29								
	2. Strive to preserve and/or acquire extensive wetland and streambelt systems.	29								
	3. Continue to implement watershed protection regulations.	29								
★	4. Examine the amount of impervious surfaces allowed in all zones and areas.	29		1	1	1			1	
★	5. Establish strict standards for impervious coverage in significant watersheds.	29		1	1	1			1	
	6. Continue to reduce pollution from septic systems.	29								LLH
	7. Continue to reduce pollution from marine waste.	29								DEP
	8. Continue careful review of septic designs by all departments prior to approval.	29								LLH
★	9. Encourage the Health District to guide acceptable practices in non-sewered areas.	29							2	
	10. Continue to reduce pollution from storm drainage systems, including sediment.	29								
★	11. Upgrade the location, construction, and operation of salt storage areas.	29							2	PW DOT
★	12. Implement educational programs about water resources and how to protect them.	29			2	2			2	BOE
	13. Take other appropriate actions to reduce diffuse (non-point) sources of pollution.	29								
Protect Other Important Natural Resources										
	1. Continue to protect watercourses, wetlands, floodplains, and coastal resources.	32								
★	2. Expand "regulated areas" to include a setback from wetlands and watercourses.	32		1	1		1		1	
★	3. Establish non-disturbance areas around wetlands, watercourses, and coastal areas.	32		1	1		1		1	
	4. Conserve steep slopes, watersheds, aquifers, and special habitat areas.	32								
	5. Continue to provide and enhance provisions for local fish and wildlife.	32								
★	6. Encourage educational activities on conserving unique resources.	32			2	2			2	BOE

Preserve Open Space										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Establish Greenbelts										
	1. Maintain the Conservation Commission to develop an open space action plan.	34								
★	2. Develop an action plan to establish, expand, and connect greenbelts.	34	1		1		1		1	
	3. Continue to coordinate efforts with neighboring towns to create greenbelts.	34								
	4. Strive to establish a "Shoreway" in Groton to utilize Groton's biggest asset.	34								
Establish A Trail System										
★	1. Work with Groton Utilities to obtain public access to their properties.	36	1		1		1	1	1	
★	2. Work with major property owners to create an overall trail network.	36			2					PRC
	3. Acquire additional public access to Long Island Sound and adjacent rivers.	36								DEP
	4. Continue to implement the signage plan to identify coastal access points.	36								
	5. Work with open space organizations to expand the local trail network.	36								
★	6. Require identification and consideration of trails as part of land use applications.	36	2	2	2	2			2	
Implement The Open Space Plan										
★	1. Establish an open space acquisition fund funded annually in the budget.	40			1		1	1	1	
★	2. Amend regulations to allow payment of fees-in-lieu of open space dedication.	40	1							
	3. Strive to implement the recommendations of the open space plan.	40								
	4. Strive to convert managed open space to dedicated open space.	40								
	5. Maintain regulations for open space to be deeded to the Town or other organization.	40								
	6. Ensure that open space areas are not comprised entirely of unbuildable areas.	40								
★	7. Consider amending regulations to require a greater percentage of land be preserved.	40	2							
★	8. Amend regulations to allow donation of open space land elsewhere in Groton.	40	3							
	9. Consider acquiring a priority right to purchase City of Groton Utilities land.	40								
★	10. Develop an open space management plan for existing open space and future uses.	40			2		2			PRC
	11. Continue to encourage the efforts of land trusts.	40								
	12. Support enactment of a conveyance tax to support open space acquisition.	40								

