

2/27/2020



Town of Ledyard

Plan of Conservation & Development

Approved by the Ledyard Planning & Zoning Commission on 2/13/2020

Effective Date: 2/27/2020

Planning & Zoning Commission
TOWN OF LEDYARD

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ACKNOWLEDGMENTS

In adopting this Plan, the members of Ledyard's Planning & Zoning Commission reviewed and evaluated written and oral comments from Ledyard residents and comments from the following: Ledyard's Conservation, Historic District, & Economic Development Commissions, Water Pollution Control Authority, Town Council, Southeastern Connecticut Council of Governments, Tri-Town Trail Committee and Town Staff.

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I. Introduction

“City by city, town by town, and region by region, we need guiding frameworks for the land use and infrastructure decisions that local officials make every day – the little decisions that, when taken as a whole, can have as much or more of an impact than decisions we often think of as big.”

*Lucy Allen, Chair, NLC Advisory Council
Mayor, Louisburg, North Carolina*

A viable community is dynamic, exhibiting a continuum of growth and change. This growth and change exert pressure on land, roads, transit systems, water, sewer and housing that must be anticipated and accommodated in any land use decisions. The Plan of Conservation and Development (Plan) is a guiding framework for the future conservation and development of the community and is an important tool in the land use decision making process. The Plan is required under Connecticut General Statutes Section 8-23 and, according to the statutes, is to show “the Commission’s recommendation for the most desirable use of the land within the municipality... and for the most desirable density of population...” It is an advisory document utilized by the Planning and Zoning Commissions as well as all other town boards and commissions. The requirements for the Plan are excerpted in Figure 1.

This Plan builds on previous plans adopted in 1965, 1972, 1982, 1993, and 2010 and considers input from the public, members of the Planning and Zoning Commission, Conservation Commission, Historic District Commission, Water Pollution Control Authority and Inland Wetlands and Watercourse Commission. It is intended to continue the tradition of guided growth, land use and development within the town of Ledyard.

Plan Authority, Application and Implementation

Policies contained in this document should guide planning and decision-making processes of local government. Section 8-23 of the Connecticut General Statutes says: “The Plan shall be designed to promote with the greatest efficiency and economy, the coordinated development of the municipality and the general welfare and prosperity of its people.”

This Plan has a strong land-use and growth management component. Section 8-3(a) of the General Statutes requires the Planning Commission to determine whether a proposed zoning district boundary change or amendment to the zoning regulations is consistent with the Plan.

Section 8-24 of the General Statutes and Chapter VII (3)(c) of the Town Charter call for the Planning Commission to review municipal improvements proposed by various Town agencies and departments. This Commission will use this Plan to evaluate such proposals.

The Planning Commission approves all subdivision of land (Section 8-25 of the General Statutes). It is the Commission's intent that proposed subdivisions and/or changes to the subdivision regulations further the objectives of this Plan.

Finally, this Plan can be used to support and justify funding requests and grant applications to the state and federal governments. Certain categorical grants require that projects be compatible with this Plan.

Plan Consistency

This Plan was compared with the Locational Guide Map in the 2013-2018 State Plan of Conservation and Development. It was found to be generally consistent with that Plan. In addition, this Plan was compared with and guided by the 2017 Conservation and Development Policy Guide prepared by the Southeastern Connecticut Council of Governments and found to be generally consistent with that Plan.

Any inconsistencies can be generally attributed to:

- ◆ Differences in definitions of desirable uses or development densities
- ◆ Local (as opposed to Regional or State) desires about how Ledyard should grow and change in the coming years

Figure 1

Excerpt - Connecticut General Statutes 8-23

The Commission shall:

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

The Plan Shall:

- ✧ Be a statement of policies, goals and standards for the physical and economic development of the municipality...
- ✧ Show the commission's recommendation for the most desirable use of land within the municipality for residential, recreational, commercial, industrial and other purposes and for the most desirable density of population...
- ✧ Be consistent with coastal program requirements...
- ✧ Be made with reasonable consideration for restoration and protection of the ecosystem and habitat of Long Island Sound...
- ✧ Reduce hypoxia, pathogens, toxic contaminants and floatable debris in Long Island Sound...
- ✧ Make provision for the development of housing opportunities, including opportunities for multi-family dwellings consistent with soil types, terrain and infrastructure capacity...
- ✧ 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 housing needs...
- ✧ Take into account the State Plan of Conservation and Development...and note any inconsistencies it may have with said plan.
- ✧ Consider the use of cluster development to the extent consistent with soil types and terrain and infrastructure capacity.

- ♦ The fact that the State Plan and the Regional Plan make policy recommendations for land use intensity and environmental sensitivity while this Plan suggests specific land use types.

