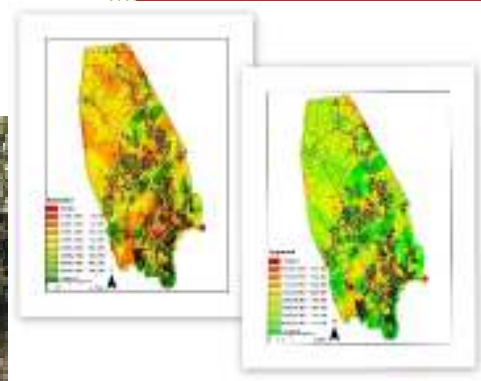
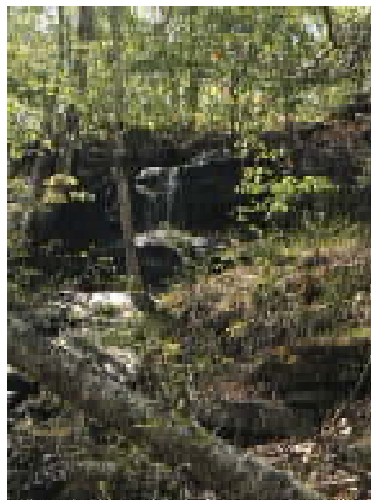


2020

Town of East Lyme Plan of Conservation and Development



East Lyme Planning Commission
Town of East Lyme
11/9/2020

“The earth is common ground and... gradually the idea is taking form that the land must be held in safekeeping, that one generation is to some extent responsible to the next...” - E.B. White, 1942

ACKNOWLEDGEMENTS

Plan of Conservation and Development Steering Committee:

Michelle Royce Williams, Chair

Lawrence Fitzgerald

Richard Gordon

Peter Lynch (2019)

Dr. Rosemary Ostfeld

Norman B. Peck III

Kirk Scott

Planning Commission:

Kirk Scott, Chair

Michelle Royce Williams, Secretary

Nichole Davison

Thomas Fitting Jr.

Richard Gordon

Mary Salvatore

Elizabeth Allen, Alternate

Brian Bohmbach, Alternate

East Lyme Staff:

Gary A. Goeschel II, Director of Planning / Inland Wetland Agent

William Mulholland, Zoning Official

Jennifer Lindo, Administrative Assistant

Karen Zmitruk, Administrative Assistant

Board of Selectmen:

Mark Nickerson, First Selectman

Kevin Seery, Deputy First Selectman

Daniel Cunningham

Paul Dagle

Rose Ann Hardy

Mark Salerno

TABLE OF CONTENTS

FIGURES	8
TABLES	9
APPENDICES	9
FORWARD	10
INTRODUCTION	12
MISSION STATEMENT	12
VISION	13
GOALS	13
Chapter 1 - Background	15
1.1 Progress Since the 2009 Plan of Conservation and Development	15
1.2 Methodology	16
1.3 Stakeholder Engagement	17
Chapter 2 - Agricultural Resources	19
2.1 History of Agriculture and Aquaculture in East Lyme	19
2.2 Current State of Agriculture in East Lyme	19
2.3 Supporting Local Food Systems	19
2.4 Protecting Clean Water Resources	19
2.5 Economic Development	19
2.6 Reduced Cost of Services	20
2.7 RECOMMENDATIONS	20
2.7.1 Strategies for Implementation	22
Chapter 3 - Coastal Resources	23
3.1 Coastal Boundary	23
3.2 Management	25
3.3 RECOMMENDATIONS:	29
Chapter 4 - Historic Resources	33
4.1 Historical Community Groups	33
4.2 Documents & Artifacts	33
4.3 RECOMMENDATIONS	34
Chapter 5 - Natural Resources	36
5.1 Environmental Quality	36
5.2 Environmentally Sensitive Areas	36
5.2.1 Aquifers	36
5.2.2 Surface Waters	36

5.2.3	Floodplains.....	37
5.2.4	Inland and Tidal Wetlands:.....	37
5.2.5	Beaches, Dunes and Bluffs	37
5.2.6	Steep Slopes.....	37
5.3	Groundwater and Surface Water Protection	39
5.3.1	Synthetic Organic Chemicals, Hydrocarbons.....	39
5.3.2	Landfill Leachate	39
5.3.3	Salt.....	39
5.3.4	Nitrates.....	39
5.3.5	Biological Pollutants	40
5.3.6	Pesticides.....	40
5.3.7	Heavy Metals	40
5.4	RECOMMENDATIONS	40
Chapter 6 - Open Space		42
6.1	Acquisition, Preservation, and Enhancement	42
6.2	Types of Open Space.....	42
6.2.1	Conservation Open Space	42
6.2.2	Recreational Open Space	42
6.2.3	Institutional and Private Open Space.....	43
6.2.4	Agricultural Open Space.....	43
6.3	Open Space Plans for East Lyme.....	43
6.3.1	Natural Resource Commission Open Space Plan	43
6.3.2	Land of Unique Value Study.....	48
6.3.3	The Niantic River Watershed.....	51
6.3.4	Long-Term Perspective	51
6.3.4	Sustainability	54
6.7	RECOMMENDATIONS	54
Chapter 7 - Residential Development		56
7.1	Background	56
7.1.1	Population	56
7.1.2	Housing Stock	58
7.1.3	Affordable Housing.....	59
7.2	Current Affordable Housing Offerings.....	60
7.2.1	Government Assisted Affordable Housing	60
7.2.2	Affordable Housing (No Gov. Assistance).....	61

7.3	RECOMMENDATIONS	62
Chapter 8 - Commercial and Industrial Development		64
8.1	Commercial & Industrial Zoning Districts	64
8.1.1	CA Commercial Districts	64
8.1.2	CB Commercial Districts:	64
8.1.3	CM Commercial Districts	64
8.1.4	LI Light Industrial Districts	64
8.1.5	GPDD Gateway Planned Development District	64
8.1.6	SU Special Use Districts	64
8.1.7	SU-E Special Use Districts	64
8.2	RECOMMENDATIONS	67
Chapter 9 - Economic Development		69
9.1	Philosophy and Policy	69
9.1.1	Current Spending and Taxes	69
9.2	Economic Sustainability	70
9.2.1	Northern Flanders	71
9.2.2	Flanders Village	71
9.2.3	Niantic Village	71
9.3	Employment Trends	72
9.4	Wage Trends	72
9.4.1	Cost of Living Index	73
9.5	Commercial Industries	73
9.5.2	Industry Clusters	75
9.5.3	Occupations	75
9.5.4	Education Levels	75
9.6	RECOMMENDATIONS	76
Chapter 10 - Community Spaces & Recreation		79
10.1	Parks and Recreation	79
10.2	East Lyme Community Center	80
10.3	East Lyme Public Library	80
10.4	Educational Spaces	81
10.5	Town Hall	82
10.6	RECOMMENDATIONS	82
10.6.1	Parks and Recreation	82
10.6.2	Community Center	83

10.6.3	Library	84
10.6.4	Educational Spaces.....	85
10.6.5	Town Hall	85
Chapter 11 – Clean, Reliable, Sustainable Energy		87
11.1	History of Energy in East Lyme and the Surrounding Area	87
11.2	Current State of Energy in East Lyme and the Surrounding Area	87
11.3	Energy Efficiency.....	87
11.4	Renewable Energy Development	89
11.5	Environment-Focused Renewable Energy Siting.....	89
11.6	Micro-Grid Development.....	90
11.7	Engaged Community and Leadership.....	90
11.8	RECOMMENDATIONS	91
11.8.1	Grant Funding Opportunities	92
Chapter 12 - Water and Wastewater Management		94
12.1	Source and Supply	94
12.1.1	Water Quality	97
12.1.2	Water Supply.....	97
12.1.3	Emerging Contaminants	97
12.1.4	Sewage Capacity	98
12.1.5	Energy Efficiency and Greenhouse Gas Emissions.....	98
12.1.6	Investment in Infrastructure Resiliency	98
12.2	RECOMMENDATIONS	99
Chapter 13 - Municipal Solid Waste Management.....		101
13.1	Solid Waste and Recyclables	101
13.2	RECOMMENDATIONS	103
Chapter 14 – Transportation.....		104
14.1	Roadway Infrastructure	104
14.1.1	Expressways	104
14.1.2	Arterials.....	104
14.1.3	Collectors	104
14.1.4	Boulevards	104
14.1.5	Local Roads	104
14.1.6	Rural Collector and Local Roads	104
14.2	Town Roads	105
14.3	State Roads	105

14.4 Sidewalks and Bicycling	105
14.5 RECOMMENDATIONS	111
Chapter 15 - Emergency Services	121
15.1 Police Department.....	121
15.2 Fire Department	121
15.2.1 Flanders Fire Department.....	121
15.2.2 Niantic Fire Department.....	121
15.3 Public Safety Building.....	121
15.4 Looking to the Future.....	124
15.5 RECOMMENDATIONS	124
Chapter 16 - Sustainable Municipal Finance	126
16.1 Expenditures and Revenues.....	126
16.1.1 Investing in Economic Development.....	128
16.2 RECOMMENDATIONS	128
Chapter 17 - Education, Outreach, and Implementation	129
17.1 POCD Recommendations	129
17.2 Implementation.....	129
17.3 RECOMMENDATIONS	129
RECOMMENDATIONS MATRIX.....	130
APPENDICIES	130
REFERENCES	130

FIGURES

Figure 1 - Coastal Boundary & Resources	24
Figure 2 - Hurricane Surge Map.....	26
Figure 3 - FEMA Flood Zones and Areas of Conflict.....	27
Figure 4 - FEMA Flood Zones and Structures Impacted by.....	29
Figure 5 - Environmentally Sensitive Natural Resources	38
Figure 6 - NRC Open Space Plan.....	44
Figure 7 - Major Watersheds & Aquifers	45
Figure 8 - Open Space Vision	47
Figure 9 - LUV Study Recommendations for Future Open Space.....	50
Figure 10 - Niantic River Watershed.....	53
Figure 11 - Population Growth, Trends, and Projections.....	56
Figure 12 - Projected Population Change	57
Figure 13 - Single Family Housing Units.....	58
Figure 14 - Commercial Zoning Districts	65
Figure 15 - Land of Unique Value (LUV) Study Neighborhoods	70
Figure 16 - Employment Trends	72
Figure 17 - Wage Trends	72
Figure 18 - Cost of Living East Lyme vs Connecticut.....	73
Figure 19 - Industry Clusters Q3 2019.....	73
Figure 20 - New Business Entities Formed.....	74
Figure 21 - 2019 Q3 Industry Clusters.....	75
Figure 22 - Education Levels	76
Figure 23 - Preliminary Energy Assessment Completed by ECG Engineering 2011	88
Figure 24 - Source of Supply, Level A Aquifer Protection Areas	95
Figure 25 - Sewershed Boundary	96
Figure 26 - Municipal Solid Waste Tonnage	101
Figure 27- Recycling Sticker.....	102
Figure 28 - Existing roads, Sidewalks, Trails and Bicycle Lanes.....	106
Figure 29 - Sidewalk and Walkability Plan	107
Figure 30 - SECCOG Bike and Pedestrian Recommendations.....	108
Figure 31 - Density of Traffic Accidents and Crime on/within 1/4 Mile of I-95.....	109
Figure 32 - Unified Proposed Improvements and Known Trouble Areas	110
Figure 33 - Total Accidents - Years 2010 - 2020	111
Figure 34 - Corner Sidewalk Bump Out.....	113
Figure 35 - Mid-block Sidewalk Bump-out.....	114
Figure 36 - RT 161 Area of Proposed Widening	115
Figure 37 - Widen Route 161 at Gorton Pond.....	116
Figure 38 - Street View on Route 161 South Bound at Gorton Pond	116
Figure 39 - Recommended Center Turning Lane on Route 161 - North of I-95	117
Figure 40 - Widen and Re-stripe Route 156, Street View West Bound.....	117
Figure 41 - 2019 Sidewalk and Walkability Plan	119
Figure 43 - 911 Response Analysis.....	122
Figure 44 - Density of Responses	123
Figure 45 - General Government Expenditures 2010 - 2019	126
Figure 46 - General Government Revenues.....	127

TABLES

Table 1 - NRC Open Space Plan Table 2	46
Table 2 - U.S. EPA's 10 Guidelines for Smart Growth	49
Table 3 - Current Land Use by Type - 2020	51
Table 4 - Government Assisted Affordable Housing.....	60
Table 5 - Non-Government Assisted Affordable Housing.....	61
Table 6 - General Government Expenditures 2010 - 2019.....	126
Table 7 - General Government Revenues	127

APPENDICES

Appendix A:	Town of East Lyme Land of Unique Value Study, University of Connecticut, Community Research and Design Collaborative, October 2009
Appendix B:	Town of East Lyme 2019 Community Survey Results
Appendix C:	Yale Urban Design Report (East Lyme Charrette Report) April, 5, 1997
Appendix D:	Open Space Plan Report, East Lyme Commission for the Preservation of Natural Resource, May 29, 2009
Appendix E:	East Lyme Coastal Resilience, Climate Adaptation and Sustainability Study (CRCASS) December 10, 2018
Appendix F:	Stones Ranch Military Reservation & Camp Niantic Joint Land Use Study December 2016
Appendix G:	Protecting Drinking Water in East Lyme 2019 Commission for the Conservation of Natural Resources
Appendix H:	A Salt Marsh Advancement Zone Assessment of East Lyme, Connecticut
Appendix I:	Community Workshop Feedback Minutes https://eltownhall.com/wp-content/uploads/2020/02/POCD-Subcommittee-January-29-2020-Minutes.pdf
Appendix J:	2016 Fire Department Study
Appendix K:	Economic Overview, East Lyme and Niantic Connecticut, January 3, 2020

Appendices are provided under separate cover and available upon request and additional fee. Copies of the East Lyme Plan of Conservation and Development and the Appendices are available in the Office of the East Lyme Town Clerk, the East Lyme Public Library, and the East Lyme Department of Planning. The Plan of Conservation and Development and Appendices can be viewed on the East Lyme website at www.eltownhall.org.

FORWARD

Connecticut State law requires a municipal planning commission to prepare and adopt a Plan of Conservation and Development (POCD). Section 8-23 of the Connecticut General Statutes (CGS), as amended by Public Act 15-95, sets forth required procedures by which each municipality must prepare or amend and adopt a POCD. Effective July 1, 2016, any municipality that does not adopt a POCD at least once every ten years shall be ineligible for discretionary state funding unless such prohibition is expressly waived by the OPM Secretary. The 10-year clock for discretionary state funding eligibility re-sets whenever the municipal POCD is prepared or amended and adopted in accordance with CGS Section 8-23.

Discretionary state funding includes, but is not limited to, any source of funding that a state agency administers through a competitive process. Examples include, but are not limited to, the Urban Action Program, Small Town Economic Assistance Program (STEAP), Clean Water Fund, Drinking Water State Revolving Fund, as well as various housing, historic preservation, brownfields remediation, open space and farmland preservation programs.

The Plan shall consider the following:

- the community development action plan of the municipality, if any;
- the need for affordable housing;
- the need for protection of existing and potential public surface and ground drinking water supplies;
- the use of cluster development and other development patterns to the extent consistent with soil types, terrain and infrastructure capacity within the municipality;
- the state plan of conservation and development;
- the regional plan of development;
- physical, social, economic and governmental conditions and trends;
- the needs of the municipality including, but not limited to, human resources, education, health, housing, recreation, social services, public utilities, public protection, and transportation;
- the objectives of energy-efficient patterns of development, the use of solar and other renewable forms of energy and energy conservation; and
- protection and preservation of agriculture.

The Plan shall also:

- be a statement of policies, goals and standards for the physical and economic development of the municipality;
- provide for a system of principal thoroughfares, parkways, bridges, streets, sidewalks, multipurpose trails and other public ways as appropriate;
- 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 and identify areas where it is feasible and prudent (i) to have compact, transit accessible, pedestrian-oriented mixed use development patterns and land reuse, and (ii) to promote such development patterns and land reuse;
- recommend the most desirable use of land within the municipality for residential, recreational, commercial, industrial, conservation and other purposes and include a map showing such proposed land uses;
- recommend the most desirable density of population in the several parts of the municipality;

- note any inconsistencies with the following growth management principles: (i) redevelopment and revitalization of commercial centers and areas of mixed land uses with existing or planned physical infrastructure; (ii) expansion of housing opportunities and design choices to accommodate a variety of household types and needs; (iii) concentration of development around transportation nodes and along major transportation corridors to support the viability of transportation options and land reuse; (iv) conservation and restoration of the natural environment, cultural and historical resources and existing farmlands; (v) protection of environmental assets critical to public health and safety; and (vi) integration of planning across all levels of government to address issues on a local, regional and state-wide basis;
- 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 in which the municipality is located; and
- 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 identified in the housing plan prepared pursuant to section 8-37t and in the housing component and the other components of the state plan of conservation and development prepared pursuant to chapter 297. In preparing such plan the commission shall consider focusing development and revitalization in areas with existing or planned physical infrastructure.

The Plan provides the guidance for the physical development of East Lyme. It is an active, fluid, and evolving document, resulting in specific and relevant proposals for implementation by local Boards and Commissions, or by Town Meeting. It is intended to be relevant for at least 10-years, but ideally 20-years. Its focus is on physical development, such as density, infrastructure, and undeveloped areas. The Plan contains important demographic, social, and economic information, which in turn will allow the town to better identify and forecast future community needs and services. Other topics, including zoning, preservation of community character, and the acquisition of open space are discussed in the Plan. The POCD is a comprehensive document, not only utilized by the Planning and Zoning Commissions, but also other Town Boards and Commission as well as Town-elected leaders and municipal officials.

New requirements of CGS 8-23 require the Plan incorporate sustainability and resiliency initiatives and the identification of areas served by existing sewerage systems, where sewer systems are planned and to be avoided. This document updates the expiring Goals & Objectives of East Lyme's 2009/2010 Plan of Conservation and Development, incorporates sustainability and resiliency through Sustainable CT action items, and identifies existing sewerage systems, planned sewerage systems and the areas for sewer avoidance. The POCD provides a legally defensible standard for zoning changes, and brings the community further into compliance with anticipated changes to the state's enabling laws.

INTRODUCTION

How our community plans for and manages land use and development determines our economic, social and environmental well-being. Smart Growth promotes development that is good for the economy, community and the environment. The benefits of smart growth include the following:

- The creation of diverse housing options;
- The protection of farm and forest land;
- Diverse transportation options and less dependence on the automobile;
- Greater social interaction with neighbors;
- A lower cost for public services resulting in reduced taxes; and
- An overall higher quality of life.

The basic principles of Smart Growth, as provided by the United States Environmental Protection Agency (“EPA”) are:

1. Promote mixed land uses;
2. Take advantage of compact building design;
3. Create a range of housing opportunities and choices;
4. Create walkable neighborhoods;
5. Foster distinctive, attractive communities with a strong sense of place;
6. Preserve open space, farmland, natural beauty, and critical environmental areas;
7. Strengthen and direct development towards existing communities;
8. Provide a variety of transportation choices;
9. Make development decisions predictable, fair, and cost effective; and
10. Encourage community and stakeholder collaboration in development decisions.

Our future depends on carefully integrating growth, environmental protection and economic opportunities into our local planning framework. Development guided by these smart growth principles enhances neighborhoods, reinforces community vitality, protects natural resources and creates a vibrant place to live, work, and play. The result is a high quality of life that drives economic competition, creates business opportunities, and improves the local tax base.

MISSION STATEMENT

“Safety, security, economic stability, beauty, maintenance of property values and infrastructure, are all important to the long-term physical development of East Lyme. As such, the mission of East Lyme is to create and sustain a healthy community, one whose residents have stability and security with the preservation of natural resources for future generations.”

Articulated through the Planning Commission and Staff, the vision explains the intent of the Town and the community values for the 2020 Plan of Conservation and Development, as adopted by the Planning Commission:

- achieve a balance between conservation and development;
- ensure that changes enhance East Lyme;
- carefully balance the need for economic development and land use with the preservation of recreational, scenic, historic, cultural, agricultural, and natural resources;

- protect and enhance natural resources, community character, and the overall quality-of-life in an environmentally responsible and sustainable way; and
- direct future growth so that no one aspect of the town overwhelms the others.

VISION

Located on Long Island Sound, East Lyme is a coastal New England town, enhanced by its additional frontage along the Niantic River and the diversity of its population and land uses. East Lyme is characterized by beach communities; a traditional seaside village center along Route 156, the busy commercial corridor along Route 161, quiet residential neighborhoods, vast open spaces and substantial rural character. East Lyme's natural setting includes expansive water views and winding rural roads through a more rugged wooded upland terrain. East Lyme's people come together in a sense of community that supports activities ranging from youth sports to community parades. In order to achieve a balance between conservation and development, East Lyme's future challenge will be balancing the many facets of East Lyme, protecting and enhancing natural resources, community character, and the overall quality-of-life in an environmentally responsible way; directing future growth so that no one aspect of the town overwhelms the others. Therefore, the vision of East Lyme is to ensure that changes enhance East Lyme and seeks to carefully balance the need for economic development and land use with the preservation of recreational, scenic, historic, cultural, agricultural, and natural resources.

GOALS

1. Maintain the traditional New England character of the community and enhance the Niantic and Flanders Village identities of East Lyme.
2. Establish a coordinated, cooperative system of land-use decision making to ensure that development continues to meet high performance standards, specifically with regard to open space preservation, view corridor protection, environmental protection, sustainability, and landscaping and building design treatments consistent with East Lyme's New England setting.
3. Promote Compatible and Sustainable Economic Development
4. Support and cultivate a wide variety of economic activities that may be easily integrated into the community with little or no adverse impact on community resources.
5. Promote agricultural industries.
6. Identify and preserve the natural, historic, cultural and environmental resources and habitats of the community.
7. Protect East Lyme's native ecosystems, biodiversity and maintain the quality of East Lyme's wetlands, watercourses, and groundwater.
8. Promote wise use of land in the coastal area, which recognizes the importance of the Town's coastal resources and existing water-dependent uses.
9. Preserve existing period, historic New England style structures and sites through the use of Certified Local Government ("CLG") designation of historic properties, the Connecticut State Register and National Register of Historic of Historic Places or other implements, to include Historic Society.
10. Preserve the tradition of public access to East Lyme's shoreline, while weighing such access against the need to protect sensitive shoreline and inland water resources, and the rights of property owners.
11. Provide park and recreational facilities that meet the diverse needs of residents and visitors of all ages.
12. Provide facilities and services for a municipal government that meet future needs and maintain the quality and range of municipal services and facilities desired by the townspeople while maintaining and diversifying the tax base.

13. Develop adequate water supply to meet current and future demand for public water in the Town.
14. Provide solid waste disposal that maximizes the recovery and recycling of materials.
15. Provide sanitary waste disposal in a manner that protects the Town's resources.
16. Provide for the safe, convenient, and efficient movement of people and goods through and within the town by developing a planned transportation system, which serves local traffic, through traffic, and pedestrian movement while ensuring the preservation of community character.
17. Encourage and Participate in Cooperative Efforts to Promote the Health and Welfare of all in East Lyme and the Southeastern Connecticut Region.
18. Prepare for the impacts of climate change and sea level rise along our town's coastline.

Chapter 1 - Background

1.1 Progress Since the 2009 Plan of Conservation and Development

The 2009 Plan of Conservation and Development was written from the perspective of a town in growth. From 1990-2000 the town population grew from 15,340 to 18,118 and between 2000-2010 grew by another 1,000 residents to 19,160. In the 10 years following, the town's population has stabilized and is predicted to continue this trend over the next 10 years or more, with a greater percentage of the town's population aged 65 and older. The addition of several multi-unit housing offerings both in the Gateway Planned Development District and elsewhere have diversified East Lyme's primarily single-family housing offerings and may impact those predictions.

The Gateway Planned Development District has been developed since 2009 and currently includes Costco wholesale and The Sound at Gateway Commons, which when complete, will include 400 apartments and condominiums. Additional available developable space still exists within the Gateway Planned Development District.

Many of the POCD recommendations for downtown Niantic have been implemented since 2009. Streetscape improvements, diversified housing options, new businesses and architectural regulations to maintain a unified aesthetic have all been enacted. A public park was constructed at the intersection of Main Street and Pennsylvania Avenue, allowing for increased visual access to Niantic Bay, and long-standing improvements to the Niantic Bay Boardwalk were completed, with the boardwalk fully reopened. As of the writing of this document, downtown Niantic is a vibrant district with a low percentage of vacant storefronts, high pedestrian traffic, and a center of community events such as the Niantic Stroll, Celebrate East Lyme, the Niantic Light Parade and more.

On the residential side, many of the 2009 recommendations regarding Cluster Development have been enacted. Conservation Design Developments or CDDs, have replaced traditional subdivision layouts for any subdivision over 10 acres or 4 lots (with Planning Commission purview to require them under 10 acres and 4 lots as well) as a means of creating permanent open space, preserving environmentally sensitive areas and encouraging creative subdivision designs while ensuring that increased density does not occur when water and sewer are available to the site.

Commercially, as recommended in the 2009 POCD, commercial development has been limited to East Lyme's existing commercial zones, which have not been meaningfully expanded. While, as detailed in the 2009 POCD, the further buildout of properties within the commercial districts has resulted in increased traffic in some of these commercial zones, this is still considered preferable to increased sprawl by expanding the zones. Some 2009 recommendations are still relevant and included in this document including the need for reduced curb cuts, possible road expansion and creative design development that places storefronts closer to the road with rear or side parking lots and utilizes back of lot areas for businesses that may not require visibility from the road.

After two decades of growth, public sentiment gained through the process of updating this document has been clear that there is a desire to increase conservation and slow growth. Some of the conservation recommendations from the 2009 POCD have been accomplished and some remain in this current document, with additions. The Natural Resources Commission Open Space Plan included in this POCD has been updated to reflect acquired open space, potential open space parcels that have been developed since 2009, and potential open space parcels that should still be considered for preservation.

In the 2009 to 2020 time period, the Open Space Plan yielded important additions to open space. In December of 2011, East Lyme acquired 16 Mostow Road (aka Darrow Pond). The 2014 Darrow Pond Open Space, Environmental Response Team Report details the features of the property.

To date, in coordination with Yale, the State of Connecticut and the Eight Mile Wild & Scenic River Watershed, the Town has established the Goodwin Trail which stretches approximately 14-miles from Darrow Pond to Devil's Hop Yard at Route 82. In addition, the Town also established the Carlson Trails which runs about 1-mile from Whistle-town Road to the Goodwin Trail. Further, the Town financially supported the New England Forestry Foundation's acquisition and preservation of approximately 200-acres known as the Niantic River Headwaters Preserve.

In January 2020, Governor Lamont announced a series of grants for the acquisition of open space and East Lyme received two state grants, the first of which is the Pattagansett River Watershed Preserve sponsored by the East Lyme Land Trust. This parcel was 38.7 acres and is surrounded on three sides by more than 3,000 acres of protected forest. A wetland on the easterly boundary forms the headwaters of the Pattagansett Watershed, which supplies half of the drinking water for the Town of East Lyme. Some 15 acres are in early successional forest providing habitat for the New England cottontail. Other features of the site include wetlands, vernal pools, and rock ledges. There is potential to create additional trails that connect to the 14-mile Goodwin Trail.

Also, in January of 2020, East Lyme and Montville received a grant for the Nehantic Nature Preserve which was sponsored by the Woodsman Land Trust, Inc. and provided 320-acres of open space. This large tract of forestland on the Montville/East Lyme border is less than half a mile from the Holmes Road entrance to the Nehantic State Forest. The property is located in the Latimer Brook watershed which flows into the Niantic River. Important features of the site include ledge outcrops, inland wetlands, and two ridgelines. Mixed hardwoods such as black oak and shagbark hickory grow here. Red maple, black gum, and American elm grow in the wetlands on site. An Eversource powerline right-of-way creates borders of young forest growth. The site is located within multiple Natural Diversity Database areas. The Woodsmen Land Trust plans to create a hiking trail that will connect to the Nehantic State Forest trails.

Both of these projects were possible because of state grants and are excellent examples where Public-Private Partnerships are key. Skilled grant writers and private partners can help the town achieve its open space goals.

As sustainability and resiliency become increasingly important, particularly as a coastal town, many of the 2009 recommendations are still relevant regarding stormwater management (since 2009, this has been incorporated into subdivision regulations but, should be further incorporated to other developments), protections against strong storms and predicted sea level rise, particularly regarding our infrastructure, and strengthening East Lyme's natural and agricultural resources.

1.2 Methodology

A POCD Subcommittee was formed out of the Planning Commission in February 2019.

The subcommittee began by reviewing all chapters of the 2009 POCD and interviewing individuals who had been involved in the creation of that plan and/or sections of the plan. An audit of recommendations was conducted to determine which recommendations had been complete, which were ongoing, which were relevant but had not begun and which may no longer be relevant.

Reference materials were gathered and reviewed including the Southeastern Council of Governments Regional Plan of Conservation and Development and updated planning and research documents or data on topics relating to the themes covered in the POCD.

Plans of Conservation and Development from other Connecticut towns and cities were also reviewed.

Connecticut General Statute (CGS) 8-23 required that the updated POCD incorporate sustainability and resiliency initiatives into each section. It also required the Town to identify and document areas served by existing sewerage systems, areas where sewerage systems are planned, and areas where sewers are to be avoided.

The Committee decided to improve the usability and accountability of the POCD by shortening the document, including a stakeholder accountability matrix in the Executive Summary, providing case studies to illustrate successful implementation of goals, and encouraging broad community and stakeholder participation.

During the spring of 2019, students from Wesleyan University's E&ES 197 Introduction to Environmental Studies class developed sustainability recommendations for the POCD. Students worked in small groups on several key topics: economic development, growth management, land use, open space, transportation, and waste. Students used the Sustainable CT website to identify programs related to these topics which had been successfully implemented in other towns. The outputs of this process were documents and presentations providing recommendations, rationale, and specific case studies to serve as inspiration for implementation.

Sustainable CT is a non-profit organization created by the Connecticut Conference of Municipalities, residents, and municipal leaders to help municipalities improve sustainability. The organization also offers a voluntary certification program. The East Lyme Natural Resource and Conservation Commission applied for and attained Bronze Level certification in 2019.

Also, at this time, active outreach to town departments, board and commissions was being conducted and the subcommittee expanded to become the Plan of Conservation and Development Steering Committee, which included members of the public/members of boards/commissions outside of the Planning Commission. Stakeholder engagement (detailed below) was active and ongoing.

From the POCD Steering Committee, Section Captains were assigned to complete more detailed research into their sections of the plan, compiling information from community feedback, stakeholder feedback, regional planning documents, town ordinances, guidelines and regulations, the strategic or long-term plans from other relevant organizations and scientific research. Using all of the above and in collaboration with the Town Planner, town staff, and others as applicable, section captains drafted the updated sections of the plan.

Each section was reviewed, discussed and approved by the Plan of Conservation and Development Steering Committee via publicly-held meetings. (Either in person or via Zoom following COVID-19.)

An initial draft was presented to the Planning Commission on Tuesday, August 4, 2020 for their feedback and acceptance to move forward, to the Board of Selectmen on Wednesday, August 5, 2020 for their feedback and acceptance to move forward, and to the public via eltownhall.com by September 28, 2020. The document was filed with the East Lyme Town Clerk on October 7, 2020. Public hearings were held at the Board of Selectmen on September 30, 2020 and Planning Commission on November 10, 2020. In accordance with Connecticut State Statute appropriate timelines were adhered to and a public hearing was held for community feedback on the draft.

1.3 Stakeholder Engagement

The Plan of Conservation and Development Steering Committee wanted the process of updating the POCD to be open, transparent, and include as much feedback from town residents, town staff, boards and commissions and community groups as possible. The following outreach efforts gained stakeholder feedback to inform this update.

1. Outreach was conducted via letter/email to all East Lyme Department Heads to ask for their input on the plan or to send a designee to the POCD Steering Committee meetings.
2. Each East Lyme Board and Commission Chair received notification of the POCD Steering Committee, was invited to send a designee for membership on the committee, and was invited to provide feedback on the plan.
3. A community survey was conducted from mid-October through December 31, 2019. Over 500 individuals completed the survey. Results are attached in the appendix. The link to the online survey was distributed via handouts at the First Selectman's Debate in October 2019 at the East Lyme High School Auditorium, at both polling locations on Election Day 2019, and available at some of East Lyme's local businesses, the East Lyme Senior Center, East Lyme Public Library and East Lyme Town Hall. A link to the survey was available on eltownhall.com, published in articles in both *The Day* and *CT Examiner*. It was also posted to a number of locations on social media including by individuals and through the East Lyme Community Forum.
4. A public forum was held on January 29, 2020 for members of the public to learn about the POCD, its chapters, the timeline for update and speak directly to the Plan of Conservation and Development Steering Committee about their thoughts and ideas for the plan. Minutes of that public forum are attached in the appendix.
5. The Plan of Conservation and Development Steering Committee gathered a list of community organizations either locally or regionally who may be subject area experts or otherwise highly involved in areas addressed in the plan. (Examples: East Lyme Historical Society, East Lyme Public Library Board,

Niantic Main Street, Save the River-Save the Hills, Niantic River Watershed Committee etc.) These groups were invited to an informational stakeholder kickoff on December 9, 2019 and given information about the POCD update, timeline and how to formally submit feedback on behalf of their groups.

6. A second public session was slated for March 2020 but was not able to move forward due to the COVID-19 Pandemic.
7. All Plan of Conservation and Development Steering Committee meetings were open to the public either in person or later, via Zoom, with opportunities for public delegations.
8. Publishing of the draft plan and public hearings on the draft plan were conducted in accordance with Connecticut State Statutes.
9. From August - November 2020, the draft plan was updated as feedback came in from the Board of Selectmen, stakeholders and the general public.

Chapter 2 - Agricultural Resources

2.1 History of Agriculture and Aquaculture in East Lyme

East Lyme's farming roots reach far into the past. For centuries, the Nehantic Indians raised corn and squash on the fertile land and harvested shellfish from the Niantic River and Bay. Eventually, white settlers took those areas for their crops and animals, before the town of East Lyme came into existence. A map dating back to the 1880's shows interior portions of East Lyme extensively farmed for family sustenance. Eventually, as farming methods improved, larger dairy, poultry and orchards appeared. These farms have now declined in both size and number, as children and grandchildren of the family farm have found other ways to make a living. The remnants of the farms from the 1900's are our heritage today.

2.2 Current State of Agriculture in East Lyme

Agriculture is the process of creating, growing, culturing, and harvesting a food for consumption, both on land and in the water. Per the State of Connecticut definition 19A-341, "agriculture includes farming, aquaculture and fishing." The local products available in East Lyme include, but are not limited to, fruits, vegetables, oysters, scallops, beef, poultry, shellfish, and fish. In addition to those products, agriculture supports clean water, lowers town expenses, and provides open space.

2.3 Supporting Local Food Systems

Our local farms provide an invaluable necessity to our community – food. Whether or not we all take advantage of the local offerings, the State of Connecticut acknowledges if I-95 and I-84 were closed for 3 days, Connecticut citizens would experience drastic food shortages. (Statistic provided by Agricultural Subcommittee of East Lyme's Natural Resources Commission.)

While any number of situations (ie: natural disasters, conflict) could cause a closure of the key pathways that our food supply chains cross, at the writing of this POCD, the COVID-19 Pandemic has brought the reality of supply chain disruption into clearer view. Staples such as eggs and dairy were intermittently unavailable this spring at many of our larger, local grocery chains. Being able to supply food within our own town makes us less reliant on outside food sources and their longer supply chains. East Lyme has approximately 53 farmers, farming over 2,000 acres of land, 1.5% of the town. East Lyme risks impairing its resiliency if agriculture is not supported and encouraged.

2.4 Protecting Clean Water Resources

In promoting agriculture, we not only help farmers, but also help residents have access to clean drinking water and clean bodies of water within town. By providing open space, farms help East Lyme maintain larger amounts of pervious land, which acts as natural filtration and stormwater management. Loss of open space, such as that protected via agriculture, creates opportunities for excess soil, silt and clay runoff into surface water bodies and decreased filtration for groundwater sources.

2.5 Economic Development

Our town has thrived off farming in the local bodies of water via aquaculture and fishing since its formation. By keeping open land to filter water and prevent sediment build up from impacting our water bodies, we are able to assist the local aquafarmers in providing us with their products and services. The growth of shellfish, seaweed and kelp is beneficial to our water supply through the inherent pollutant-fighting products that each product provides. In addition, over 15,000 people visit our town's commercial fishing fleet and charter fishing boats, (Statistic provided by Agricultural Subcommittee of East Lyme's Natural Resources Commission.) leading to additional spending within area shops.

Therefore, the promotion of aquaculture and the individuals harvesting such products should be encouraged within the town as it has notable and positive environmental and economic impacts.

2.6 Reduced Cost of Services

“Although working and open space lands may generate less revenue than residential, commercial or industrial property, they require less public infrastructure and fewer community services.” - American Farmland Trust Cost of Community Services Studies, 2016

On average, nationwide, the median cost to provide public services for commercial and industrial land was \$0.30, for working lands and open space was \$0.37, and for residential lands was \$1.16, for every dollar collected in taxes. (source: American Farmland Trust Cost of Community Services Studies 2016)

Because fewer municipal dollars are expended on agricultural and open space properties, residential taxes can be kept lower when open spaces are prioritized over additional residential space. The research conducted by the American Farmland Trust cited the costs of different land uses in many Connecticut towns:

Hebron: 9,500 residents – the residential cost is \$1.06 for every dollar of tax revenue while open spaces cost \$0.43.

Colchester: 16,000 residents – the residential cost is \$1.14 for every dollar of tax revenue while open spaces cost \$0.18.

Farmington – 25,000 residents – the residential cost is \$1.33 for every dollar of tax revenue while open spaces cost \$0.31.

Despite the common misconception, more residential space does not produce net positive revenues. It is the opposite – more residential space equates to greater costs whereas open spaces do not require public services such as educational costs, water, sewage, trash and snow removal and are of very little cost to the public.

2.7 RECOMMENDATIONS

- 1. Conserve Farmland:** Prioritize efforts to preserve East Lyme’s farmland via partnerships with the American Farmland Trust, Connecticut Farmland Trust, US Department of Agriculture Conservation Service and CT Department of Agriculture. These organizations provide funding to conserve historic farmland through initiatives such as the Farmland Restoration Program and can assist with the purchase of development rights or other preservation methods.
- 2. Create Community and Giving Gardens:** East Lyme residents have previously expressed a desire to promote “educational and fun farm based events.” One solution to this need for community-based agriculture is creating community garden spaces that foster interaction and education. Community and Giving Gardens are beginning to appear all around Connecticut. Examples include Massaro Community Farm in New Haven, KNOX in Hartford, and the Coogan Farm Giving Gardens in Mystic. These gardens provide opportunities for community members to grow their own food. They also enable educational experiences for members of the community of all ages. The Giving Gardens at Coogan Farm provides thousands of pounds per year to the United Way of Southeastern Connecticut food bank. Community Gardens increase food security, improve local dietary habits, and reduce obesity rates. Workshops can focus on healthy eating habits and sustainability. These spaces will introduce sustainable farming practices to the entirety of the community that will improve the food supply. Additionally, programs aimed at educating children will create an enduring interest in sustainability through East Lyme future generations.
- 3. Establish A Sustainable Aquaculture Hub:** The United States is currently the world’s top importer of seafood. Establishing a Sustainable Aquaculture Hub could increase the supply of fresh seafood available in town and provide a resource which could be exported to other communities in the region.

4. **Establish A Public-Private Partnership for Sustainable Aquaculture Education:** Local seafood businesses could sponsor sustainable aquaculture educational opportunities for the community to gain a greater understanding of fishing and aquaculture in relation to the town's economy and history. This programming could be offered to schools located in the region or to members of the community interested in sustainable fishing.
5. **Protect Pollinator Pathways:** Critical to our ability to grow food, pollinator populations have been in sharp decline in recent years. Habitat loss and pesticide use have been tied to their decline. Educational programs for residents and encouraged residential beekeeping and native plantings are recommended. As a municipality, East Lyme should utilize best practice organic methods and native plants for landscaping and encourage growth of roadside wildflowers as possible when it does not interfere with public safety. Where possible, parking lot, roadway and cul-de-sac islands should be planted in lieu of pavement. Town-owned properties could be made available for beekeeping (ie: Darrow Pond area) for those homeowners whose residential lots do not allow beekeeping as an approved use.
6. **Reduce Harmful Pesticide and Fertilizer Use:** Establish an education program for residents on best practices in organic landscaping and the drawbacks of harmful pesticide and fertilizer use. Abide by best practices in organic landscaping for all town-owned lands, including those maintained by East Lyme Public Schools and East Lyme Parks and Recreation.
7. **Establish A Sustainable Agriculture Zone:** East Lyme zoning currently accounts for coastal conservation through the "Tidal Marsh District" classification and rural residential conservation through the "RU-80" classification, yet there is no classification for conserving rural farmland. The residents of East Lyme have clearly expressed an interest in conserving local farmland and stopping the spread of development into currently rural spaces. Farmland "helps to keep East Lyme a desirable place to visit and live," and zoning to ensure farmland near residences would continue the appeal of East Lyme. Once zoning protects farmland, the farms will in turn supply the local community with fresh, healthy foods and improve the economy. Finally, tax breaks are an effective economic tool to incentivize the creation of regenerative organic farms that will improve the soil health of East Lyme and decrease the emissions of the town by sequestering carbon.