Protect Coastal Resources										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Update Coastal Planning										
★	1. Undertake a separate planning effort to review and update the 1982 MCP.	43	2		2		2		2	DEP
Protect Coastal Resources										
	1. Continue to manage coastal activities in conformance with state guidance.	44								DEP
	2. Continue coastal management programs to maintain and enhance coastal resources.	44								DEP
Protect Coastal Water Quality										
	1. Continue efforts to protect and improve coastal water quality.	45								DEP
Improve Coastal Public Access										
	1. Continue successful efforts in obtaining, marking, and mapping public access.	46								DEP
★	2. Identify and acquire sites that contribute to a greenbelt/riverbelt access system.	46	2		2		2	2	2	DEP
	3. Consider acquiring any waterfront site that can provide for community benefits.	46								
★	4. Establish a waterfront land acquisition strategy.	46	2		2		2	2	2	
Provide For Water Dependent Uses										
	1. Continue to place highest priority on waterfront sites for water-dependent uses.	46								
Carefully Manage Coastal Development										
	1. Continue to manage cumulative development impacts in coastal areas.	48								
	2. Continually review regulations affecting coastal areas to ensure adequate controls.	48								
	3. Encourage building set back from eroding and vulnerable coastal areas.	48								
★	4. Consider flexible yard requirements in coastal high hazard areas.	48	2	2					2	
★	5. Develop a protocol to address buildings severely damaged after a coastal storm.	48		2					2	
	6. Continue to review coastal site plans for flood and erosion control structures.	48								
	7. Discourage erosion control structures except when unavoidable and necessary.	48								
	8. Ensure that structural measures will not cause cumulative shoreline impacts.	48								
	9. Encourage or require use of "non-structural" erosion controls.	48								
	10. Ensure flood / erosion control structures comply with appropriate requirements.	48								
	11. Consider purchase of shoreline properties after significant storm events.	48								

Protect Historic Resources										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Continue to Identify Historic Resources										
★	1. Implement the recommendations of the 1996 Historic Preservation Plan.	52	3	3					3	HDC
	2. Continue to obtain funds to document historic resources.	52								HDC
	3. Undertake efforts to identify archeological resources in Groton.	52								
Continue to Protect Historic Resources										
	1. Encourage establishment of local historic districts.	54								
	2. Consider establishing village districts overseen by the Zoning Commission.	54								
★	3. Consider ordinances for demolition and rehabilitation delay, and/or tax abatement.	54					2			Tax
	4. Coordinate historic preservation activities on a town-wide basis.	54								
	5. Encourage the efforts of local organizations that promote historic preservation.	54								HDC
★	6. Establish educational programs to promote awareness of historical resources.	54							3	HDC BOE
	7. Encourage owners of historical resources to preserve and protect them.	54								
	8. Continue to maintain a municipal historian to preserve local history information.	54								
	9. Seek a central repository for historical information about Groton.	54								HDC
★	10. Amend regulations to require archeological surveys prior to construction.	54	2	2						
	11. Maintain designation as a Certified Local Government.	54								

Promote Community Character

	Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Protect and Enhance Character Resources									
	1. Continue to protect resources that enhance overall community character.	56							
Protect Scenic Resources									
	1. Continue to identify scenic views, scenic roads, and other scenic resources.	56							
	2. Preserve scenic resources (such as stone walls,) that are visible from public streets.	56							
★	3. Amend regulations to include protection of scenic views and other scenic resources.	56	2	2				2	
	4. Protect tree canopies from unreasonable destruction from utility pruning.	56							
Enhance "Sense of Place"									
	1. Encourage development patterns that contribute to a "sense of place".	59							
	2. Encourage a diversity in "sense of place" to promote the character of each area.	59							
★	3. Recommend adoption of a property maintenance code.	59				3			
	4. Address abandoned buildings as promptly as possible.	59							
Promote Good Design									
★	1. Establish and maintain design review guidelines.	60	2	2				2	
	2. Consider establishing a design review process in the future, if appropriate.	60							
Retain Undeveloped Land									
★	1. Establish an open space assessment policy to retain undeveloped residential land.	64	2		2		2	2	Tax
	2. Consider a local tax abatement program to retain undeveloped residential land.	64							Tax
	3. Consider establishing a program to purchase farmland development rights.	64							