Ledyard History

Our future planning for Ledyard is guided as much by the context of our history as it is by our future goals. A continuous link between the past, present and future is needed in order to ensure that our proposed changes help the town evolve, based on its actual strengths and weaknesses, rather than on a universal plan. Ledyard evolved from a small agricultural town to a suburban community in a short twenty-year period that changed the town permanently.

During the 1940s, the Town Fathers wanted to end the one room schools and have a consolidated school but could not start until the end of World War II. Buildings that did not support the war effort could not be constructed while the war was in progress and so it was not until September 1949 that the Ledyard Consolidated School opened with six classrooms and an auditorium. Juliet W. Long was principal and taught the eighth grade. The school was to serve the needs of Ledyard for twenty years. Its auditorium also provided a place to hold the town meetings, which had been previously held in the basement of the Ledyard Congregational Church.

In 1946 the Town started paving the roads. In 1945, Route 12 came to Town making a trip from Groton to Norwich much easier because the existing roads traveled around ledge outcroppings and coves of the Thames River.

The Town Fathers could not have foreseen the phone call that would alter the course of Ledyard's history. Hyman G. Rickover, then a Navy Captain, discussed building an innovative new submarine with the shipyard commander at Portsmouth Naval Shipyard in Kittery Maine. The commander was not particularly interested in Rickover's project. Captain Rickover borrowed the Admiral's phone and called O. P. Robinson, President and General Manager of Electric Boat Company. Robinson was very interested and invited the captain down to discuss his project. The ensuing handshake at their meeting settled the site of a birth called Nautilus, the first nuclear powered submarine. Additional nuclear submarines were designed and built at the shipyard in Groton. This was followed by the missile firing submarine, also designed and many built in Groton. Additionally, Charles Pfizer Corporation in Groton increased its labor force during that period and Dow Chemical opened its plant at Allyn's Point in 1954. Dow was given tax free status in Ledyard for ten years. At the end of the ten years, Dow became Ledyard's biggest taxpayer.

The great rise in employment opportunities caused a great increase in the needs for goods, services and all forms of commercial activities. The population of Ledyard had been less than

2,000 up to 1950. The commercial events described caused the population of Ledyard to explode. For a period of time in the 1950s and 1960s, Ledyard was the fastest growing town in Connecticut.

In 1952, the first addition to the Ledyard Consolidated School had begun. In 1955, Gales Ferry School opened, and the Ledyard Consolidated School became Ledyard Center School. During the high growth years, while schools were being added on to, classes were held in the fire house in Ledyard center. In 1956, the first phase of the current Town Hall was built replacing the earlier town hall which was built in the 1930s and currently is used as the Ledyard Food Pantry.

In the following years, several additions to the Town Hall have taken place. High School students from Ledyard had gone to The Norwich Free Academy in the past. However, the population's increase was too much for the academy, so Ledyard had to build its own high school. It opened in 1960. This was followed by a middle school, Gallup Hill School and Juliet Long School. Ledyard's high rate of growth plateaued in 1970 and the population has remained at that approximately level at the present. The twenty years between 1950 and 1970 changed Ledyard from an agricultural community to the suburban residential community it is now.

II. Conditions and Trends

Ledyard is a suburban town in southeastern Connecticut that covers 38.2 square miles, with a population of 14,926 for a density of 390.5 people per square mile. Ledyard is bordered on the west by the Thames River and by the Towns of Preston to the north, North Stonington, Stonington and Groton to the East and South, and hosts within its boundaries the first federally recognized Indian tribe in Connecticut, the Mashantucket Pequot Tribal Nation.

Ledyard was first settled in 1653 as part of the New London Colony, then as part of the independent Town of Groton. The Town was incorporated from Groton in 1836. The Town has a rich cultural history and its historical and ongoing relationship with Native Americans, particularly the Pequot Tribe, has played an important role in the development of the Town.

Ledyard's development pattern has been influenced by a number of factors, with the most notable recent being its location. During the 1950s and 1960s, Ledyard was one of the fastest growing communities in Connecticut, attributable in large part to a national growth in population and the substantial increase in defense manufacturing jobs located in Groton and New London. Ledyard served as a residential community and saw significant residential growth, but relatively little commercial or industrial development. This trend continues as residents commute locally to Groton, New London, the reservations and even further to Hartford and Providence.

Major employers within the community include Foxwoods Resort and Casino, Ledyard Board of Education, Town of Ledyard, and US Dept. of the Navy. Although there are a large number of people who commute into Ledyard daily for employment with the Board of Education and Foxwoods, most Town residents rely on other employers in the region such as General Dynamics Electric Boat, Pfizer and Mohegan Sun Casino & Resort for their job base and a majority of Ledyard's working population continues to commute to businesses outside the Town. The SCCOG Regional POCD 2017 (Regional Plan) states employment in the region continues to be concentrated in casino gambling and defense-related businesses.