Areas appropriate for this zone, or a 3-acre zone may include: the area east of Bridebrook Rd./South of I-95/west of Roxbury Rd/north of Route 156. Additionally, north of Upper Pattagansett Rd at Junction of Aunt Ruth's Highway (part of Goodwin Trail now)/ Nehantic State Forest/Whistle town Rd. Finally, land west of Whistle town Rd., South along areas of Scott Rd./Route 1/Old Lyme border.

8. **Consider adopting additional permitted uses on farms to help sustain their business:** Allowable uses could include weddings, breweries, Bed & Breakfast lodging, small cafes or eateries, farm stands, expanded educational or agritourism offerings.
9. **Consider adopting additional permitted agricultural uses in residential zones:** While beekeeping was recently added as an allowable use in many residential zones, other similar home-scale agricultural uses could be explored.
10. **Provide a Tax Incentive for Regenerative Agricultural practices:** Conventional agriculture causes increased greenhouse gas emissions, soil erosion, water pollution, and threatens human health. Regenerative organic farming has a smaller carbon footprint and improves soil health. A 1% increase in soil organic matter can result in a 3.7% increase in soil water holding capacity, which can help reduce erosion and runoff. The United Nations Framework Convention on Climate Change (UNFCCC) identifies land management to increase carbon in soils as a climate change mitigation strategy. The USDA backed by the National Organic Standards Board currently offers an "Organic Certification" for farms that meet their guidelines. Secured farmland will improve the local economy by improving the town's production and organic foods can receive a premium of up to 82% above non-organic prices. American demand for organic foods currently exceeds supply, with \$1.65 billion of organic food imported in 2016.
11. **Encourage the Next Generation of Farmers:** The average age of an American farmer is 58 years old. This poses a major issue as older farmers reach the age of retirement. To help younger farmers get access to affordable farmland and ensure a steady local food production, a program could be started in

which older farmers are matched with new farmers who are interested in leasing and eventually purchasing land. The Town of East Lyme Agribusiness Committee could keep a database of farmers and serve as a point of contact for new farmers in collaboration with the New CT Farmer Alliance. Create a list of all East Lyme Farms in operation.

12. Pursue Grant Funding Related to Open Space and Agriculture: Partnership with a professional grant writer is recommended to explore and apply for grants including:

- Agriculture Viability Grants
- Open Space Grants
- Community Investment Act (CIA) for Farm Preservation

13. Encourage Local Farm to Table Offerings and Support Agritourism: Through community education and marketing (ie: East Lyme Farm Trail), encourage local farm-to-table restaurants and events (ie: on the farm dinners). Explore additional ways to offer residents and tourists the opportunity to see first hand how their food is grown through educational and entertainment events, open houses etc. Utilize the list of operating farms in East Lyme (recommendation 11) toward the development of a farm trail marketing campaign.

2.7.1 Strategies for Implementation

Detroit, MI – In Detroit, MI, the Michigan Urban Farming Initiative created the first sustainable Agri-hood that provides food to 2000 households with 2 acres of farmland. This initiative has been very successful. It has cut down on greenhouse gas emissions, encouraged community-members to eat a more plant-based diet, and has provided lots of locally-sourced fruits and vegetables for the neighborhood.

Hartford, CT – In Hartford, CT, an organization called KNOX converts vacant city lots into community gardens. They currently operate 23 gardens that serve 300 local families. The gardens themselves range in size from 300 square feet to 625 square feet and participants are provided with free seeds, water, liability insurance, and instruction in sustainable farming. These spaces produce food, enhance the natural beauty of neighborhoods, and help establish relationships across physical barriers.

References:

American Farmland Trust Cost of Community Services Study, September 2016

Chapter 3 - Coastal Resources

3.1 Coastal Boundary

This chapter supports a number of other recently-updated and comprehensive documents relating to our town's coastal resources- particularly: The East Lyme Harbor Management Plan, which was updated and adopted in March 2019 (A principal purpose of the Plan is to strengthen and maintain the Town's authority for managing use and conservation of the East Lyme Harbor Management Association.), and the Niantic River Watershed Protection Plan, updated in August 2020 to address the health of the Niantic River, which does not currently meet State of CT water quality standards as noted by observed degradation of aquatic life and shellfish harvesting.

In the 2020 Community Questionnaire and Public Forum on the Plan of Conservation and Development, coastal resources and access to coastal views were among the top resources enjoyed by residents. Our coastline is treasured and makes East Lyme unique.

"In the Town of East Lyme in eastern Connecticut, the uniqueness and special character of the Town's coastal area on the Niantic River, Niantic Bay, the Pattagansett River, and Long Island Sound is unmistakable. East Lyme's coastal resources—including wetlands, intertidal flats, beaches, finfish and shellfish, and estuarine embayments—support boating and many other recreational activities; provide vital ecological functions and scenic values; enhance shore area neighborhoods; and contribute significantly to the quality of life for all. In addition, by supporting water-dependent businesses, attracting visitors to the Town, and enhancing property values, the coastal area is vitally important to the local and regional economy." - East Lyme Harbor Management Plan

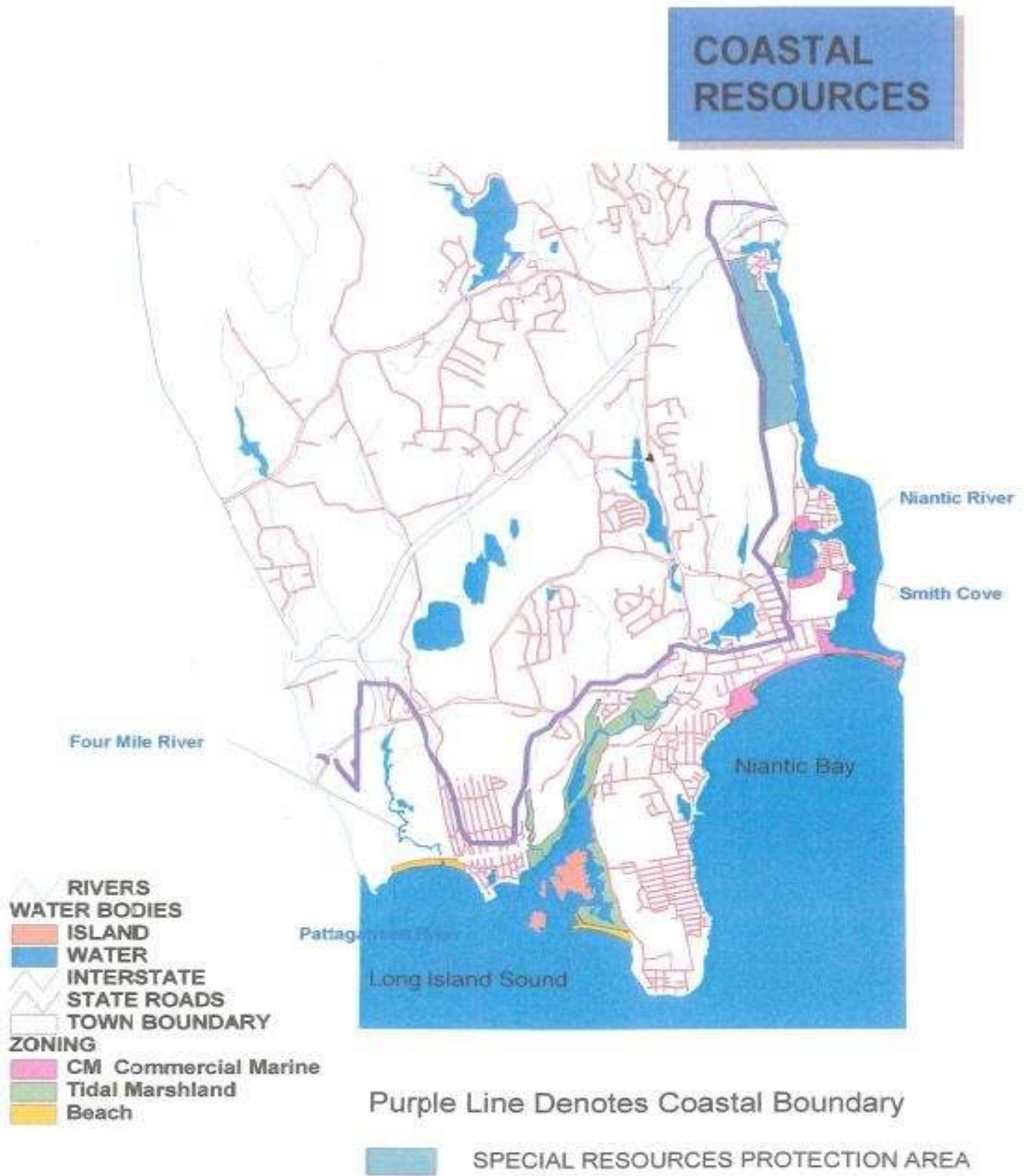
"The variety of coastal resources found in and adjacent to the East Lyme Harbor Management Area include, but are not limited to, the area's tidal waters and embayments, intertidal flats, tidal wetlands, beaches, islands, rocky shorefronts, floodplains, and living marine resources such as finfish and shellfish. In addition, the several tributaries and watersheds draining into the HMA through the Town have significant natural values and ecological functions. There is a fundamental relationship among the HMA, Long Island Sound, and the Niantic, Pattagansett, Four Mile, and Bride's Brook watersheds. For example, storm-water runoff from the watersheds eventually enters the HMA and Sound, affecting the quality of surface waters. The environmental quality of the Sound greatly depends on the environmental quality of its many tributaries and watersheds, including the watersheds draining into the HMA. In addition to their natural values—for protecting water quality and providing fish and wildlife habitat, for example—East Lyme's coastal resources provide opportunities for beneficial use and have significant economic and cultural values, including recreational, historic, scientific, and educational values. They enhance the value of waterfront properties, for example, and provide opportunities for the variety of boating and other water-dependent activities that provide significant recreational and economic benefits to the town and its citizens." - East Lyme Harbor Management Plan

East Lyme's treasured Coastal Resources need to be actively managed for both conservation and development. Land use at the waterfront and along the watersheds of the many tributaries to the Niantic, Pattagansett and Four Mile Rivers as well as Bride Brook (among others) impacts the water quality of the Niantic Bay and Long Island Sound. It is important to manage the health of the water so that it can continue to be enjoyed by generations to come for agriculture, recreation, and economic development.

Connecticut has established a general coastal area which includes the Connecticut portion of Long Island Sound and the entire land and water area of the 36 towns fronting on Long Island Sound and the saltwater portions of the Connecticut, Thames and Housatonic Rivers. The coastal management system and coastal policies, however, apply to a more limited land area.

The boundary of this management area is delineated on the landward side by the farthest inland of: a 1,000-foot setback from mean high water; a 1,000-foot setback from the inland edge of tidal wetlands; or the inland limit of the 100-year coastal flood zone. The extent of East Lyme's coastal management area is shown in Figure 1 Coastal Resources Map.

Figure 1 - Coastal Boundary & Resources



3.2 Management

Besides known, specific sources of pollution to waterways, nonpoint sources of pollution are particularly challenging to manage. Such sources are decentralized and variable over time and space. Nonpoint source pollution is cumulative and is associated with regular, periodic precipitation events, occurring systematically over an entire watershed, which is the underlying hydrologic unit. Effectively managing nonpoint source pollution relies on comprehensive approaches that include effective land management through Planning and Zoning. It is a simple matter - water management is really an offshoot of land use management. Land use planning and regulation, including the proper management of stormwater runoff, are key elements and largely under some control by local municipalities. This is particularly true for long-term planning as inevitable further development and population increases occur with concurring increasing adverse effects related to nonpoint sources of pollution. It must also be noted that effects to waterways occur without respect to political boundaries as many streams and rivers are found within multiple jurisdictions. Thus, ideas such as watershed-based management need to be considered regardless of their challenges to preserve and protect our waterways, aquatic life, and associated human activities.

Along with water quality concerns, the shoreline is vulnerable to natural hazards, including but not limited to, flooding, erosion, and wind hazards caused by hurricanes (see Figure – 2 Hurricane Surge), coastal storms, rising sea level (See Figure - 3, FEMA flood zones and areas of conflict) and other weather and climate-related events and phenomena. While working to address East Lyme's contributions to global temperature rise, we must also prepare for the impacts associated with continued global temperature rise to strengthen the resiliency of our coastal areas and overall community.

Figure 2 - Hurricane Surge Map

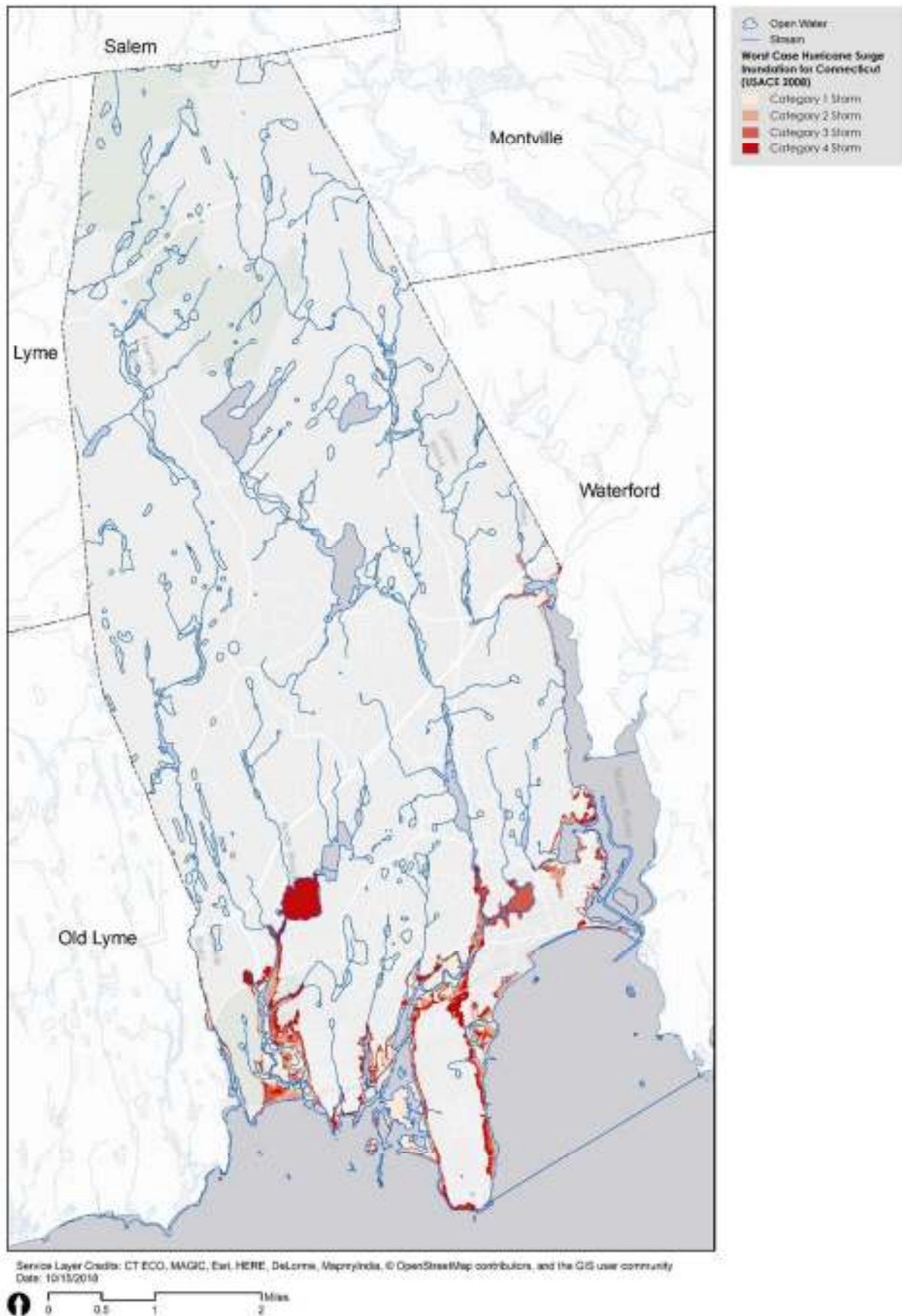
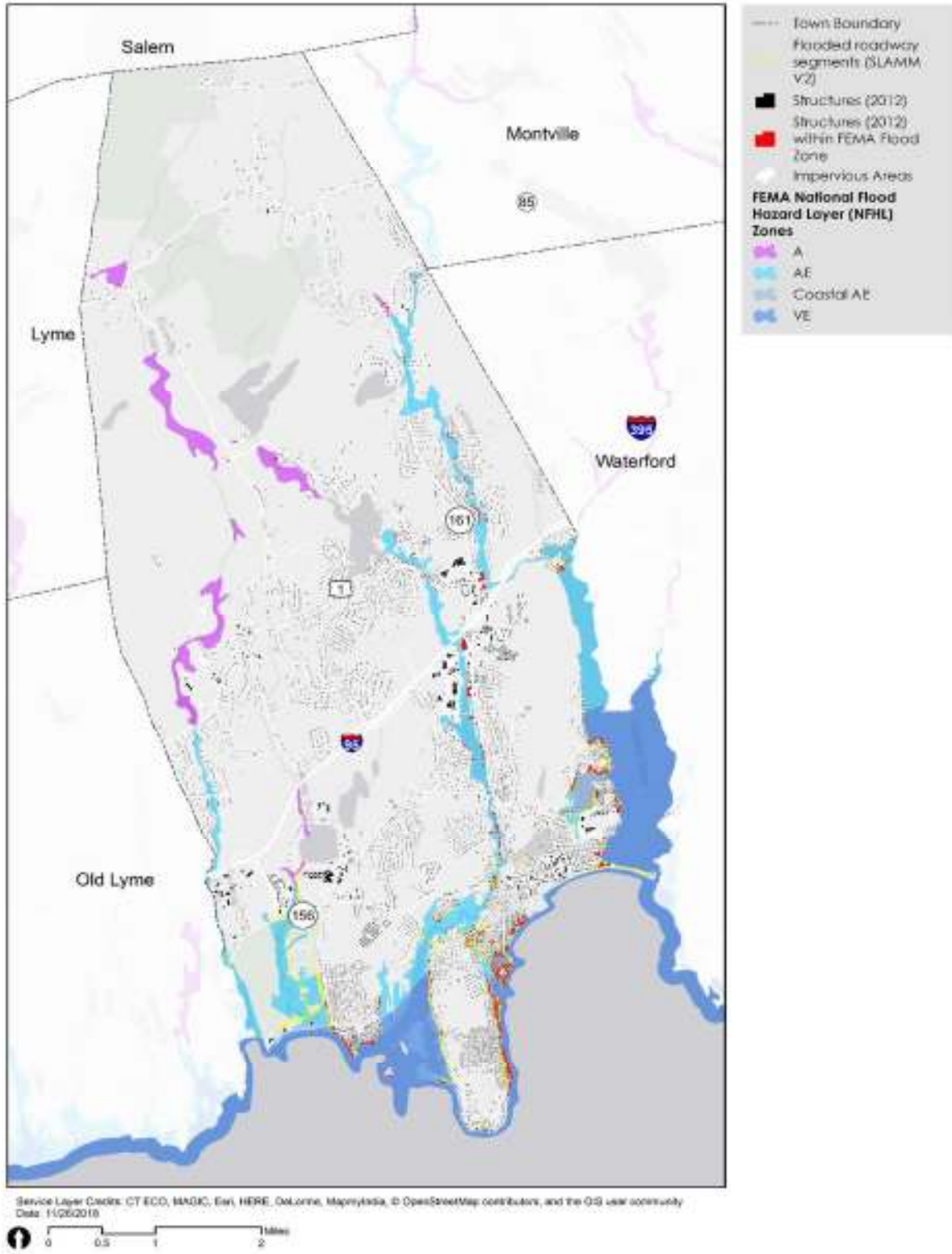


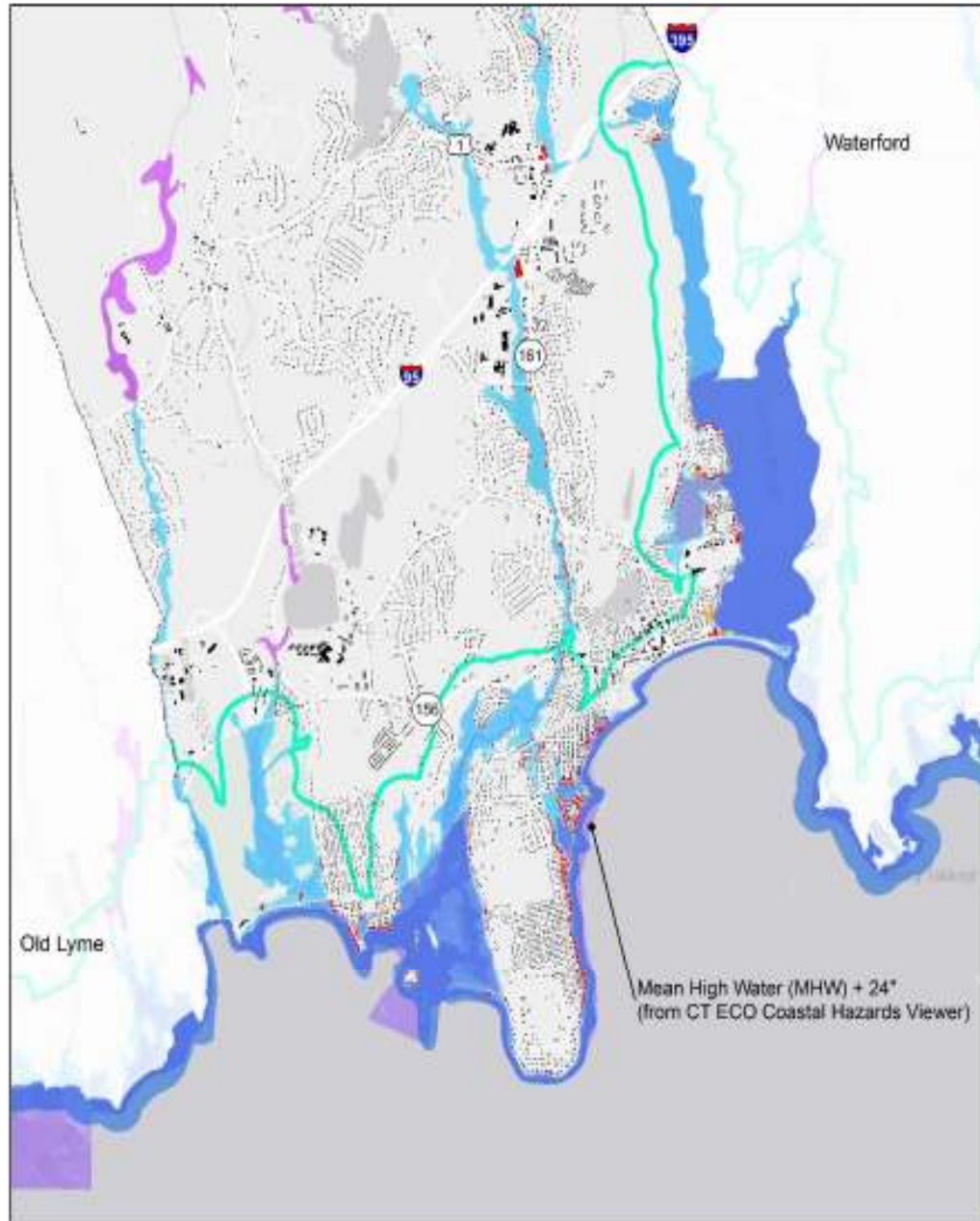
Figure 3 - FEMA Flood Zones and Areas of Conflict



Previous methods and approaches to storm protection such as hardened adaptation exist in many areas of East Lyme and include private seawalls and bulkheads, groins and jetties as well as larger structures like breakwaters. Effective protection measures such as native shoreline planting, marsh enhancement, beach enhancement and submerged offshore breakwaters can supplement or replace current adaptation measures while providing additional benefit, particularly in consideration of sea level rise (see Figure - 4 FEMA Flood Zones and Structures Impacted by 24" of SLR).

The recommendations in this section aim to preserve and enhance coastal resources while providing for public use and enjoyment of the coast and sound economic growth. They plan for and regulate the use of coastal lands on the basis of capability of the land and adjacent waters to support development. They aim to manage the coastal area as recommended in the Harbor Management Plan to assure that priority and preference in the use of waterfront areas and lands immediately adjacent to the coast are given to uses and facilities which are dependent on proximity to the water. The recommendations should accommodate waterfront uses requiring extensive structural development in the developed shorefront area of the lower Niantic River, with special attention to the resiliency measures needed to ensure their sustainability into the future. Where possible, this plan recommends increasing public access, both physical and visual, to East Lyme's coastal waters, consistent with the rights of private property owners and the capability of the coastal resources present to sustain use.

Figure 4 - FEMA Flood Zones and Structures Impacted by 24" of Sea Level Rise (SLR)



Service Layer Credits: CT ECO, MNR&C, CT DEEP
 Data: HERS, Delorme, Mapbox/Esri, © OpenStreetMap contributors, and the GIS User community
 Date: 11/20/2018



- Town Boundary
- Buildings within MHW + 24"
- Structures (2012)
- Structures (2013) within FEMA Flood Zone
- Impermeous Area
- Coastal Boundary
- FEMA National Flood Hazard Zone (NFH) Zones
 - A
 - A2
 - COASTAL AE
 - V2

3.3 RECOMMENDATIONS:

1. Support the goals and recommendations of the East Lyme Harbor Management Plan (March 2019) and the Niantic River Watershed Protection Plan (August 2020) as comprehensive documents addressing best practices for the protection and utilization of our coastal resources.
2. Develop the following educational campaigns:
 - Town-wide education and/or ordinances regarding best practices in landscaping and lawn management to improve water quality through reduced nitrates and other pollution in runoff, (Possible partnership with Niantic River Watershed Committee.)
 - Communications campaign to educate property owners in current and future flood zones on the risks, mitigation techniques and updated policies,
 - Educational campaigns on proper maintenance of septic systems,
 - Campaigns on animal waste impacts to waterbodies, including for dog owners and to discourage against the feeding of wildlife, particularly if it concentrates birds or animals in areas that allow their waste to accumulate and enter waterways,
 - Consider partnerships with artists or Public Service Announcement-type notifications or weekly news features to creatively identify and execute more ways to communicate with the public on the wide variety of ways they can be stewards of East Lyme's coastal resources.
3. Prioritize existing plans to extend domestic wastewater sewers to homes located along the Niantic River (i.e.: Saunders Point) and other existing coastal neighborhoods (i.e.: Huntley Court) to decrease discharge of nutrients and other substances into groundwater entering coastal estuaries. Require the periodic inspection and pumping out of home septic systems and the repair or replacement of those that are malfunctioning.
4. Support the detailed stormwater/drainage recommendations for Flanders and Niantic outlined in the 2020 Niantic River Watershed Protection Plan and the Stantec Coastal Resilience, Climate Adaptation and Sustainability Study (Dec 12, 2018).
 - Niantic River Watershed Protection Plan Recommendations: See Appendix
 - Hope Street: Hope Street floods during heavy rain including backing up into the new construction on Methodist Street. Addressing Hope Street would require comparison of the private and municipal stormwater pipe network connecting into a potentially undersized state storm pipe network on Main Street.
 - Black Point Road at Burnap Road: Approximately 28 structures and condos sit in a FEMA flood zone near the intersection of Black Point and Burnap roads just south of the railroad corridor. Inundation in this area comes from Pattagansett River on the other side of the tracks. The water appears to travel through a culvert at an unknown location. The town should assess this neighborhood for potential flood-control measures. For example, a backflow preventer might be sufficient to avoid flooding, protecting property owners from having to meet more onerous flood insurance requirements.
5. Adopt the State of Connecticut's definition of freeboard into East Lyme's flood control ordinance and zoning regulations. The planning threshold for sea level rise in Connecticut is 20 inches by 2050. The State of Connecticut passed a bill in 2018 to require a full two feet of freeboard for State-led projects, plus updated levels to be evaluated not more than every ten years. Freeboard represents a margin of safety, measured in the number of feet, added to projected flood elevations with the goal of compensating for unknown factors that might push actual levels above projected heights. According to FEMA, the cost to property owners of adding freeboard is only 1-2% of the overall cost of elevating a structure. Owners can expect payback within 3-6 years due to reductions in flood insurance premiums based on the additional height.

6. Support the acquisition of open space as detailed in:
 - the Town of East Lyme Open Space Plan,
 - the Niantic River Watershed Protection Plan,
 - the Stantec Coastal Resilience and Climate Adaptation and Sustainability Study; and
 - The Nature Conservancy's Salt Marsh Advancement Zone Assessment of East Lyme

While there are many reasons to promote the protection of open space, for purposes of this section, to support the purchase of open space that would protect watershed lands and improve water quality. Additionally, consider the possibility of Town acquisition of flood-damaged properties for conservation to make long-term changes in land use where appropriate. (Funding sources exist to support such acquisition.)

7. Evaluate the impact of sea level rise on critical infrastructure (water/wastewater, other utilities etc.) in flood hazard zones to protect these assets from extreme storms and flooding.
8. Support additional coastal resilience measures to protect existing structures and coastline including native shoreline plantings, marsh enhancements, beach enhancement and offshore breakwaters. (Examples detailed in Stantec Coastal Resilience, Climate Adaptation and Sustainability Study December 2018) Discourage further structural alteration of the East Lyme coastline except when coastal structures are necessary and unavoidable for the protection of infrastructure facilities, water-dependent uses or existing inhabited structures.
9. Encourage expansion of marine-related commerce in Niantic and apply controls to maintain, upgrade and expand, where possible, water-dependent commercial uses in the lower Niantic River as appropriate for the overall health of the water body.
10. Maintain and improve the quality of East Lyme's coastal waters through local action and support of State and Federal water quality control measures. Look to minimize the pollution of coastal waters from erosion and runoff by creating an Erosion and Sedimentation Ordinance and by strengthening land use controls to prevent the disturbance of areas adjacent to watercourses and wetlands. Always require the most current Best Management Practices during construction activities, particularly for those developments that might affect waterways. This includes such practices as proper erosion controls and use of riparian buffers near waterways.
11. Consider regulations on landscape, road maintenance and other products that can negatively impact water quality.
12. Seek ways to make pollution from litter and debris less likely. (i.e.: ordinances on throwing items during downtown parades, evaluation of quantity and placement of trash receptacles, littering fines)
13. Support aquaculture programs and research efforts to maintain and improve East Lyme's shellfish resources.
14. Support necessary periodic maintenance dredging of the existing Niantic River navigation channel (including Smith Cove), with appropriate restrictions to assure minimum possible impact on shellfish and finfish resources. Discourage dredging elsewhere in East Lyme's coastal waters except where necessary to maintain access to existing water-dependent facilities or where natural circulation patterns have been impaired. (i.e.: from storm damage).
15. Protect natural resource areas such as wetlands, salt marshes, watercourses and beaches by establishing Non-Infringement Area controls. Development within tidal and inland wetlands, watercourses, waterbodies and beaches is regulated by a variety of existing controls. However, each of these sensitive resource areas are susceptible to pollution or alteration from activities occurring on adjacent lands. Wetland and water bodies can be polluted by soil erosion, surface runoff of oils and chemicals, and leaching of sanitary wastes. Construction immediately adjacent to beaches, dunes and bluffs may accelerate their natural state of erosion and require structural stabilization in the future. These impacts can be reduced by adopting Non-Infringement Area provisions in the Zoning Regulations. Such

provisions require the reservation of a Non-Infringement strip between the portion of the lot to be developed and any of the above resources that are contained within or border on the lot. Construction of buildings and septic systems is prohibited in the Non-Infringement Area as are other activities that disturb the area such as filling, excavation and stripping of vegetation.

16. Support the preservation of the Oswegatchie Hills as open space. Town acquisition of the remaining parcel(s) of the hills would protect the health of the Niantic River and Niantic Bay while allowing low-impact public use and enjoyment of the open space. Doing so would provide a coastal recreational experience distinctly different from that available at McCook Point Park, Hole in the Wall, Cini Park and the Niantic Bay Boardwalk and would therefore further the goal of diversifying the coastal recreational opportunities available to townspeople.
17. Encourage State and federal agencies to:
 - Dredge the sand shoal at the mouth of the Four Mile River to restore tidal circulation and maintain access between the State boat launch and Long Island Sound
 - Dredge the Niantic River at Golden Spur to restore circulation
 - Dredge Smith Cove and look for methodologies to improve flow to and from Niantic River
 - Support water-flow projects, including dredging, from storm-damaged coastal areas and tidal ponds.
18. While this plan supports the overall development and expansion of clean energy technologies, regulations for clean energy in watershed areas should be developed to protect watersheds from the negative impacts that things like increased impervious surface and clearing of established forests or other beneficial land masses may have.
19. Where possible, encourage the use of Low Impact Development such as pervious surfaces for driveways or similar surfaces that would otherwise have direct runoff from impervious surfaces.
20. Protect eelgrass and widgeon grass beds in the Niantic River and Bay by limiting nutrient inputs (particularly nitrogen). Both species provide important aquatic habitat for many marine organisms.

References:

- East Lyme Harbor Management Plan (March 2019)
- Niantic River Watershed Protection Plan (2009, 2020)
- 2020 CT DEEP Integrated Water Quality Report
- Stantec Coastal Resilience, Climate Adaptation and Sustainability Study Outcomes Report, December 12, 2018
- The Nature Conservancy's Salt Marsh Advancement Zone Assessment of East Lyme (2013)

Chapter 4 - Historic Resources

4.1 Historical Community Groups

In the absence of historical events, the historical resources of a town are the essence of its very existence: the neighborhoods, the places of commerce, the centers of education, religion and government, etc. The preservation of such resources, or, at the very least, development that acknowledges and respects these resources, are vital to a sense of community and continuity and contribute to the overall quality of life in any town.

The town of East Lyme has over 200 buildings built before 1900, although not all of them are still recognizable as such. Many of these buildings are concentrated in particular areas such as the Smith_Street/Smith Avenue neighborhood or Crescent Beach, giving these areas an historic value as well. In addition, many of the earlier institutional buildings are still in existence, although the conditions and use have changed over the years. Even some of the early commercial buildings have survived. Where they have not, the signs of their existence, such as dams, millponds and foundations are still to be found.

According to the Community Questionnaire, launched to inform this document, 65.1% (330 of 507) of questionnaire participants felt that we had the right amount of historic places while 23.7% (120 of 507) of questionnaire participants felt that we should have more. The remainder felt that we had too many (12) or had no opinion (45).

While an Open Space Plan can contribute to the protection of East Lyme's historic and cultural resources, ultimately the responsibility of preserving historical resources should rest with groups intended for that purpose.

In East Lyme, a number of groups serve that purpose:

1. **The East Lyme Historical Society:** The East Lyme Historical Society is a private entity made of volunteers. The East Lyme Historical Society owns and manages the Thomas Lee House and the Little Boston School House, both on West Main Street in Niantic.
2. **Brookside Farm Museum:** The Brookside Farm Museum (Society Road, Niantic) is owned by the Town of East Lyme and managed through the Brookside Farm Museum Commission, with support from private donations and volunteer hours from the Friends of Brookside Farm Museum.
3. **Samuel Smith Farmstead:** The Friends of Samuel Smith House and Property, Inc. is a non-profit organization whose mission is to restore, maintain and preserve the house and property as a living museum of 17th and 18th century Connecticut farm life. The Farmstead is jointly owned by the Town of East Lyme and Niantic Sportsmen's Club. The Farmstead is overseen by Friends of Samuel Smith House and Property, Inc through a board and membership.
4. **Historic Properties Commission:** East Lyme's Historic Properties Commission is responsible for administering the provisions of the Connecticut General Statutes (Title 7, Chapter 97) relative to the three historic museums. Additionally, there are 19 cemeteries in the town of East Lyme, although the town does not own any of those cemeteries.

A number of other private membership groups also maintain historic information about East Lyme including organizations like Niantic's beach associations, Kari-Hill Post VFW, American Legion, fire departments and residents who may reside in historic homes.

4.2 Documents & Artifacts

As such, East Lyme's historical documents and artifacts are stored in a number of locations throughout the town including:

- The home of the Town Historian (who is also on the board of the East Lyme Historical Society) has historical documents at her home.

- The East Lyme Public Library contains documents and files pertaining to local and town history.
- All three historical houses have records about their house and land.
- Historic Resource Database is available at the Town Clerk's office and the library.
- Many organizations such as the firehouse, beach associations, VFW and the American Legion keep information on their own history.

To best create a complete picture of East Lyme's history and historic assets, the recommendations below encourage further partnership between various interest groups and greater educational programs for East Lyme's residents and the general public.

4.3 RECOMMENDATIONS

1. Develop a sign program to list the initial building date of a home and the builder of the home. The signs which list the date and builder of the home would be available to the homeowner at their request to post on their property. The Historical Properties Commission is currently studying this project and is completing a historic resource database with this information. East Lyme also has an inventory of historically significant homes located in the Records Room of the Town Hall.
2. The historic resource database existing at the Town Clerk's office should be deployed and periodically updated as the database could be used by the commissions in the process of making their decisions. Land use commissions should be more aware of the availability of this database in making decisions.
3. Historical interest should be promoted through photograph displays, markers, tours, oral histories, etc. Much of this work is already being done by the historical houses, but the creation of a central display area would do much to encourage public interest. There may be grants available for projects of this kind as they involve historical tourism/local interest & education.
4. Actively seek grant funding: The Historic Property Commission has completed the work necessary to ensure that East Lyme is a Certified Local Government and published a list of possible grantors on the Town website, thereby enabling each of its historic properties to directly apply for grant funding through the State. Publicizing the historic resources database will assist in obtaining grant funding.
5. In the event of properties being threatened by destruction, it might be in the best interest of the town to become actively involved in the acquisition of such properties for conservation and preservation purposes. The Samuel Smith Farmstead is an example of a property that has been preserved since the last POCD. It is recommended that the Historic Properties Commission launch a fund for the purchase of historic sites that can be supplemented with grants as available.
6. Consider an increased partnership between the Historic Properties Commission, the town's three historic properties and the East Lyme Public Library. Currently, the Town lacks one common regularly accessible and environmentally controlled location and digital process by which to record, maintain and display all of East Lyme's historical artifacts, documents and ephemera for the benefit of all. This material is now held separately and often in only an analog format, in a number of locations including the three historic properties, a room at the library and at various private locations. Through partnership, all stakeholders in historic resources could develop a common location and digital process by which to record, maintain and display all of East Lyme's historical artifacts, documents and ephemera that is accessible to all. The East Lyme Public Library/East Lyme Community Center/Brookside Farm and surrounding properties should be considered as an appropriate location for a future Town of East Lyme Museum. The location is not only centrally located but is already staffed by professionals who are properly equipped to not only digitally catalog but also to effectively manage the care and display of our towns historic resource. To implement, an inventory of all of the assets should be undertaken and potential grants for digitizing should be researched.

7. Engage in an educational campaign to encourage homeowners to list their homes on the registry of protected properties in the town and/or apply for the National Register of Historic Places. Being listed on the register provides protection from unreasonable destruction under Connecticut law.
8. Stonewalls, quarry holes, animal pens and other cultural features should continue to be identified and protected in the course of site plan review. When appropriate, efforts should be made to minimize the visual impact development on significant historic areas.
9. Designation of scenic roads, vistas and ridgelines should be implemented. These designations encourage sightseeing along the road and help preserve it from modifications that detract from its appearance.
10. Historic markers should be installed in key locations around town to help educate citizens on past historical events of significance in our town.
11. For buildings 100 or more years of age, the Historic Properties Committee should be notified before demolition. The town currently has a demolition delay ordinance but communication between the town and the Historic Properties Committee needs to improve. The Town should review the Town's functional implementation of the Demolition Delay Ordinance to ensure that it is implemented by the Town as designed. The Demolition Delay Ordinance was passed by the Town of East Lyme in 2018.
12. The town should pursue improving consistency regarding the agreements with the three historical houses. Currently, the Town's relationship with each house is defined in separate agreements that are inconsistent with each other, and there is no plan in place to correct these inconsistencies. This complicates and sub-optimizes the ability to develop, support, integrate, deliver and brand our assets. The Town should re-examine its agreements with each house and correct inconsistencies with regard to organization and funding of each entity, to ensure that each is funded in a way that meets the recommendation noted in this bullet. The designation of a commission for the Samuel Smith Farmstead may be considered.
13. The Town should maintain its owned Historic Properties (Brookside Farm and the Samuel Smith Farmstead) and the lands that go with these properties in a condition suitable to and supportive of development and delivery of educational and environmental programming for our students, our townspeople, and the greater population. While the historic properties that are owned by the town should be as self-sufficient as reasonably possible, the vehicles of grants, taxpayers' dollars and local fundraising are likely to be necessary.
14. A list of historic properties should be digitized and posted publicly on the town website.

Chapter 5 - Natural Resources

5.1 Environmental Quality

A primary goal of the Plan of Conservation and Development is to maintain and, where possible, enhance the environmental quality of East Lyme's land and water resources. Clean and adequate supplies of water are essential for future growth and prosperity of the Town.

Environmental quality should be the concern not just of conservationists, but of all citizens, because destruction or disturbance of environmentally sensitive areas results in real losses to the social and economic welfare of the community.

East Lyme contains a wide variety of natural resources and environmentally diverse/sensitive areas including aquifers, steep slopes, beaches and dunes, surface waters, inland and tidal wetlands. Some of East Lyme's sensitive environmental areas have already been adversely affected by adjacent development or other factors. Where possible, this plan aims to decrease further impacts or improve existing damage.

Inadequate management of natural resources can create hazards from flooding, destroy productive habitats, jeopardize drinking water supplies and limit recreational enjoyment.