Enhance Community Pride and Spirit										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Promote Community Spirit										
	1. Continue to promote unique local programs that promote community spirit.	66								
	2. Maintain and enhance unique local services or facilities that promote spirit.	66								
	3. Continue to promote recognition of Groton's special qualities.	66								
	4. Encourage other actions and programs that promote a sense of community.	66								
Enhance Neighborhood Identity										
	1. Recognize that neighborhoods working together will make a strong community.	67								
	2. Recognize and enhance the unique features of each part of the community.	67								
	3. Encourage neighborhoods to work together and with local organizations.	67								
Promote Community Involvement										
	1. Encourage volunteers who promote the community and quality of life.	68								
★	2. Establish a more active program to develop volunteers.	68					2		2	
	3. Continue to promote and encourage volunteer organizations.	68								
★	4. Recognize local volunteers through special annual events or other activities.	68					2		2	
	5. Strive to involve neighborhoods in the overall community that is Groton.	68								
	6. Encourage "neighborhood" events that involve all Groton residents.	68								
Improve Communications										
	1. Educate and communicate information for all community activities.	69								
★	2. Publish a "community calendar" to inform people of coming events.	69							2	PRC
	3. Maintain a Groton "website" to inform and allow for e-mail communications.	69								
	4. Use Community Television to provide information on local issues and events.	69								
	5. Continue to publish local newsletters and other information.	69								
	6. Promote better coverage by local newspapers.	69								
Promote and Market Community Assets										
★	1. Undertake a program to market Groton to a broader audience.	70					1		1	

Enhance Physical Structure										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Reinforce Community Structure										
	1. Enhance “sense of place” in order to promote community character.	72								HDC
	2. Promote “nodes” with diverse uses and densities that enhance character.	72								
★	3. Revise regulations to promote and enhance existing and new nodes.	72	1	1						
	4. Use mixed-use nodes as a major organizing feature in the development of Groton.	72								
	5. Educate Groton residents about “nodes” to overcome possible resistance.	72								
Seek A Central Focal Point For Groton										
	1. Establish a central focal point for Groton.	74								
Nurture Each Node										
★	1. Undertake study of each node and surrounding areas during the planning period.	76	1	1						
	2. Promote the uniqueness of each node as a component of the entire community.	76								
	3. Consider adopting regulations to encourage mixed uses within each node.	76								

Encourage Appropriate Residential Development										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Promote Open Space Development Patterns										
★	1. Modify local regulations to encourage open space development patterns.	82	2	2					2	
★	2. Adopt a definition of buildable land and a density regulation.	82	2	2					2	
★	3. Require a specific percentage of land area be preserved as open space.	82	2	2					2	
	4. Provide flexibility in minimum lot size requirements within the Health Code.	82								
	5. Consider other flexible development types that preserve meaningful open space.	82								
Guide Multi-Family Development										
	1. Guide multi-family uses to properly served sites near "nodes".	83								
	2. Guide multi-family developments to sites where they provide a land use transition.	83								
	3. Discourage multi-family development elsewhere unless a benefit will result.	83								
	4. Discourage multi-family development that is not small, moderate density projects.	83								
★	5. Reevaluate multi-family zones for uses, design standards, and zone locations	83	1	1					1	
Limit Two Family Development										
★	1. Review all residential zones to limit where two family homes could be located.	84	2	2					2	
Review Bulk and Dimensional Standards										
★	1. Review dimensional and bulk standards for residential zones.	85	2	2					2	
	2. Consider adopting a maximum floor-area-ratio regulation in Groton.	85								
Guide Conditional Uses (Special Permit)										
★	1. Review the conditional uses allowed in residential zones.	86	1	1					1	
★	2. Adopt additional Special Permit Objectives in the Zoning Regulations.	86	1	1					1	
Continue To Address Housing Needs										
	1. Continue to provide for a diversity of housing types throughout Groton.	90								
	2. Continue to address identified needs for elderly housing and affordable housing.	90								
	3. Guide such development to areas that support community structure.	90								

Encourage Appropriate Economic Development

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Develop A Strategic Economic Development Plan										
★	1. Prepare an economic development strategic plan to guide future activities.	93								EDC
	2. Update such strategic plan on a regular basis.	93								
Simplify Business Zoning and Procedures										
★	1. Simplify the list of uses permitted in each zone by using broad classes.	94		2					2	EDC
★	2. Establish a new hierarchy of business zones to simplify the business structure.	94		2					2	EDC
★	3. Review all business and industrial zones and areas as to location and requirements.	94		2					2	EDC
★	4. Investigate ways to streamline or improve land use procedures.	94	2	2					2	EDC
	5. Empower staff to make more permit and approval decisions.	94								
Continue Economic Development Efforts										
	1. Expand the tax base by retaining existing and attracting new businesses.	95								EDC
	2. Ensure that business development supports structure and complements character.	95								EDC
	3. Work with existing organizations to help create a business-friendly environment.	95								EDC
★	4. Reactivate joint commission meetings to encourage economic development.	95	2	2					2	EDC
	5. Work with other organizations to promote regional economic development.	95								EDC
Encourage Development of Fully Serviced Sites										
★	1. Assist the Town Council in considering funding of infrastructure improvements.	97	2			2	2		2	EDC
★	2. Change the Industrial Park District designation to Business Park.	97	3	3					3	EDC
	3. Find ways to enhance the use of existing business sites.	97								EDC
	4. Ensure that business development supports and complements Groton.	97								EDC
	5. Consider conceptual approvals that will guide potential businesses and developers.	97								
	6. Consider identifying other appropriate locations for economic development.	97								EDC

Encourage Appropriate Economic Development (continued)

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Modify Commercial Development Patterns										
	1. Encourage “nodes” and discourage “strip” type business development.	100								EDC
	2. Consider undertaking a special study of each commercial area.	100								EDC
	3. Consider using design districts to encourage the development of “nodes”.	100								
★	4. Evaluate current zoning designations and requirements.	100		2					2	
	5. Encourage consolidated development with shared access, parking, and circulation.	100								EDC
★	6. Modify regulations to create incentives for consolidated development.	100		2					2	
	7. Encourage architectural character as part of new business development.	100								
★	8. Develop an overall traffic plan for business areas.	100	2						2	DOT TA
	9. Discourage parking lots that detract from the streetscape and pedestrian circulation.	100								
	10. Resist pressure to rezone areas that would create strip development patterns.	100								
	11. Encourage businesses to enhance the streetscape.	100								
	12. Encourage reinvestment in existing business areas rather than more expansion.	100								EDC
	13. Encourage development of neighborhood and community based retail facilities.	100								EDC
Maintain or Reduce Commercial Zoning										
	1. Resist the desire of owners and retailers to rezone new lands to commercial use.	102								EDC
	2. Prevent commercial “creep” along major roads.	102								
	3. Strive to reduce (or maintain) the amount of commercial zoning in Groton.	102								EDC
	4. Guide commercial development back to the desired “nodes”.	102								
★	5. Perform a comprehensive study of the retail market.	102							2	EDC
Address Other Economic Development Issues										
★	1. Address economic development issues identified in the Plan.	103 – 106	2	2			2		2	EDC
Continue to Provide For Home Occupations										
★	1. Review home occupation regulations.	108		3					3	

Enhance Transportation Options

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Carefully Manage The Existing Roadway System										
	1. Develop east-west connectors, where feasible and desirable.	111								
	2. Maintain traffic capacity for future traffic volumes while maintaining character.	111								TA
★	3. Make intersection improvements where needed on Routes 1, 12, and 184.	111							2	DOT TA
★	4. Undertake one or more access management studies on Routes 1, 12, and 184.	111	1							TA
	5. Implement recommendations from the access management study in these areas.	111								TA
	6. Encourage access management strategies along major roadways in Groton.	111								TA
Revise Roadway Classifications										
	1. Update regulations to incorporate the roadway classification scheme.	112								
Encourage Roads That Are More Scenic										
★	1. Review road standards to promote construction of more scenic roads.	115								PW
	2. Continue to designate local roads as scenic roads to enhance character.	115								Res.
★	3. Publicize and promote the "adopt-a-road" program with local organizations.	115			3		3			PW
Continue to Maintain and Improve Roads										
	1. Continue to make roadway improvements to address safety and capacity issues.	116								PW
	2. Increase road maintenance funding to adequately maintain existing roads.	116								PW
	3. Continue to work closely with the SCCOG and CTDOT on transportation issues.	116								
	4. Encourage continued spot improvements to state highways, where necessary.	116								PW
	5. Continue to evaluate how future transportation projects may benefit the community.	116								
Address Unaccepted Streets										
	1. Continue efforts to address unaccepted streets.	117								PW
	2. Discourage private streets unless future liability is clearly specified.	117								PW