In East Lyme, Pattagansett Lake, Gorton Pond and Dodge Pond have all been adversely affected by adjacent development. These bodies of water provide many desirable functions including sites for many types of human recreational activities, augmenting our well drinking water supply as part of aquifers, and serving as wildlife habitat. Similar to town shoreline neighborhoods, the lakes also provide economic benefits for the town from enhanced tax revenues on waterfront properties and spending by both residents and visitors to the lakes for a variety of goods and services.

Erosion caused by over development of coastal shore fronts has resulted in a loss of storm protection and the need for high-maintenance protective structures. Higher than acceptable levels of bacteria in bathing waters have necessitated the closing of beaches in town on several occasions. In each case, there exists either an actual or potential cost to the public or loss of revenue as a result of the resource being impaired.

5.2 Environmentally Sensitive Areas

The following land and water areas are considered environmentally sensitive, either because they serve valuable natural functions or because their improper use will impair the functioning of other resource areas.

5.2.1 Aquifers

Within the Town of East Lyme, there are four stratified drift aquifers and numerous bedrock aquifers, which provide the Town with its drinking water supply. The aquifers and their recharge areas must be protected from contamination by chemical and biological pollutants. (Reference: Protecting Drinking Water in East Lyme, East Lyme Commission for the Conservation of Natural Resources, 2018)

5.2.2 Surface Waters

Rivers, streams and inland water bodies serve as conduits and storage areas for flood waters and therefore, should be protected from encroachment and filling, which could lessen their carrying capacity. East Lyme utilizes surface waters for potable water supply, and these waters are valuable recreational resources and also support animal life. Latimer Brook and Bride Brook both support anadromous fish runs (alewife in both and also sea trout in the former). Bride Lake has one of the largest spawning populations of alewife in New England (Reference: Atlantic States Marine Fisheries Commission, 2017 River Herring Stock Assessment Update. Volume II: State-specific Reports) They should therefore be protected from erosion and sedimentation, chemical runoff and domestic sewage leachate.

5.2.3 Floodplains

Land areas adjacent to rivers and streams, which are inundated during floods, should not be developed since the presence of development will raise flood levels above natural levels and endanger other areas.

5.2.4 Inland and Tidal Wetlands:

Wetland areas are valuable flood-water storage areas and, in the case of tidal wetlands, buffers the surrounding area from storm wave action. They are also highly productive plant and animal habitats and improve water quality by trapping pollutants before they enter surface waters. Excavation, filling, building or sedimentation within wetlands impacts all of these functions.

5.2.5 Beaches, Dunes and Bluffs

These erodible coastal resources are, of course, highly valuable recreational resources. They also act as buffers to coastal flooding and dissipate wave energy during storms. These lands are inherently unstable and are highly susceptible to destruction through any modification.

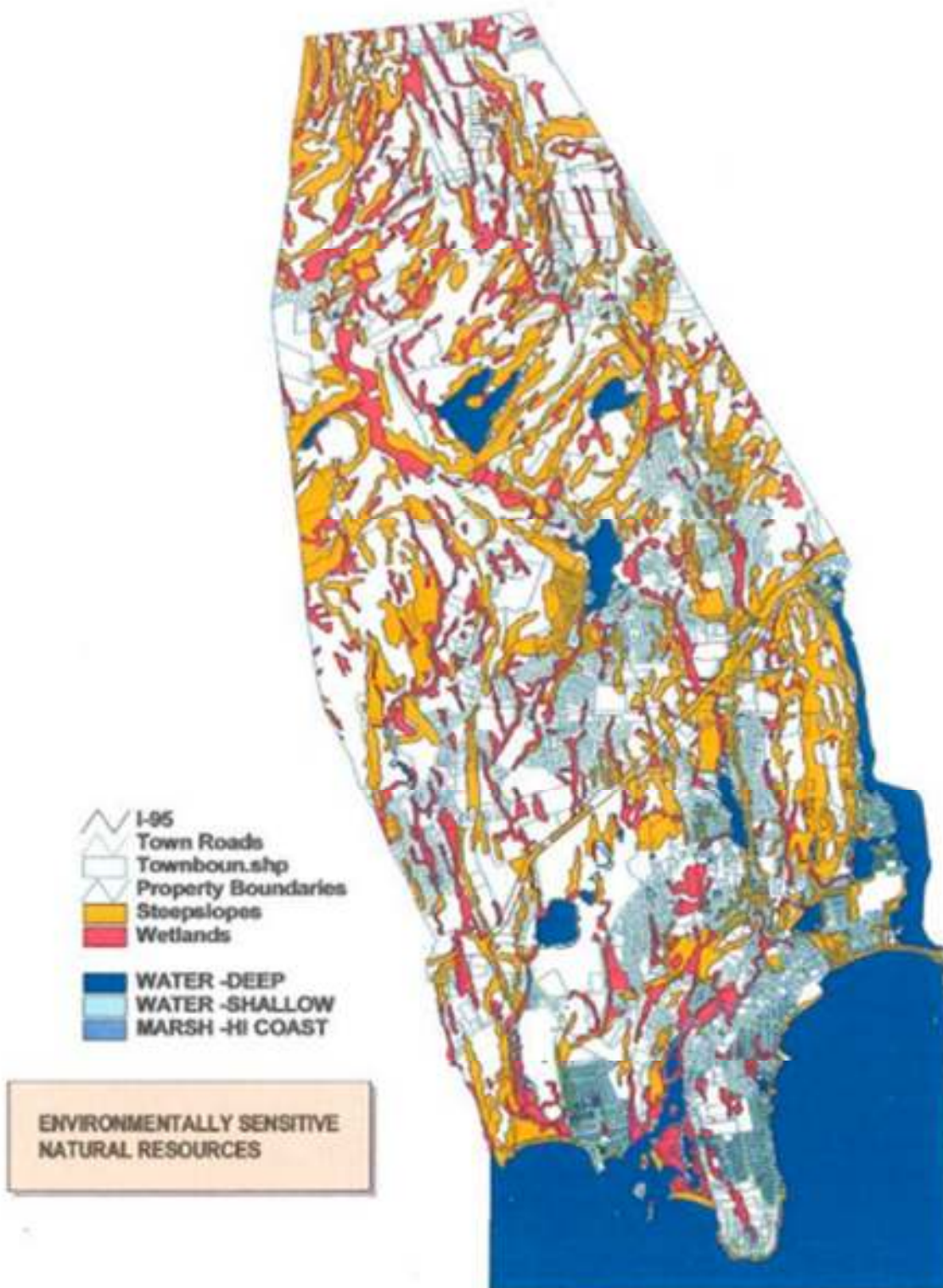
5.2.6 Steep Slopes

Slopes provide habitat value. Slopes greater than 15 to 20 percent are highly erodible, and construction on them is likely to result in sedimentation of down-grade watercourses unless erosion control measures are taken. Erosion losses are exacerbated by the typically thin soil layer over rock on steep slopes, which requires major site modification to install foundations and septic systems.

As can be seen from these brief descriptions, damage to environmentally sensitive resources, and the related losses in public and private investment, occurs in three ways:

- (1) pollutants seep into the ground, impacting groundwater supplies;
- (2) natural materials and man-made pollutants are transported over the land and deposited in watercourses through erosion and sedimentation; and
- (3) land is exposed to the destructive force of flood and storm waters, a natural occurrence, but one which is aggravated by modification of natural water retention areas and development in floodplains. The objective of resource management is to control the use of sensitive lands in a manner that prevents, or at least minimizes, groundwater pollution, erosion/sedimentation and development in floodplains. This is accomplished by first directing intensive development away from sensitive lands, and second, by adopting controls for sensitive lands when they are used.

Figure 5 - Environmentally Sensitive Natural Resources



5.3 Groundwater and Surface Water Protection

Groundwater pollution can derive from a variety of point and nonpoint sources, with a range of potential severity. Some of the most common forms of groundwater pollution are listed below:

5.3.1 Synthetic Organic Chemicals, Hydrocarbons

By far, the greatest share of surface and groundwater contamination is caused by organic chemicals, mostly of man-made origin (synthetic organic chemicals), along with refined hydrocarbons from naturally occurring sources, such as petroleum. This group includes toxic substances used as solvents in industries, businesses and homes- such as per- and polyfluoroalkyl substances (PFAS/PFOAS); pesticides used on lawns and agricultural fields; refined liquid fuels, such as gasoline and heating oil; petroleum distillates used in industry; and oils of many types and uses.

A few chemicals in this group, such as benzene and vinyl chloride, are known human carcinogens. Several other compounds, such as some of the chlorinated solvents, are suspected human carcinogens or are known to promote cancer in animal tests. Federal and State drinking water standards have been established for only a handful of Synthetic Organic Chemicals and Hydrocarbons. Allowed concentrations are very low because even minute amounts of these chemicals in groundwater can threaten human health. These chemicals are often persistent in soil and water and may affect groundwater for many years. All new wells are tested for compliance with drinking water standards by the local Health Department through the well permitting process.

5.3.2 Landfill Leachate

Seepage of precipitation through the refuse dumped at landfills has the potential for introducing a number of soluble pollutants to groundwater. Heavy metals, numerous organic decomposition products and synthetic organic and inorganic chemicals are typically present in leachate.

5.3.3 Salt

Salt is commonly used for winter maintenance to help melt ice and provide safer driving conditions. Salt is a compound which is soluble in water, does not easily degrade and which can remain in the soil for long periods of time. Improperly stored road salt can contaminate groundwater supplies as the material is dissolved in surface water runoff and then seeps into the ground. Runoff from salt application on highways, roads and parking lots can be discharged directly to surface water where it can eventually infiltrate the soil or groundwater resources. Salty groundwater contamination can also be caused by “backwash” from residential water softeners. Discharge of these salts to septic systems is illegal. However, many users are unaware that discharging water softener backwash can pose a risk to area wells and groundwater supplies. Besides environmental concerns, high concentrations of salt in drinking water supplies can pose a health hazard. (Salt is further addressed in this document in Chapter 13: Water and Wastewater Management.)

5.3.4 Nitrates

Nitrogen is a major component of living tissue and a necessary plant nutrient. Nitrates are nitrogen salts that occur widely as a result of decomposition and other natural processes, but at high concentrations they affect the ability of the human circulatory system to provide oxygen, especially in infants. The principal sources of nitrate contamination are animal manure, fertilizers and subsurface sewage disposal systems. Nitrates are highly persistent in groundwater. In surface water, nitrates can promote algal blooms and impair water quality.

5.3.5 Biological Pollutants

An improperly installed septic system can be a source of disease-causing bacteria and viruses in groundwater. Adherence with the Public Health Code has been very effective in minimizing this risk. Farm animal wastes over 5,000 gal. per day are regulated as well. Some surface waters have been contaminated by flocks of waterfowl such as ducks and geese whose waste has rendered the pond or lake un-swimmable for periods of time. Control of these populations must be considered to avoid contamination from occurring.

5.3.6 Pesticides

Some agricultural pesticides are suspected carcinogens and have been found in Connecticut to persist in groundwater for over 15 years. The use of pesticides is regulated by DEEP but it is acknowledged that further research and monitoring is needed to determine the impact of pesticide use on groundwater supplies. Many of the farmlands in Town are being developed as residential subdivisions. Sufficient soil and water testing criteria should be established to ensure that there is no potential risk to human health associated with past pesticide use on the property.

5.3.7 Heavy Metals

Heavy metals can be introduced into surface and groundwaters from a variety of sources including manufacturing, erosion of metallic structures, etc. Health hazards occur if concentrations exceed defined drinking standards.

5.4 RECOMMENDATIONS

1. Consider adopting Zoning Regulations requiring that all lots contain a minimum area of buildable land to further protect sensitive environmental areas.
2. Consider incorporating stormwater best management practices into Town Road Design Standards and Zoning Regulations. (Standards were already adopted into Subdivision Regulations but could be further reviewed and amended as best practices are refined.) A storm-water management ordinance should be instituted for both Town and private construction and development:
 - A. Stormwater runoff management in aquifer areas should promote pre-treatment of runoff prior to discharge and aquifer recharge. Stormwater drainage for new industrial and commercial development should be treated to remove particulate and dissolved pollutants associated with road and parking lot runoff prior to discharge. Infiltration of clean or pretreated run-off should be maximized, except in areas subject to an unusually high risk of hazardous material spillage. Open vegetated basins, depressions and buffer strips are the preferred methods of infiltrating stormwater runoff from paved surfaces.
 - Where possible, install engineered biological treatment systems such as tree filters (which are already found in several town neighborhoods) to treat stormwater by removing nutrients, bacteria and heavy metals
 - B. New or enlarged sites for the accommodation or storage of manure, fertilizers, pesticides, salt/ice melt and herbicides should:
 - Have a roof which should prevent precipitation from coming into contact with these materials.
 - Have a liquid-tight, diked floor with no drains other than a sump pit.
 - Be located so that surface water runoff drains away from the storage area.
 - C. Any above-ground chemical and fuel storage tank should be on an impervious, structurally diked area to contain any leaks or spills, with no drains other than a sump pit, and suitably covered to prevent precipitation accumulation.

- D. Dumpsters and other waste receptacles should have covers or should be located within roofed areas and should be placed on impervious surfaces, away from storm drains. Revisit Zoning, Building and Public Works regulations and/or consider an ordinance for enforcement.
 - E. Except for clean roof drainage, the use of underground drywells or leaching trenches is not recommended for stormwater runoff from developed areas.
3. Revise subdivision recommendations, which currently specify road width reduction from 30' - 24' in Conservation Design Developments to reflect 24' road width for all new subdivisions to minimize impervious surfaces and the amount of clearing/regrading made necessary for road construction. Consider allowing public roads to be constructed at 18' curb-to-curb paved width.
 4. Review cluster/CDD subdivision regulations to encourage further protection of sensitive natural resources. Consider possible changes to required open space percentages.
 5. Consider establishing a sewer avoidance program consisting of mandatory inspections and maintenance at regular intervals to manage existing on-site sewage disposal systems. The benefits of such a program are threefold. First, with preventative maintenance, the need for costly repairs by the homeowner can be avoided. Second, systems which are not providing adequate treatment can be detected and improved, and lastly, installation of sewers can be avoided.
 6. Systematic maintenance programs in place should be reviewed to assure regular vacuuming and routine catch basin clean-out. Decreasing impervious surfaces and methods to increase infiltration is another measure that should be included in road and parking design.
 7. The regulatory setback for tidal wetlands should be increased from 25 feet to 100 feet for all grading, clearing and building of structures.
 8. The Town should consider mitigation measures in coastal high hazard areas. These measures are outlined in detail in Chapter 4: Coastal Resources.
 9. Support efforts to develop Hazmat Spill Mitigation measures for the possible spill/chemical release of hazardous waste from Interstate-95, commercial and industrial facilities or through the use of firefighting foam.
 10. Support the implementation of the Niantic River Watershed Protection Plan (2020).

Chapter 6 - Open Space

6.1 Acquisition, Preservation, and Enhancement

The goal of this chapter is to provide recommendations that encourage the acquisition, preservation and enhancement of Open Space in East Lyme.

Open space and institutional land areas provide a mechanism to preserve critical land and natural resources. Areas in their natural state protect valuable ecological functions and unique natural features. Likewise, disturbance of land through development creates erosion, increased stormwater run-off and exponentially increases pollution in lakes, rivers, streams, Long Island Sound and the Town's aquifers.

East Lyme remains a tourist destination for many because of its open spaces and pristine, swimmable town beaches. Therefore, it is important the town works to maintain its open spaces. A significant portion of the town's revenue is generated from tourism. To ensure the town continues to gain economic support from the tourist market, the maintenance of property is essential as well as the creation of management plans to conserve the land are put in place. By keeping all the current open space in optimal shape, it allows the ecosystems to prosper, by allowing for a decrease in soil leaching and pollution in the waterways.

The protection of open space can also minimize potential loss of life and destruction to property from climate change and increased storm strength and minimizes the necessity of public expenditures to protect future development from such threats.

Lastly, the Town of East Lyme has been in a heated debate regarding the development of residential units and associated impervious surfaces atop of the Oswegatchie Hills. These hills must be preserved in order to maintain the ecosystem which they provide while also keeping the Niantic River free from pollution-filled runoff.

Private open space acquisition is important for the Town's future financial stability. As explained in Chapter 3: Agricultural Resources and Chapter 8: Residential Development, certain land uses incur municipal services that can lead to an overall net loss to the Town. Conservation Open space requires minimal municipal oversight. When owned by a homeowner's association, conservation opens space typically yields a net gain for the Town. Another aspect of savings from acquisition of open space is the control of residential development. Residential development typically yields a net loss to the Town through increased expenditures per unit built based on the number of school children within a household. The table below shows the different land uses types as a percent of the total acreage of East Lyme.

6.2 Types of Open Space

6.2.1 Conservation Open Space

Conservation open space also provides passive recreation opportunities for activities such as hiking, cross-country skiing, nature study, and camping. Primary examples in East Lyme include the Bobrow Property on Plants Dam Road, Nehantic State Forest, Oswegatchie Hills, and Rocky Neck State Park.

6.2.2 Recreational Open Space

Another category of open space is active recreational land. Active recreational lands tend to experience more intense use than conservation type open space. This land does require expenditure for maintenance and use. Among recreational land uses, parks such as McCook Point provide open space and recreational facilities, but also retain their prominent natural amenities versus playing fields, which are developed for organized sports and the typically the majority of the natural amenities or naturally occurring site features are removed. In East Lyme, these consist of Veterans Memorial Park, Samuel M. Peretz Park at Bridebrook and the fields at the Town's three school sites.

6.2.3 Institutional and Private Open Space

Supplementing these public lands are a number of large open space areas either closed to the public or limited to special events. Institutional uses such as Stones Ranch Military Reservation, the Girl Scout Camp and the Yale Property are examples of these areas. The Niantic Correctional Facility and the National Guard Camp at the Niantic River have intensified the use of the properties to the extent that an open space classification is questionable.

6.2.4 Agricultural Open Space

Conservation of agricultural land has been shown to have economic advantages over development. More information on this is provided in the agriculture section of this POCD.

6.3 Open Space Plans for East Lyme

Open Space planning in East Lyme is contained in three plans, The Natural Resource Commission Open Space Plan, The Land of Unique Value Study and The Niantic River Watershed Protection Plan.

6.3.1 Natural Resource Commission Open Space Plan

In 2008, the Town established the East Lyme Commission for the Preservation of Natural Resources. Subsequently, the Natural Resources Commission adopted an Open Space Plan for the Town, which inventoried and recommended acquisition of land for the preservation of open space.

The Open Space Plan endorsed by the NRC (Figure 3 NRC Open Space Plan) identifies a number of private properties that if secure in perpetuity in their current or more-or-less natural state, would measurably benefit the town. These properties were evaluated against a set of eight characteristics used to define the attribute or resource elements of the open spaces.

The Open Space report indicates the single most important feature of any open space is its ability to aid and abet in the quality and quantity of our Town's drinking water supply. The Town's drinking water comes from stratified drift aquifers, a geologic formation that contains a usable supply of water and consist mainly of layers of sand and gravel, parts of which are saturated and can yield water to wells or springs. The distribution and hydraulic characteristics of stratified-drift aquifers are related to the original environment in which the sediments were deposited in layers by meltwater streams flowing from retreating glacial ice. As approximately 30-percent of East Lyme is on Town supplied water, we draw about as much as we can during the peak use season. These aquifers are located within two of four main watersheds (see Figure 4).

As a result of the Town's natural topography, historically development has occurred over these aquifers. Therefore, the result of past development has established the need for protecting these aquifers. In addition to drinking water protection, the Open Space Report considers seven other resource characteristics. The eight resource characteristics along with a rating system used to quantify the overall importance of each property identified is provided in Table 1 NRC Open Space Plan

Figure 6 - NRC Open Space Plan

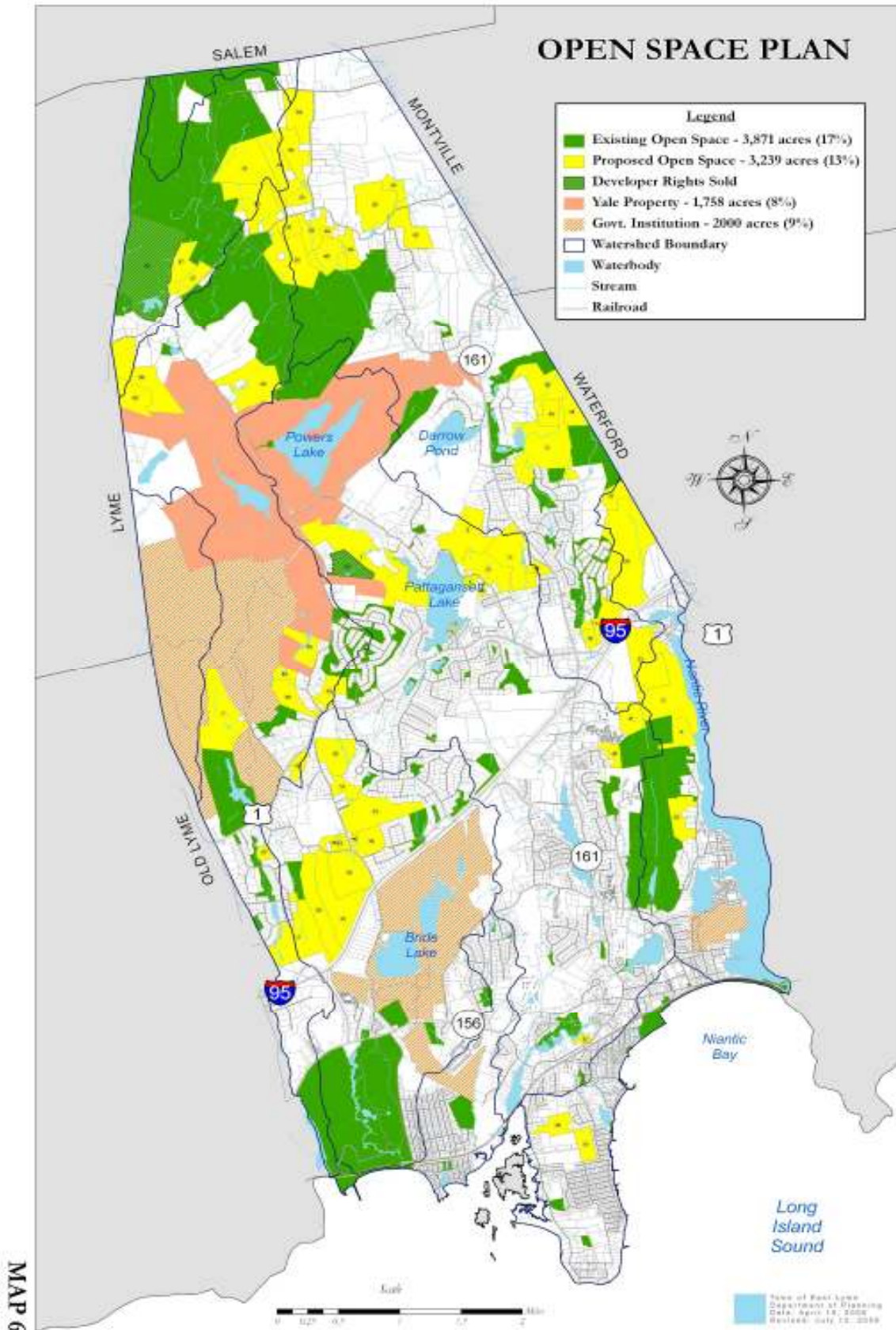


Figure 7 - Major Watersheds & Aquifers

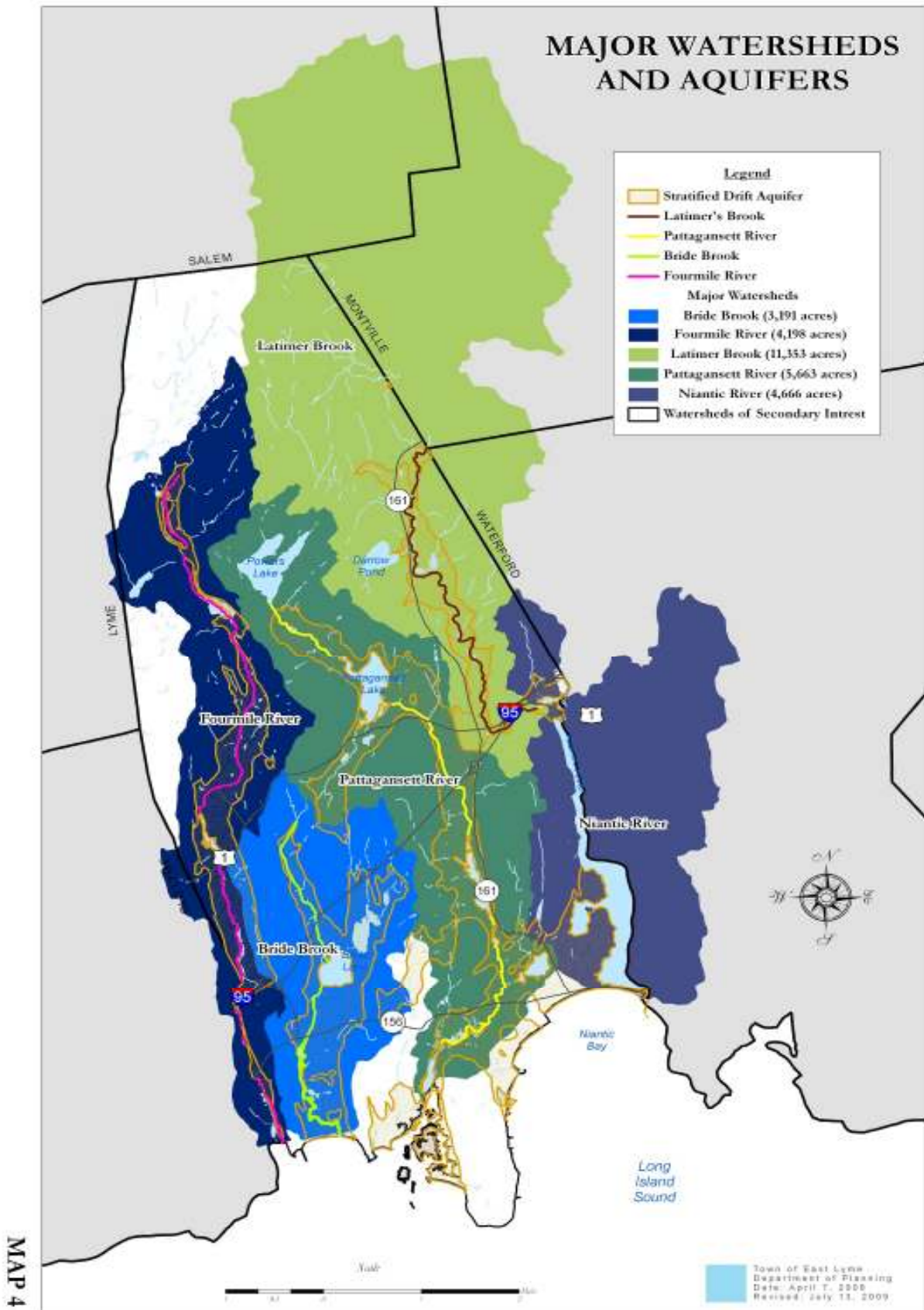
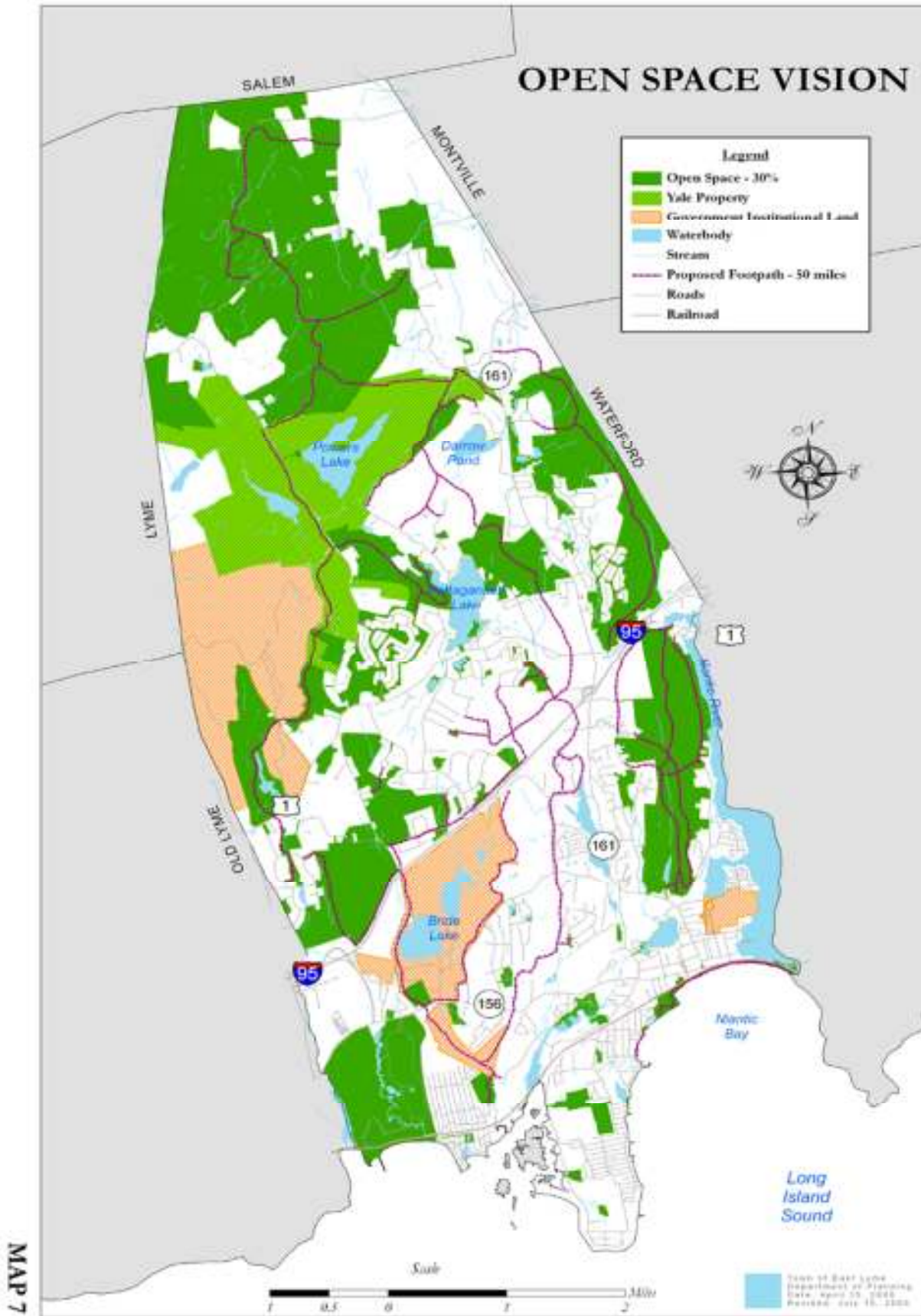


Table 1 - NRC Open Space Plan Table 2

OS ID	Parcel_ID_1	Address	Acres									TOTAL
				Reserve (Primary) Tax	Water Access - 1/4th	Agricultural Lands - a	Active/Private Reserve	Forest Block/Forever	Unique Geological Fe	Cultural/Historical -	Biodiversity (NOBS)	
1	35.0 23	HATHAWAY RD	152.25	X	X	X	X	X			X	26
2	14.0 45	SPRING ROCK RD	87.90	X		X	X		X		X	21
3	32.0 1	23 CALKINS RD	113.50		X		X	X	X	X	X	15
4	27.0 14	QUARRY DOCK RD	29.00		X		X	X	X	X	X	15
5	36.1 11	DRABK RD	77.20	X		X	X	X				20
6	35.2 1	U PATT RD	7.50	X	X	X					X	20
7	23.0 1	56 STONE RANCH RD	104.00	X		X	X	X	X	X		19
8	41.0 1	QUARRYCREST RD	130.94		X	X	X	X				14
9	35.0 44	121 UPPER PATT RD	77.85	X	X		X				X	19
10	31.0 2	91 BOSTON POST RD	11.86		X		X	X	X	X		13
11	31.0 2-1	89 BOSTON POST RD	11.33		X		X	X	X	X		13
12	30.1 66	20 ISLANDA CT	2.14	X	X		X					17
13	30.1 66-1	22 ISLANDA CT	1.92	X	X		X					17
14	46.0 30	15 BEAVERBROOK	200.00			X	X	X		X		13
15	19.0 49	223 N BRIDEBROOK RD	83.17	X		X	X					16
16	19.0 52	199 N BRIDEBROOK RD	35.16	X		X	X					16
17	24.0 76	N BRIDEBROOK RD	21.73	X		X	X					16
18	19.0 54	N BRIDEBROOK RD	69.67	X		X	X					16
19	19.0 55	67 PLANTS DAM RD	98.00	X			X				X	15
20	19.0 58	PLANTS DAM RD	71.20	X			X				X	15
21	35.2 6	83-89 U PATT RD	53.80	X		X					X	15
22	11.3 8-1	93 BLACK POINT RD	5.59		X	X						10
23	31.0 4	BOSTON POST RD	86.95				X	X	X	X		9
24	36.0 34	ROUTE I-95	198.56				X	X	X	X		9
25	22.0 1	QUARRY DOCK RD	41.34			X	X			X	X	9
26	42.0 7	175 WHISTLETOWN RD	79.50			X	X			X		9
27	46.0 35	191 GRASSY HILL RD	25.00			X	X			X		9
28	35.4 43	U PATT RD	4.52	X	X							12
29	51.0 15	98 GRASSY HILL RD	33.40			X	X					7
30	51.0 20	132 GRASSY HILL RD	87.56			X	X					7
31	51.0 24	119 GRASSY HILL RD	102.25			X	X					7
32	52.0 1	41 GRASSY HILL RD	70.11			X	X					7
33	52.0 2	31 GRASSY HILL RD	20.82			X	X					7
34	54.0 1	6 UP WALNUT HILL RD	14.67			X	X					7
35	54.0 2	14 UP WALNUT HILL RD	55.90			X	X					7
36	44.0 19-14	29 BOCCO DR	57.94			X	X					6
37	41.0 6	GRIDUSE CR	23.43			X	X					6
38	45.0 2	CHESTERFIELD RD	22.25			X	X					6
39	45.0 3	CHESTERFIELD RD	26.27			X	X					6
40	26.4 17	28B DAMON HEIGHTS RD	16.62			X	X					6
41	31.0 9	KING ARTHUR DR	34.08			X	X					6
42	06.3 133	OLD BLACK POINT ROAD	25.80			X				X		5
43	46.0 46	0 WHISTLETOWN RD	71.99									6
44	19.0 78	15 PLANTS DAM RD	9.50			X						4
45	24.0 30	415 BOSTON POST RD	35.45			X						4
46	24.0 134	BOSTON POST RD	17.90			X						4
47	24.0 95	291 N BRIDEBROOK RD	53.49			X						4
48	06.3 99	ATTAWAN RD	25.00			X				X		5
49	42.0 4	203 WHISTLETOWN RD	42.96									6
50	29.0 8	224 SCOTT RD	13.54			X						4
51	29.0 12	32-32B SCOTT RD	34.73			X						4
52	29.0 31	405 BOSTON POST RD	39.66			X						4
53	35.0 25	25 HATHAWAY RD	17.10									0
54	36.1 9	10 DRABK RD	11.00			X						4
55	38.0 2	WHISTLETOWN RD	168.00									0
56	51.0 9	80 GRASSY HILL RD	22.56			X						4
57	51.0 12	88 GRASSY HILL RD	6.83			X						4
58	51.0 18	118 GRASSY HILL RD	19.50			X						4
59	52.0 115	GRASSY HILL RD	43.43			X						4
60	54.0 3-1	UP WALNUT HILL RD	46.88			X						4
61	57.0 1	66 HOLMES RD	58.34			X						4
62	42.0 2	GRASSY HILL RD	41.51				X					3
63	46.0 15	GRASSY HILL RD	85.36				X					3
64	46.0 32	GRASSY HILL RD	40.00				X					3
65	51.0 13-1	GRASSY HILL RD (REAR)	47.51				X					3
66	51.0 22	127 GRASSY HILL RD	83.19				X					3
67	42.0 1	0 WHISTLETOWN RD	13.10									0

Figure 8 - Open Space Vision



6.3.2 Land of Unique Value Study

The Lands of Unique Value Study provided a different methodology and recommendations for the management and preservation of open space. These plans served as the basis for a comprehensive policy for the acquisition, management, and preservation of open space.

The LUV Study's recommendation for Future Open Space is based on the following Town objectives:

- Identify and preserve the natural, historic, cultural and environmental resources and habitats of the community;
- preserve and conserve the natural environment of the town for the benefit of future generations and maintain a high quality-of-life for East Lyme's people and maximum protection for flora and fauna;
- investigate and recommend environmentally responsible technologies in order to protect and preserve East Lyme's beaches, salt marshes, inland wetlands, and watercourses, and aquifers;
- continue making attempts to preserve environmentally sensitive areas such as Oswegatchie Hills and other lands identified in the Open Space Plan of the Town of East Lyme; and
- develop conservation restrictions to protect natural ecosystems, continue supporting the preservation and establishment of public access to East Lyme's shoreline.;

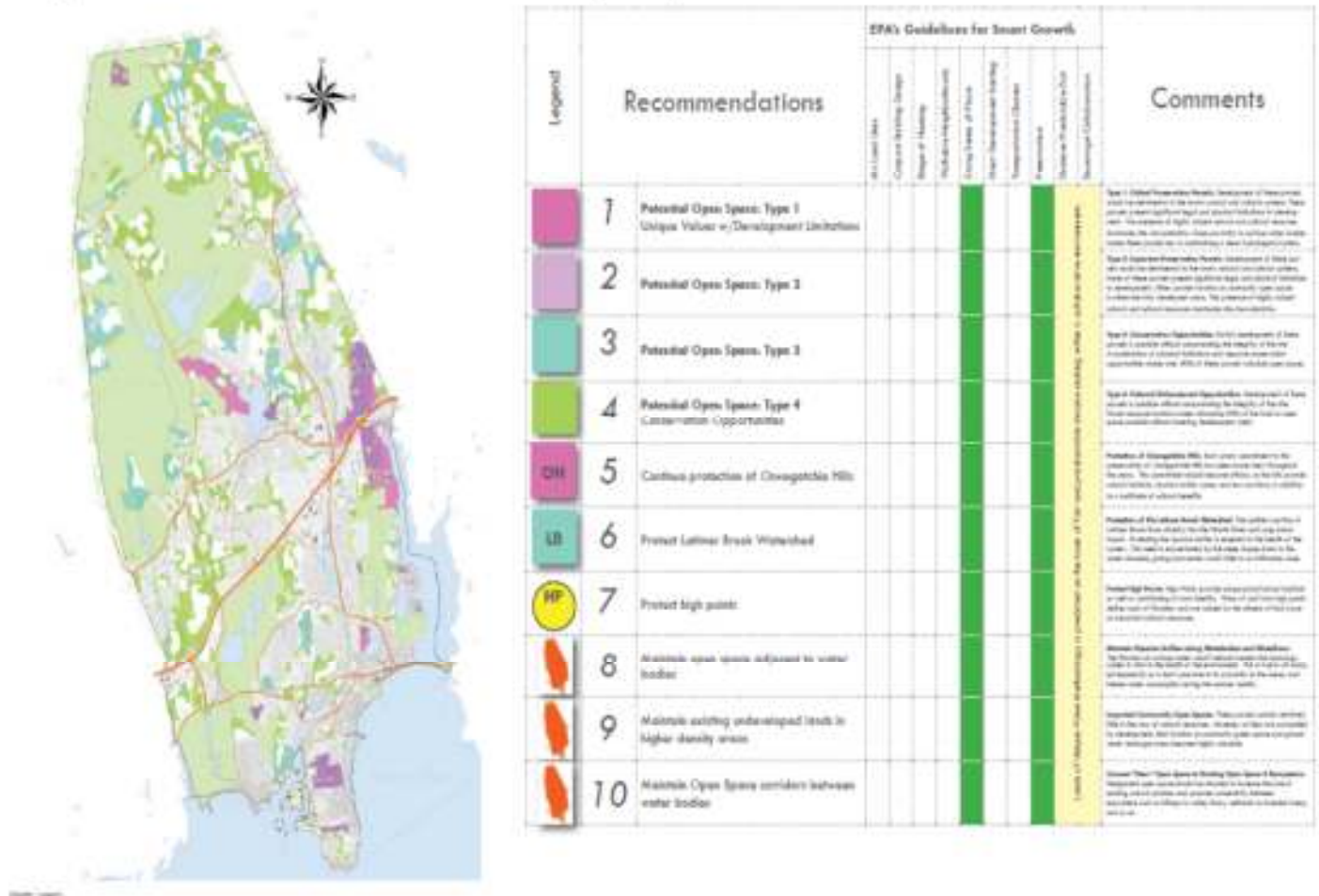
The LUV Study's Recommendations for Future Open Space provides a map and a matrix showing the relationship between the recommendations and the EPA's 10 Guidelines for Smart Growth (Table 2).

Table 2 - U.S. EPA's 10 Guidelines for Smart Growth

Smart Development	
1	Mix land uses
2	Take advantage of compact building design
3	Create a range of housing opportunities and choices
4	Create walkable neighborhoods
5	Foster distinctive, attractive communities with a strong sense of place
6	Strengthen and direct development towards existing communities
7	Provide a variety of transportation choices
Conservation / Preservation	
8	Preserve open space, farmland, natural beauty, and critical environmental areas
Decision Making	
9	Make development decisions predictable, fair, and cost effective
10	Encourage community and stakeholder collaboration in development decisions

Figure 9 - LUV Study Recommendations for Future Open Space

Chapter 1 Recommendations for Future Open Space



The Recommendations for Future Open Space prioritizes the preservation of open space into four different categories as follows:

Type 1: Critical Preservation Parcels: Development of these parcels would be detrimental to the town’s natural and cultural systems. These parcels present significant legal and physical limitations to development. The presence of highly valued natural and cultural resources dominates site characteristics. Close proximity to surface water bodies makes these parcels key to maintaining a clean hydrological system.

Type 2: Important Preservation Parcels: Development of these parcels would be detrimental to the town’s natural and cultural systems. Some of these parcels present significant legal and physical limitations to development. Other parcels function as community open space in otherwise fully developed areas. The presence of highly valued natural and cultural resources dominates site characteristics.

Type 3: Conservation Opportunities: Partial Development of these parcels is possible without compromising the integrity of the site. A combination of physical limitations and resource conservation opportunities makes over 50% of these parcels valuable open space.

Type 4: Network Enhancement Opportunities: Development of these parcels is possible without compromising the integrity of the site. Parcel resource location makes allocating 50% of the land to open space possible without lowering development yield.

Table 3 - Current Land Use by Type - 2020

LAND USE CATEGORIES	Acres	% of Total Town Area
Residential	12,532	51
Commercial	862	3.5
Industrial	475	1.9
Mixed	135	.55
Special Open Space	1,133	4.6
OPEN SPACE		
Agriculture & PA 490	3,118	14
TOTAL LAND AREA	24,147	100.0

6.3.3 The Niantic River Watershed

Open Space plays a critical role in protecting and improving the health of the Niantic River. While the Niantic River Watershed, Figure 7 below encompasses four towns, as a town located at the mouth of the river, much of East Lyme’s economy and recreational opportunities rely on the health of the river. The Niantic River Watershed Protection Plan identifies key areas of open space for preservation.

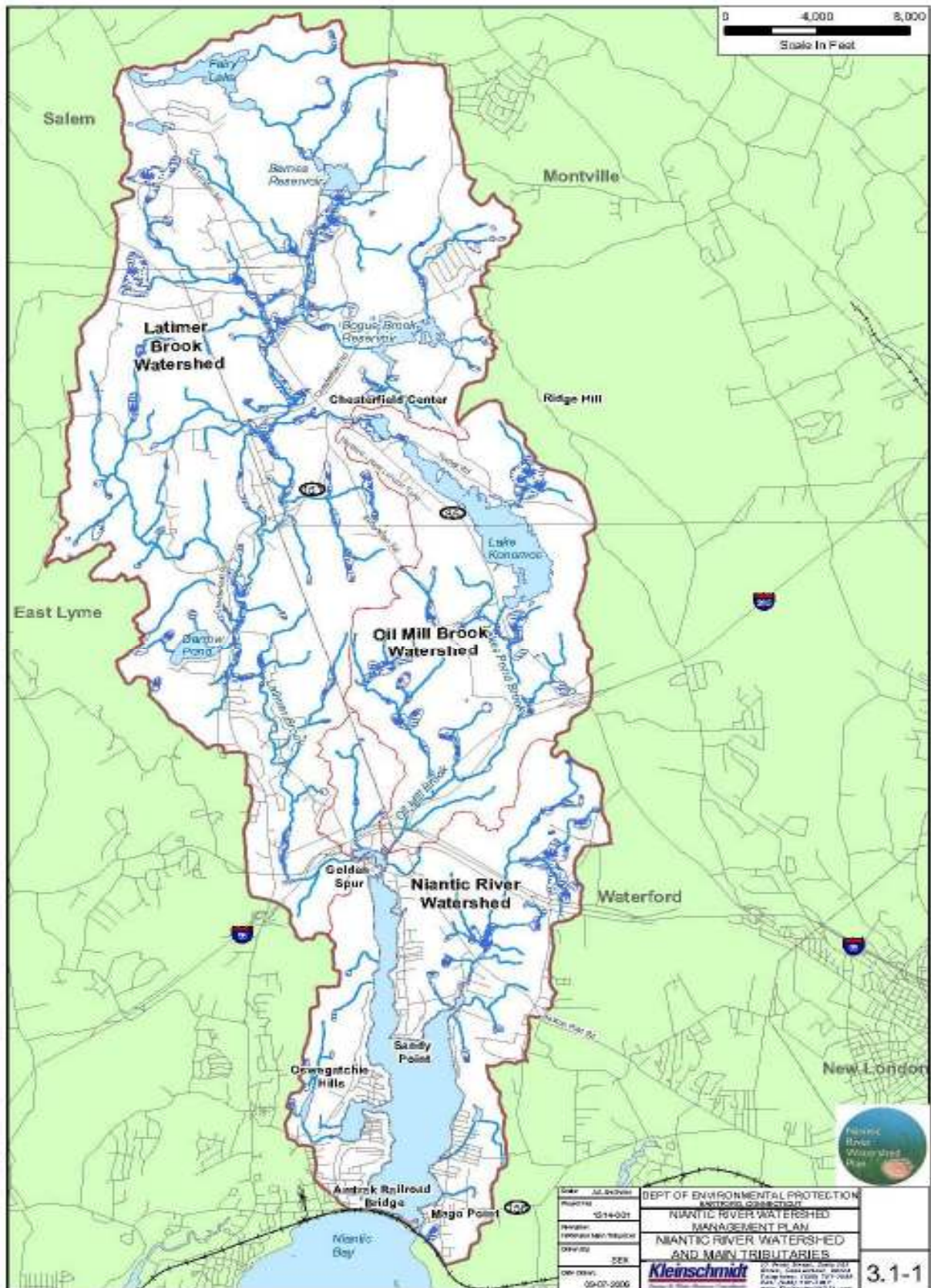
6.3.4 Long-Term Perspective

The Town of East Lyme will need to continue evaluating the policy for open space acquisition, specifically for the purpose of preservation of resources and growth management opportunities. In addition, the Town should continue developing policies and regulatory methods to improve recreational opportunities that link the community together, specifically bike paths, walking trails and greenways.

Due to the finite carrying capacity for land resources in East Lyme, the remaining land available for development is in areas with proportionally more critical resources per acre than land developed during the last two decades. Steep slopes, wetlands, ledge outcrops, and ridgelines, as well as agricultural soils are an increasing factor in

vacant parcels of land available for development. These critical areas will need more protection through adherence to cluster/conservation type zoning and subdivision regulations. Therefore, areas such as Oswegatchie Hills, the Smith Ledges, Latimer Brook and Four Mile River continue to be targeted areas for protection.

Figure 10 - Niantic River Watershed



6.3.4 Sustainability

The Town's plan to acquire more open space also aligns with the State of Connecticut's land conservation goals. By 2023, the State of Connecticut aims to conserve 21% (673,210 acres) of Connecticut's land base, in accordance with Section 23-8 of Connecticut's General Statutes (State of Connecticut Green Plan, 2016). Opportunities to secure resources for open space acquisition should be actively pursued.

6.7 RECOMMENDATIONS

- 1. Preserve and maintain large, unfragmented tracts of open space:** Land fragmentation is a leading cause of habitat loss, as such preservation of land is essential. An increase in green space can also help regulate air quality and climate which counters the warming effects of the concrete paved surfaces.
- 2. Work to link existing open space parcels together:** By preserving large parcels of open space which connect with one another, contiguous habitats remain intact and, if desired, passive recreation opportunities are increased.
- 3. Preserve open space in areas that are more prone to the impacts of climate change (ex. flooding) to enable the land's natural ability to mitigate such disasters:** The prevention of new public infrastructure in flood prone areas is important in order to combat rising sea level. Prioritizing the coastal land as areas of open space and restricting development. The creation of teams which can identify climate related vulnerabilities in the town is important for combatting future issues. Projects to address storm surges and the damage they cause can be funded by the State of Connecticut. Maximizing nature's solutions by protecting and restoring forests, grasslands, and wetlands. On a larger national scale, the nature conservancy has conducted a study which estimates that natural solutions could mitigate more than a third of its carbon emissions. The southern edge of the town is an arm of Long Island Sound, the region's largest estuary and with the warming temperatures and sea level rise it is important to take action to protect the ecosystem and the species it houses. Varied stressors will form unforeseen results which makes it uncertain how quickly species will be able to adapt to these problems if at all. Connecticut must protect existing habitats and make plans to minimize projected changes on coastal environments.
- 4. Preserve and continue protection of Oswegatchie Hills and the Niantic River:** The Niantic River is an arm of the Long Island Sound estuary and provides an ecosystem for many species. East Lyme's commitment to the preservation of Oswegatchie Hills has been made clear throughout the years. As indicated in this plan, it is East Lyme's intention to preserve Oswegatchie Hills as open space in perpetuity.
- 5. Protect the Latimer Brook Watershed:** The southern portion of Latimer Brook flows directly into the Niantic River and Long Island Sound. Protecting the riparian buffer is essential to the health of the system. This need is exacerbated by the steep slopes down to the water channels, giving stormwater runoff little to no infiltration zone.
- 6. Encourage an Open Space Consortium:** The Commission for the Conservation of Natural Resources should meet at least annually with a collection of members from but not limited to: Aquifer Protection Agency, Niantic River Watershed Committee, East Lyme Land Trust, Eight Mile Wild and Scenic River Watershed Committee, Planning Commission, Zoning Commission, Inland Wetlands Agency, East Lyme Public Trust Foundation, Parks & Recreation Commission for purposes of collaboration.
- 7. Encourage continued public/private partnerships to pursue state, federal and private grant opportunities:** Partnership with a professional grant writer is strongly recommended to take advantage of all potential opportunities for state, federal and private grant dedicated to the

preservation of open space. For Example: CT DEEP Open Space and Watershed Land Acquisition Fund - The Open Space and Watershed Land Acquisition (OSWA) Grant Program provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space, and to water companies to acquire land to be classified as Class I or Class II water supply property.

- 8. Support open space acquisition projects as outlined in the Niantic River Watershed Protection Plan (August 2020):** Support this plan both as an active partner for parcels within town limits and as an advocate for parcels in other towns (i.e.: submitting testimony and/or letters of support).
- 9. Promote opportunities to donate land for open space:** Develop a “Landowners Guide to Conservation Options.”
- 10. Protect high points:** High Points provide unique plant/animal habitats as well as contributing to town identity. Views of and from high points define much of Flanders and are valued by the citizens of East Lyme as important cultural resources.
- 11. Maintain open space adjacent to water bodies:** Maintain Riparian Buffers along Waterbodies and Waterflows. The filtration of surface water runoff before it enters the hydrology system is vital to the health of the environment. This is true in all towns, but especially so in East Lyme due to its proximity to the ocean, and intense water consumption during the summer months.
- 12. Maintain Open Space corridors between water bodies:** Connect “New” Open Space to Existing Open Space & Ecosystems. Designated open space should be situated to increase the size of existing natural patches and promote connectivity between ecosystems such as hilltops to valley floors, wetlands to forested areas, and so on.
- 13. Support consistent funding of open space acquisition through annual town budget.** Allow private contributions to the fund through various measures including “Contribute to a Place” campaigns.

References:

- Connecticut State Green Plan, 2016-2020
- Niantic River Watershed Protection Plan, August 2020
- Land of Unique Values Study
- East Lyme Natural Resources Commission Open Space Plan
- Protecting Drinking Water in East Lyme, 2018, East Lyme Commission for the Conservation of Natural Resources

Chapter 7 - Residential Development

7.1 Background

East Lyme has diversified its housing offering since the 2009 Plan of Conservation and Development but is still subject to developer appeals under Connecticut's 8-30g statutes, as less than 10% of East Lyme's current housing stock is available as affordable housing. East Lyme has more work to do in proactively addressing affordable housing.

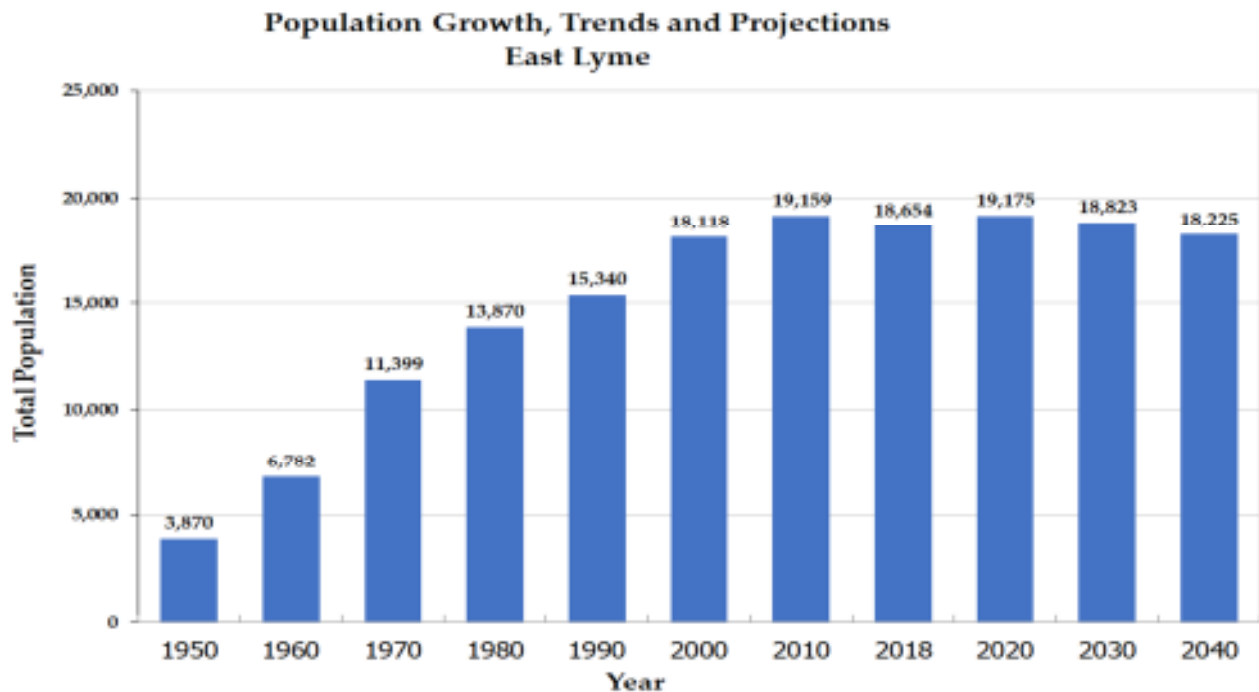
Public water and sewer availability is evaluated elsewhere in this document, and may be a limitation on further growth. Additionally, public sentiment as expressed in the Community Questionnaire and Public Forum conducted as part of the Plan of Conservation and Development update indicate the public's desire to slow down growth and focus on preservation of open space, agriculture and other natural resources.

Population projections show that East Lyme's total population will remain steady or decline over the next 20+ years while residents over 65 years of age will make up a slightly greater than current percentage of the population. Housing projections indicate that East Lyme's current housing stock is sufficient for the projected population.

7.1.1 Population

East Lyme's residents are older, on average, than the rest of the Southeastern Connecticut region. The most recent population projections anticipate that East Lyme will decline in population as households led by seniors shrink in size. In other words, fewer residents are expected to occupy East Lyme's housing stock. (Source: Town of East Lyme Housing Profile, April 2019 - Southeastern Connecticut Housing Alliance)

Figure 11 - Population Growth, Trends, and Projections



Source: U.S. Census Bureau, American Community Survey data 2013-2017

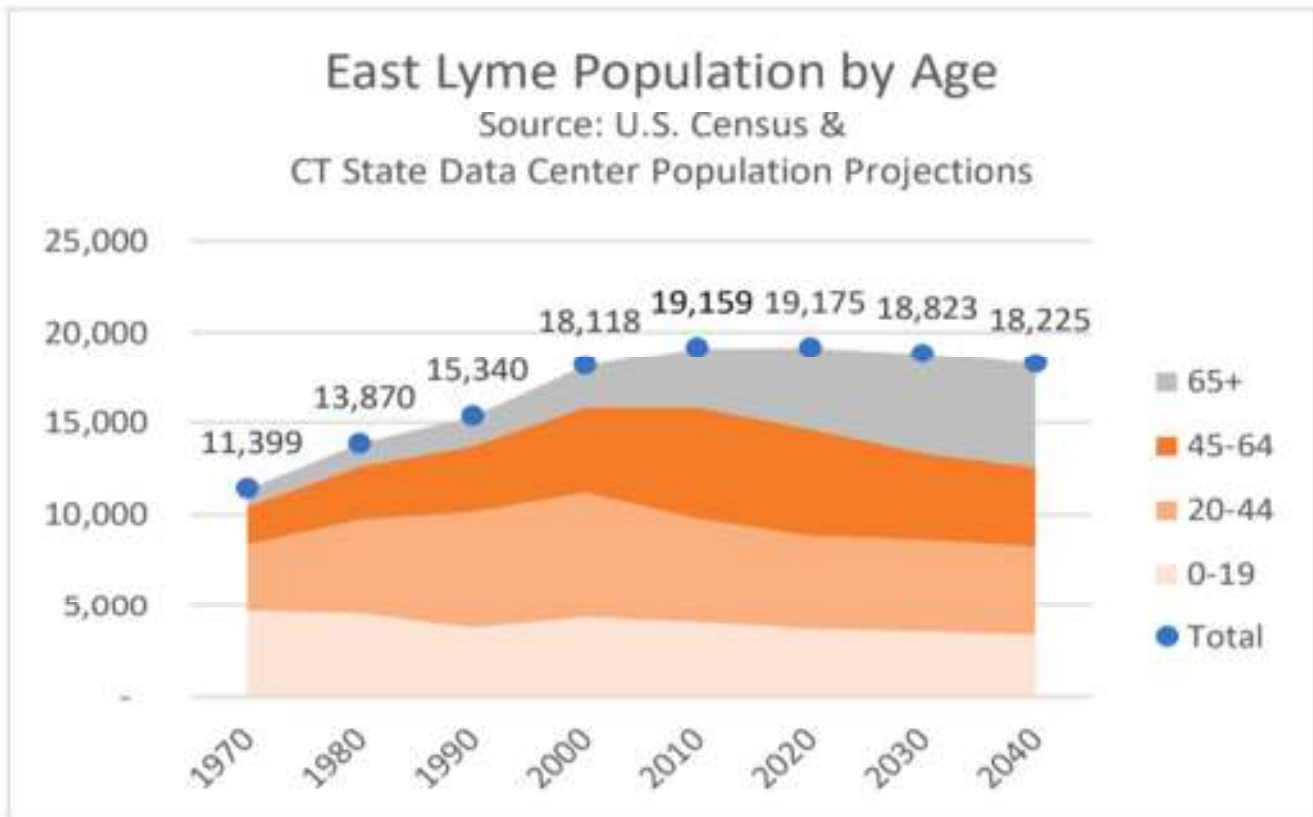
According to the American Community Survey (ACS), between April 2010 and July 2018, East Lyme’s population decreased by 2.7% along with New London County. Whereas, the Nation grew by 6% during this time.

East Lyme’s current population mix indicates that about 21-25% of residents are age 65 and older. That percentage is projected to increase to up to 31% by 2025. Meanwhile, the projected number of school aged children is projected to decrease town wide. (Source: Regional POCD from Southeastern Connecticut Council of Governments, 2017.)

East Lyme’s population saw growth from 1990-2000, of almost 4,000 residents, and then modest growth from 2010-2014 but is projected to have leveled off and may decline as we approach 2025. Current projections show that while total population may decline, it will rise in those over 65 years of age. (Source: Regional POCD from Southeastern Connecticut Council of Governments, 2017.) This trend is not unique to East Lyme and is projected for a number of other similarly sized suburban municipalities in the region including Waterford, Stonington, and Ledyard.

Figure 12 - Projected Population Change

Projected East Lyme Population Change (2010-2040): -5%

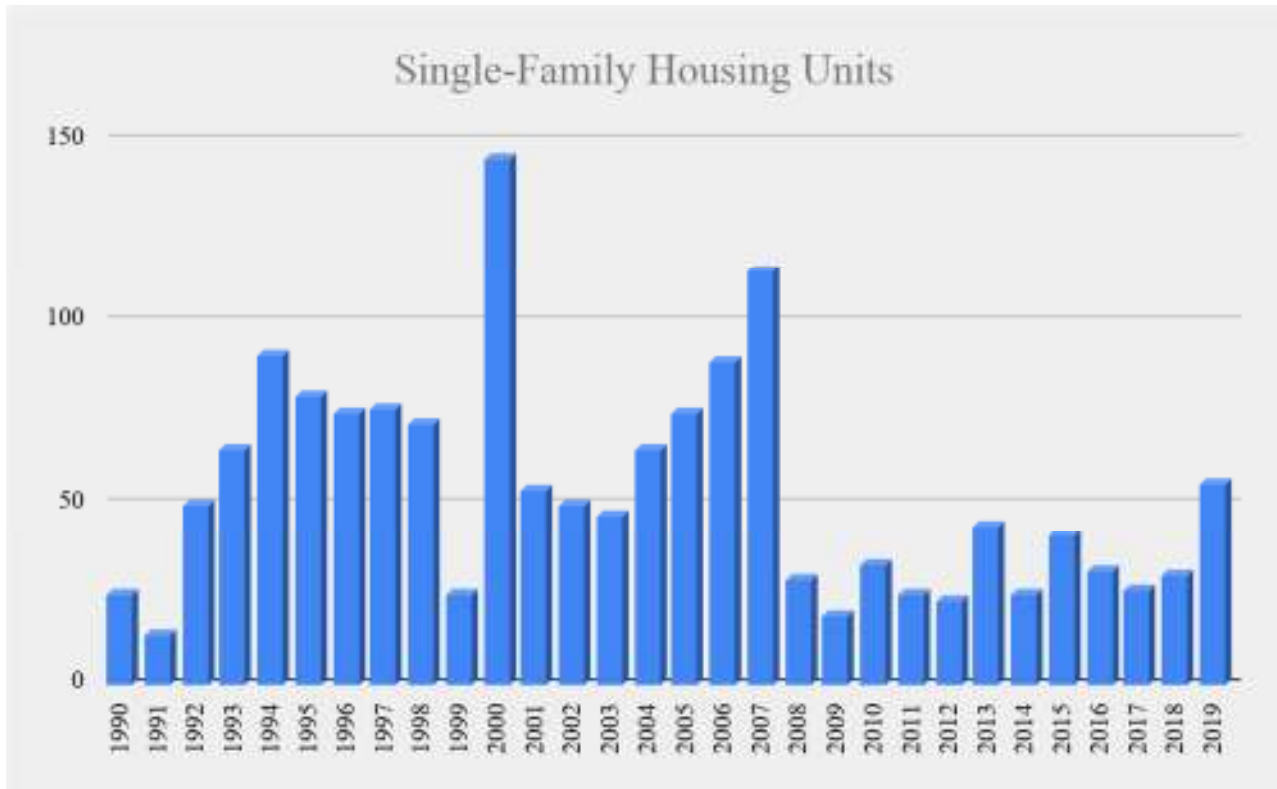


(Source: Town of East Lyme Housing Profile, April 2019 - Southeastern Connecticut Housing Alliance)

7.1.2 Housing Stock

East Lyme has diversified its housing offering since the 2009 Plan of Conservation and Development through the addition of multi-family rental units in the Gateway District, and condo units on Hope Street, as well as through some affordable housing developments. According to the Economic Overview prepared by Southeastern Connecticut Enterprise Region (SeCTer) for East Lyme and Niantic, Connecticut indicates there are a total of 8,739 housing units within the town. From the table below, the Town has averaged approximately 60 - 65 homes every decade.

Figure 13 - Single Family Housing Units



The Median home value is estimated at \$305,557.00 dollars. According to the U.S. Census Bureau's, American Community Survey (ACS) five-year estimates (2014-2018) in 2018 dollars, the Median Household income is \$93,416. Whereas, the Economic Overview from SeCTer indicates the median income at \$86,075.00.

Housing not reflected in the above table includes a 65-unit affordable housing development known as Rocky Neck Village and is under construction. In addition, there have been approximately 58 - lots created as a result of subdivision since the last POCD update, of which 28-lots are pending litigation.

Some barriers may exist when considering further residential development, in addition to the data that indicates we may not have a need for increased residential development. Public water and sewer availability is evaluated later in this document, and may not allow for growth in this area. Additionally, public sentiment as expressed in the Community Questionnaire and Public Forum conducted as part of the Plan of Conservation and Development update indicate the public's desire to slow down growth and focus on preservation of open space, agriculture and other natural resources.

At the time of this update, we are in the midst of the COVID-19 pandemic and are witnessing a documented trend in populations leaving cities for more suburban and rural areas such as Connecticut. Population projections in this section reflect data pre-pandemic and may require updating as we witness the potential effects on the population size of East Lyme.

On average, nationwide, the median cost per dollar of revenue raised to provide public services for commercial and industrial lands was \$0.30, for working and open space lands was \$0.37, and for residential lands was \$1.16. (source: American Farmland Trust Cost of Community Services Studies 2016)

The research conducted by the American Farmland Trust cited the costs of different land uses in many Connecticut towns. A sampling is included below for reference:

- Hebron: 9,500 residents – the residential cost is \$1.06 for every dollar of tax revenue
- Colchester: 16,000 residents – the residential cost is \$1.14 for every dollar of tax revenue
- Farmington – 25,000 residents – the residential cost is \$1.33 for every dollar of tax revenue

Despite the common misconception, more residential space does not necessarily equal more tax revenue. In fact, it is the opposite – more residential space typically equates to greater costs as they require public services such as educational costs, water, sewage, trash and snow removal. The deficit generated by residential cost for services versus tax revenue gained are often made up in the form of commercial development, agricultural lands and open space.

7.1.3 Affordable Housing

While progress has been made in the development of affordable housing, the town may still require additional units to maintain state-mandated levels of affordable housing stock.

The State of Connecticut requires that affordable housing plans be addressed in each town's Plan of Conservation and Development. The Affordable Housing Appeals Procedure, also known as Section 8-30g, provides assistance with development of affordable housing throughout the state. Affordable housing is defined as housing that is priced to be available at 30% or less than 80% or less than the median income.

The common definition of an affordable home is one where the resident spends no more than 30% of their income to pay the rent or mortgage. Supportive housing is also considered affordable but, goes a step further to include access to additional services or resources that low-income residents may need. In Connecticut over 200,000 households are spending more than half their income on housing costs. The amount a person must make per-hour to afford a typical two-bedroom apartment is \$25.40 and the average wage for a renter is \$17.53 (NLIHC, 2019).

According to the U.S. Census Bureau's American Community Survey (ACS) as of 2018, East Lyme's median household income is \$93,416 (2018 Dollars), a 1.06% increase since 2010.

East Lyme is currently subject to developer appeals under Connecticut's 8-30g statutes but is close to the threshold of units (10% of housing stock) to earn a one-year moratorium from appeals.

7.2 Current Affordable Housing Offerings

7.2.1 Government Assisted Affordable Housing

Table 4 - Government Assisted Affordable Housing

<i>Funder/Administrator</i>	<i>Municipality</i>	<i>Project Name</i>	<i>Total</i>	<i>Multi-Family</i>	<i>Elderly</i>	<i>Handi-capped</i>	<i>Street Address</i>	<i>Occ. Date</i>
HUD	East Lyme (Niantic)	AHEPA 250-I	54	0	54	0	267 Roxbury Rd	6/1/1992
HUD	East Lyme (Niantic)	AHEPA 250-IV	50	0	50		265 Roxbury Rd	10/2/2007
HUD	East Lyme (Niantic)	AHEPA 250-V	52	0	0		269 Roxbury Rd	
CHFA	East Lyme	Deerfield Village I & II	153	100	0	0	10 King Arthur Dr	3/1/1981
CHFA	East Lyme	Faylor Apartments	36	36	0	3	130 Boston Post Rd	12/1/81
USDA/RD	East Lyme	Nicholas Manor	9	9	0	0	183 Boston Post Rd	12/20/79
CHFA	East Lyme (Niantic)	The May Institute Inc.	1	1		1	4 Pontiac Dr	
USDA/RD	East Lyme	Twin Haven Apartments	40	0	40	4	39 Upper Pattagansett Rd	6/30/1976
	East Lyme	Rocky Neck Village	36					
TOTAL			395					

7.2.2 Affordable Housing (No Gov. Assistance)

Table 5 - Non-Government Assisted Affordable Housing

East Lyme	38 Hope St	150	150	23	23		38 Hope St	1-Jun-06
East Lyme	Sea Spray Condominiums	108	108	16	17		15 Freedom Way	3-Nov-05
East Lyme	Village Crossing	66	66	13	11	No more than 20/year; 4-additional units shall be designated as affordable over and above the statutorily required 30% of affordable units	Park Place	6-Jan-11
East Lyme	Evergreen Ridge	58	58					Expired: Approvals Lapsed
East Lyme	Oswegatchie Hills	840	840					Pending Litigation

New, since the 2009 POCD, the CT State Legislature has adopted *Sec. 8-30j. Affordable housing plan. Hearing and Adoption. Amendments. Filing requirement which stipulates that:*

- A.** At least once every five years, each municipality shall prepare or amend and adopt an affordable housing plan for the municipality. Such a plan shall specify how the municipality intends to increase the number of affordable housing developments in the municipality.
- B.** The municipality may hold public informational meetings or organize other activities to inform residents about the process of preparing the plan. If the municipality holds a public hearing, at least thirty-five days prior to the public hearing on the adoption, the municipality shall file in the office of the town clerk of such municipality a copy of such draft plan or any amendments to the plan, and if applicable, post such draft plan on the Internet web site of the municipality. After adoption of the plan, the municipality shall file the final plan in the office of the town clerk of such municipality and, if applicable, post the plan on the Internet web site of the municipality.
- C.** Following adoption, the municipality shall regularly review and maintain such plan. The municipality may adopt such geographical, functional or other amendments to the plan or parts of the plan, in accordance with the provisions of this section, as it deems necessary. If the municipality fails to amend such a plan every five years, the chief elected official of the municipality shall submit a letter to the Commissioner of Housing that explains why such plan was not amended.

An Affordable Housing Plan Technical Assistance Grant is available through CT Department of Housing for assistance in developing the plan.

As required by law but, also as a best practice measure to make advancements in affordable housing opportunities in East Lyme, this plan recommends the update of East Lyme's Affordable Housing Plan with consideration to the following:

- **Education:** Greater efforts should be made to inform the public on existing programs such as those offered by Connecticut Housing Finance Authority (CHFA)
- **Incentives:** Incentives such as revolving loan funds for property owners to deed restricted housing that is priced naturally to be affordable, or a program to target acquisition and resale of tax delinquent or foreclosed properties as deed restricted affordable units. (The town could partner with a non-profit agency or a for-profit developer to identify, acquire, rehab and manage the sale of these properties.)
- **Incentive Housing Zones:** Proactive determination of where affordable housing would enhance an area and designation of an overlay zone that encourages this development. In 2007, the Connecticut General Assembly passed the Housing for Economic Growth Program (Public Act 07-4) to incentivize towns to plan proactively for affordable housing. It is a voluntary program in which a town can determine the location, size, composition and design of the housing.

The legislation authorizes the creation of Incentive Housing Zones (IHZ). As overlay zones for affordable housing, they only provide an additional option for the property and do not replace the underlying zoning. They can be mixed use as well as residential. This program was intended to encourage smart growth rather than environmentally irresponsible sprawl. It stipulates that the zone must have access to public transportation and existing or planned utilities and be located in a village or commercial center or a designated growth area. East Lyme currently has adopted three Incentive Housing Zones in downtown Niantic.

Deed Restricted Accessory Units: East Lyme should encourage that accessory units be deed restricted for affordable housing.

Inclusionary Zoning: Interest is growing in Connecticut in a type of zoning regulation that requires that developers of market-rate housing participate in satisfying the need for affordable housing. Inclusionary Zoning requires that developers include an affordable component in any residential development.

7.3 RECOMMENDATIONS

1. Evaluate the options for reducing future impact on water and soil resources, particularly in the northern end of town where there are larger remaining tracts of undeveloped land. Consider adjusting agricultural regulations that better encourage and support the preservation of agricultural land. (ie: expand allowable uses in agricultural zones such as events, B&Bs etc.)
2. Continue to promote cluster residential development as a means of creating permanent open space, preserving environmentally sensitive areas and encouraging creative subdivision design. Revisit Conservation Design Development (CDD) Zoning Regulations (Section 23) to improve the configuration and connectivity of open spaces within residential areas. Consider increasing open space requirements for subdivisions. Encourage the Planning Commission to utilize CDD Regulations whenever appropriate for applications and require subdivisions of less than 10-acres and/or 4-lots or less to abide by conservation design requirements.

3. Establish an Affordable Housing Subcommittee to identify and promote solutions for increasing the town's affordable housing units to at or above state requirements and complete an updated Affordable Housing Plan for East Lyme. The Plan of Conservation and Development Subcommittee notes that an effort of this importance requires the attention, creativity and enthusiasm of a dedicated committee. East Lyme's Affordable Housing Plan should be revised and updated by 2022. For purposes of cross reference, this POCD supports the current Affordable Housing Plan and strongly recommends that it be further developed and strengthened over the next two years to consider a proactive approach to affordable housing needs and identifying areas for affordable housing that are convenient to multiple modes of transportation, town services and amenities including but not limited to schools, community spaces such as recreational areas and stores. In commercial areas, any new construction of affordable housing is recommended to be mixed use housing with commercial space on the first floor and residential space on upper floors.
4. As commercial zoning space occupies approximately 5-6% of East Lyme's zoning map, and population studies have indicated that East Lyme's existing housing stock is sustainable for the future, residential use of currently commercially zoned property is strongly discouraged, except in the case of mixed-use development.
5. Consider additional protections in residential development areas near watersheds and aquifer recharge areas to ensure future development has minimal impact to the watershed/aquifer. Highest priority should be placed on maintaining undeveloped woodlands (particularly those surrounding Powers Lake, Bride Lake, Dodge Pond, Pattagansett Lake, Darrow Pond, Gorton Pond, Oswegatchie Hills, Stone's Ranch and the Yale property) and maintaining and expanding wetlands particularly those adjacent to Pattagansett Marsh.
6. Improve resiliency of existing and future residential development by adopting zoning regulations for 100-year stormwater collection, retention, and quality on any new development or redevelopment.
7. Evaluate permitted (either outright or by special permit) commercial uses within residential areas including:
 - a. Additional appropriate home business uses in residential districts abutting commercial districts, creating visually a transitional zone from commercial to residential.
 - b. Increased permissible agricultural uses in residential zones especially in cases where doing so will increase resiliency of food supply or support environmental health
8. Allow the construction of accessory apartments (attached or detached) on single-family lots to diversify housing offering without contributing to sprawl or reducing space available for commercial use, provided it does not change or compromise existing neighborhood character.
9. Consider a moratorium on sewer line extensions to new developments in residential zones beyond what has already been committed to.

References:

- Town of East Lyme Housing Profile, April 2019, Southeastern Connecticut Housing Alliance
- U.S. Census Bureau, American Community Survey data 2013-2017
- Regional POCD from Southeastern Connecticut Council of Governments, 2017
- US Census Bureau American Community Survey 2018:
<https://www.census.gov/quickfacts/fact/table/eastlymetownnewlondoncountyconnecticut/RTN130212>

Chapter 8 - Commercial and Industrial Development

8.1 Commercial & Industrial Zoning Districts

East Lyme has seven zoned districts that allow commercial development, in different forms. These zones represent approximately 5% of East Lyme's zoning map. As residential growth (which represents a higher cost of community services than agricultural/open space and commercial/industrial uses) continues and sentiment remains strong to preserve East Lyme's residential character, utilizing East Lyme's commercial and industrial districts efficiently will be crucial to prevent further rising tax costs to residents.

8.1.1 CA Commercial Districts

A commercial district along arterial routes. The purpose of this district is to provide for convenient neighborhood and community oriented development.

8.1.2 CB Commercial Districts:

A commercial district designed to represent the central business district of the Town, characterized by intensive commercial and related development. The purpose of this district is to concentrate the main commercial enterprises of the town.

8.1.3 CM Commercial Districts

Marine commercial district containing land with frontage on certain public waterways, and adjacent parcels. The purpose of this district is to encourage the development of new and the retention of existing water-dependent uses in those areas of the Town suitable for such development, consistent with the policies of the Connecticut Coastal Management Act.

8.1.4 LI Light Industrial Districts

A district suitable for a wide variety of commercial and light industrial uses, oriented essentially to major transportation facilities. The purpose of this district is to provide areas for industrial and commercial uses in an open setting that will not have objectionable influences on adjacent residential and commercial districts.

8.1.5 GPDD Gateway Planned Development District

Created with the purpose to coordinate development of properties under separate ownership and provide safeguards that one or another early development does not jeopardize maximum build-out. Promote high technology businesses and complementary uses that will broaden the town's tax base, provide employment for highly skilled workers and be in harmony with the underlying aquifer protection district.

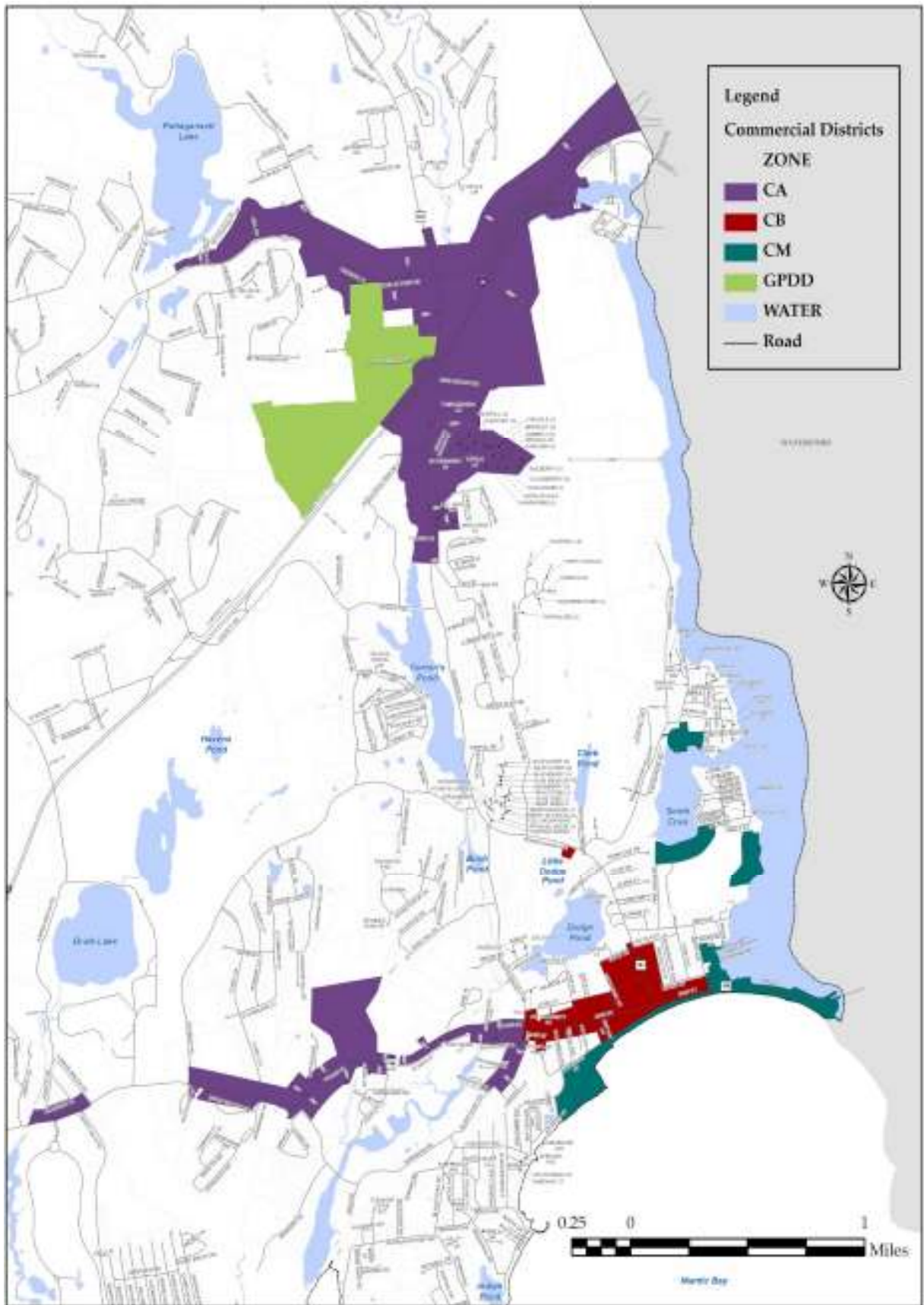
8.1.6 SU Special Use Districts

A district designed to accommodate highly specialized uses on large tracts of land in appropriate locations to be determined by the Zoning Commission.

8.1.7 SU-E Special Use Districts

A district designed to accommodate elderly housing uses on large tracts of land in appropriate locations to be determined by the Zoning Commission.

Figure 14 - Commercial Zoning Districts



Out of approximately 1,000 acres zoned for commercial or special use, approximately one-half has been developed for commercial use.

Sentiment remains strong from East Lyme residents to preserve the residential nature of town. To preserve the residential feel of town while avoiding increasing taxes, it is important that East Lyme utilize its limited commercial space efficiently and effectively to generate the tax revenues needed to support a highly residential town. (American Farmland Trust's Cost of Community Services Study referenced earlier in this plan under Chapter 3: Agricultural Spaces cites residential properties' tendency to cost more to a town than they bring in via tax revenue, making commercial, agricultural and open space necessary to offset those expenses.)

A concern about some of the areas of our commercial zones, particularly in the CA Commercial District in Flanders, is its proximity to the Pattagansett aquifer and other bodies of water that feed into the Niantic River (i.e.: Latimer Brook). Recommendations below include those that would encourage the safe development of these areas with protections of watershed and aquifer lands.