Enhance Transportation Options (continued)

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Create an Overall Pedestrian Network										
	1. Continue to improve and extend the sidewalk network in and around Groton.	120								PW
	2. Maintain regulations that require the installation of sidewalks for new projects.	120								
	3. Continue to appropriate funds to extend sidewalks throughout the community.	120								
	4. Consider enacting a “fee-in-lieu-of sidewalk” regulation.	120								
★	5. Establish and maintain a sidewalk inventory and improvement plan.	120	1						1	PW
	6. Continue to develop, improve and extend the trail network throughout Groton.	120								
	7. Allow for multi-use trails (bicycles, pedestrians, rollerblades, etc.).	120								
★	8. Modify regulations to require the installation of trails in new projects.	120	2	2					2	
	9. Appropriate municipal funds to extend and connect trails throughout Groton.	120								
★	10. Establish and maintain a trail inventory and improvement plan.	120	2		2				2	PRC
	11. Explore opportunities to create less formal walkways where feasible and desirable.	120								
	12. Interconnect all pedestrian walkways in Groton into a cohesive overall system.	120								PRC
Establish a Bikeway Network in Groton										
★	1. Develop an overall concept plan for bicycle routes in Groton.	122	2		2				2	TA
	2. Provide appropriate bicycle facilities when road improvements are undertaken.	122								PW
	3. Give priority to bicycle trails along major roads that service areas of local activity.	122								PW
	4. Provide for bicycle racks and other support facilities, where appropriate.	122								

Enhance Transportation Options (continued)

		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Enhance Transit Service										
	1. Devote efforts to supporting and enhancing transportation options.	123								
	2. Coordinate and integrate the public and private transportation systems in Groton.	123								
★	3. Encourage preparation of a multi-modal transportation study in Mystic.	123							1	
	4. Create, support, and enhance local bus transportation.	123								
	5. Continue to work with SEAT to enhance local bus service.	123								
	6. Explore expanding other bus transportation.	123								
	7. Consider enacting a "fee-in-lieu-of-parking" regulation to support transit.	123								
Address Parking Needs										
★	1. Undertake a comprehensive review of parking requirements.	124	2	2					2	
	2. Consider establishing stand-alone parking lots where they will meet a need.	124								
	3. Maintain and, if necessary, expand commuter parking lots.	124								
Monitor Rail and Airport Operations										
	1. Support maximum passenger rail service to the Mystic and New London stations.	125								
	2. Encourage fare reduction for local Amtrak service to reduce vehicles using I-95.	125								
	3. Support revival of passenger service on the P&W line.	125								
	4. Continue to closely monitor rail service activities for local impacts.	125								
	5. Continue to closely monitor airport activities for local impacts.	125								
	6. Partner with the airport and CTDOT to enhance the airports economic potential.	125								
Support Marine Transportation Services										
	1. Continue to monitor the land-based needs of Groton's marine businesses.	126								
	2. Encourage waterfront uses for maritime commerce uses that are water-related.	126								HMC
	3. Explore the concept of water taxi services and manage any land-side activities.	126								HMC
	4. Support regional efforts to increase usage of the State Pier in New London.	126								