There have been some significant changes to East Lyme's commercial development since the 2009 POCD including implementations of a number of the POCD recommendations to the downtown Niantic CB Commercial District, the construction of multi-family housing units and Costco in the GPDD Gateway Planned Development District, new commercial structures along the arterial CA Commercial Districts along Routes 156, 161 and Boston Post Road, and additional multi-unit housing in the LI Light Industrial, CB and CA Commercial Districts zones.

The 2009 POCD outlined some larger themes that still apply to particular locations within the commercial zones including executing the vision of the GPDD Gateway Planned Development District, and the establishment of a village or historic district in Flanders.

Flanders Village is located at the geographic center of the Town at the intersection of two major arterials (Route 1 and Route 161) and two major interstate highways (I-95 and I-395). It is a central place in southeastern Connecticut and therefore has potential for filling a convenience niche oriented to people preferring to shop by car. The proximity of two schools, a variety of housing options and shopping plazas indicate a pedestrian customer base, which, with appropriate pedestrian amenities, could enhance the commercial district's economy.

While the majority of commercial properties within Flanders Village are commercial shopping plazas appropriate to car shopping, there is another small area off Boston Post Road and Church Lane which would be appropriate for park and pedestrian traffic. Across from the school and administrative building on Boston Post Road, approximately a quarter-mile in length, there are historic structures worthy of preservation and adaptive re-use as commercial buildings.

Designating an Historic District will help preserve the remaining houses and churches that give Flanders its character. Adding or widening sidewalks will strengthen the village character and unify the district for area residents.

LI Light Industrial Zones are located primarily in small industrial parks, located in the I-95/Exit 72 interchange area and along I-95 at Exit 74 heading south toward Society Road.

8.2 RECOMMENDATIONS

1. Limit future commercial development to existing commercially zoned areas. Support efficient use of commercial space by updating Zoning Regulations to allow multi-unit housing developments only as part of a mixed-use building (ie: first floor commercial, top floors residential) to ensure that commercially-zoned areas remain available for commercial uses.
2. Work with CT DOT and impacted property owners of the I-95 exit 74 project to proactively re-develop properties in that area to meet the needs of a growing and changing East Lyme. Ideas may include overlay districts, planned developments, mixed-use affordable housing (due to bus routes and availability of other amenities) and more.
3. Consider amending allowed uses, or uses by special permit, in the residential zones adjacent to CA and CB zones to allow for more flexibility in home-based business uses and businesses that can be operated out of residential structures, therefore preserving the character and feel, allowing a transition from commercial to residential zones and increasing the availability of commercial space in town, while not negatively impacting its residential feel. Alternatively, a new transitional zoning district could be considered with the same objectives.
4. Should East Lyme move to the proposed Public Safety Building at the Honeywell property on Route 156 and vacate the police building on Main Street, consider an RFP process so that this property at the center of Niantic Village is developed to best fit the needs of the downtown district.
5. Support agriculture as a commercial business through the expansion of allowable uses on agricultural lands (ie: Bed & Breakfast, events) and encourage the preservation of agricultural land to provide local crop supplies for associated businesses and tourism support, such as farm to table restaurants or events, farm tours etc. Encourage aquaculture as a commercial use in the CM Commercial Marine District. Clarify allowable use definitions for aquaculture in the CM Commercial Marine District Zoning Regulations.
6. Support efforts to develop Hazmat Spill Mitigation measures for the possible spill/chemical release of hazardous waste from Interstate-95, commercial and industrial facilities or through the use of firefighting foams, particularly those containing PFAS/PFOAS.
7. Consider a tree ordinance or application as one of Connecticut's Tree Cities via Tree City USA through the Arbor Foundation to increase the urban tree canopy in our commercial district. Partner with other organizations, such as East Lyme Public Trust Foundation and private property owners to plant trees in priority areas of East Lyme's Commercial Districts.
8. Consider a re-zone of the current Flanders commercial district on Boston Post Road from Chesterfield Road to the West as CB or given a new designation such as Flanders Village District FVD, with regulations that encourage redevelopment to improve upon the village concept. As in the existing CB zone, new buildings in this area should be located near the front of the parcel to emphasize both visibility for new businesses and enhancements for pedestrians and vehicles trying to access the property. Incentive-based zoning should encourage property owners to locate parking to the side or rear and abide by architectural regulations or recommendations which complement existing historic structures in the area and use various landscaping alternatives to compliment both the site and the structure.
9. Adopt controls over the number and location of curb cuts for access to commercial development. The abundance of vehicular access points to commercial properties in CA Commercial Districts has been documented to be a major contributor to traffic congestion. Additionally, the uncontrolled turning movements associated with these access points are a safety concern. Although little short of roadway improvements can be done to eliminate these conditions for existing development, controls over the number and location of curb cuts in new commercial development would limit further traffic problems in the future. As limiting curb cuts often requires partnership between private property owners, East Lyme should consider incentive programs such as one-time tax reductions to encourage shared entryways for the benefit of road maintenance and public safety.

10. Continue to support actions that strengthen Niantic's downtown CB Commercial District, where much progress in this area has been achieved since the 2009 POCD.
11. Refer to Chapter 13: Water and Wastewater Management for recommendations on salt application best practices for commercial parking lots.
12. Refer to Chapter 12: Clean Energy for recommendations on encouraging appropriately sited solar arrays in areas with existing impervious surfaces (i.e.: large commercial rooftops, parking lots)
13. Encourage appropriate agricultural uses in commercial and industrial zones such as hydroponics.

References:

- American Farmland Trust's Cost of Community Services Study, 2016
- Planning The Urban Forest: Ecology, Economy and Community Development, American Planning Association
- Connecticut Tree Cities: <https://portal.ct.gov/DEEP/Forestry/Urban-Forestry/Connecticut-Tree-Cities-USA>

Chapter 9 - Economic Development

The recommendations in this chapter are designed to promote a healthy, balanced, and sustainable year-round and seasonal economy that improves the quality of life for residents, stressing support for local businesses and workers.

9.1 Philosophy and Policy

In policy, the Town should encourage attractive, well-designed commercial and industrial activity in appropriate locations in order to provide convenient services for residents. As such, the expansion of existing businesses and establishment of new businesses in the village centers, in a manner that promotes a cohesive, pedestrian-friendly, mixed-use retail, service, and residential area should be encouraged. The Town should reserve commercial and industrial- only zones, while guarding against commercial sprawl and consider small neighborhood centers consisting of mixed-use development. In addition, the Town should encourage and develop opportunities for low-impact, home-based businesses.

East Lyme has the rich history of a mill, maritime, and retreat town economy. Dense development and aquaculture clustered near the coast while mills and agriculture flourished in the higher elevations. Commercial and Residential development continues, further filling valleys, and beginning to breach the ridgelines.

9.1.1 Current Spending and Taxes

Currently, spending is either mirroring or increasing faster than current tax revenue. This occasionally requires an annual increase of at least $\frac{1}{2}$ - 1 mil. The residential taxpayer bears an increasing burden to meet these obligations, providing about nine times the revenue contributed by all commercial and industrial sources.

Although industrial/commercial development and residential development are interrelated, for the purpose of economic development in East Lyme, it is important to recognize that commercial and industrial development will not fully defray tax increases due to residential growth. Industrial and commercial development increase jobs, which increase new residential growth; residential growth creates the critical customer base to encourage new commercial development.

As residential development occurs, it has the potential to result in increased student enrollments at a rate that exceeds the natural attrition rate. When this happens, the Town may experience the need to invest in new capital facilities for education which impacts debt spending and usually results in increased mil rates. Conversely, residential growth in East Lyme changes the Town's demographics and increases the Town's population. This increase in population typically results in an increased demand for commercial services by the local populous. It is important to note, while commercial and industrial development will not fully defray tax increases due to residential growth, development of commercial and industrial properties will offset the extreme increases in the mil rate. Thus, providing the Town with time needed to adjust to potential fiscal constraints.

To fully expand the Town's economic development capacity, it is important to attract those industries and businesses that yield increased revenue and high property value. Commercial development which generates increased tax revenue is a result of market and demographics. Commercial properties, which have road frontage and good infrastructure, have a high resale value and should be encouraged. Modifying regulations to entice new economic growth must be carefully evaluated. Regulations which lessen the requirements for landscaping, aesthetic improvements and architectural standards may actually detract high quality development from locating within East Lyme. Businesses locate where there is a strong customer base. Customers are drawn to areas which provide an attractive environment, efficient points of access and parking.

9.2 Economic Sustainability

Sustainability is also a key component to creating a thriving economic environment. Sustainable CT is a voluntary certification program and Connecticut resource that assists towns in planning for that future. Sustainable CT communities strive to be thriving, resilient, collaborative, and forward-looking. They equitably promote the health and well-being of current and future residents, and they respect the finite capacity of the natural environment. Additionally, there is an opportunity for grant funding through participation in the program. East Lyme is currently certified at the Bronze level but should look to achieve Silver or Gold certification in the future.

Recommendations from the Sustainable CT program not only focus on environmental sustainability, but on creating a diverse business base which is rich in cultural value and supportive of the arts which has been shown through their research to strengthen the local economy and improve sense of place, to positively impact property values.

In the Fall of 2010 University of Connecticut Community Research and Design Collaborative Director and Associate Professor, Peter Miniutti, along with research specialists Joe Bivona and Cynthia Reynolds conducted a Land of Unique Values (LUV) Study (Appendix C). The LUV Study divided the Town into eight (8) well-defined neighborhoods. The land north of Interstate 95, known as Flanders has three neighborhoods. The lands known as Niantic, which are south of Interstate 95 have 5 neighborhoods. The LUV Study identifies the existing town neighborhoods and their unique features to be the town's most valuable assets, see Figure 11 below. Of the eight (8) neighborhoods, three (3) provide the most economic development opportunity; Flanders: North (Northern Flanders), Flanders: East (Flanders Village), and Niantic: Central (downtown Niantic).

Figure 15 - Land of Unique Value (LUV) Study Neighborhoods

Introduction: Existing Neighborhoods East Lyme's #1 Resource



9.2.1 Northern Flanders

Composed of low density residential and agricultural uses. Agriculture is the area's predominant cultural aesthetic of providing scenic views, historic awareness, and economic diversity. The rural and agricultural character is highly valued by citizens and visitors. Residential development is beginning to overtake this portion of town, replacing the agricultural/woodland vernacular with generic subdivisions. This district presents a rare opportunity to protect large tracts of natural ecosystems before they are lost or adversely impacted by development. Narrow, winding roads are characteristic of this area and help to keep traffic flow at safe speeds.

9.2.2 Flanders Village

Composed of low density residential and commercial uses, the area is dominated by sprawled residential subdivisions and strip-development patterns which create an auto centric community. Flanders Four Corners will never be a quaint "New England" downtown as recommended by Smart Growth principles without a complete overhaul; an approach that is impractical in this setting. Instead, this area provides an opportunity to create a new version of a downtown, which celebrates and respects both existing development and pedestrian needs.

Rather than attempting to redevelop the entire zone, enhancing and creating connections between various land uses, allowing for multi-modal transportation, redeveloping key parcels, and infilling others into walkable nodes within the larger framework will help form a sense of place within a larger space.

The methods for doing this include streetscape improvements to bring a sense of unity and wayfinding, and integration of sustainable stormwater practices as elements of the infrastructure. The use of infill as an opportunity to engender pedestrian friendly nodes, and in some cases redevelopment to create gateway nodes provide a stronger presence on the street itself.

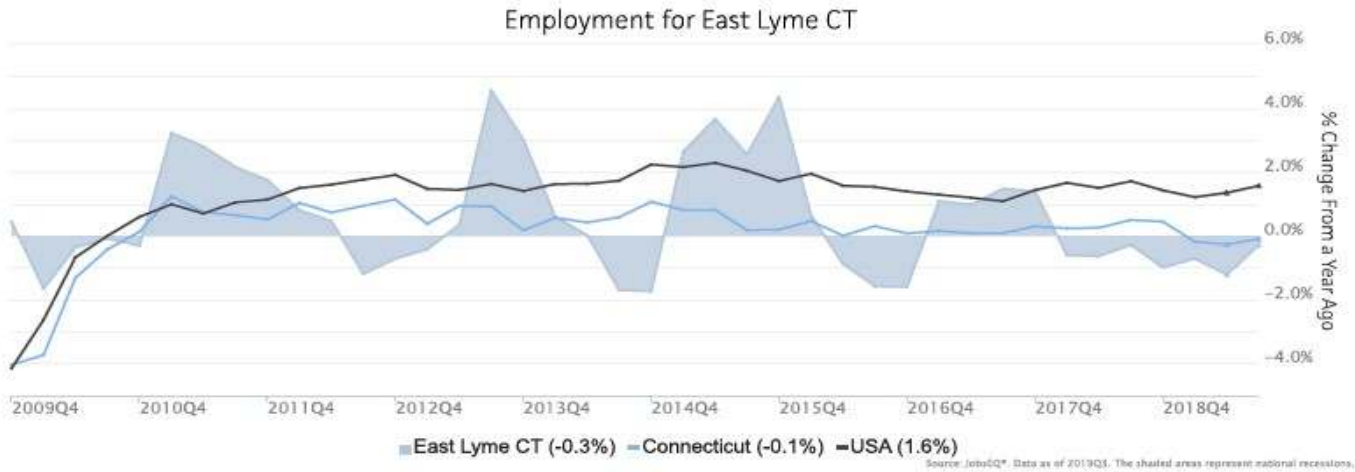
9.2.3 Niantic Village

Composed of medium density residential and commercial uses, the existing Niantic Downtown is a vibrant community, which could benefit from strategic infill, with any new development connecting to existing infrastructure as much as possible. It has dense development and an attractive streetscape which promotes walking from shop to shop. It also provides dense residential neighborhoods and easy access to Long Island Sound recreation. This area presents many opportunities to successfully utilize multimodal transportation such as buses or trolleys. In general, the existing fabric and architectural character demonstrates a healthy community, though new development must be designed to reflect the characteristics of the historic zones and successful pieces of the district. Main Street is located right on the Long Island Sound yet is disconnected from it by the railroad tracks. The portion of Main Street going easterly towards the marinas and the mouth of the Niantic River is dominated by narrow sidewalks and almost a total lack of trees.

9.3 Employment Trends

As of the third quarter (Q3) of 2019, total employment for East Lyme was 5,979 (based on a four-quarter moving average). Over the year ending 2019 Q3, employment declined 0.3% in the region.

Figure 16 - Employment Trends

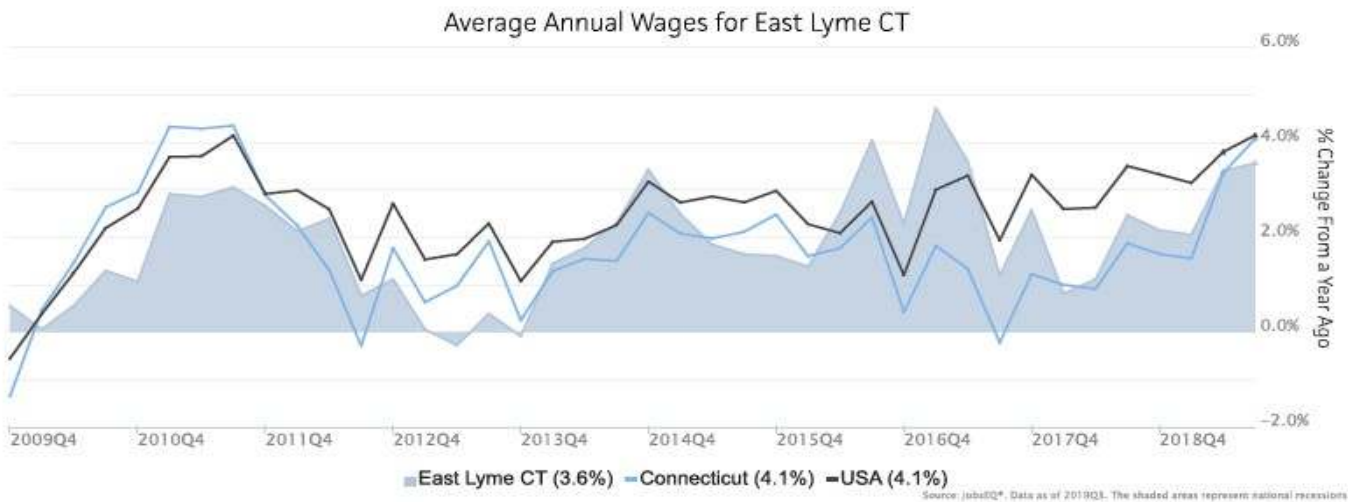


Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2019Q1 with preliminary estimates updated to 2019Q3.

9.4 Wage Trends

The average worker in East Lyme earned annual wages of \$56,118 as of 2019 Q3. Average annual wages per worker increased 3.6% in the region over the preceding four quarters. For comparison purposes, annual average wages were \$57,681 in the nation as of 2019 Q3.

Figure 17 - Wage Trends



Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2019Q1 with preliminary estimates updated to 2019Q3.

9.4.1 Cost of Living Index

The Cost of Living Index estimates the relative price levels for consumer goods and services. When applied to wages and salaries, the result is a measure of relative purchasing power. The cost of living is 19.4% higher in East Lyme than the U.S. average.

Figure 18 - Cost of Living East Lyme vs Connecticut

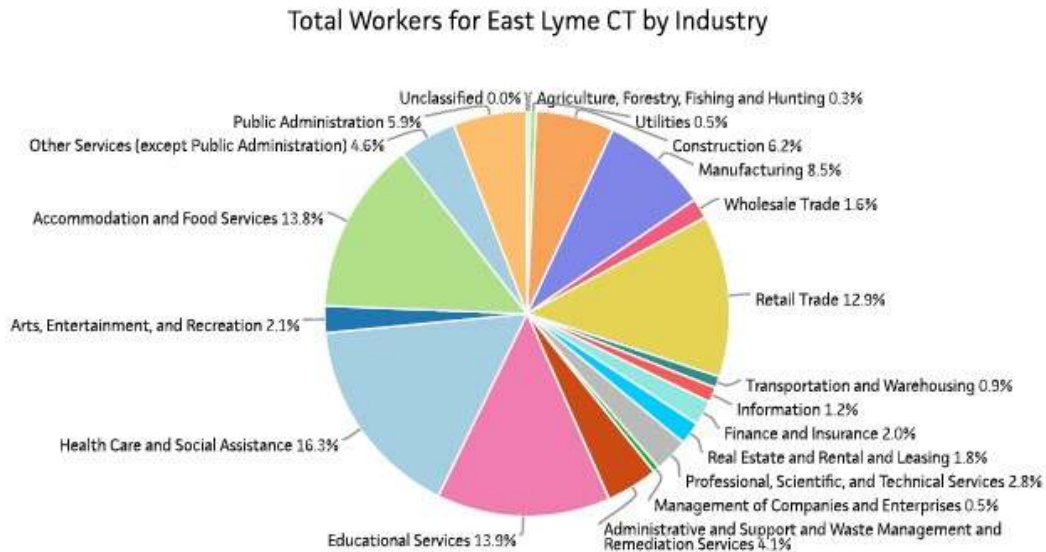
	Cost of Living Information		
	Annual Average Salary	Cost of Living Index (Base US)	US Purchasing Power
East Lyme CT	\$56,118	119.4	\$46,981
Connecticut	\$68,908	125.7	\$54,810
USA	\$57,681	100.0	\$57,681

Source: [JobsEQ®](#)
 Data as of 2019Q3
 Cost of Living per C2ER, data as of 2019q2, imputed by Chmura where necessary.

9.5 Commercial Industries

According to an Economic Overview prepared by the Southeastern Connecticut Enterprise Region (seCTer) in January 2020, the largest industry sector in East Lyme is Health Care and Social Assistance, which employs 972 workers. The next-largest sectors in the Town are Educational Services (830 workers) and Accommodation and Food Services (827).

Figure 19 - Industry Clusters Q3 2019



Source: [JobsEQ®](#), Data as of 2019Q3

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2019Q1 with preliminary estimates updated to 2019Q3.

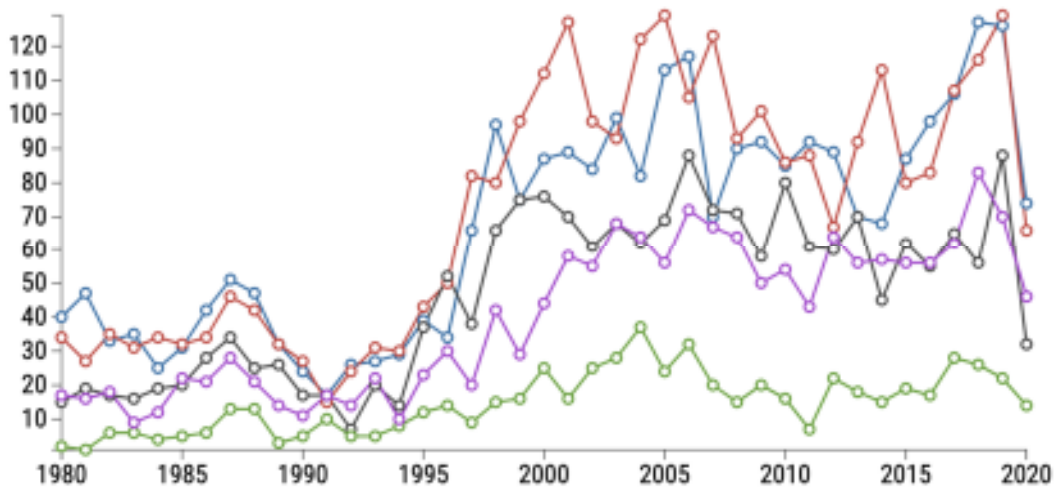
According to the CT Data Collaborative, in the 10 years since the last Plan of Conservation and Development, 1,022 new business entities have formed in East Lyme (see Figure 19). This does not indicate the total number of businesses, but the total number formed. Growth as illustrated by business entities formed is higher in East

Lyme than its bordering towns, with exception of Waterford, where 5 more entities were formed over the same period.

Figure 20 - New Business Entities Formed

	East Lyme	Old Lyme	Waterford	Montville	Salem
Total All Business Entities	1,022	674 (-34.1%)	1,027 (+0.5%)	647 (-36.7%)	204 (-80.0%)
Avg./year	93	61 (-34.1%)	93 (+0.5%)	59 (-36.7%)	19 (-80.0%)

■ East Lyme
 ■ Waterford
 ■ Old Lyme
 ■ Salem
 ■ Montville



entities
East

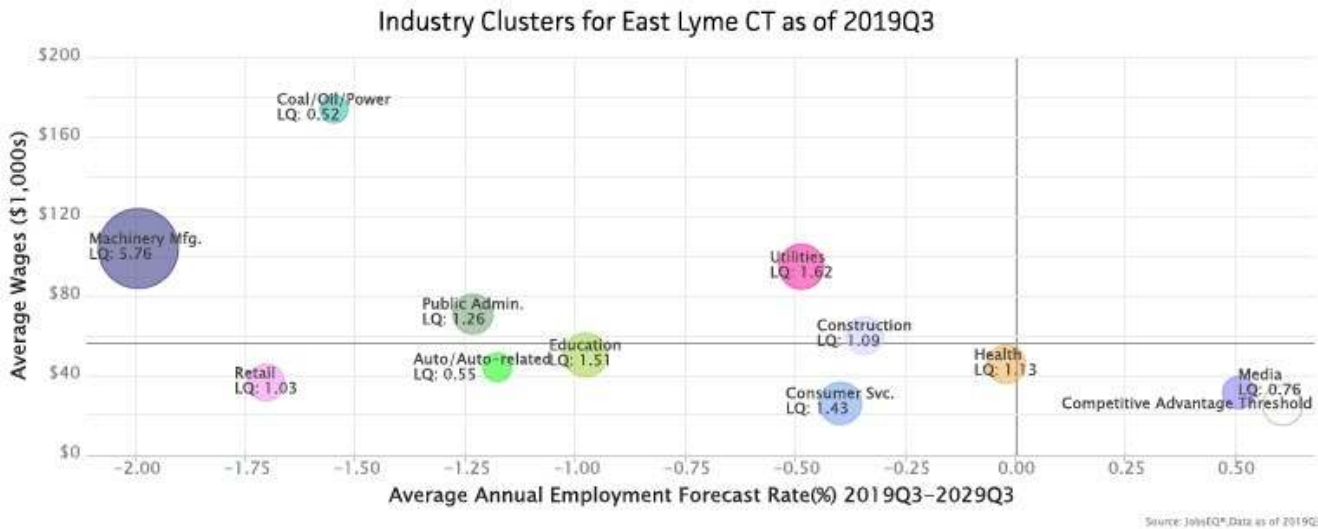
Waterford Old Lyme, Salem & Montville 1980-2020
Source: <http://ctbusiness.ctdata.org/#/compare-towns>

Business
formed in
Lyme,

9.5.2 Industry Clusters

A cluster is a geographic concentration of interrelated industries or occupations. The industry cluster in East Lyme with the highest relative concentration is Machinery Manufacturing with a location quotient of 5.76. This cluster employs 487 workers in the region with an average wage of \$103,832. Employment in the Machinery Manufacturing cluster is projected to contract in the region about 2.0% per year over the next ten years.

Figure 21 - 2019 Q3 Industry Clusters



Location quotient and average wage data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics, imputed where necessary, and updated through 2019Q1 with preliminary estimates updated to 2019Q3. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

9.5.3 Occupations

Sectors in East Lyme with the highest average wages per worker are Utilities (\$130,729), Manufacturing (\$102,262) and Management of Companies and Enterprises (\$104,152). Total employment in East Lyme was 5,979 as of Q3 in 2019. Demographics indicate that the town has a civilian labor force of 9,331 with a participation rate of 59%. Additionally, of individuals 25-64 in East Lyme, 45.2% have a bachelor's degree or higher. (Nationwide average is 32.3%).

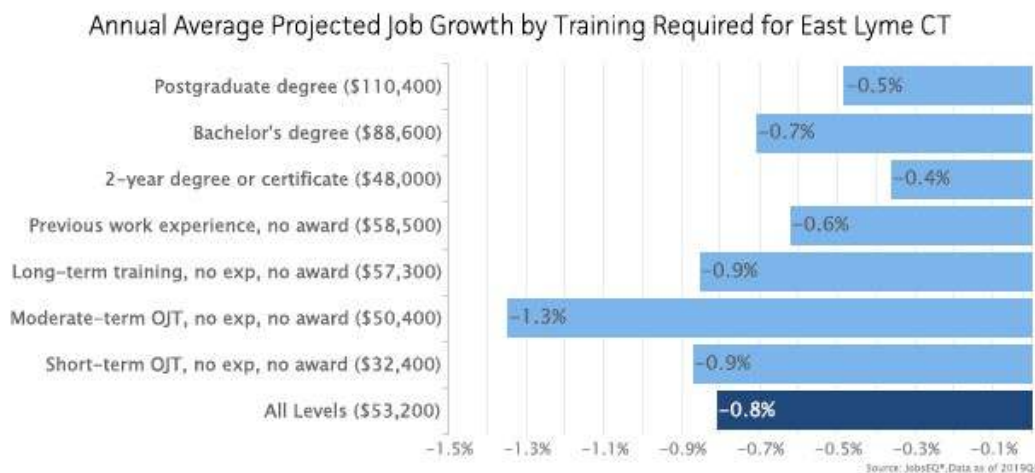
According to the Economic Overview prepared by the seCTer in January 2020, it is estimated employment in East Lyme is projected to contract by 48 jobs in the next year. This does not account for the economic impact of the current COVID-19 Pandemic. The fastest growing sector in the region is expected to be Information with a half percent (+0.5%) year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Health Care and Social Assistance, Arts, Entertainment, and Recreation, and Information.

Regional sectors with the best job growth (or most moderate job losses) over the last 5 years are Manufacturing (+125 jobs), Administrative and Support and Waste Management and Remediation Services (+56), and Health Care and Social Assistance (+33).

9.5.4 Education Levels

Expected growth rates for occupations vary by the education and training required. While all employment in East Lyme is projected to contract 0.8% over the next ten years, occupations typically requiring a postgraduate degree are expected to contract 0.5% per year, those requiring a bachelor's degree are forecast to contract 0.7% per year, and occupations typically needing a 2-year degree or certificate are expected to contract 0.4% per year.

Figure 22 - Education Levels



Employment by occupation data are estimates as of 2019Q3. Education levels of occupations are based on BLS assignments. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

A vibrant and diverse economic landscape in East Lyme will help keep lower tax rates, provide the convenience of a variety of amenities to residents, and enrich the local community through added cultural value. It's important that when planning to achieve successful economic development, East Lyme be mindful of sustainability and work to create a local economy that is resilient and able to endure over a long period.

9.6 RECOMMENDATIONS

1. Complete the following Sustainable CT Actions:
 - a. Map Tourism Destinations (possible partnership with Niantic Main Street and Discover East Lyme to complete)
 - b. Support Arts and Creative Culture and Business
 - c. Establish a Town Poet Laureate
 - d. Include arts and culture in publicly available municipal marketing
 - e. Commit dedicated funding to the arts (events, programs, organizations, etc.)
 - f. Establish a Percent for Art/Public Art Program
 - g. Establish a Cultural Office or Arts and Culture Department
 - h. Establish and designate/appoint an Arts and Culture Liaison or Artist-in-Residence to municipality
 - i. Establish a Cultural District (CT Public Act No. 19-143) - A Cultural District is a specific area of a city or town identified by the municipality that has a number of cultural facilities, activities and/or assets – both for profit and nonprofit. It is a walkable, compact area that is easy for visitors to recognize. It is a center of cultural activities – artistic and economic. It is a place in your city/town where community members congregate, and visitors may enjoy those places that make a community special. Because each community is unique, each Cultural District will look different.
 - j. Develop a Placemaking Plan - Include the arts by providing the arts a seat at the community development table. In other words, when focusing on a new real estate development, transit

opportunities, safety issues, public health crises, or other issues that impact how a place affects a resident's life, the arts should be one of the tools considered. Examples:

- i. Real Estate Development – understanding arts and cultural assets to market to developers & buyers
- ii. Transit Opportunities – Artist-designed bicycle racks, bus shelters, walkways, streetscapes, signage/wayfinding, public art
- iii. Beautification Projects – Integrate art and artwork to improve streetscapes, activate commercial/retail vacancies, create a sense of place
- iv. Safety Issues – Public art to calm traffic, reduce crime and blight, and build community
- v. Public Health Crises & Issues – Artists and artwork raise awareness (murals, signs, installations) of public health issues and can be utilized for coping, improving mental health, combatting depression, and aiding in recovery

2. Strengthen the Northern Flanders neighborhood through the following:

- a. Agricultural Lands; Lands in Northern Flanders could be zoned agricultural. Agricultural lands are technically commercial and as such should be preserved and enhanced. Consider allowing residential development in Northern Flanders by special permit only or permitting additional accessory uses such as Farm to Table Events, Weddings, Bed and Breakfasts, and other Agri-Tourism industries.
- b. Develop an Agricultural “hub” for the sale of locally and Connecticut grown products. See Chapter 3: Agricultural Resources for further detail on a sustainable agricultural hub.
- c. Encourage the conservation of agricultural character which can be accomplished by maintaining views of farm fields from roads and continued protection of ecological resources as specified in Conservation Development by Design Zoning & Subdivision Regulations.
- d. Maintain the Hathaway Property as either agricultural land and/or public open space with access to Pattagansett Lake.

3. Enhance Niantic and Flanders Villages by taking the following actions:

- a. Continue to encourage a range of mixed land uses to happen in commercial zones and along state/collector roads. Take advantage of existing infrastructure by encouraging adaptive reuse of buildings and sites. New commercial buildings should be located close to the road, with parking on the side, or rear of the plot.
- b. Upgrade the visual quality of Flanders through art, the installation of sidewalks, street trees and planters, grass median strips and identifiable crosswalks.
- c. Encourage property owners through an incentive program to upgrade their signs, buildings and parking areas to create a positive image for the passing automobile driver.
- d. Strengthen Main St. by celebrating its proximity to the Sound. Continue to expand and improve visual access to the coast.
- e. Counter strip development by redeveloping large parking areas into more efficient layouts and shared-use lots, curb cuts can be eliminated, and additional structures erected to enhance the edge conditions.
- f. Enhance wayfinding - Develop a wayfinding system to marinas and beaches by utilizing creative techniques such as painting utility poles, locating public art, and placing unique street lighting. Exploration of alternate wayfinding techniques is advised.

4. Promote home-based businesses and transition from strip development to mixed uses along state roads - specifically routes 156, 161 and Boston Post Road corridors. One specific aspect of the mixed-

use concept that is catching on is the “live/work unit”. Live/work units are designed for both residential and commercial uses, often with the owners conducting business on the first floor while living upstairs.

5. Promote compatible business in appropriate locations to foster local employment and opportunities, a favorable tax base, the provision of goods and services for local residents. Build a stronger year-round economy through continued support of downtown as a year-round business and employment center.
6. Encourage the expansion of existing year-round businesses and establishment of new year-round businesses in downtown Niantic, in a manner that promotes a cohesive, pedestrian-friendly, mixed-use retail, service, and residential area through Village District Plans.
7. Provide improved public services, particularly in downtown areas.
8. Encourage and develop opportunities for low-impact, home-based businesses. Support the development of small businesses that provide the goods and services for increasing energy efficiency and utilizing alternative energies.
9. Support improved environmental sustainability efforts by commercial businesses ie: energy efficiency upgrades, installation of rooftop solar, water conservation measures etc., to reduce operational costs for building owners and decrease demand on East Lyme’s existing infrastructure.
10. Support agriculture and aquaculture as important economic activities as a means to help assure a more sustainable food and resource supply and as a critical component of the traditional landscapes.
11. Continue to support and promote sustainable fisheries and the marine industry.
12. Incorporate visual markers that reflect the interconnectivity between Flanders and Niantic along Route 161.
13. Provide incentives to promote architectural designs for commercial developments and remodeling of existing buildings.
14. Seek funding for economic development and infrastructure projects as well as investigate various other state, federal and private grant programs which might be available for special projects. Partnership with a professional grant writer is recommended.
15. Ensure that developers fund their share of improvements whenever possible.

References:

- CT Data Collaborative: CTBusiness.CTData.org (a partnership with the Office of the Connecticut Secretary of State) Economic
- Overview: East Lyme and Niantic, CT Presented by the Southeastern Connecticut Enterprise Region (seCTer), January 3, 2020
- Lands of Unique Value Study, East Lyme, CT Fall 2009

Chapter 10 - Community Spaces & Recreation

10.1 Parks and Recreation

The Town of East Lyme owns and operates a wide array of active and passive recreational facilities. East Lyme Parks & Recreation currently manages over 200 acres of recreational space including athletic fields, beach areas, parks, the high school swimming pool, walking trails, picnic areas and open space. Of the 200 acres of recreational space, 140 acres are currently dedicated to active playing fields.

Three main waterfront areas fall under the Parks & Recreation Department: McCook's Point Park and Beach, Hole in the Wall Beach, and Cini Park / Amtrak Beach along with the Niantic Bay Boardwalk, mooring areas and boat launches.

The diverse array of recreational facilities is complemented by a broad selection of programmed and supervised recreational activities, undertaken by the Parks and Recreation Department designed to appeal to all age groups and interests. According to the community questionnaire launched for the preparation of this document, the beaches, recreational fields and the boardwalk rank as #1, #3 and #4 as the town services that the residents use the most.

Current Recreational Facilities Managed by Parks & Recreation

- 19 Parks and Recreation Athletic Fields
- McCook's Point Park and Beach
- Hole in the Wall Beach
- Niantic Bay Boardwalk
- Cini Park
- Amtrak Beach
- 19 Parks
- East Lyme High School Swimming Pool
- Walking Trails, Picnic Areas and Open Space Areas including Darrow Pond

Of the above; 140-acres are currently dedicated to active playing fields, which are highly used for various organized programs and activities. This results in approximately 700 hours of annual usage per field throughout town.

Historic and conventional standards for recommended minimum park and recreation areas in a town range from 10-15 acres per 1000 residents, depending on the reference source. Using these conventional standards, a desirable parks and recreation acreage would be approximately 200-285 acres. These areas would include playgrounds, fields, parks, walking paths, recreational complexes and special purpose areas such as beaches and the boardwalk. While the acres per population-type standard is guidance to measure against, it should not outweigh the desires and resources of the community and its priorities.

Community support for recreational spaces in East Lyme is strong. As such, a number of investments in community recreational spaces have been made since the 2009 POCD including but not limited to:

- The addition of a synthetic turf field at the high school
- Successful fundraising for the development of the Miracle League Field
- Enhanced restroom facilities at the town's beaches
- A band shell large tent at McCook's Point Park
- Construction of pickleball facilities at Samuel Peretz Field at Bridebook Park

- A new park at the intersection of Main Street and Pennsylvania Avenue in Niantic
- Renovated basketball courts at Samuel Peretz Field at Briedbrook Park

The 2020 community questionnaire showed that many East Lyme residents were generally satisfied with the town's facilities and its programs, yet improvements could be made. According to the questionnaire, the town's beaches, the boardwalk and McCooks Park are the public places that are valued the most in the Town of East Lyme. The recommendations set forth in this document aim to maintain and enhance existing recreational facilities to meet the ever-increasing needs of the residents and visitors.

10.2 East Lyme Community Center

Located at 41 Society Road in Niantic, the East Lyme Community Center currently houses the East Lyme Public Library, Senior Center, Youth Center, Parks and Recreation Department, East Lyme Registrar's Office and meeting rooms for community use. Common spaces in the community center are utilized for Parks & Recreation programming, voting, and by registration for private community groups (ie: Scout Troops, volunteer organization) in addition to the programming taking place through the library, senior center and youth center.

Bus service is available to seniors. The Community Center is located within walking distance to East Lyme Middle School, Lillie B. Haynes School, baseball and football fields and Brookside Farm Museum. Wooded walking trails are located behind the Community Center. Due to its centralized location in town, proximity to Interstate-95, and walkable other destinations, the Community Center is an already well-utilized building that could be further enjoyed as a centralized hub offering a variety of activities and services.

Some modifications to the building as well as improvements to area walkability could extend the capacity and accessibility of the Community Center for the benefit of East Lyme residents and others. Space concerns have been voiced by a number of organizations currently housed in the Community Center including the Senior Center and East Lyme Library. A lack of storage space was also expressed as an issue to address, to better hold the supplies required to operate and maintain the numerous programs that run at the center.

The Town should consider further development and increased utilization of this site. With the Community Center, Brookside Farm, the Middle School Campus, Gorton Pond, the ball fields, a potential connection to Midway Plaza, etc. it could become a very attractive "town center" for both the local population and tourists. Listed below are recommendations of projects that can be studied and implemented at the Community Center.

10.3 East Lyme Public Library

East Lyme's first library was founded in 1888 and was called the Niantic Library and Reading Room association. It's operated in many locations and under a couple of names but has been located in the Community Center since 1990. The East Lyme Public Library is not a municipal department, rather it is a public/private association with a federal 501c3 non-profit designation. It partners and reports to the East Lyme Board of Selectmen and Board of Finance for funding and some budgetary oversight but is closely managed and operated by an independent professional staff and leadership team. It is governed independently by the East Lyme Public Library Board of Trustees with additional support and input from the East Lyme Library Foundation (which also provides approximately \$50,000 annually in support).

A Library and Community Center Building Report was conducted with consultants commissioned by ELPL in 2005, providing a number of recommendations that have not been enacted and are still relevant today. According to the library's 2018-2019 usage report, there were 109,674 visits to the library. Total library circulation was over 155,000 and circulation includes books, magazines, newspapers, museum passes, digital downloads, audio books, videos and microfilm.

In addition to items available in circulation, the library also sponsors numerous innovative programming for all ages for children, tweens/teens and adults such as book clubs, summer reading programs, hosted speakers, and children story time. Also noted in the library's 2018-2019 usage report, 2,207 people attended adult programs, 472 attended young adult programs and 3,210 attended children's programs.

Space and infrastructure concerns by the library are chronic and longstanding. A careful evaluation and analysis of these needs are well described and summarized by the Library and Community Center Building Report from 2005 (prepared by consultants commissioned by the ELPL, Lushington Associates). Most of the facility critique and recommendations provided are still relevant today and have only become more urgently needed.

These recommendations include: expansion of the children's facilities, creation and expansion of middle school and young adult area outside of the children's facilities, expansion of open and closed stack storage area, creation of a meeting room that could hold 70-150 people to serve current and expand for future library programming for all ages.

As relevant to this document, the East Lyme Public Library has the following strategic goals:

- **Programming:** Continue to create and offer free programs that engage, educate, delight and inspire our patrons and enhance their lives.
- **Collections & Services:** Make the library a go-to center for knowledge, literature, visual media, connectivity, creative tools and physical space enhanced by expert professional staff and excellent customer service.
- **Partnering:** Partner with the community and business organizations to offer programs that meet the needs of their members.
- **Technology:** Help community members learn and apply emerging technologies to support collaboration, employability, digital literacy, social/civic communication and quality of life.
- **Space:** Upgrade/redesign the physical spaces of the library to better support emerging and evolving uses such as: community meetings, small group study, tutoring, quiet spaces, internet access, technology skills acquisition and other work-related activities.

10.4 Educational Spaces

The strength of East Lyme Public Schools has historically added to the attractiveness of East Lyme as a place of residence. East Lyme Public Schools currently operates three elementary schools (Niantic Center School, Lillie B. Haynes School, Flanders School), East Lyme Middle School and East Lyme High School. The original structures of these schools' range in age from 18 to 84 years. According to the community questionnaire developed to receive input for this POCD, the schools were ranked as the number one reason that questionnaire participants listed for choosing to live in East Lyme. Maintaining its strength is important in relation to the value of existing properties or new development.