Address Community Facility Needs										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Address Current Community Facility Needs										
★	1. Undertake longer term enrollment planning.	128							2	BOE
	2. Continue to evaluate educational facility needs and implement recommendations.	128								BOE
★	3. Undertake programs to attract and retain volunteer public safety personnel.	129					1			
★	4. Establish a Committee to identify and prioritize all options for a Town Beach.	130					1			
Plan For Mid-Range Needs										
	1. Provide additional recreational facilities to meet local needs.	131								PRC
	2. Continue to coordinate recreation facility usage with the schools to meet needs.	131								BOE PRC
	3. Explore the possibility of cooperation with other recreation facilities in Groton.	131								PRC
	4. Consider developing a recreation center with pool, gym, fitness, and youth areas.	131								PRC
★	5. Construct a new vehicle maintenance facility at the public works facility.	132					2	2	2	PW
★	6. Establish additional sand and salt storage facilities.	132					2			
	7. Address the long-term policy issue of proper disposal of road sand sweepings.	132								PW
★	8. Undertake programs to educate residents about waste management.	132			2				2	BOE Res.
★	9. Establish facilities for composting, bulky waste disposal, and a "swap" facility.	132					1	1	1	PW
	10. Consider establishing a permanent facility for household hazardous waste collection.	132								PW
	11. Address the animal shelter, including the possibility of regional sharing of a facility.	132								PW COG
	12. Promote waste stream reduction, reuse, and recycling of materials.	132								PW
★	13. Investigate constructing additional housing units for elderly/disabled persons.	132					3		3	
★	14. Investigate establishing a community center / recreation center complex.	133					2	2	2	PRC
	15. Maximize the opportunities for a community / recreation center on Route 117.	133								
	16. Consider acquiring adjacent property to allow expansion of the community center.	133								
	17. Investigate opportunities to coordinate all three libraries.	133								
★	18. Provide additional space for Social Services and Youth and Family Services.	134					2	2		
★	19. Investigate opportunities to consolidate fire districts and ambulance associations.	134					2			

Address Community Facility Needs (continued)										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Prepare For Future Needs										
★	1. Develop an overall strategy to identify possible future facility needs.	135	2				2	2	2	
	2. Strive to acquire land as soon as possible for future facility needs.	135								
★	3. Identify and acquire future school sites during the planning period.	135	2				2	2	2	
	4. Use the Structure and Future Land Use Plans to guide facility locations.	135								
	5. Investigate ways to establish cultural facilities such as a performing arts center.	136								

Enhance Infrastructure										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Guide Piped Utilities To Meet Community Needs										
	1. Continue to encourage the provision of adequate potable water.	138								LLH
	2. Expand public water on the basis of supporting desired development patterns.	138								LLH
	3. Encourage efforts to identify and develop adequate sources of water supply.	138								LLH
	4. Continue to encourage the provision of safe and efficient sewage disposal.	140								LLH
	5. Expand public sewer on the basis of supporting desired development patterns.	140								PW
★	6. Complete expansion of the Town's Water Pollution Control Facility.	140							1	PW
	7. Continue to implement the recommendations of the 1995 Master Sewage Plan.	140								PW
	8. Clearly define sewer avoidance and sewer service areas (including industrial areas).	140								PW
	9. Address capacity issues related to inflow, pipe cleaning, and pump stations.	140								PW
★	10. Undertake a Town-wide study of drainage needs and issues.	141							1	PW
★	11. Perform an assessment of ways to improve water quality at storm drainage outfalls.	141			1	1			1	PW
	12. Continue to encourage the provision of natural gas service.	141								EDC

Enhance Infrastructure										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Guide Wired Utilities To Meet Community Needs										
	1. Promote energy conservation to reduce energy needs and maintain capacity.	143								
★	2. Amend regulations to require all new wired utility services be underground.	143	1	1					1	PW
	3. Encourage all replacement wired utility services be placed underground.	143								PW
	4. Work with utility companies to establish a reasonable tree-trimming schedule.	143								PW
	5. Work with utility companies to select plantings compatible with overhead wires.	143								PW
	6. Encourage electrical system improvements for capacity and reliability.	143								PW
	7. Encourage improvements in communication infrastructure.	143								
	8. Encourage the implementation of highest quality communications technology.	143								
	9. Encourage local utilities to make high-speed Internet access available in Groton.	143								
	10. Continue to monitor changes in communications technology.	143								
Address Wireless Communications										
	1. Anticipate the growth in wireless communications and antennas.	144								
	2. Continue to monitor evolving technologies to efficiently address local needs.	144								
	3. Enhance regulations related to the siting of wireless communication facilities.	144								

Enhance Government Structure										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Enhance Government Coordination										
	1. Strive to enhance government efficiency.	148								
Consider Alternative Structures										
	1. Consider alternative government structures.	148								
Find Effective Solutions										
	1. Strive to find effective solutions to organizational and governmental issues.	148								
	2. Reduce or minimize duplication of services.	148								

Implementation										
		Page	PC	ZC	CC	IWA	TC	RTM	Staff	Other
Implement The Plan										
	1. Educate people about the Plan recommendations.	153								
★	2. Maintain and regularly update a community "web page".	153							3	
★	3. Establish a system where residents can e-mail Town employees.	153					2		2	
	4. Consider establishing special issue shows on community television.	153								
	5. Use the Plan implementation schedules to guide local activities.	154								
★	6. Establish an oversight committee to coordinate plan implementation.	154	1				1	1	1	
★	7. Develop an annual implementation program.	154	1				1		1	
	8. Regularly maintain the Plan as a working, rather than a reference, document.	154								
★	9. Comprehensively review a major section of the Plan every year.	154	1	1	1	1	1	1	1	Res.
	10. Use the consistency checklist to help review proposals and implement the Plan.	154								
	11. Use the Plan of Conservation and Development as a basis for land use decisions.	154								
★	12. Update the subdivision regulations and make necessary revisions.	156	2							
★	13. Update the zoning regulations / map and make necessary revisions.	156		2						
	14. Continue to enforce local regulations.	156								
	15. Incorporate Plan recommendations into the operating and capital budget.	156								
	16. Continue to refer municipal improvements for review under CGS Section 8-24.	156								

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CONCLUSION

The Plan establishes goals for all Groton residents to work towards ...

This Plan of Conservation and Development is a statement of themes, strategies, and tasks for the Town of Groton. In preparing this Plan, the Groton Plan of Conservation and Development Steering Committee and the Planning Commission:

- reviewed and discussed information about Groton
- conducted meetings and surveys to determine residents' attitudes
- discussed conditions, trends, and issues affecting the community
- refined a number of strategies to help guide the community during the planning period

Based on all of the work accomplished, this Plan is believed to reflect the consensus of the community in terms of where Groton should devote much of its effort and intentions over the next ten to twenty years. The process of preparing the Plan has been an opportunity for all participants to learn more about their community and to help prepare a guide to the future of Groton. As a result, it has been a rewarding experience for everyone involved.

While situations and conditions will undoubtedly change during the next ten years, this Plan establishes goals for all Groton residents to work towards. In addition, it provides flexibility in exactly how to attain those goals.

Now, the hard work must begin. The most critical step in bringing the Plan to fruition is implementing its recommendations. While that task rests with all residents of Groton, it is also coordinated by the Planning Commission and other Town agencies.

While it is true that even the longest journey begins with a single step, the Groton Plan of Conservation and Development Steering Committee and the Planning Commission feel that, by preparing this Plan of Conservation and Development, the journey towards building a better community has already begun.

BACKGROUND INFORMATION



During the process of preparing this Plan of Conservation and Development, the following workbooks were prepared to summarize information and frame policy discussions. These background materials (as well as other materials) can be reviewed at the Groton Library or the Office of Planning and Development Services at the Town Hall Annex on Groton Long Point Road.

1	Planning Primer	July 6, 1998
2	Implementation Status of Prior Plans	September 14, 1998
3	Public Meeting #1	November 9, 1998
4	History of Groton	November 9, 1998
5	Regional Factors	November 9, 1998
6	Natural Resources of Groton	November 9, 1998
7	People of Groton	December 14, 1998
8	Housing In Groton	December 14, 1998
9	Economy Overview	December 14, 1998
10	Land Use & Development Potential	February 8, 1999
11	Open Space	February 8, 1999
12	Infrastructure	March 8, 1999
13	Community Services & Facilities	March 8, 1999
14	Transportation & Circulation	March 8, 1999
15	Coastal Areas & Issues	March 29, 1999
16	Historic Preservation	March 29, 1999
17	Regulatory Review	April 12, 1999
18	Economic Development	May 10, 1999
19	Public Informational Meeting #2	August 16, 1999
20	Groton Tax Impact Analysis	September 13, 1999
21	Governmental Review	September 13, 1999
22	Community Structure	September 27, 1999
23	Planning Program Ideas	November 15, 1999
24	Preliminary Planning Program	November 15, 1999

ACKNOWLEDGMENTS

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2002
Groton
Plan of
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