Approximately 5% of East Lyme is zoned for commercial uses. The remaining developable land (minus open space, municipal facilities etc.) is zoned for residential use. Potential increase in residential development may require the Town to consider expansion of its school facilities.

The Board of Education's budget represents a major portion (66%) of the Town's overall budget. Planning for future expenditures must preserve the assets of a strong system, as well as minimize increased costs, which would adversely impact tax rates. In addition, future budgets must provide for continued maintenance of these facilities (indoor and outdoor) to avoid any problems that may cause shutdowns or lack of accessibility to programs or instruction for the students.

There is a strong desire for East Lyme to maintain its residential pattern of development. There is an inter-relationship between the quality of the school system and residential property values. If residential property values do not remain high, it may be difficult to sustain a quality educational program. If a quality educational program is not maintained, residential property values may slowly decline. A 2018 study used for a redistricting plan for the elementary schools projected that Flanders would be at 87% capacity, LB Haynes would be at 80% capacity and the Niantic Center would be at 88% capacity for the 2019-20 school year. The redistricting plan that was approved led to a readjustment of student population at the three elementary schools for the 2019-2020 school year.

Any future redistricting plans should recognize that, although parents have substantial pride in the schools their children attend and resist reassignment plans, East Lyme schools cannot be defined as neighborhood schools; only a very small percentage of students are able to walk to school and others are transported to buildings that are not the closest to their homes.

The middle school enrollment is expected to decline in 2020-2021, with future varying rates of recovery estimating an increase in school population over the following eight years varying from 4.7% to 16.2%. Currently, the middle school is below capacity. The current student/teacher ratio at the middle school is 12:1.

The estimates for the high school population show a possibility of a slight increase in school population (5.9%) to a slight decrease in population (4.4%) over the next eight years. Currently, the high school is maintaining a reasonable student population level with a student/teacher ratio of 11:1.

In addition to on-campus facilities, there are a number of other area amenities located adjacent or in close proximity to East Lyme's Schools. Improved walkability around schools not only increases safety but, could provide easier accessibility in the before/after school hours for both students and community members.

10.5 Town Hall

The Community Center relieved overcrowding in the Town Hall by removing certain recreational and meeting activities from the Town Hall to the center.

Many of the interior offices have been built in rooms designated as meeting rooms and do not have windows or easy access. The 2009 POCD stated that future growth of Town departments, an increased need for record storage and near-capacity use of meeting spaces (Community Center and school meeting spaces are also near capacity) needed to be studied. Towards that end, Town Hall personnel have been digitizing documents in order to reduce paper and create more space. The capital expenditure for the new police station location may result in movement of offices from the Town Hall to this new location. Another issue related to the Town Hall is the fact that it is not fully handicapped accessible, as required by law. For instance, people in wheelchairs can get up the ramp to the entrance door by themselves but, cannot get through the door by themselves. The doors can be a barrier to handicapped people who are not in wheelchairs.

Sustainable CT is a voluntary certification program and Connecticut resource that assists towns in planning for that future. Sustainable CT communities strive to be thriving, resilient, collaborative and forward looking. They equitably promote the health and well-being of current and future resources, and they respect the finite capacity of the natural environment. Additionally, there is an opportunity for grant funding through participation in the program. East Lyme is currently certified at the bronze level but should achieve silver or gold certification in the future. The sustainable CT certification program should be considered as a resource for meeting energy development goals in municipal buildings. This would comprise reduction of energy use, achieving high energy performance for individual buildings and increasing use of renewable energy in municipal buildings.

10.6 RECOMMENDATIONS

10.6.1 Parks and Recreation

1. Both the Parks and Recreation Department and the Board of Education should update their playing field inventories and develop a plan in partnership to address potential needs for locations of new fields and management of existing fields (i.e.: the construction of an additional synthetic turf field.)
2. Continue to recognize the need for additional recreation fields. The Parks and Recreation Department should identify and develop locations, which can increase the inventory of multi-use recreational playing fields; such as Roxbury Road, Samuel Peretz Park at Bridebrook and areas north of Interstate 95. These areas should be identified and developed in conjunction with Open Space, Natural, and Historical Resources.

3. Continue to recognize the need for additional passive recreational areas. The Parks and Recreation Department should identify and develop locations which can increase the passive recreational facilities of the town; such as upgrading the Darrow Pond property, the Bobrow property and exploring the possibility of developing an area exclusively available for dogs to roam off leash in a maintained area for developing a park setting preferably on open space land. The areas north of I-95 can also be investigated as a location for passive recreational areas. These areas should be identified and developed in conjunction with other chapters in this POCD such as Open Space, Natural, and Historical Resources.
4. Investigate improving the Darrow Pond property to include upgrades to the Hiking Trails, Handicap Accessible Canoe/Kayak Launches for access to the Pond, Designated Trails for Biking, Restroom Facility, Disc Golf, Picnic Areas and other passive recreational activities.
5. The Parks and Recreation Department should investigate improvements to McCook Point Park to include; a new Playground Area to replace one of the existing areas that was erected in the early to mid-1990's. Increased usage of the Pavilion and the Tent at McCook from various groups and outings places a need for an additional covered Pavilion area.
6. Collect data on the need for parking solutions at all Parks and Recreation facilities to determine if more parking spaces are needed.
7. Consider public exercise stations throughout the town and its parks.
8. Consider allowing permits for food truck vendors at appropriate Parks and Recreation locations as a means of providing food and beverage amenities to residents while also creating a revenue stream. This recommendation is not to encourage the replacement or create competition for food stands run by various town-run athletic leagues as a means of fundraising. Food truck permits should be issued only for locations / days in which an existing fundraising food stand is not in operation.
9. Consider additional investments in ways to access the water at Cini Park along the Niantic River including updating the canoe/kayak launch for improved accessibility and investigating the feasibility of transient docking for boaters.
10. Implement best practices in organic landscaping with minimal fertilization on all town-owned lands to improve the health and safety of residents, and protect water quality, particularly in watershed areas.
11. Through the joint efforts of the Natural Resources Commission, the Parks and Recreation Commission and the Planning Commission, the Town should conduct an updated open space study and ten-year needs assessment for recreational facilities, focusing on land areas which would be suitable for sports fields, recreational development, greenway corridors for bicycles and pedestrians and preservation of critical land areas, such as agricultural land areas along Latimer Brook, Niantic River or properties which enhance the connective open space property of the Town of East Lyme.
12. Support the preservation of East Lyme's farmland and avoid installation of any future recreational field on existing farmlands.

10.6.2 Community Center

1. A study of open spaces within the Community Center, especially in the main entrance area, should be made to determine if storage areas could be added in these spaces at a reasonable cost. Assistance might be obtained from users of the Center in carrying out any construction and installation work required.
2. Continue evaluation to determine if the Community Center is nearing capacity in regard to office and meeting space and whether expansion or shifting locations of current offices is needed. Expansion plans could include a second story or additional wing.

3. Improve walkability to the Community Center. Consider expanding sidewalks and bike/hike trails which could be located to make the Community Center more accessible to townspeople, especially youth, who do not have access to a vehicle. If needed, additional bike racks should be installed at the community center. Accessibility can be improved with paths linking the Community Center northbound to Flanders including to Flanders School and East Lyme High School as well as connecting to existing pathways in Downtown Niantic. Investigate the potential for pathways to the Midway Plaza area as well.
4. Look to utilize existing Community Center space more efficiently by identifying the potential for multi-use opportunities. (i.e.: Youth Center during the day when children are at school and Senior Center in the evenings when programming is complete)
5. The open space in the main entrance area of the Community Center is largely under-utilized space that could be modified to support collaboration space for small groups (i.e.: students, small business owners/entrepreneurs). Tables/chairs, automated vending refreshments, internet, printing and charging infrastructure and glass-enclosed spaces for private discussions or calls could make the space better utilized. It may also be possible to develop a public/private partnership and revenue stream through the lease of the space to a coffeehouse-type business to develop the same types of offerings in the space.
6. Some accessibility improvements have been made to the Community Center since the 2009 POCD (e.g.: automatic doors) but some remain (e.g.: higher toilets). Consider accessibility in any remodels or renovations.
7. As suggested in the historic resources section, a central location for historic documents at the Community Center, in partnership with the library and East Lyme's historical organizations should be considered.
8. The Sustainable CT certification program should be considered as a resource for meeting energy development goals. This would comprise reduction of energy use, achieving high energy performance and increasing use of renewable energy.

10.6.3 Library

1. Address significant space needs to better serve current needs and more importantly expand capabilities that help the library evolve to address different needs of future generations. Consider:
 - a. New space for Young Adult and Tween areas.
 - b. Children room expansion to accommodate different age groups and needs.
 - c. Meeting space for group performance functions and gatherings (50-70 people).
 - d. Dedicated computer lab space
 - e. Additional reading rooms.
 - f. Generic small meeting space
 - g. Business meeting space to serve small businesses and entrepreneurs with digital and teleconferencing capabilities.
 - h. Makerspace/Collaboration or innovation space (house art/crafts, digital and computer workstations, 3D printer, video/photography studio etc. See example at Wallingford Public Library. <https://www.wallingford.lioninc.org/collaboratory/>)

2. Encourage the development of a place for historical documents and artifacts in partnership with the East Lyme Historic Properties Commission, East Lyme Historical Society, Brookside Farm Museum, Samuel Smith House and local organizations and neighborhood associations. As mentioned elsewhere in this document, there is a growing need for the display and conservation of historic documents. While some items and documents are currently stored in the East Lyme Room, there are many artifacts that are housed and retained by local community associations and there is a need for a more central and publicly accessible repository, including remote access with digital archiving (e.g., digital historic properties database- example of an historic photos and properties database <https://historicipswich.org/>). The partnership may include space outside of the library's four walls at other municipal or historic properties.
3. The Sustainable CT certification program should be considered as a resource for energy development goals. This would comprise reduction of energy use, achieving high energy performance and increasing use of renewable energy.

10.6.4 Educational Spaces

1. When considering redistricting, The Board of Education should continue to monitor student growth prognostications when making future student reassignments to maintain an acceptable student/teacher ratio and factor safety concerns involving transporting students along with safety concerns involved with any construction projects. (The lack of sidewalks in different areas is a concern.) Additionally, any future reorganization plans at this level should factor into the plan an assurance that overcrowding does not occur and students do not need to go to classrooms facilities that are temporary/portable. These facilities tend to be expensive over extended periods, provide less than optimal educational settings and would be unattractive to families considering East Lyme as a place of residence.
2. Prioritize sidewalk and trail investments linking local schools to downtown and the Community Center.
3. Work in partnership with the Parks and Recreation Department to update recreational inventories and develop a plan to address maintenance and/or potential needs for new facilities (i.e.: a new roof for the East Lyme pool, the construction of an additional synthetic turf field).
4. Identify and implement a new, permanent location for school buses when they are not in service.
5. The sustainable CT certification program should be considered as a resource for meeting energy development goals. This would comprise reduction of energy use, achieving high energy performance and increasing use of renewable energy.

10.6.5 Town Hall

1. The Town government should continue to review Town Hall space needs; i.e.; determining what offices, meeting facilities and storage spaces are required to support the increasing needs of a Town on the move. The review should take into account the space availability in other Town buildings and include handicapped accessibility in the design of any new facilities.
2. The Town government should make a survey to determine all the changes required to make the Town Hall fully handicapped accessible; input from handicapped individuals would also be appropriate. Again, any future additions to the Town Hall should meet handicapped accessibility requirements.

3. The grounds at the Town Hall can be further utilized for a variety of outdoor activities. The popularity of the annual arts and crafts show at the Town Hall demonstrates how the town hall grounds can be used for these activities.
4. Continue to strengthen IT infrastructure to ensure security and reliability for the many essential functions housed in Town Offices.
5. The sustainable CT certification should be considered as a resource for meeting energy development goals. This would comprise reduction of energy use, achieving high energy performance and increasing use of renewable energy. Consider completing the following sustainable CT actions:
 - a. 6.2 Reduce the energy use across all municipal buildings
 - b. 6.3 Achieve high energy performance for individual buildings
 - c. 6.4 Increase use of renewable energy in municipal buildings

References:

- East Lyme Public Library Strategic Plan, 2019-2023
- East Lyme Public Library Annual Report, 2018-2019
- East Lyme Public Library Building Program, building evaluation prepared by Lushington Associates, 2005
- SustainableCT.org

Chapter 11 – Clean, Reliable, Sustainable Energy

11.1 History of Energy in East Lyme and the Surrounding Area

The Town of East Lyme is located only several miles from Millstone Power Station in Waterford, Connecticut which began operations in 1970 with Unit 1. Two additional units began operation in 1975 and 1986, respectively. In 1995, Unit 1 was shut down due to safety violations, leaving the remaining two units providing 6,350 MWt in total – 2,700 MWt for Unit 2 and 3,650 MWt for Unit 3 (US Nuclear Regulatory Commission, 2018). Millstone Power Station’s two remaining units generate approximately 47% of Connecticut’s energy (Dominion Energy, 2020). In September 2019, the Connecticut Public Utility Regulatory Agency (PURA), Dominion, Eversource and United Illuminating renewed the contract for Millstone Power Station to continue to generate 2,100 MW electricity for an additional 10 years (CT.gov, 2019). Although the Town is located in close proximity to this fossil fuel free energy source, additional clean energy resources must be explored moving forward.

11.2 Current State of Energy in East Lyme and the Surrounding Area

In 2011, Greenskies Renewable Energy LLC received approval from the Connecticut Siting Council to construct a 5 MW solar energy project on 35-acres of a 43-acre site located at Grassy Hill and Walnut Hill Road in East Lyme. The project was developed after winning a Connecticut Department of Energy & Environmental Protection Request for Proposals (RFP) bid. The project aimed to provide enough electricity for approximately 14% of East Lyme’s homes (Greenskies, 2014; Greenskies, 2016). However, this project has resulted in significant controversy within the town due to the impacts it has had on the Cranberry Meadow Brook and other nearby waterways. Clear-cutting the forest and replacing it with impervious surfaces (the solar panels) has led to erosion from the property and siltation in nearby waterways (The Day, 2019). This project provides an example which illustrates the critical importance of appropriate renewable energy project siting and impact analysis prior to approval and construction.

11.3 Energy Efficiency

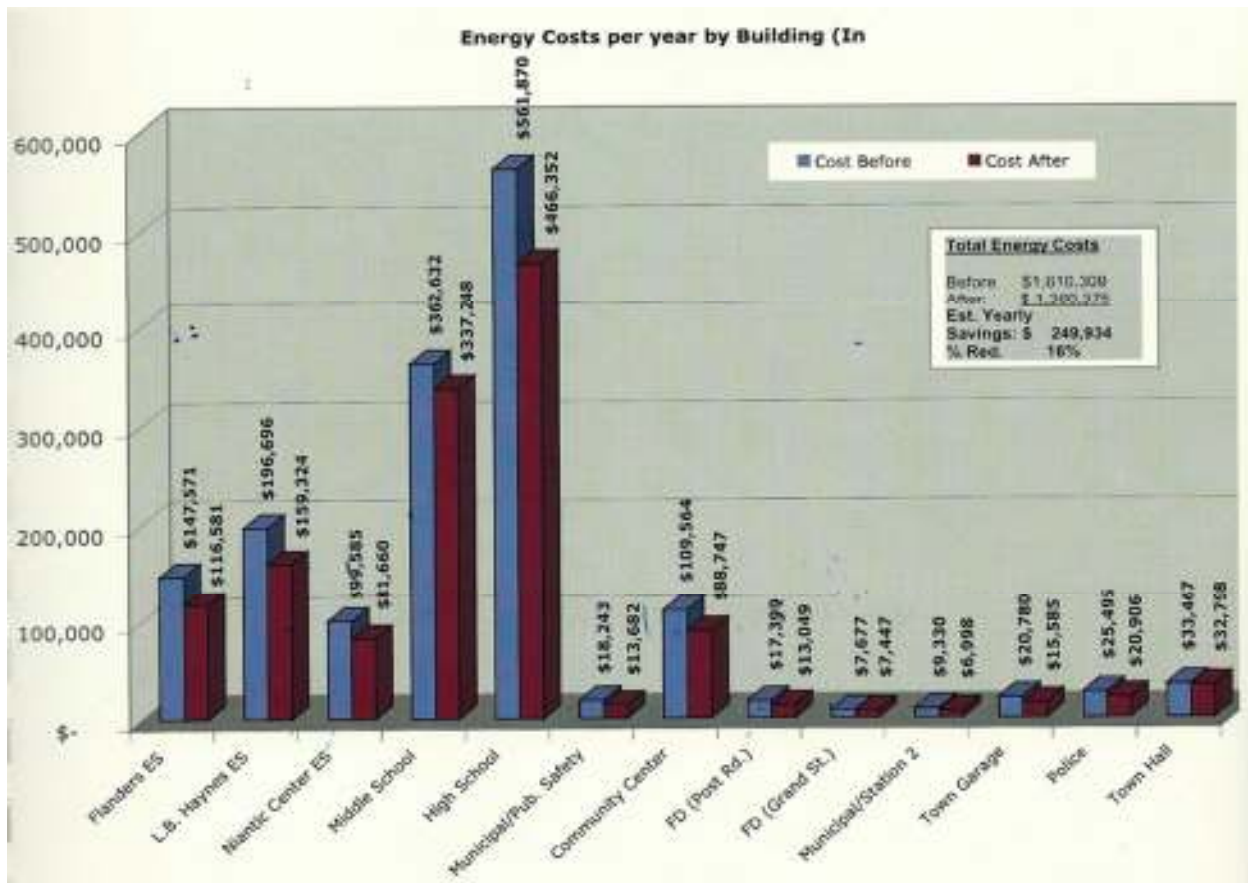
In 2011, ECG Engineering completed a Preliminary Energy Assessment for the Town and Public Schools District of East Lyme. Based on each building’s Energy Usage Intensity score, they were given a label of “Very inefficient”, “Inefficient”, “Less Efficient”, “Moderately Efficient”, or “Efficient”. Of the schools, they found Flanders Elementary, L.B. Haynes Elementary and Niantic Center Elementary to be “Inefficient”, the high school to be “Less Efficient”, and the middle school to be “Efficient”. Since the completion of the Assessment, the three elementary schools have undergone substantial renovations which have included energy efficiency measures.

Of the town buildings, ECG Engineering found the Municipal/Public Safety, Fire Dept. (Post Rd.), Municipal/Station 2 and Town Garage to be “Very Inefficient”, the Community Center and Police Station to be “Inefficient”, and the Fire Department (Grand St.) to be “Efficient”. The Town and School District Overall was labeled “Less Efficient”.

ECG made general suggestions of possible projects. They divided them up into two categories: fast payback and slow payback, with payback referring to the speed of the return on investment. Slow payback measures include renewable energy technologies and replacing “old, inefficient boiler plants and/or boiler burner heads with modern high-efficiency or gas-condensing units.” Fast payback measures include many lighting changes (including street-lighting), which can be quicker fixes, according to Mr. Ron Bence, the Town of East Lyme’s Building Maintenance Supervisor at the time.

The figure below (Figure 17) summarizes ECG Engineering’s estimates of the impact of improving efficiency in multiple town buildings, shown as dollars saved. It can be seen that savings may be very large, depending on the project. These are net savings, including the cost of efficiency measures.

Figure 23 - Preliminary Energy Assessment Completed by ECG Engineering 2011



The Connecticut Energy Efficiency Fund supports programs that provide financial incentives to help reduce energy use in homes and businesses and funds vendors similar to ECG Engineering. The following are data from their 2011 Report for East Lyme (CT Energy Efficiency Fund 31). The methodology used to develop the report is unclear and may require additional follow-up.

- Energy Incentives= \$310,988
- Annual kWh Savings= 789,392
- Lifetime kWh Savings= 9,101,757
- Peak Demand kW= 95
- Annual CCF Savings= 0
- Lifetime CCF Savings= 0
- Annual Gallons Oil= 8,83
- Lifetime Gallons Oil= 140,612
- Annual Dollar Saved= \$154,992
- Lifetime Dollar Saved= \$1,935,665
- Annual CO2 (Tons) Saved= 511

Based on estimates provided by CL&P's Tom Marano, Business Development Manager, the Town (including residential) consumes approximately 78,960,000 kW over the course of a year. Data provided by the Town's Director of Finance, Anna Johnson, indicated that East Lyme pays an average of \$.24/kWh per month, obtained from two sources, CL&P and TransCanada. (The total kWh used for 2010/2011 by the Town buildings amounted to 1,870,382.) Data provided by the Board of Education's Business/Facility Director, Don Meltabarger, indicated an average of \$.187/kWh per month. The sum of the two is \$.427/kWh. Due to inclusion of solar power costs, the Town's rate is higher than the Board of Educations'.

11.4 Renewable Energy Development

Based on numerous reports, including the IPCC Report on a Global Warming of 1.5°C, adopting renewable energy is no longer a question of if, but when. These recommendations to include language in the POCD that lays the groundwork for adopting renewable energy is necessary as the price of renewable energy continues to decrease and will eventually be more affordable than fossil fuels. The costs of renewable energy are rapidly decreasing. In 2017, the global weighted average cost for electricity from renewables (besides offshore wind and CSP) were all within the market range for standard fossil fuel energy costs ([Renewable Power: Sharply Falling Generation Costs, 2017](#)).

Laying the foundation for more renewable energy development in the POCD is economically sound and it is the best option for cleaner and healthier communities. For example, a study mentioned in a WRI article stated that if NY ISO added 8 GW of wind capacity, they would have saved \$1.3 billion in power plant operation costs per year, which comes out to \$65 per person served (["Shifting to Renewable Energy Can Save U.S. Consumers Money", 2014](#)). Additionally, renewables have enormous potential for job creation. Renewable energy is a labor-intensive field, and the job market vastly outnumbers the job market for fossil fuels. In 2017, 500,000 new jobs were created in renewables ([U.S. Energy and Employment Report, 2017](#)). Lastly, the adoption of cleaner energy will not only save money in immediate costs, but also long-term human welfare costs. The Union of Concerned Scientists estimates increasing use of renewables and increasing energy efficiency can save around \$127 billion in public health and financial costs through 2030 ([Accelerating Toward a Clean Energy Economy, 2016](#)).

In order for this to occur, East Lyme will need to invest money and resources into renewable energy and make sure that the foundation is laid for new projects down the line for the next 10-20 years. We need to make sure that any new infrastructure or projects allow room for renewable energy installations and make sure that city regulations aren't inhibiting us from adopting the most energy efficient, cost-saving options. It must be ensured that East Lyme can transition to a reliance on renewable energy as other options become too costly or unavailable.

11.5 Environment-Focused Renewable Energy Siting

Clean, or "Green" energy projects (i.e., based on renewables such as solar or wind) are part of official state goals to meet electricity demands in Connecticut and the region. As such, a considerable number of solar energy projects have been recently approved (Connecticut Siting Council [CSC] Decisions; see References) or are undergoing the approval process (CSC Pending Matters; see References). In many cases forests are clear cut and prime farmland are used for these large solar projects and as of 2016, ground-mounted solar photovoltaic facilities have become the largest single type of development consuming agricultural and forest lands in Connecticut (CEQ 2017). Local town authority over solar energy projects is limited, with local Zoning, Inland Wetlands Agency (IWA), and other commissions having no decision-making authority in the siting and approval of solar energy projects once they are proposed (CSC Statutes/ Regulations; CEQ 2017). CSC procedures do, however, provide for input from affected towns and citizens. And, municipal agencies do have enforcement authority when there is a violation of inland wetlands and watercourses regulations and when impacts go beyond the solar energy site boundaries (CEQ 2017). Many people consider solar energy projects benign from an environmental impact as the panels are mounted above the ground. However, if inaccurate assumptions are made during the development of erosion and control plans while evaluating both vegetative cover and soil conditions, negative impacts on the environment can arise. Contractors often do not follow the plans approved by the CSC, leading to failure of erosion and stormwater systems in the field (CEQ 2015).

High runoff volumes after construction is completed cause stream channel erosion and sedimentation and warming of receiving streams. Discharges of turbid runoff into wetlands and streams during construction have fouled pristine aquatic streams, including in East Lyme (ELIWA 2014-16; CEQ 2015).

Opportunities for Connecticut towns to prohibit, limit, or place restrictions on large energy or telecommunications facilities are limited due to state statutes giving the CSC considerable approval and oversight responsibilities. Note that the CSC uses a distinctive terminology in its regulatory process. The solar power developer (“petitioner”) submits its application materials (“petition”) to the CSC for a “declaratory ruling that no Certificate of Environmental Compatibility and Public Need” should be required for the proposed solar generating project. In addition, DEEP also reviews the petition and, if it is approved by the CSC, DEEP’s General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (known more simply as the “Construction General Permit”) is issued. This permit is supposed to limit construction to 5 acres at any one time. The Connecticut Council on Environmental Quality (CEQ) (2015) noted four weaknesses in Connecticut’s regulations:

- Weak enforcement rules as even Notices of Violations have little consequences;
- No turbidity standards, which limits effective oversight of erosion and discharge into stormwater receiving streams;
- Outdated rainfall expectations used by developers where increasing frequencies of heavy rainfalls due to climate warming have not been used in stormwater analyses
- In general, there are no specific provisions for the unique environmental effects potentially caused by large solar energy installations.

11.6 Micro-Grid Development

A micro grid is defined as “a local energy grid with control capability, which means it can disconnect from the traditional grid and operate autonomously” (Energy.gov, 2020). Microgrids are an important step in grid resiliency, especially as natural disasters threaten grid security during blackouts for hospitals, police stations, and other critical services. East Lyme has faced long power losses due to the impacts caused by hurricanes which could be addressed through the construction of a micro-grid. Building resilience to sea level rise is also especially important considering East Lyme is a coastal town. Currently, 68% of East Lyme uses fuel oil for home heating. Making the shift to a microgrid for heating and electrification would reduce fossil fuel dependency in East Lyme.

11.7 Engaged Community and Leadership

The model of economic growth that we are familiar with is one of resource extraction, of fossil fuels, and of pollution. A green economy is a model of economic growth that incorporates equity and sustainable development. The change that we need and need to continuously invest in so that we do not fall behind will not occur on a national level, but rather on the local level, where the First Selectman and city officials that know East Lyme best can invest in. First Selectmen can serve as a role model of a new generation of Climate Mayors that are invested in the long-term health of their city, their people, and their planet. Voters are looking for leadership and elected officials who can step up to tackle the hard issues and deliver results for their voters, not stay on the sidelines and proceed with business as usual. If local Mayors and First Selectmen step up and take responsibility, we can revitalize our economy, stimulate new jobs, make access to energy more equitable, and care for the public health of East Lyme and Connecticut residents. The First Selectman of East Lyme should become involved with Former Mayor Michael Bloomberg’s Climate Mayors organization, and also the Global Covenant of Mayor’s working to address climate change.

11.8 RECOMMENDATIONS

1. Create a new Town of East Lyme Clean Energy Task Force.
2. Transition municipal production and consumption to 100% clean electricity by 2035 through the development of local renewable energy projects.
3. Develop micro-grids that enable East Lyme to generate all electricity required for the Town if a natural disaster or other potential disruption to energy transmission from the grid were to occur.
4. Require new developments and commercial developments to include renewable energy resources that have the ability to provide electricity to the associated buildings.
5. Utilize public-private partnerships to develop solar and wind projects. Lease existing impervious surface space owned by the Town for potential solar energy development sites.
6. Allow space for electric vehicle (EV) charging stations in all municipal buildings and public parking spaces where fit. Consider requiring new and redeveloping commercial development/lots to install EV charging stations as part of construction.
7. Implement an Environment-Focused Approach to Siting for New Renewable Energy Projects:
 - a. The Town of East Lyme should fully participate as a party (pursuant to C.G.S. 14-177a, 16-50n, 16-50o, and 229-120) in the CSC process for any proposals related to any large solar energy installations proposed within town boundaries and perhaps also as an intervener for facilities proposed for other towns that might affect shared water courses of importance (e.g., Waterford in the case of the Niantic River).
 - b. East Lyme should request a public hearing as an initial step when asking for party status as a matter of course for any proposed energy or major telecommunications proposal. The CSC process is fast-tracked statutorily and the agency requests that a public hearing be requested when initial contacts are made after a petition is received.
 - c. Participation should include reviewing the initial application materials and, if the CSC petition is approved, the subsequent Development and Management Plan, which presents site drawings, a project narrative, and stormwater management plan.
 - d. As part of this process town staff should provide their comments and concerns and make requests of the petitioner concerning all activities taking place on the site and adjacent areas (e.g., town roads that might be affected by construction activities) to ensure that the proposed facility is sound and will not impact the environment or affect town residents.
 - e. The petitioner should be required to address potential environmental effects beyond the site boundary as stormwater discharges can potentially affect receiving streams and their biota. Also, deforestation within a block of core forest will impact the surrounding area.
 - f. East Lyme should not permit the wholesale removal of topsoil from any future solar energy project as this is a degradation of the property environment, not conducive for effective growth of low groundcover plants to reduce runoff and infiltration of precipitation, and will limit the usefulness of the property after decommissioning.
 - g. Stormwater management analyses and designs should conform to all municipal stormwater regulations or those by DEEP, with the most stringent requirements being applied.
 - h. East Lyme should fully participate in the DEEP Construction General Permit process to the extent it can.
 - i. East Lyme's Fire Marshal should provide review and comment on fire safety issues associated with solar energy facilities as many components as well as the lands around them are flammable and, in the case of the photovoltaic panels, many types contain hazardous and toxic substances (IER 2017; Prume, Viehweg et al. 2018).

- j. East Lyme should ensure that the facility has a detailed decommissioning plan for the removal of thousands of photovoltaic panels manufactured using various toxic chemicals, which will become an increasingly serious issue in the future (IER 2017); associated structures such as racking and concrete bases; and site perimeter fencing, as East Lyme should not be left with any legacy liabilities.
 - k. East Lyme should enact Zoning regulations to limit larger solar energy developments to already-developed commercial and industrial zones or brownfield areas (e.g., town landfill).
 - l. East Lyme should support agricultural land uses and preserve forested lands rather than allowing their continual loss to development, including those for energy installations that could be sited elsewhere (e.g., see AFT 2020)
 - m. East Lyme should promote large solar energy projects to be placed on existing or proposed large commercial or industrial buildings, directly on or overhead (i.e., above-ground installation) of existing impervious surfaces, such as parking lots, which are suggestions noted in CEQ (2017).
 - n. Smaller-scale solar energy panel installations should be encouraged for individual homes through education and outreach as an alternative method to achieve Green Energy goals.
 - o. East Lyme should be vigilant in the oversight of any environmental damages to off-site water courses resulting from solar energy project stormwater discharges and hold the developer responsible for any damages and repair, which is the town's right.
8. Create a public awareness campaign on renewable energy incentives, such as those available for residential solar panel installation.
 9. Create a public awareness campaign on energy efficiency.
 10. Involve the First Selectman in the Climate Mayor's program.
 11. Require new municipal, residential developments, and commercial buildings to place all electrical transmission wiring underground.
 12. Actively pursue grant funding for renewable energy projects and micro-grid development. The hiring of a town Grant writer could fulfill this role and explore ways that public art can advance energy education.
 13. Encourage evaluation or development of wind, solar and other renewable energy siting regulations including but not limited to EV charging stations by East Lyme's Zoning Commission.

11.8.1 Grant Funding Opportunities

- Sustainable CT Grants Portal: <https://sustainablect.org/funding/>
- Connecticut Green Bank: <https://www.ctgreenbank.com/about-us-2017/>
- Energize CT Bright Idea Grant: <https://www.energizect.com/your-town/solutions-list/clean-energy-communities>
- C-PACE from Connecticut Green Bank: <https://www.cpace.com/Municipality/What-is-C-Pace>
- Collins Aerospace Green Communities program: <https://www.rockwellcollins.com/Our-Company/Corporate-Responsibility/Community-Overview/Green-Communities.aspx>

References:

- American Farmland Trust. 2020. Solar Siting Guidelines for Farmland.
- CEQ (Connecticut Council on Environmental Quality). 2017. Energy Sprawl in Connecticut. Why Farmland and Forests are Being Developed for Electricity Production. Recommendations for Better Siting
- Connecticut Siting Council: <https://portal.ct.gov/CSC> 2020.
- ECG Engineers. 2011. Town of East Lyme Energy Efficiency Report.

- International Renewable Energy Agency. 2018. Renewable Power Generation Costs in 2017.
- People's Action for Clean Energy (PACE). 2020.
- Sugarman, D. 2012. Model small-scale solar siting ordinance. Center for Climate Change Law at Columbia Law School.
- US Nuclear Regulatory Commission. 2018.
- Windham, CT: [EV Charging Stations on Town Property](#), [EV Lease-Purchase ZEV](#), and [Water Department Solar Project](#)
- Coventry, CT: [Coventry Solar Panel Permitting and Yale Researchers Release Municipal Solar Scorecards for Connecticut](#)
- New Haven, CT: [Commits to Power Municipal Buildings with 100% Renewable Energy](#)
- Easton, CT: ["Samuel Staples School in Easton Goes Green with 950 Solar Panels"](#)
- Fairfield, CT: [Fairfield Microgrid Development](#) and [New England Microgrid Future](#)
- Various Locations, MA: [Massachusetts Highway Right-of-Way Solar Project](#)

Chapter 12 - Water and Wastewater Management

12.1 Source and Supply

East Lyme's Water and Wastewater services are critical to the town. The ability to provide clean, safe, reliable water for drinking, hygiene and economic development is crucial -- necessary to support life -- and the ability to effectively remove/treat wastewater is equally as important to the public and environmental health. Currently, East Lyme serves about 6,700 water customers and 3,400 sewer customers.

East Lyme's water comes from seven underground sources. Wells are at various locations throughout the town in two separate aquifers: the Pattagansett and Bride Brook aquifers. The water from five of the wells is filtered to remove iron and manganese and then treated for pH adjustment, chlorine disinfection and fluoridation. Two of the wells, Wells 1A and 2A are similarly treated but not currently filtered. A sequestering agent is also added to the finished water of Wells 1A and 2A. The finished water is then delivered through an extensive distribution system including two water storage tanks and ten booster stations. Construction is currently underway to provide filtration for Well 1A to remove manganese and improve water quality. This project is slated to be completed in the Spring of 2021.

During the summer months, East Lyme's supply is supplemented with water from the City of New London through a distribution network including over three miles of water main, an elevated water storage tank, and two pumping stations. New London's water comes from lakes and reservoirs in a protected watershed that is located in Waterford, Montville and Salem. The principal reservoir is Lake Konomoc. The water is processed using coagulation, flocculation, sedimentation and carbon filtration, and then treated for pH adjustment, chlorine disinfection, fluoridation and corrosion control.

The following maps outline East Lyme's water supply sources, location of municipal water customers, and sewer shed/sewer service areas.

Figure 24 - Source of Supply, Level A Aquifer Protection Areas

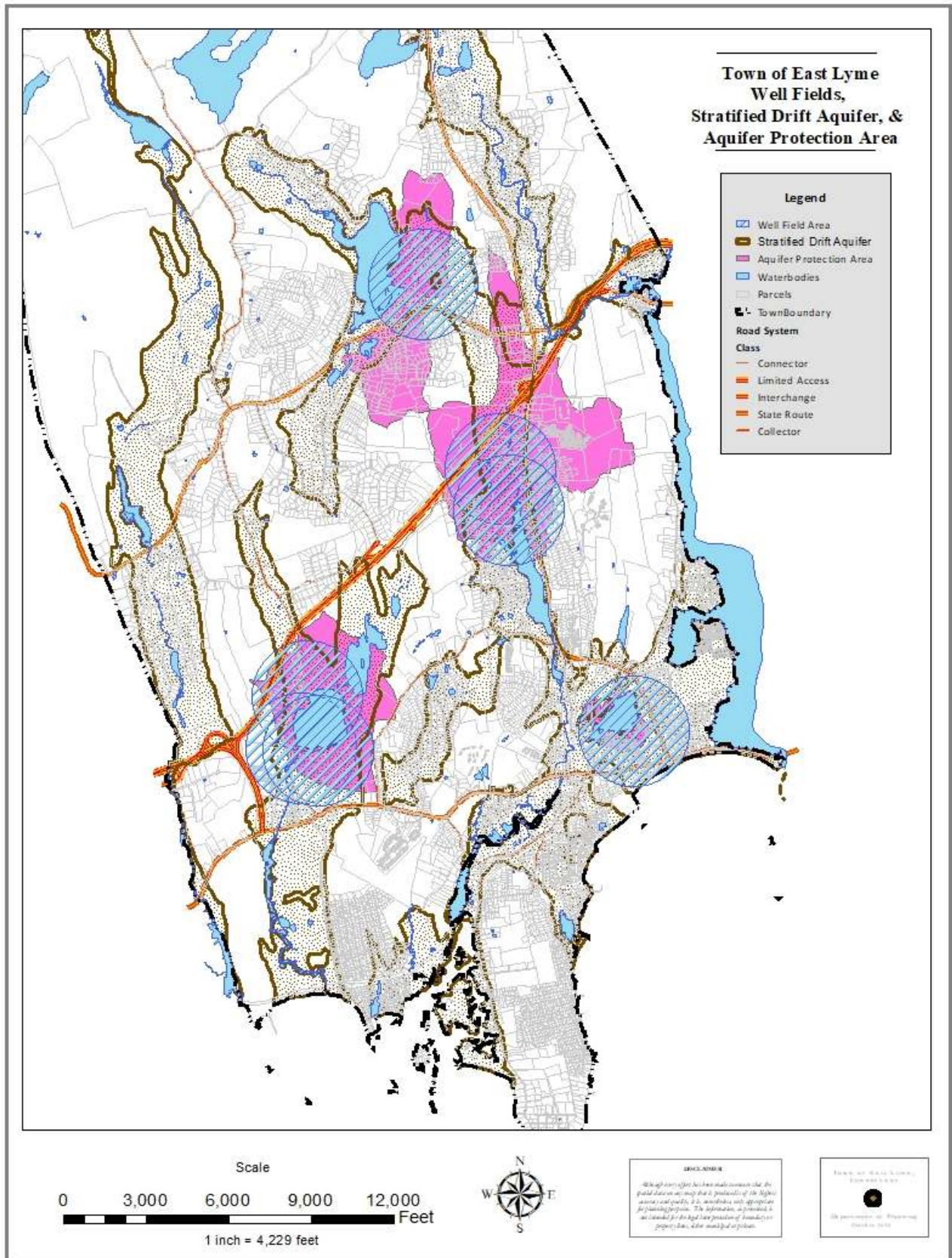
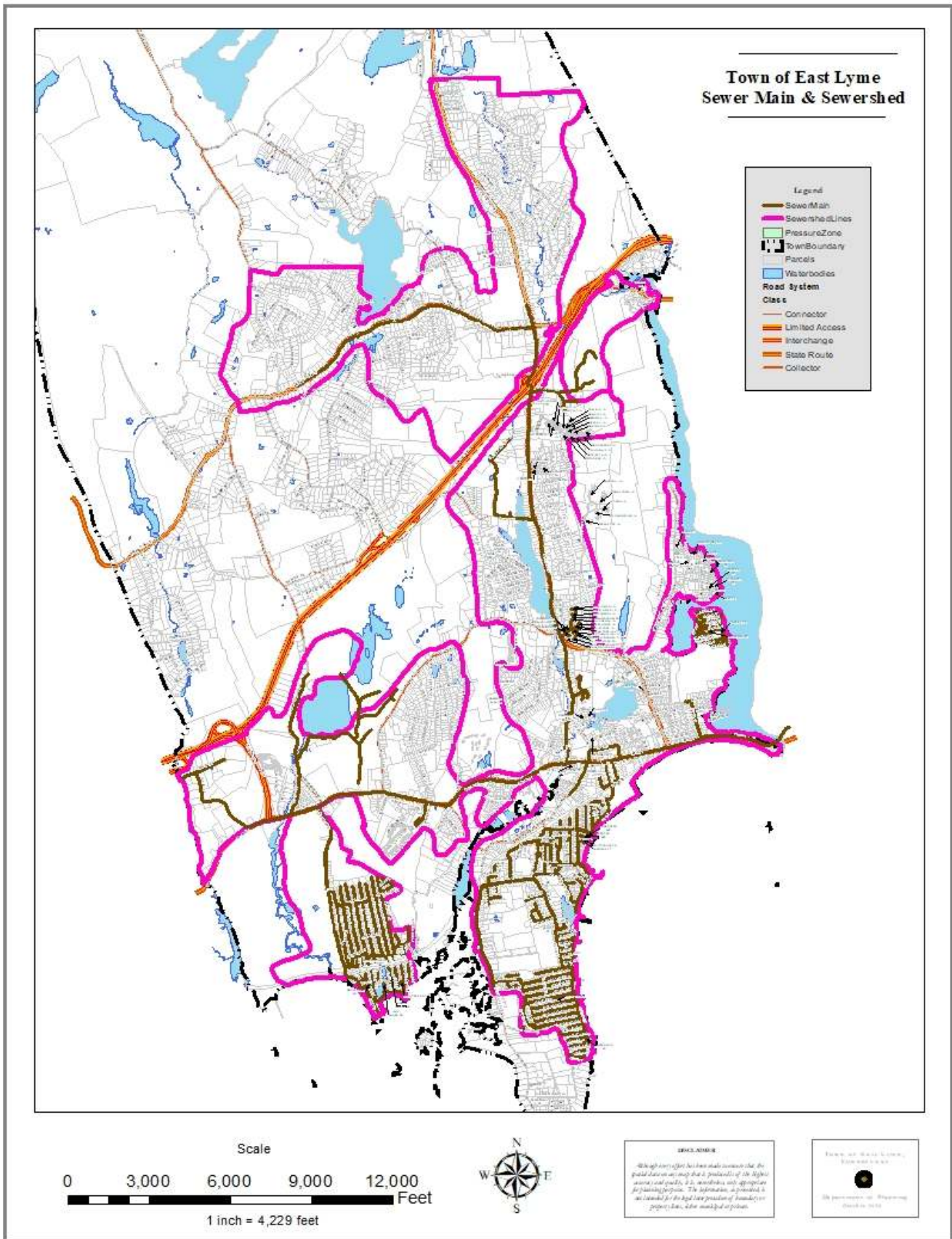


Figure 25 - Sewershed Boundary



Recommendations in this section focus on a number of key areas including:

12.1.1 Water Quality

Water needs to continue to meet all state and federal drinking water quality standards. While various treatment methods are currently in use, protection of East Lyme's water supply sources are important to preserve water quality and to minimize the need for costly treatment measures in the future.

Source protection for the Pattagansett and Bride Brook aquifers remains crucial to the continued ability for East Lyme to provide its residents with high-quality drinking water. Of particular concern to East Lyme's water quality is the application of salt to roads, parking lots and other impermeable surfaces. While East Lyme meets federal and state drinking water quality standards, its sodium content exceeds 28 parts per million (ppm), at which level those on a sodium-restricted diet should inform their physicians. Sodium removal during water treatment is cost prohibitive, and the preferred alternative would be to prevent sodium from entering the surface and groundwater by implementing salt management practices.

Protection of East Lyme's aquifers is managed by the Zoning Commission through its Aquifer Protection Regulations. These regulations rely on Level A Aquifer Mapping, which more accurately identifies the zone of influence for East Lyme's water supply wells and is used to regulate land use activities that may affect water quality. In addition to these regulations, a Groundwater Protection Plan should be adopted to further manage and protect East Lyme's water supply sources. The Connecticut Department of Energy and Environmental Protection has resources available to help communities with the development of Groundwater Protection Plans.

12.1.2 Water Supply

East Lyme meets its current water supply needs through its own wells (detailed above) and through a partnership with the City of New London to obtain additional water supply during the summer months when the demand is the highest. While the current supply adequately meets the needs of the town, increased demand due to growth and decreased supply due to drought, regulatory constraints and other operational limitations, requires that East Lyme continue to investigate the development of additional sources of supply. East Lyme has an Emergency Water Supply Ordinance that has been used from time-to-time to manage and conserve water supply during peak summer demand.

12.1.3 Emerging Contaminants

Since the 2009 POCD, more information has become clear about PFAS (Per- and Polyfluoroalkyl substances) PFAS and PFOAS represent a large group of man-made chemicals that have been manufactured and used around the world for decades in a variety of products from food packaging to fabrics to firefighting foam. These chemical chains do not break down easily in the environment or the human body, and as such are sometimes referred to as "forever chemicals."

Currently, there are no federal or state guidelines indicating recommended levels of PFAS in drinking water, however the Environmental Protection Agency (EPA) has issued a health advisory level of 70 parts per trillion (ppt) for PFAS/PFOAS (The 70ppt advisory represents detection of one of or the sum of both.)

At the time of the writing of this POCD, the State of Connecticut has established a PFAS Task Force to determine appropriate regulations in this area. As PFAS/PFOAS have been detected in a number of water supplies across the country, East Lyme should be prepared to conduct necessary testing and any required mitigation relating to these substances as further guidance becomes available from the regulatory agencies.

12.1.4 Sewage Capacity

East Lyme is a member of a tri-town agreement with Waterford and New London whereby those East Lyme properties with sewer connections send wastewater to a treatment facility in New London. East Lyme is nearing its maximum gallon capacity under the current agreement. The agreement is due to be re-negotiated in 2020. Increasing East Lyme's available capacity may come at an increased cost to the town due to upgrades that may need to take place at the treatment facility in order to accommodate the additional flow.

To address treatment capacity issues, East Lyme could also seek to reduce demand on the system through a variety of strategies including limiting the types of developments in which sewers shall be provided. This may include prohibiting future sewer line extensions except to East Lyme's Commercial Districts or limiting sewer service in areas which are not environmentally sensitive, such as in an aquifer protection zone or sensitive watershed. Efforts should also continue to implement corrective measures to reduce infiltration and inflow into the wastewater collection system.

Additionally, East Lyme could explore on-site, community systems, or package plants for the localized management of wastewater in areas where septic systems are not ideal.

12.1.5 Energy Efficiency and Greenhouse Gas Emissions

Pumping, treating and distributing water and removing wastewater requires a great deal of energy. This can be in the form of electricity and/or diesel-powered equipment. An energy audit of East Lyme's water and wastewater facilities could provide recommendations on where East Lyme can gain efficiencies to save dollars and energy or utilize clean energy technologies for some or all of its energy supply. Pump stations may provide opportunities for the placement of solar panels. Capital investment in new and efficient technologies may save the town and water/sewer customers money over the lifespan of the improvement project.

Additionally, technology can reduce emissions from East Lyme's fleet of water and sewer vehicles, particularly through the investment in new water meters for customers. Radio-read meters do not require on-site personnel to read, resulting in mileage saved in bi-annual or quarterly meter reading. At the writing of this POCD, a meter changeover to radio-read meters is in process, however, was paused due to the COVID-19 pandemic.

12.1.6 Investment in Infrastructure Resiliency

As a coastal town, East Lyme is likely to experience firsthand many of the predicted impacts of climate change including increased flooding, sea level rise and stronger storms. Any of these events on their own or in combination with each other present a threat to East Lyme's water and sewer infrastructure.

According to the Drinking Water Vulnerability Assessment and Resilience Plan, November 2018, water systems in East Lyme and across Connecticut's coastal towns and cities face a number of vulnerabilities including flood risks to infrastructure, water quality vulnerabilities, climate change impacts and drought potential.

Key elements of East Lyme's water infrastructure are located in current or potential future flood-prone areas. Long-term power outages, and sea or ground level water rise can also pose risks to our infrastructure.

Findings from the Stantec Coastal Resilience, Climate Adaptation and Sustainability Study found that seven of East Lyme's pump stations sit in the 1% annual chance storm flood zone. Furthermore, the pump stations on Black Point Road and Attawan Avenue sit in velocity zones (areas with wave heights greater than 3 feet). Critical infrastructure, like pump stations, with a high risk of flooding and other hazards should receive top priority for protection. EPA's 2014 Guide for Water and Wastewater Utilities contains useful suggestions for preventing intrusion of flood water, protection assets and ensuring reliability.

Resilience-building options available to East Lyme include construction of permanent or temporary barriers to flooding, elevate or relocate instrumentation, electrical controls, computers and records, and to ensure backup power for pumps.

12.2 RECOMMENDATIONS

1. Protect East Lyme's water quality through strong support of East Lyme's Open Space Plan as developed by the East Lyme Natural Resources Commission and support development of an East Lyme Groundwater Protection Plan.
2. Make efforts to reduce road salt application to lower sodium levels in the water supply. Potential measures include:
 - a. Develop a certification program for salt applicators in partnership with East Lyme Public Works to utilize best practices in salt management on roadways and in parking lots. Explore opportunities such as New Hampshire's Voluntary Salt Applicator Certification & Liability Protection Program which limits liability for slip and fall suits on commercial parking lots to encourage the responsible application of road salt.
 - b. Require salt management plans for parking lots as part of applications for new commercial developments, with periodic inspections to determine adherence to the plans.
 - c. Engage in public education for property owners on best practices in road salt applications.
 - d. Advocate for responsible road salt application from the State of Connecticut on state roads.
 - e. Employ best practices in salt application on town roads through partnership with East Lyme Public Works.
3. Consider new regulations in critical aquifer areas. Potential ways to enact these include:
 - a. Develop a Groundwater Protection Plan.
 - b. Adopt Inland Wetland Regulations in critical watershed areas such as the Pattagansett River, Bride Brook and Four Mile River.
 - c. Develop/Strengthen East Lyme's stormwater management plan to reduce impacts of potentially harmful seepage and runoff in critical water supply areas.
 - d. As mentioned elsewhere in this document, support the installation of trees and other vegetation as a primary means of stormwater filtration to protect water quality.
4. Consistently explore new sources of water supply at various locations in East Lyme including in the Four Mile River Aquifer to expand or diversify East Lyme's water supply and improve resiliency.
5. Work in collaboration with guidance from the Governor's Task Force on PFAS and CT DPH to complete necessary evaluation of potential PFAS/PFOAS contamination and any potential remediation or treatment requirements in the event that an action level is set. Where possible, determine sources of PFAS/PFOAS contamination and enact accountability measures for polluters to be responsible for costs of PFAS mitigation. Evaluate any potential town-generated sources of PFAS (ie: firefighting foam) and begin to utilize other alternatives.
6. Work to address future demands on East Lyme's limited sewage capacity. While new applicants for sewer connections over 20 units or 5,000 gallons/day must apply for allocation of capacity with the Water and Sewer Commission, further measures may warrant consideration such as:
 - a. A moratorium on service lines to new developments.
 - b. Development of septic system ordinances requiring periodic septic system inspections to ensure functional systems in sensitive areas that may otherwise require sewer such as coastal areas and watershed areas.
 - c. Explore the feasibility of increased capacity at the current New London Wastewater Treatment Facility.
 - d. Explore the development of regulations to install on-site community systems or package plants.
7. Decrease greenhouse gas emissions and improve energy efficiency through the following:

- a. Conduct an energy audit of East Lyme's Water and Sewer Infrastructure
 - b. Continue the meter replacement program so that all meters will be able to be read remotely
 - c. Encourage the installation of solar panels where appropriate on building facilities
 - d. Take advantage of any programs or partnerships whereby clean energy can be used to power facilities (i.e.: fuel cell partnerships)
8. Prioritize investments in East Lyme's most vulnerable infrastructure to protect critical services in the event of increased flooding and/or strong storms. Utilize best practices in EPA's Flood Resilience Guidelines for Water and Wastewater Utilities along with expert recommendations, best practices and partnerships with organizations such as the Connecticut Institute for Resilience and Climate Adaptation (CIRCA) and studies such as Stantec Coastal Resilience, Climate Adaptation and Sustainability Study, December 2018.

References:

- Protecting Connecticut's Groundwater: A Guide for Local Officials, CT DEEP, 1997
- Drinking Water Vulnerability Assessment and Resilience Plan for Fairfield, New Haven, Middlesex and New London Counties, November 2018. Prepared for CT Department of Public Health by University of Connecticut researchers, the Connecticut Institute of Resilience and Climate Adaptation and Milone & MacBroom.
- Stantec Coastal Resilience, Climate Adaptation and Sustainability Study, December 2018
- US EPA Flood Resilience: A Basic Guide for Water and Wastewater Utilities


Chapter 13 - Municipal Solid Waste Management

13.1 Solid Waste and Recyclables

East Lyme's garbage and recycling services are administered by the Department of Public Works. East Lyme is a member of The Southeastern Connecticut Regional Resources Recovery Authority (SCRRRA), which is made up of 12 towns in southeastern Connecticut. It was created to implement long-term solutions for municipal solid waste, recycling, and other waste issues.

Weekly garbage pickup and bi-weekly single stream recycling pickup are conducted by East Lyme's Public Works employees. In Fiscal Year 19-20, East Lyme collected 9,408 tons of waste, 9,268 in Fiscal Year 18-19 and 10,062 in Fiscal Year 17-18, see Figure 20 below.

Figure 26 - Municipal Solid Waste Tonnage



**East Lyme - FY 2020
MSW Tonnage by Month**

Fiscal Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 17 Actual	902	996	892	797	783	814	757	650	762	812	960	1,025
FY 18 Actual	972	966	892	887	880	747	718	637	696	790	932	946
FY 19 Actual	906	951	769	847	742	630	719	600	656	764	892	792
AVG FY 17 - 19	927	971	851	844	802	730	731	629	705	789	928	921
FY 20 Actual (MSW)	982	893	761	812	751	764	732	641	690	761	753	868
Deviation from AVG	55	(78)	(90)	(31)	(51)	34	1	12	(15)	(28)	(175)	(53)
Deviation from AVG	6%	(8%)	(11%)	(4%)	(6%)	5%	0%	2%	(2%)	(4%)	(19%)	(6%)

Cumulative MSW Tonnage by Fiscal Year

Fiscal Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 17 Actual	902	1,898	2,790	3,587	4,370	5,184	5,941	6,591	7,353	8,165	9,125	10,150
FY 18 Actual	972	1,938	2,830	3,717	4,597	5,344	6,061	6,698	7,394	8,184	9,116	10,062
FY 19 Actual	906	1,857	2,626	3,473	4,215	4,845	5,564	6,164	6,820	7,584	8,476	9,268
AVG FY 17 - 19	927	1,898	2,749	3,592	4,394	5,124	5,855	6,484	7,189	7,978	8,906	9,827
FY 20 Actual (MSW)	982	1,875	2,636	3,448	4,199	4,963	5,696	6,337	7,027	7,787	8,540	9,408
Deviation from AVG	55	(23)	(113)	(144)	(195)	(161)	(160)	(148)	(162)	(191)	(366)	(419)
Deviation from AVG	6%	(1%)	(4%)	(4%)	(4%)	(3%)	(3%)	(2%)	(2%)	(2%)	(4%)	(4%)

East Lyme is currently charged \$58/ton for municipal waste services. East Lyme's Solid Waste per Capita numbers have decreased over the last three years with 1,308.8 pounds per capita in fiscal year 2017, 1,293.7 pounds per capita in fiscal year 2018 and 1,191.2 pounds per capita in fiscal year 2019. While pounds per capita has decreased, successful waste management and reduction remains a key component to East Lyme's ability to achieve sustainability goals.

Waste collected weekly via the brown garbage cans is currently transported to Covanta SECONN, a waste-to-energy plant in Preston, CT. As of January 1, 2021, this waste will be transported to Wheelabrator in Lisbon, CT. Collected recycling is taken to Willimantic Waste Recycling Facility in Willimantic, CT.

In October 2018, East Lyme stopped receiving any revenue from recycling. There is now a fee of \$70/ton for recycling services, however that fee is paid for by The Southeastern Connecticut Regional Resources Recovery Authority (SCRRA). East Lyme's recycling rate in FY 18-19 was 36%.

Additionally, East Lyme Public Works operates a Transfer Station on Roxbury Road in Niantic, which accepts the following free of charge; leaves, scrap metal, recycling, household trash, electronics, anti-freeze, motor oil, mattresses, batteries & fluorescent bulbs. The Transfer Station also accepts the following items based on fees set by the Board of Selectmen; brush, appliances, tires, bulky waste, asphalt & non-reinforced concrete, demolition material, wood & construction debris.

Connecticut General Statutes require that certain items be recycled by a municipality. Unfortunately, if residents mix garbage or other unwanted items it can contaminate the stream of recycled products at the processing center and decrease their value or cause recyclable items to need to be discarded as trash.

Contamination problems have indicated that additional education is needed for residents on what items are/are not recyclable in the gray single-stream bins. Currently, Public Works Supervisors inspect about 50 recycling cans a day and if they find items that shouldn't be in the can, they leave a warning notice on the can and the can won't be picked up until those items are removed.

Public Works is also beginning to install stickers on the top lids of the cans identifying to residents what should and should not go in the recycling can. One of the biggest offenders in the recycling cans is plastic bags and plastic wrap as they clog up the sorters at the recycling plant (Figure 27)

Figure 27- Recycling Sticker



Recycling Stickers Currently Being Placed on Recycling Bins

Through partnership with SCRRA, East Lyme participates in a regional, multi-town collection program for hazardous wastes from residents. Held April through November, these 9 annual collections change location each month, providing free, convenient hazardous waste disposal for homeowners. Participating community residents can go to any or all of the 9 collections. The collection sites also offer confidential shredding services.

13.2 RECOMMENDATIONS

1. Engage in further public education about what can/cannot be placed in single stream recycling bins. Consider a partnership with the local arts community to design a campaign that can be executed through a variety of channels including on bins, signage, mail, digitally and more to create an eye-catching and easy to understand way of communicating recycling rules for the public. Consider that especially during the summer, waste may not be being sent to the curb by residents but by visitors to the town (through home rentals or enjoying East Lyme's public areas) who have not been previously exposed to educational materials on the topic.
2. Implement composting programs in East Lyme Public Schools for purposes of both waste reduction and education. A composting program could also lead to the creation of educational/community gardens for students and/or the public.
 - Set a competitive town-wide recycling target to exceed the currently 36% of all waste. Achieve this goal through educational programs as listed above, waste reduction programs (ie: compost), continued support for region-wide hazardous material and shredding events and the possible expansion of allowable recyclables either through curbside pickup or the town's Transfer Station.
 - Further encourage composting by East Lyme residents. This could be achieved via a number of outlets, including through partnership with SCRRA, through an enhanced education program, municipal curbside pickup, transfer station drop off, or in partnership with an outside compost company.
3. Consider completion of Sustainable CT Certification efforts that relate to municipal waste management including:
 - a. Action item 7.5: Report Materials Management Data and Reduce Waste
 - b. Action item 7.6: Implement Save Money and Reduce Trash (SMART) Program
 - c. Action item 7.7: Recycle Additional Materials and Compost Organics
 - d. Action item 7.8: Develop a Food Waste Prevention and Food Scraps Recovery CampaignComplete information on these action items available here: <https://sustainablect.org/actions-certifications/>
4. Seek to ensure that all waste receptacles in East Lyme (ie: dumpsters, temporary construction dumpsters, garbage bins in public spaces) are covered. Consider ordinances or regulations to indicate that this is required.
5. Leverage the necessary and important role that waste receptacles have to install a public art project to improve East Lyme's unique sense of place. Plain garbage bins in our town parks and beaches present an opportunity for a unique display to add to East Lyme's sense of place and also make utilization of garbage cans more likely.
6. Continue to educate on and enforce the existing permitting policy for burning of yard waste.

References:

- School Composting: A Manual for Connecticut Schools: <https://portal.ct.gov/DEEP/Waste-Management-and-Disposal/Organics-Recycling/School-CompostingThe-Next-Step-In-Recycling>

Chapter 14 – Transportation

14.1 Roadway Infrastructure

Transportation is the system of providing for the safe and convenient movement of people through the Town. The transportation system, including moving vehicles, walkers and cyclists, and parking areas, takes into account people using the local facilities, those just passing through and the movement of goods into or through the Town.

East Lyme is a prominent location and serves as the southwestern gateway to southeastern Connecticut. The Town is geographically and demographically suited for commercial and industrial development being located halfway between New York City and Boston. Public art projects, landscaping, streetscaping and traffic access management will be key in servicing the needs of East Lyme’s residents, businesses and visitors.

Many of the recommended improvements to the Town's transportation system are a result of extensive research, ideas presented in the East Lyme Yale Design Report, the Regional POCD, the 2017 Southeastern Connecticut Council of Governments Bike and Pedestrian Plan.

East Lyme's road system is made up of approximately 136 miles of roads, each of which serves a specific function in the Town's traffic flow system. The following categories are generally accepted and were used in preparing the recommendations made in this plan.

14.1.1 Expressways

Designed to carry large volumes of high-speed “through traffic” between regions and towns. They afford no access to abutting properties and have grade-separated interchanges with ramps providing the only access. Example: Interstate 95 & State Route 449 (Rocky Neck Connector).

14.1.2 Arterials

Roads carrying heavy volumes of traffic, often providing access to expressways and connecting important points within the community. Example: Routes 156, 161 & 1.

14.1.3 Collectors

Carry traffic between points in the community and collect traffic from residential neighborhoods for distribution to arterials and/or other points in the community. Some of these roads are in rural areas and carry only low volumes of traffic. Examples: Black Point, North Bride Brook, Scott and Upper Pattagansett Roads.

14.1.4 Boulevards

Are similar to collectors but, minimizes impact on the slope and natural terrain and incorporates a center-landscaped or tree-lined median and perimeter walkways/bikeway within residential neighborhoods. Boulevards can also be classified as arterials or local roads depending on traffic volumes.

14.1.5 Local Roads

Provide access to individual properties (i.e. Pontiac Drive and Hillcrest Road).

14.1.6 Rural Collector and Local Roads

These roads are located in largely unsettled areas and are intended to carry low volumes of traffic. (i.e. Grassy Hill Road, Whistle-town Road, and Holmes Road).

It is important to apply these categories in a manner which will provide an effective road network for the Town's future. With the accelerated changes expected over the next decade, the current function of many roads will have to be upgraded to a higher category to provide an effective road network for the Town. It is important to initiate a planned approach to upgrading the Town's transportation system with the following general goals:

- Ensure that infrastructure systems are safe, efficient, modally balanced, environmentally sensitive and will support economic development.
- Strive to minimize reliance on automobiles and dependency on the road network through increased use of alternative modes of trans: rail, buses, pedestrian sidewalks and crosswalks, bikeways.

As residential development is anticipated to continue, it is expected that new roads will be developed to access undeveloped property. This can affect the hierarchy of roads by causing local roads to become collector streets and collector streets can evolve into arterial roads. This can increase the traffic load on current arterial roads. This heavier volume of traffic could require further upgrading of these arterials and the possible addition of a new north-south arterial in the western or eastern part of the Town. Care must be taken during this development period to provide a unified and integrated network of roads.

Approximately 32 miles of the roads within the Town are state-owned and maintained. These roads consist of the two major east-west routes (US 1 and Route 156) and the major north-south corridor (Route 161). The remaining roads are local roads maintained by the Town.

14.2 Town Roads

Approximately 115 miles of road are maintained by the Town. The Town should conduct an engineering study to identify specific problem areas of congestion and safety and identify the related cost of improvements. One consideration of this study could be to determine whether or not it is feasible to use any of the current Town roads in establishing a new north-south arterial road in the central or western portions of the Town. Increased traffic volume on Route 161 could make establishing such an arterial a necessity in the not too distant future.

14.3 State Roads

The process of implementing state road improvements in Connecticut consists of two steps. First, necessary improvements should be identified in the Regional Transportation Plan, and second, projects must be programmed for construction by inclusion in the regional Transportation Improvement Plan (TIP). Projects can obtain funding priority through the political process. The Town, primarily through the Selectmen and the Town's representatives in the General Assembly, should press for necessary improvements as needed.

A major state project is in the works to reconfigure the entrance and exit ramps at Exit 74 on Interstate 95. In the heart of East Lyme's commercial district, this will represent a major roadway change. It will be important for East Lyme officials to work in close partnership with State officials on maximizing this opportunity and communicating with residents.

14.4 Sidewalks and Bicycling

East Lyme currently maintains 15.4 miles of sidewalk. The town has many great scenic roads and attractions that are attractive to pedestrians and bicyclists. Many walk and ride for pleasure and many do so purely as a mode of transportation. Greater consideration of the needs for the safety of pedestrians and bicyclists. As East Lyme has grown and traffic patterns have intensified, the road infrastructure has become less and less accommodating to pedestrians and bicyclists. In many cases pedestrians can walk on sidewalks where available, although several key areas in town do not have adequate sidewalks. Installing sidewalks in these areas will have substantial impact regarding safety. Furthermore, many key roadways in town do not have suitable width to support safe bicycling.

Figure 28 - Existing roads, Sidewalks, Trails and Bicycle Lanes

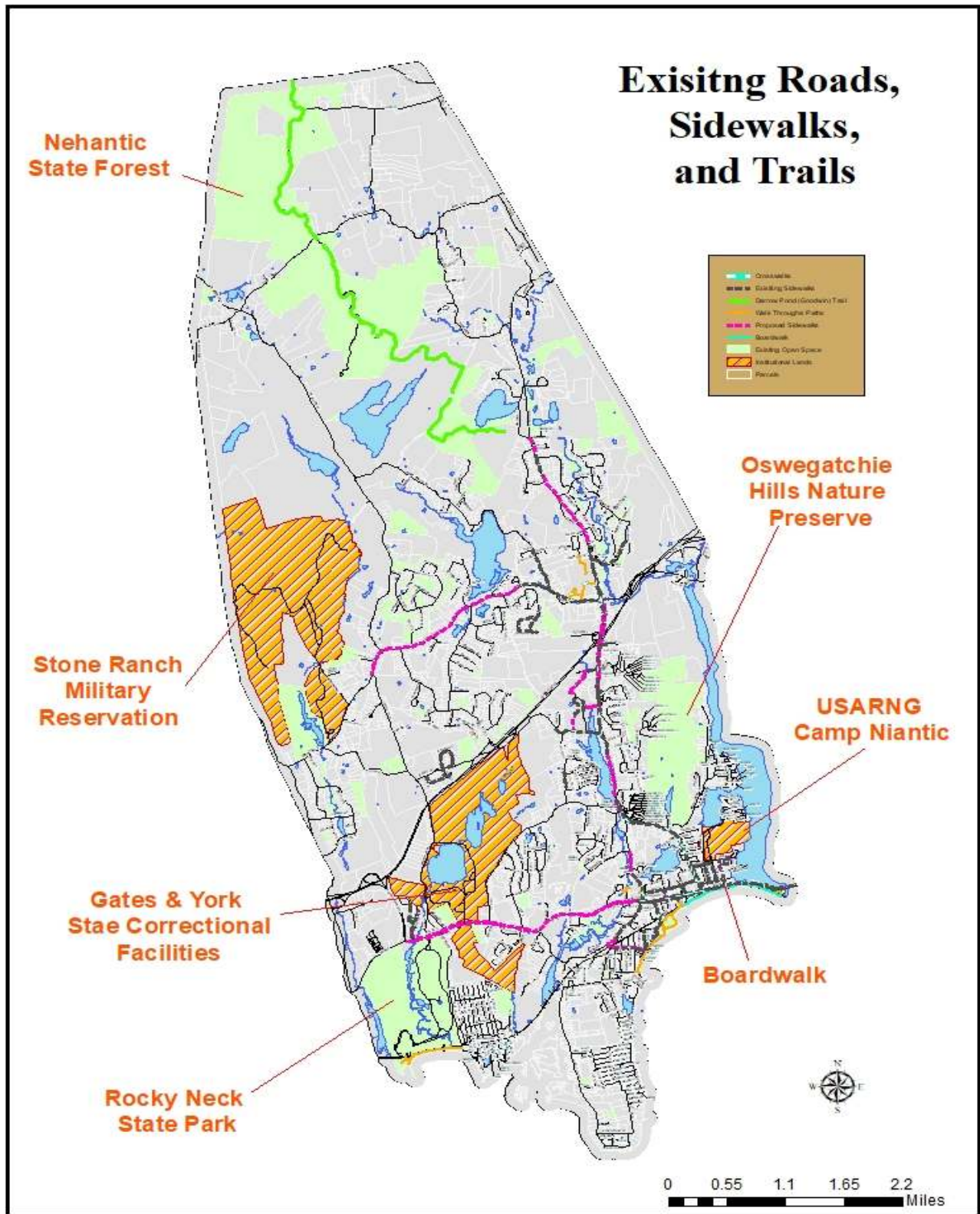


Figure 29 - Sidewalk and Walkability Plan



Figure 30 - SECCOG Bike and Pedestrian Recommendations

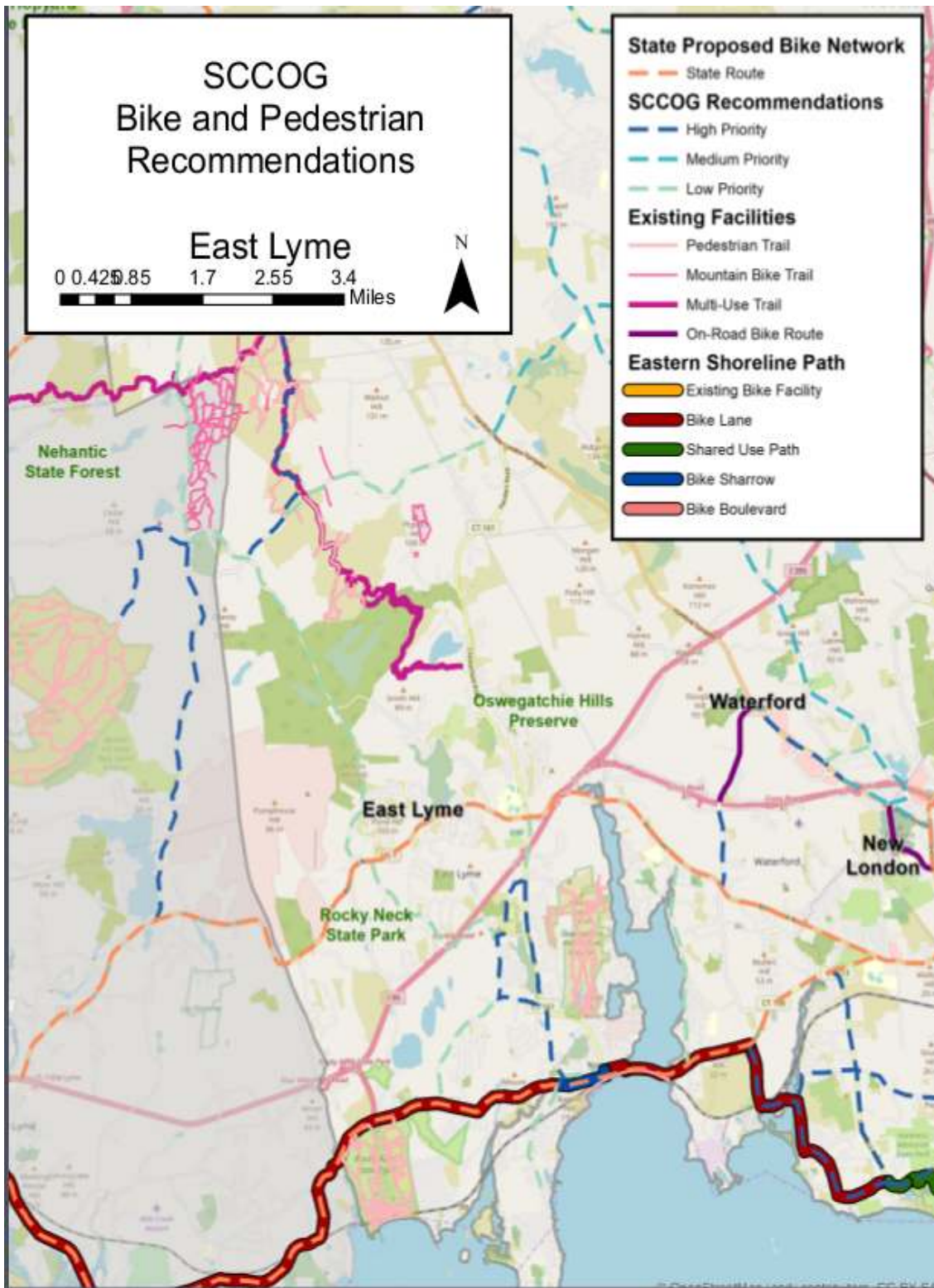


Figure 31 below shows a heatmap of traffic accidents noting where accidents occur. Referring to such a resource can help determine where the significant community improvements are needed. Resources that are used responding to routine accidents in known trouble areas are resources ideally used elsewhere if the particular hazard is corrected.

Figure 31 - Density of Traffic Accidents and Crime on/within 1/4 Mile of I-95

Traffic Density/ Impact of I-95:

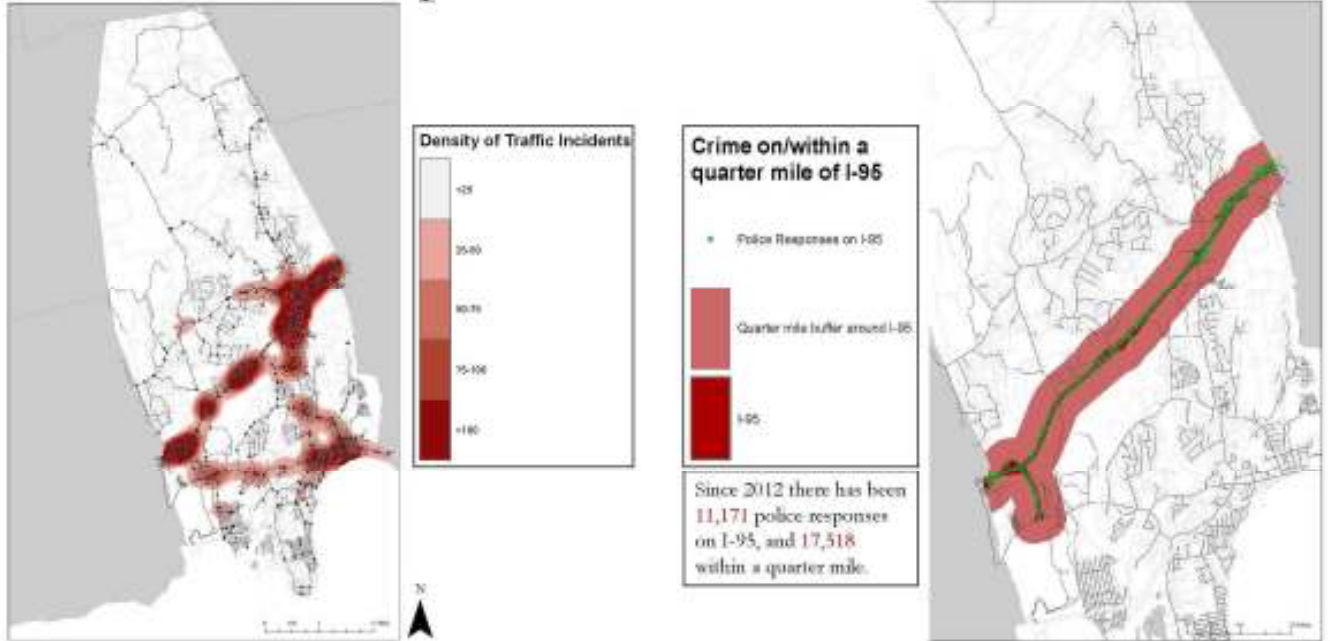
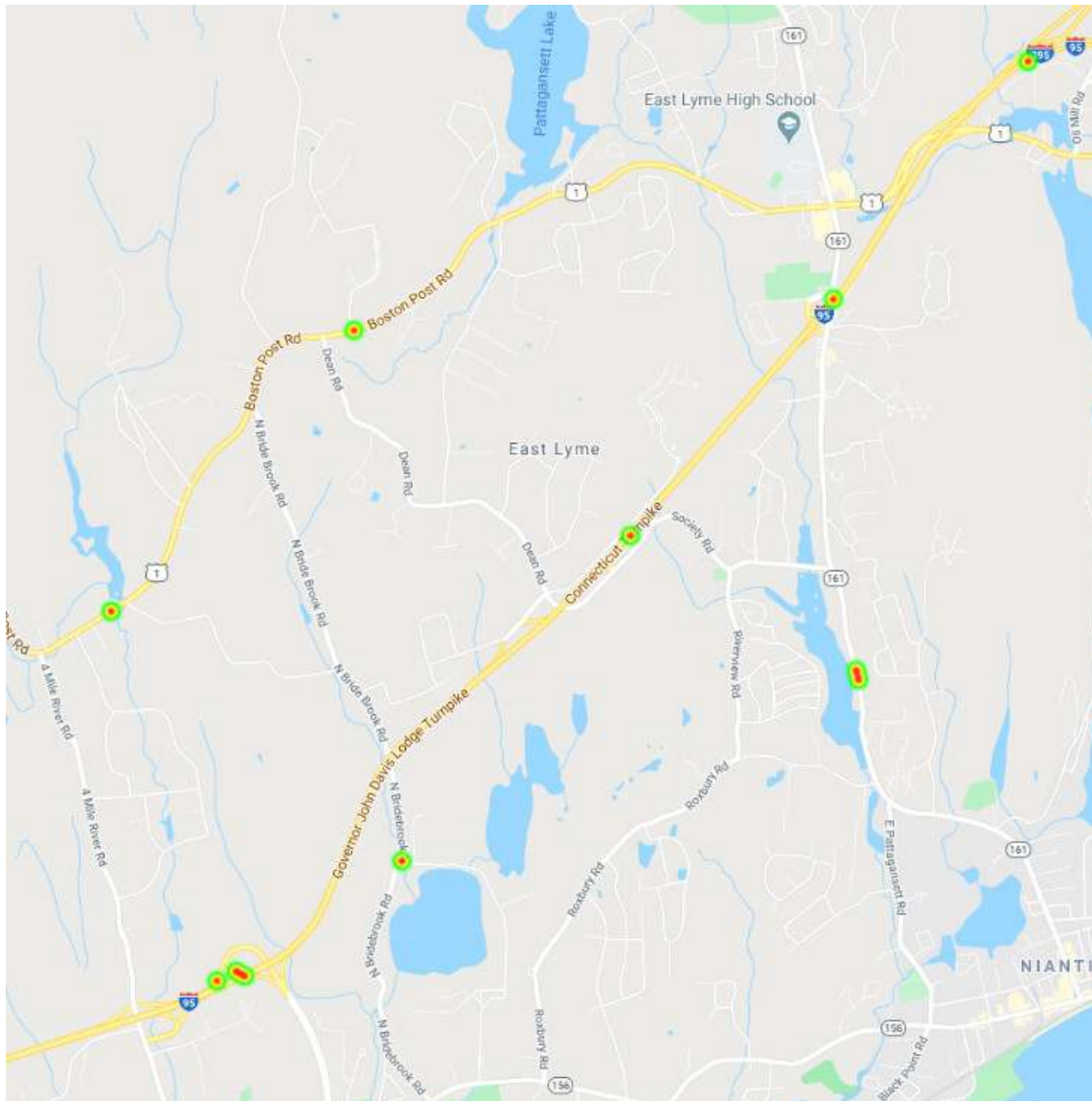


Figure 33 - Total Accidents - Years 2010 - 2020



14.5 RECOMMENDATIONS

1. Continue to emphasize East Lyme as the gateway to southeastern Connecticut over the next ten years.
2. Promote multi-modal forms of transportation: Create safe sidewalk and bike lane systems.
3. Enhance coastal access to boat transportation.
4. Encourage traffic access management techniques along Route 161. There is a need to institute traffic access management techniques to control the number of curb cuts allowing access to and from commercial properties. Frequent access points, as seen on Route 161, hinder traffic flow and cause congestion. Increased commercial development will only accentuate this problem. The following methods are recommended:
 - a. Require that development or redevelopment of commercial properties are designed to encourage opportunities for shared access points between adjoining properties.

Figure 34 - Corner Sidewalk Bump Out

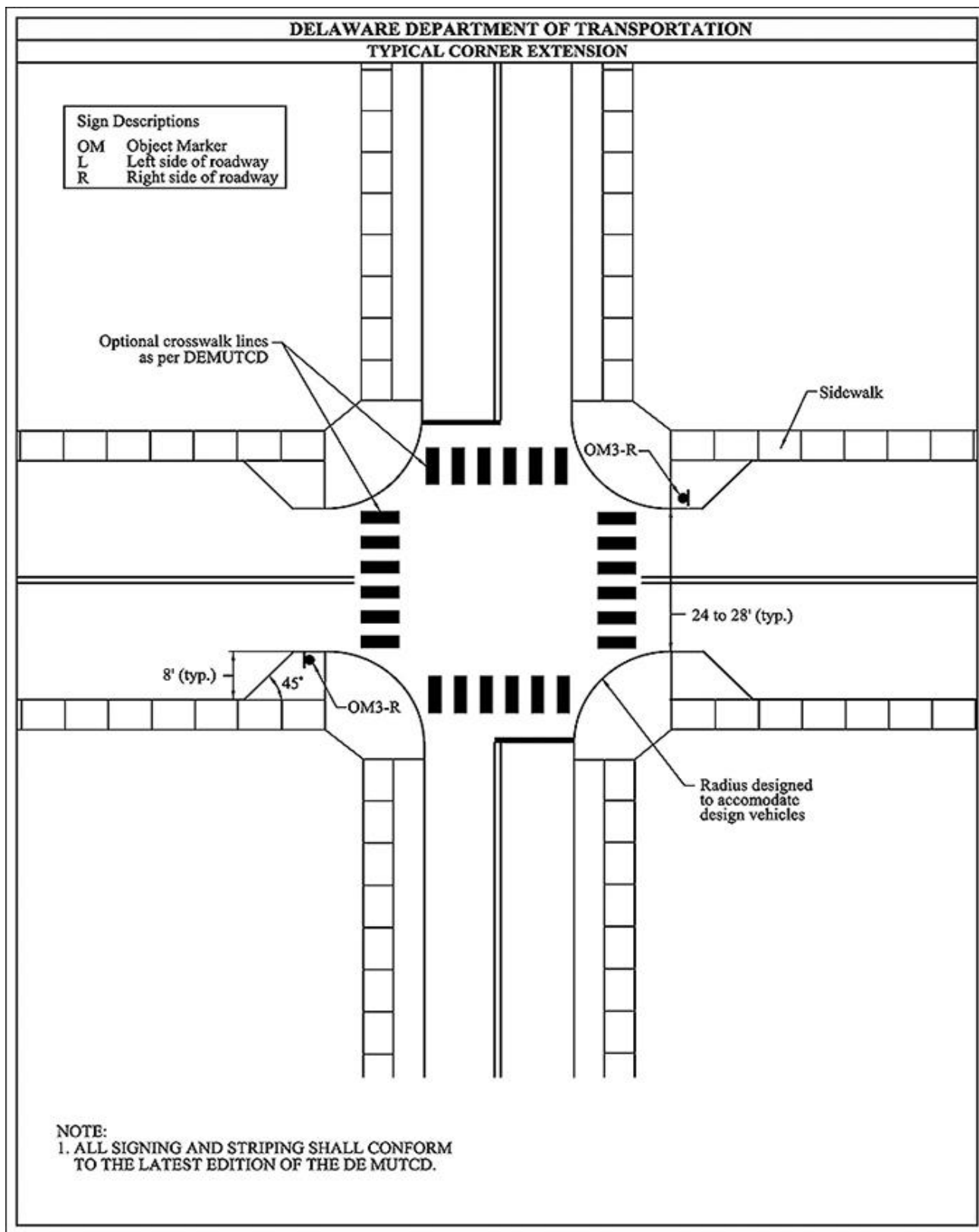
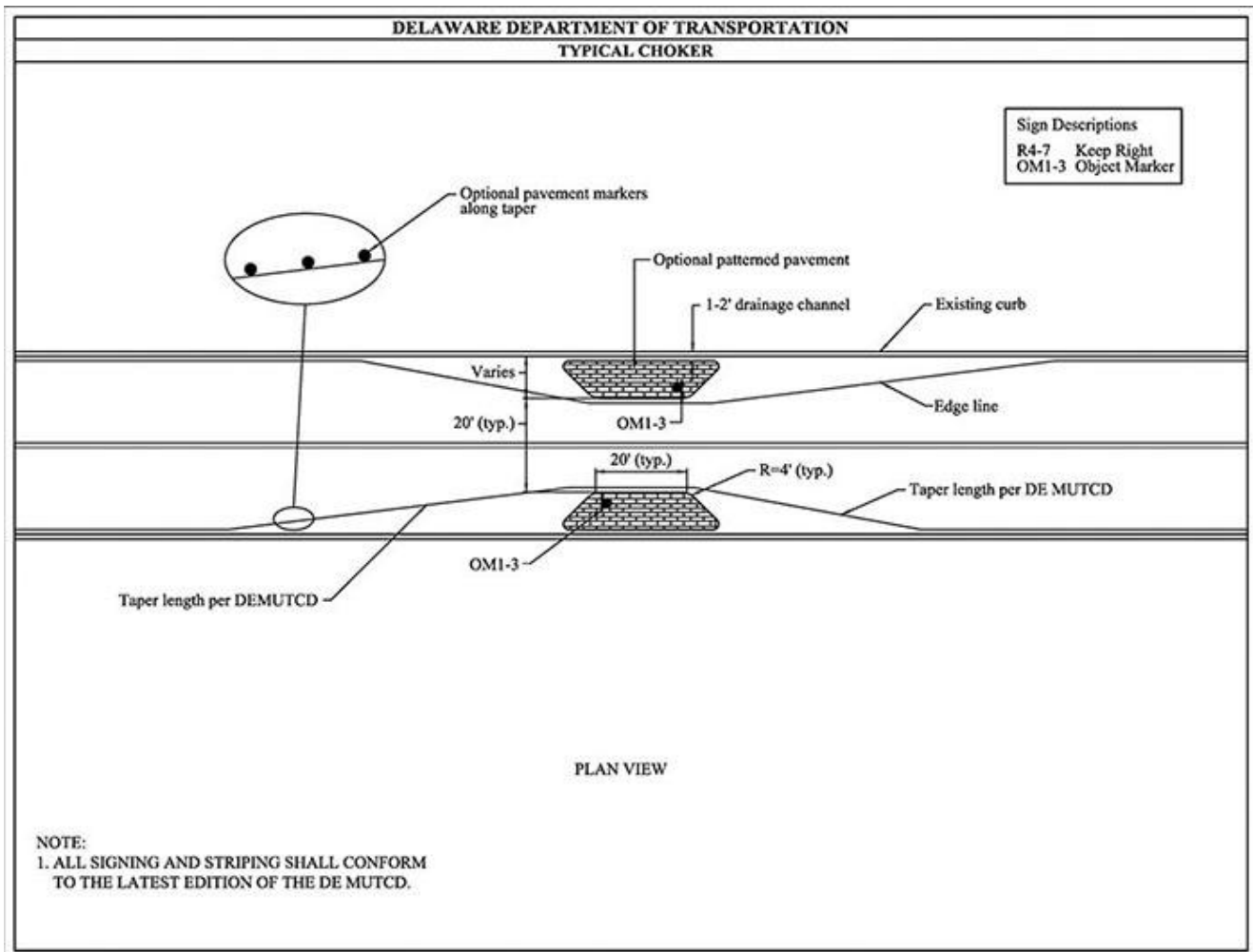


Figure 35 - Mid-block Sidewalk Bump-out



6. Expand parking opportunities by adhering to standards for “Smart Growth”: Strongly encourage the shared-use parking for land uses where peak demands occurs at different times of the day, reducing the total number of parking stalls required. Promote parking and development that encourage multiple destinations within an area to be connected by pedestrian strips.
7. Enhance critical gateways into town. Gateways function like front doors to the Town as well as each neighborhood. Having welcoming gestures in these areas helps to create a positive, optimistic image for both residents and visitors.
8. Coordinate road standards for local residential roads with conservation subdivision initiative. Adopt connectivity standards within the subdivision regulations to promote a greater connectivity of the Town’s street network.
9. Incorporate sustainable non-point drainage solutions where applicable. There are many ways to incorporate innovative stormwater management strategies and low impact development (LID) into town regulations. See NEMO (Nonpoint Education for Municipal Officials) website; <http://nemo.uconn.edu>.
10. Institute “Context Sensitive” design approach. Adopt Context Sensitive solution practices to determine the most appropriate transportation improvements to minimize environmental impacts and serve adjacent and future land uses within a multi-modal network. See Federal Highway Association information website; <http://www.fhwa.dot.gov/context/cssqa.cfm>

11. Include the following projects in the State Road "TIP":

- a. Provide for a traffic survey and an engineering program to establish current traffic patterns, estimate how upgraded or new roads might be configured to handle current and future traffic flow. The State currently has a project in the works to perform a study of I-95 usage and a Town study could be correlated with this project using data related to traffic exiting I-95 and coming into East Lyme.
- b. Widen Route 161 and mark lanes on pavement at intersections with Roxbury Road and East Pattagansett Road. Both Roxbury Road and East Pattagansett Road could be marked with right turn lanes at the intersections with Route 161. The purpose for the addition of these lanes is to enhance the flow of traffic through these intersections. Appropriate signage and pavement markings notifying motorists of these lanes should also be initiated.



Figure 36 - RT 161 Area of Proposed Widening

12. Promote the use of arts and culture into transportation projects. Arts and culture can help remedy the divisions created by urban highways and other detrimental transportation infrastructure by physically and culturally reconnecting communities or neighborhoods. In addition, incorporating arts and culture into transportation projects typically make streets safer for all users. Arts and culture can make streets safer for pedestrians and cyclists by using creative methods to help transportation professionals empathize with all users. Further, Arts and culture can help overcome the disruption of construction and mitigate the impact on businesses, residents, and visitors by using artistic interventions to create a more accessible and inviting environment.

13. Widen Route 161 at Gorton Pond (see Figures 37 and 38).

Figure 37 - Widen Route 161 at Gorton Pond



Figure 38 - Street View on Route 161 South Bound at Gorton Pond



14. Provide a center lane on Route 161 between Industrial Park Road and Route 1. This traffic access management technique will allow through traffic to continue moving while cars making left turns will be able to wait in the center lane for oncoming traffic to clear. This method may also reduce the number of traffic accidents occurring within this stretch of road and will increase the width of the shoulder for north-south bike lanes (see Figures 31 below).

Figure 39 - Recommended Center Turning Lane on Route 161 - North of I-95



15. Restructure Route 156 to handle increased traffic from Old Lyme to the Niantic River Bridge. Specific needs include Route 156 from Route 161 to the Niantic River Bridge (see Figure 32).

Figure 40 - Widen and Re-stripe Route 156, Street View West Bound



16. The Town should clarify that projected improvements to Interstate 95 should be prioritized to ensure that substandard exit and entrance ramps are improved.

17. Encourage reduced road widths (i.e 18' curb-to-curb paved width) and
18. Encourage the adoption of designated scenic roads.
19. Address resilience issues associated with flooded roads. Preventing flooding improves resilience, reduces insurance costs for property owners and prevents needing response of police and emergency personnel during a weather event. Road flooding mitigation improvements are necessary in the following areas:
 - a. West Main Street at Bride Brook
 - b. Giants Neck Road south of the railroad corridor
 - c. Bush Hill Drive at the Pattagansett River. Bush Hill Drive is the only road into the development and flooding could hinder emergency response to that neighborhood.
 - d. Pine Grove Road
 - e. Crescent Beach coastal roads
 - f. Hope Street
 - g. Black Point Road at Burnap Road
20. Prioritize and track sidewalk construction projects in key areas including:
 - a. Route 161 South of Society Road to Roxbury Road
 - b. Black Point Road to Crescent Ave at Central Ave
 - c. East Pattagansett Road from Brook Road to Bush Hill
 - d. Route 156 from Niantic Center School to Park Drive
 - e. Route 1: complete from Mill Road to Pattagansett Lake Boat Launch

Figure 41 - 2019 Sidewalk and Walkability Plan



21. Prioritize and track bicycle safety improvements including adding bicycle lanes and appropriate signage in key areas. Certain roadways may need to have lanes narrowed which will not only provide room for bicycle lanes but, will also act as a traffic calming technique. Narrower roads have been proven to slow traffic, which benefits bicyclists and pedestrians alike.
22. Provide bike lanes on both sides of Route 156 from Old Lyme border to Waterford border, the “Eastern Shoreline Path Bikeway” (ESP), - widen the road where necessary and install wayfinding signs at intervals along Route 156.
23. Provide bicycle lanes on both sides of the road from Flanders Four Corners to Niantic Main Street - widen road where necessary.
24. Provide bicycle lanes on both sides of Route 1 from Flanders Four Corners to Old Lyme border - widen road where necessary.
25. Bicycle parking in public areas should be included in new projects and be made available throughout town. This could help alleviate parking issues at local beaches and attractions.
26. Install Electric Vehicle (EV) charging stations to promote the transition to cleaner transportation. Encourage making space available on town-owned lots for lease by EV charging providers.

References:

- 2017 Southeastern Connecticut Regional Plan of Conservation and Development : http://seccog.org/wp-content/uploads/2018/05/RPOCD_Full-Document_11-16-2017.pdf
- Southeastern Connecticut Regional Bike & Pedestrian Plan: https://bikewalksect.com/wp-content/uploads/2019/09/SCCOG-Bike-and-Ped-Plan_9.27.19_web2.pdf
- Traffic Calming ePrimer: https://safety.fhwa.dot.gov/speedmgt/ePrimer_modules/module3pt2.cfm
- FEMA National Flood Hazards Mapping: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-72.39901321289034,41.239099596567165,-72.06667678710953,41.368055488444135>
- Streets, Sidewalks, People & Cars: <https://www.lgc.org/wordpress/wp-content/uploads/2013/08/traffic-calming-guidebook.pdf>
- Stantec Coastal Resilience, Climate Adaptation and Sustainability Study, December 2018

Chapter 15 - Emergency Services

In July of 2017 an ordinance was enacted, establishing The East Lyme Police as an independent police force for the town. The ordinance also established the Police Commission as the local traffic and safety authority and established a Chief of Police. According to the Fire Department Study of 2016, the Fire Department and Emergency Medical Services (EMS) of East Lyme are not recognized by the town charter or official designation.

15.1 Police Department

The Police Station is located in the former Northeast Utilities Energy Center at 278 Main Street, Niantic. The East Lyme Police Department currently has twenty-five (25) full-time officers, one (1) part-time officer, one (1) full-time Administrative Assistant, and one (1) part-time Administrative Secretary. There are fourteen (14) patrol cars, one (1) UTV, 2 ATV's, one ELPD boat, and one regional boat with Waterford.

15.2 Fire Department

15.2.1 Flanders Fire Department

Flanders Fire Department was chartered in 1946. Original Firehouse currently serves as the 911 Emergency Dispatch Center and Fire Marshal's Office. The current firehouse was built in 1973 with an addition in 2002. The Department's origination came out of the lengthy response times from the Niantic Fire Department which was located at the south end of East Lyme. The station houses two pumpers, one tower, one rescue/mobile command, one service truck and one BLS transport ambulance, a forestry unit, a service vehicle, and one chief's vehicle. Approximately 25 certified volunteers, 4 career and 8 part-time firefighter/EMT's are responsible for fire, rescue, and medical emergencies in the Flanders district, 24 hours a day, 7 days a week. The call volume is 1,400+

15.2.2 Niantic Fire Department

Niantic Fire Department was founded in 1923 to provide fire protection for the Niantic section of East Lyme. The Niantic Fire Department comprises two fire stations, the first its headquarters located at 8 Grand St., Niantic and the Morris Building located at 6 Grand Street. Built in 1957, the 5-bay station house 1 Ladder, 2 Engines, 2 Ambulances from East Lyme Ambulance Fund, 1 ATV, 1 Marine Rescue Boat, and pickup truck and trailer.

The second, known as Station #2, is located at 227 West Main St., Niantic. Station #2, built in 1973, is a four-bay station housing 1 Engine, 1 Brush Truck, and 1 Heavy Rescue. The station also houses the town's SCBA breathing air compressor.

The Niantic Fire Department has 5 Full-Time East Lyme Firefighters, 9 Part-Time firefighters, and 15 active volunteers. Their call volume alone is approximately 2,200+ call per year.

15.3 Public Safety Building

The Public Safety building, located at 171 Boston Post Rd., is home to the Public Safety Director's office, the town's Fire Marshal's Bureau, Emergency Management Office, the town's Emergency Operations Center, and the town's 911 emergency communications center. The Public Safety building, located at 171 Boston Post Rd., East Lyme, is home to the Town's Fire Marshal's Bureau, Emergency Management Office, Emergency Operations Center, and 911 emergency communications center.

The building was built in 1947 as the former Flanders firehouse. The building houses one full-time Police Chief/Emergency Management Director, one full-time Administrative Assistant, six (6) full-time emergency 911 dispatchers and six (6) part-time emergency 911 dispatchers.

The existing Town of East Lyme Police station at 278 Main Street, meant to be a temporary location in 2004, is failing and does not adequately support the needs of our Police force. A 30,000 sq. ft. two story Class A office building located at 277 West Main Street in Niantic, formerly owned by Honeywell, Corp., was purchased by the Town in 2019.

The first-floor planned use is for Public Safety with the second floor utilized for the future expansion of other Town departments. The project as of July 20, 2020 is in the final stages of obtaining approval for additional funding needed to renovate the first floor of the building for Public Safety use. If approved by the Board of Finance, the project will move to referendum in early August 2020. If funding is approved and renovations are completed, the facility will consolidate the Police Department, 911 Dispatch Center, the Fire Marshal's Office and the Emergency Operations Center under the same roof. The estimated timeline for renovations from start to finish is approximately 8.5 months.

Figure 42 - 911 Response Analysis

911 Response Analysis: Total Responses

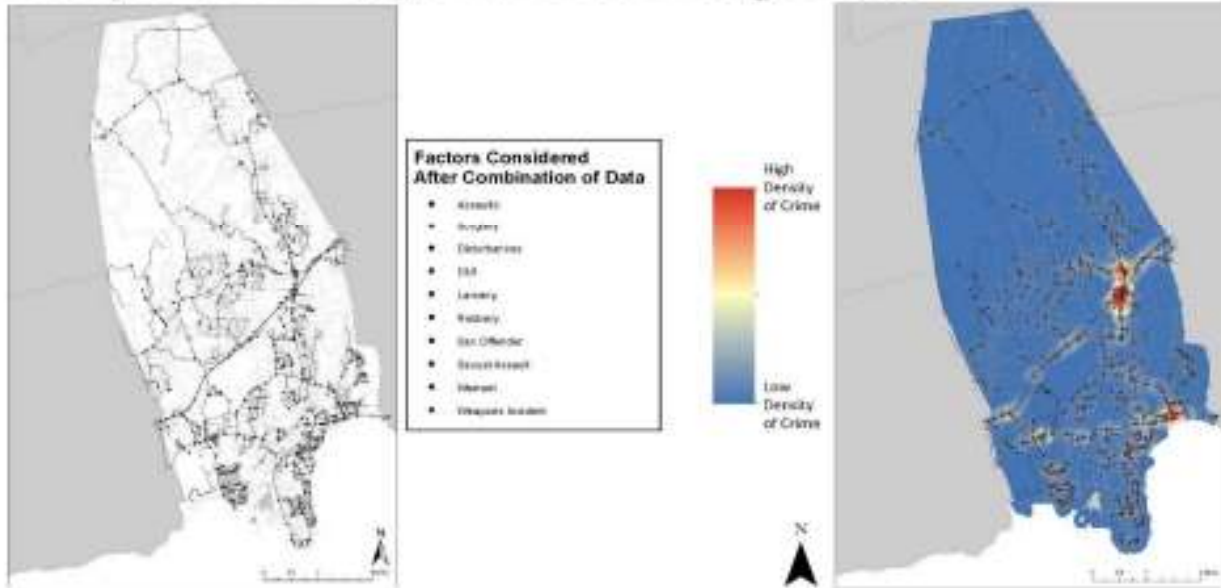
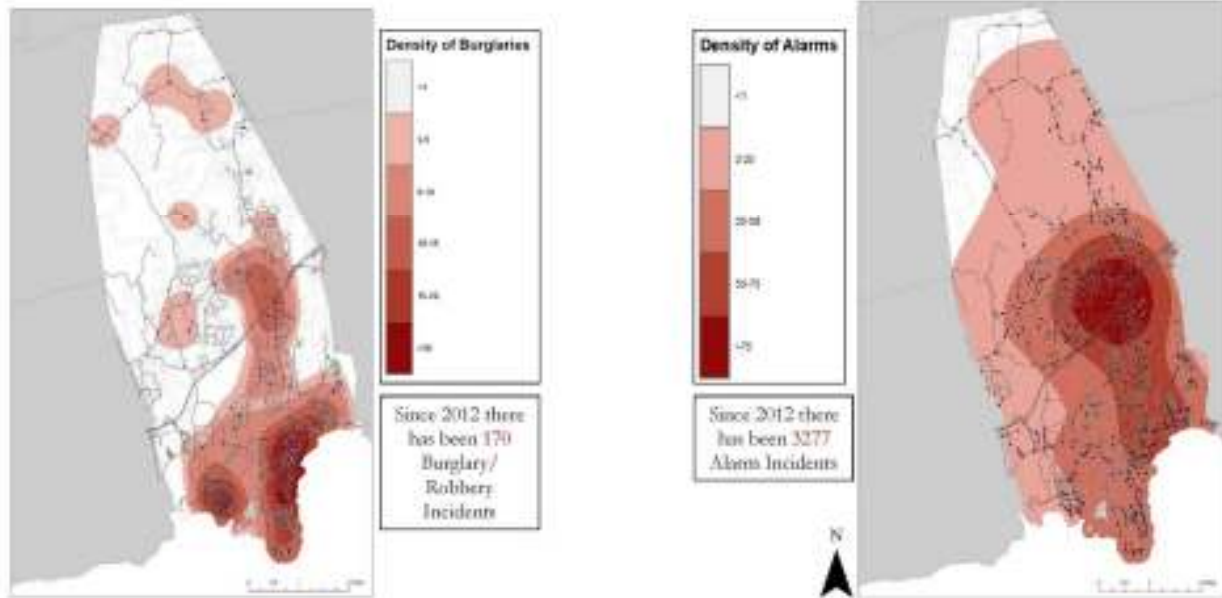
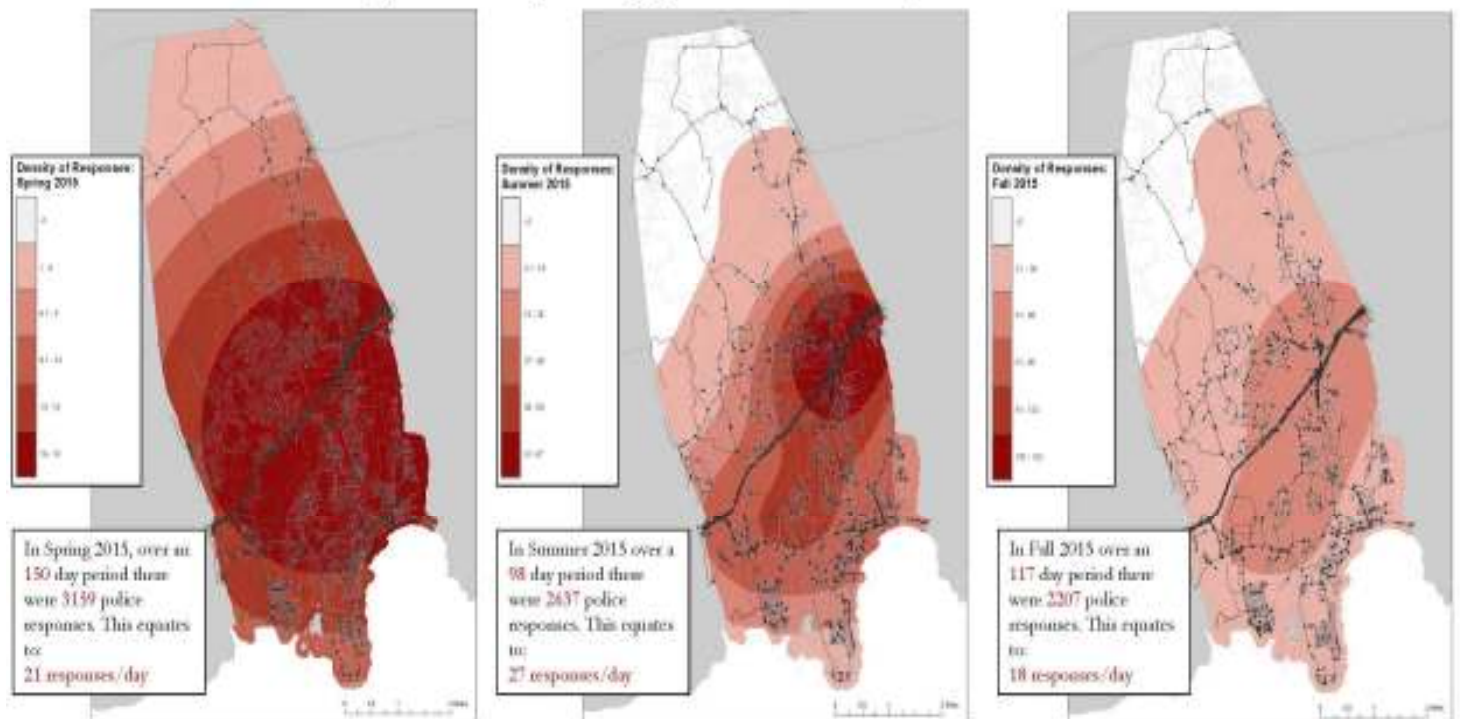


Figure 43 - Density of Responses

911 Response Analysis: Densities of other Responses



Seasonal Analysis: Spring, Summer, Fall 2015



15.4 Looking to the Future

Discussions with Chief Finkelstein, The 2016 Fire Department Study, and the 2017 SECCOG Hazard Mitigation Plan Update Annex for East Lyme provide important facts and recommendations related to planning for future growth, planning for emergency events, identifying hazards and providing suggestions to improve the overall resiliency of East Lyme. What follows is a compilation of recommendations from these resources.

15.5 RECOMMENDATIONS

1. Improve IT infrastructure including but not limited to a centrally managed system, (i.e. video cameras throughout town, radios, GIS Maps, internet and data analysis and data sharing capabilities), fiber optic network, and mobile devices for the immediate sharing of information.
2. Continue collaboration between Emergency Services (dispatch) and DPW (i.e flooded roadways).
3. As development, population growth and the effects of climate change become apparent, the town is recommended to consider the size of its Police Force, Fire Department and Emergency Medical Services (EMS). In addition, it is recommended to study trends in call volume since the adoption of the independent police force in 2017.
 - a. The existing police force currently operates at roughly 1.6 officers per 1,000 and the industry standard for policing is approximately 2.2 officers per 1,000 people (source: Department of Justice).
 - b. EMS and firefighter volunteerism trends need to be evaluated. It is recommended to determine whether to increase the number of volunteers or hire more full time EMS and Fire Department staff. Nationally, there are about 1.67 firefighters per 1,000 people and currently, it is uncertain how many total firefighters and EMS responders will be available between professionals and volunteers as volunteerism seems to be waning.
4. Promote Regionalization: Continue and expand regional partnerships where practical. Regionalization recommendations include:
 - a. Promote the ability to share underutilized or specialized resources
 - b. Promote access to specialized training
 - c. Promote access to regional sharing of information
 - d. Promote strategic positioning of emergency equipment
 - e. Promote resilience in the type and quality services available by drawing from a larger pool of talent from a wider region.
5. Develop a Long-Term vehicle acquisition for Fire trucks, Ambulances, and turn out gear, and other necessary hazmat
6. Pursue grant funding/opportunities for Vehicle, IT, and necessary lifesaving/rescue equipment through the Division of Emergency Management and Homeland Security or other applicable organizations.
7. Pursue professional grants to assist in the pursuit of state and federal grants relating to police, firefighting and EMS acquisitions.
8. Identify and remediate where possible, low lying land, roads and structures susceptible to storm surge and flooding.
 - a. Flood Prone Roadways: <http://seccog.org/wp-content/uploads/2018/07/East-Lyme-Annex-Approved.pdf> Table 4.1: Important Roadways at Risk for Overtopping During Coastal Flooding
 - b. Flood Prone Structures: <http://seccog.org/wp-content/uploads/2018/07/East-Lyme-Annex-Approved.pdf> Table 3-1: Structures Susceptible to Inland Flooding in the Town of East Lyme

9. Develop and/or Refine a Regional Unified Hazard/Resource Matrix. Such a matrix would show hazards and resources of the region and clarify who and what are best equipped for specific types of emergencies. Matrix should include quantity and type of facilities available and who owns them versus known hazards. Table 2-1 Critical Facilities from the East Lyme Hazard annex should be expanded to include all known hazards and resources.
10. Generally support the recommendations from the 2016 Fire Department Study which has 21 recommendations. Many of these recommendations refer to internal business of the Fire Department, others should be known at a Planning Commission level.
11. Generally support all of the recommendations from the Hazard Mitigation Annex. This document has many recommendations for improving resiliency at the local level.
12. Continue to identify and mitigate energy security risks by planning emergency power for critical facilities such as communication systems, healthcare facilities and water pumping stations.
13. Continue to identify and mitigate security risks associated with potable water and waste water by planning for water main breaks, water contamination events, backflow contamination event due to firefighting
14. Continue to identify and mitigate risks associated with public health issues such as global pandemics, the opioid crisis and hunger.
15. All new developments should provide water for fighting fires. Fire water is not available in all parts of town and certain portions of the existing water mains lack sufficient flow volume as detailed in the 2017 Fire Department Study.

References:

- Hazard Mitigation Plan Update Annex, East Lyme CT - DEC 2017: <http://seccoq.org/wp-content/uploads/2018/07/East-Lyme-Annex-Approved.pdf>
- 2016 Fire Department Study: <https://eltownhall.com/wp-content/uploads/2017/07/Fire-Department-Study.pdf>
- US Fire Department Profile: <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osfdprofile.pdf>
- UCONN Crash Data Repository: <https://www.ctcrash.uconn.edu/>
- Stantec Coastal Resilience, Climate Adaptation and Sustainability Study, December 2018

Chapter 16 - Sustainable Municipal Finance

16.1 Expenditures and Revenues

In light of economic conditions of the State of Connecticut, it is more important than ever to create an independent and sustainable economic base in the town of East Lyme that does not rely as heavily on residential taxpayers.

Over the past ten years, both municipal expenditures and revenues have increased through the combined effects of inflation, population increase, and a higher level of services provided. Land use has a significant impact on existing and future revenues and expenditures. While residential land use can cause an increase in expenditures for school and other services, properly designed and attractive residential subdivisions stabilize property values and reduce fluctuations in the Town's mil rate. The residents of these subdivisions also provide the customer base for the commercial land use. Commercial and industrial land use will produce revenue in excess of the expenditures required by the Town to service these uses. Conversely, poorly designed commercial and industrial properties, or excessive commercialization, will have a negative effect on residential, commercial and industrial property values.

Table 6 - General Government Expenditures 2010 - 2019

TOWN OF EAST LYME
General Government Expenditures by Function
Last Ten Fiscal Years

Fiscal Year	General Government	Public Safety	Public Works	Health & Welfare	Culture & Recreation	Education	Capital Outlays	Debt Service	Total
2010	5,693,920	2,859,309	3,082,118	218,528	1,868,381	38,134,641	468,303	6,122,761	58,447,961
2011	5,859,397	3,235,354	3,222,113	249,922	1,735,191	38,653,969	614,192	5,411,692	58,981,830
2012	5,710,654	3,351,853	3,253,218	244,473	1,772,401	40,332,538	671,222	5,206,044	60,542,403
2013	5,783,652	3,509,915	3,610,921	249,146	1,757,150	41,214,544	717,726	4,944,915	61,787,969
2014	5,899,084	3,563,027	3,685,637	253,134	1,867,979	41,913,989	1,105,829	4,814,388	63,103,067
2015	6,208,719	3,806,533	3,767,781	262,122	1,926,454	42,797,407	1,247,649	4,841,132	64,857,797
2016	6,411,242	3,944,019	3,850,269	270,956	2,040,608	44,032,089	1,101,275	5,281,994	66,932,452
2017	6,803,396	4,208,215	3,862,143	267,197	2,069,216	45,479,205	1,011,610	5,283,234	68,984,216
2018	7,099,843	4,236,463	3,717,847	256,058	2,044,883	45,972,881	813,866	5,371,017	69,512,858
2019	7,746,224	4,310,111	3,671,870	263,939	1,897,937	47,970,983	717,888	5,395,803	71,974,755

Figure 44 - General Government Expenditures 2010 - 2019

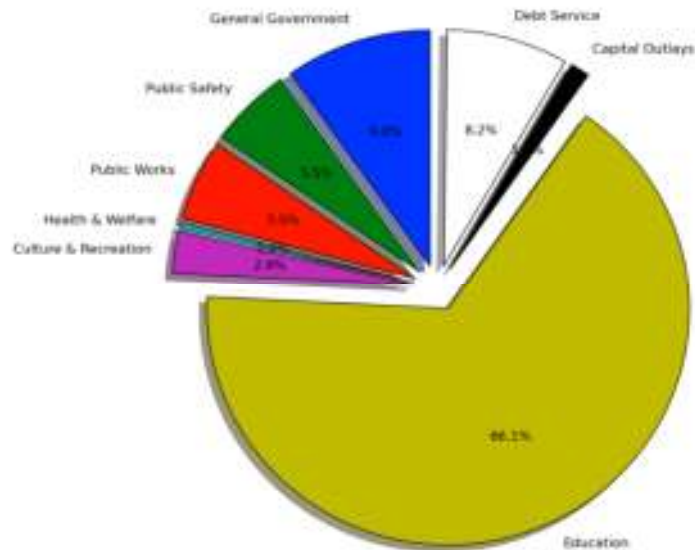
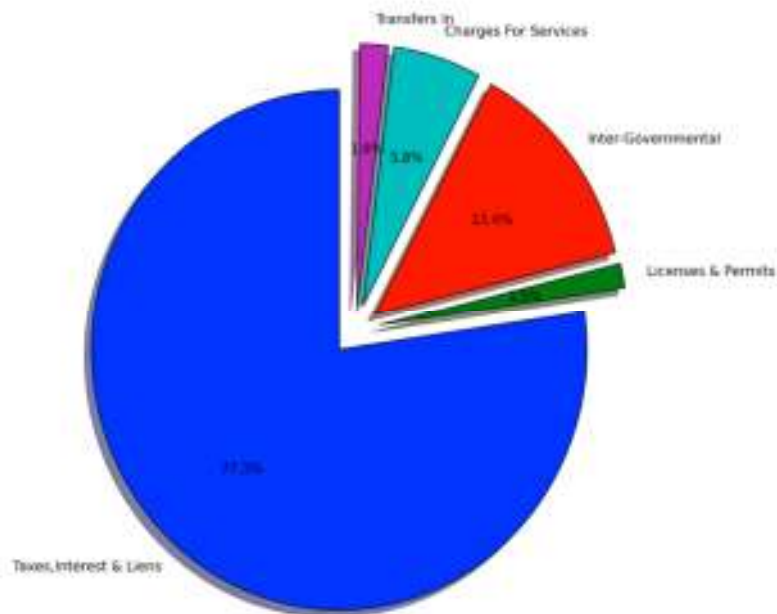


Table 7 - General Government Revenues

TOWN OF EAST LYME
 General Government Revenues by Source
 Last Ten Fiscal Years

Fiscal Year	Taxes, Interest & Liens	Licenses & Permits	Inter-Governmental	Charges for Services	Fines & Forfeits	Interest	Transfers In	Total
2010	43,941,520	998,614	7,885,281	3,409,389	44,121	76,609	2,068,562	58,424,096
2011	45,104,072	772,777	8,007,922	3,532,205	70,248	68,453	2,158,562	59,714,239
2012	45,043,599	750,505	9,132,358	3,687,007	62,949	59,720	1,944,469	60,680,607
2013	46,487,710	864,645	9,014,829	3,722,997	37,533	37,706	1,697,300	61,862,720
2014	47,820,460	1,088,653	9,356,374	3,560,759	47,958	31,877	1,048,729	62,954,810
2015	49,782,485	1,187,492	9,171,113	3,835,872	64,981	35,827	1,027,144	65,104,914
2016	51,942,736	992,761	9,318,198	3,723,520	54,814	41,959	862,102	66,936,090
2017	54,276,614	993,674	9,100,925	3,996,858	106,267	41,473	409,525	68,925,336
2018	56,577,147	1,050,769	7,589,883	3,987,532	62,348	76,270	409,951	69,753,900
2019	59,523,761	1,101,245	8,012,716	3,762,663	69,498	145,345	111,299	72,726,527

Figure 45 - General Government Revenues



16.1.1 Investing in Economic Development

Development of revenue sources is the result of many unrelated actions taken in the Town, constrained only by the permitted uses of the land and conformance with the Zoning Regulations. Managing the economic development of East Lyme, so that the essential expenditures are made, without overburdening taxpayers will take a broader perspective of the East Lyme economic future. Beyond the revised Plan of Conservation and Development and the Yale Charrette Report, a “scope of work” developed by the Town is necessary to achieve objectives noted in this Plan and the Yale Charrette Report.

The “scope of work” would provide the necessary steps to develop revenue sources in such a way that the “reasonable” expectations of the Town could be accomplished without an imbalance in spending versus revenue or an inequity in tax burdens. Spending programs could then be synchronized with the projected build-up of revenues for a “reasonable” growth rate.

Any commercial or light industrial development approach must meet the needs of businesses and compete successfully with the sites, tax incentives and other inducements offered by other communities in the region. In this regard, the strengths and weaknesses of East Lyme would be assessed. The resulting development strategy would build on strong points, such as the shoreline, school system and convenience to major highways. Critical weaknesses would be improved upon or avoided. Once the assessment and a “scope of work” is developed, the Town can use these strengths to attract candidates for new commercial and industrial development.

As a starting point, the implications of a change in the balance of tax contribution between the residential and commercial/light industrial sectors should be determined. Specifically, the business growth necessary for that sector to provide tax revenue equal to one-fourth the revenue from the residential sector should be calculated. This ratio could then be altered depending on how well the required development meets the objectives and requirements of the Town.

Time, effort and funding will be needed to develop and evaluate scenarios for growth that are suitable for the Town. The quality of this effort will directly affect the financial future for East Lyme.

16.2 RECOMMENDATIONS

In addition to annual budget considerations for government and educational needs, careful consideration should be given to future financial goals and capital outlay on the part of the Town to ensure adequate funding for future capital expenditures and adequate increases in revenue. To achieve these goals, specific recommendations include the following:

1. Amend land-use regulations to promote growth management strategies where necessary to encourage high value residential, commercial and industrial development.
2. Review long-range capital expenditures and prioritize according to those items that yield the highest economic benefit.
3. Establish capital reserve funds for projected long-range infrastructure items to offset sudden large expenditures on major projects.
4. Fund the open space line item: Capital Non-Recurring Expenditure (CNRE), annually for future acquisition of open space to help offset the financial impacts of residential growth.
5. Invest in economic development initiatives and strategies that will result in an overall plan to encourage new commercial and industrial development.
6. Strongly consider investing in grant writing services to utilize all available outside public/private funding for specific projects and initiatives.

Chapter 17 - Education, Outreach, and Implementation

17.1 POCD Recommendations

The recommendations set forth in this POCD are simply that, recommendations designed to achieve a shared vision for the Town of East Lyme. To enact that vision will take partnership and collaboration with volunteers, town staff, policymakers, business owners, and residents.

Achieving this update took the input and collaboration of all the above groups. Implementing the recommendations set forth will require continued communication, outreach and regular reliance on checking in with this document over the next 10 years.

17.2 Implementation

The Planning Commission will manage the document to best support its recommendations moving forward. As such, the Planning Commission will:

- Maintain the 2020 POCD as a standing agenda item on each regular meeting moving forward after adoption
- Upon adoption, a Planning Commission representative will attend a board meeting of other East Lyme Boards/Commissions to introduce the document, discuss what sections/recommendations may fall under the purview of that board, answer any questions and determine next steps and priorities
- Notify participating stakeholder groups of the adopted plan and discuss further collaboration opportunities
- Create a guided summary to the POCD as a complimentary resource and handout

Many of the recommendations in this document require funding, which the Plan of Conservation and Development Steering Committee found to be worthwhile to generate further economic strength, resilient infrastructure, sustainable development, and to strengthen our community as a whole. In many cases, grant funding is available for these recommendations.

17.3 RECOMMENDATIONS

1. **The Plan of Conservation and Development Steering Committee strongly recommends that the Town of East Lyme consider hiring a full time Grant Writer, or alternatively, budget for grant writing via outside consulting services for the purposes of generating funds outside of tax dollars for the shared benefit of East Lyme residents.**

RECOMMENDATIONS MATRIX

APPENDICIES

REFERENCES

- *Protecting Connecticut's Groundwater: A Niantic River Watershed Protection Plan March 2009*
- *Southeastern Connecticut Council of Governments 2017 Regional Plan of Conservation and Development*
- *Southeastern Connecticut Regional Framework for Coastal Resilience Final Report June 2019*
- *Southeastern Connecticut Regional Resilience Guidebook 2017*
- *East Lyme Shellfish Management Plan December 2005*
- *Niantic River Resilience Vision, Natural Solutions for Community Resilience Building in the Lower Niantic Watershed*
- *Southeastern Connecticut Housing Needs Assessment 2018*
- *2018 Connecticut Local Economic Development Organization Survey Report February 2019*
- *Sustainability & Energy Efficiency in East Lyme by Lily Fryburg, August 13, 2012*
- *Hazard Mitigation Plan Annex for East Lyme, Connecticut, An Annex of the Southeastern Connecticut Regional Hazard Mitigation Plan prepared for Southeastern Connecticut Council of Governments, June 2005*
- *2017 Comprehensive Economic Development Strategy (CEDS) for the Southeastern Connecticut Economic Development Region*
- *Drinking Water Vulnerability Assessment and Resilience Plan for Fairfield, New Haven, Middlesex and New London Counties, November 2018. Prepared for CT Department of Public Health by University of Connecticut researchers, the Connecticut Institute of Resilience and Climate Adaptation and Milone & MacBroom.*
- *Stantec Coastal Resilience, Climate Adaptation and Sustainability Study, December 2018*
- *US EPA Flood Resilience: A Basic Guide for Water and Wastewater Utilities*
- *School Composting: A Manual for Connecticut Schools: <https://portal.ct.gov/DEEP/Waste-Management-and-Disposal/Organics-Recycling/School-CompostingThe-Next-Step-In-Recycling>*
- *American Farmland Trust Cost of Community Services Study, September 2016*
- *East Lyme Harbor Management Plan (March 2019)*
- *Niantic River Watershed Protection Plan (2006, 2020)*
- *2020 CT DEEP Integrated Water Quality Report*
- *The Nature Conservancy's Salt Marsh Advancement Zone Assessment of East Lyme (2013)*
- *Town of East Lyme Housing Profile, April 2019, Southeastern Connecticut Housing Alliance*
- *U.S. Census Bureau, American Community Survey data 2013-2017*
- *US Census Bureau American Community Survey 2018: <https://www.census.gov/quickfacts/fact/table/eastlymetownnewlondoncountyconnecticut/RTN130212>*

- *East Lyme Public Library Strategic Plan, 2019-2023*
- *East Lyme Public Library Annual Report, 2018-2019*
- *East Lyme Public Library Building Program, building evaluation prepared by Lushington Associates, 2005*
- *SustainableCT.org*
- *Planning The Urban Forest: Ecology, Economy and Community Development, American Planning Association*
- *Connecticut Tree Cities: <https://portal.ct.gov/DEEP/Forestry/Urban-Forestry/Connecticut-Tree-Cities-USA>*
- *CT Data Collaborative: CTBusiness.CTData.org (a partnership with the Office of the Connecticut Secretary of State)Economic*
- *Overview: East Lyme and Niantic, CT Presented by the Southeastern Connecticut Enterprise Region (seCTer), January 3, 2020*
- *Lands of Unique Value Study, East Lyme, CT Fall 2009*
- *American Farmland Trust. 2020. Solar Siting Guidelines for Farmland.*
- *CEQ (Connecticut Council on Environmental Quality). 2017. Energy Sprawl in Connecticut. Why Farmland and Forests are Being Developed for Electricity Production. Recommendations for Better Siting.*
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