Although characterized as a suburban community, the Town continues to retain a strong rural character. The presence of significant wetlands and ledge combined with a lack of public infrastructure limits the density of development in large portions of the town, which contributes to a more rural characteristic that residents express a desire to protect and preserve. One of the most significant trends is the growth in land preserved as open space or agricultural land. Efforts should be made to ensure this trend continues and that future open space acquisition and

preservation is planned in order to protect natural resources, the environment and the Town's quality of life. A robust effort to conserve open space for agricultural, recreational, watershed, and habitat has seen concrete gains in recent years. This growth is driven by active land trusts, public/private partnerships with these organizations, and the implementation of Conservation and Open Space Subdivision Zoning Regulations. The large areas of undeveloped land that remain in town provide an opportunity for holistic planning of interconnected greenways that promote healthy living, watersheds and promote property values.

Residential land use dominates all other land use categories in Ledyard with about 22,600 acres of the Town's 24,000 acres zoned primarily for residential use. Less than 1% of land in Ledyard is occupied by industrial or commercial uses. Attention should be paid to economic development policies and zoning regulations to make sure the town is encouraging appropriate commercial uses. However, the lack of water and sewer infrastructure in Ledyard, the supply of available industrially and commercially zoned land with infrastructure in nearby towns and the lack of population density, suggests these numbers are unlikely to change substantially. However, a slow increase in light commercial (primarily retail) uses in the towns business districts is visible. Increasing residential density near these business districts will help make these areas more viable.

Ledyard's population at the 1950 census was 1,749, but it rose drastically in the mid-twentieth century; between 1960 and 1970 the population grew from 5,250 to 11,649. In 2017, the US Census Bureau American Community Survey (ACS 2017) estimated the population of Ledyard as 14,926, down about 1% from the 2010 Census and is projected to decline further to 14,704. Ledyard has experienced a significant decline in the population of school aged children over the last 10 years, which is expected to total 24% through 2025. This decrease in school-aged population mirrors the expected statewide decline of 10% and the regional decline of 15%.

Ledyard is also aging. The percentage of its population aged 65 and older continues to grow. The median age of the Ledyard population of 40.5 (ACS 2017), which has increased by about 13 years since 1980, reflects this demographic shift. This trend is echoed regionally and nationally and is expected to continue. This significant growth is seen in all 65+ age groups as well as the 25-44 age groups. These correspond to the large boomer and millennial generations age groups. Importantly, the 65+ households do not represent an influx into the area but aging in place by retiree's trying to stay in the area.

In addition to the aging population, the number and percentage of elderly households made up of single persons has grown. The aging of the Ledyard population and the increasing number of those who live alone has housing and service implications that must be considered in future capital planning. Such implications include impacts on education and parks & recreation

budgets, as well as a potential increase in social services, health care services and senior activities, along with the growing demand for more affordable & smaller housing units, age-restricted developments, and assisted living, nursing & congregate care facilities.

The majority (82%) of Ledyard is White, about 10% higher than the rate in New London County. It was estimated that 2% are Black/African American, 2% Native American, 2% Asian, 5% Mixed and 6% Hispanic/Latino origin. With the exception of a significant population of Native Americans, these rates are approximately half those found in New London County (ACS 2017).

Ledyard currently enjoys a poverty rate well below the state and county averages at 4.9%, compared with 9.9% for NL County and 10.1% for CT (ACS2017). Additionally, The Town's unemployment rate of 3.0% (Labor Force 8,220, Employed 7,971, Unemployed 249) is below the state (3.6%) and county (3.5%) averages (CT DOL Labor Market Information 2019). The median household income was \$88,163, 25% which is 20% higher than for NL County at \$69,411 and for CT at \$73,781 (ACS2017).

The majority of Ledyard is made up of single-family housing, agriculture, and other open spaces. Residential land use continues to dominate all other land use in Ledyard. There are two business districts, Ledyard Center and Gales Ferry Village and there has been little commercial or industrial development in Town.

According to SECCOG report "*Housing a Region in Transition: An Analysis of Housing Needs in Southeastern Connecticut*," the Southeastern Connecticut region is facing a serious affordable housing shortage. The report estimates the region will need an additional 7,200 housing units between 2015 and 2030, which is a 6.3% increase for the 22-town area. It is expected that half of these new units will need to be rental units (as compared to the current rental rate of 35%). The need for rental units is also seen by looking at the projection that ~55% of the 7,200 additional households will earn less than \$50,000, which is the approximate threshold for a two-person household to qualify as "low-income." Ledyard currently has ~4% housing that meets the 8-30g Affordability standard. With approximately 6,000 housing units in town, this means an additional ~400 exclusively affordable housing units need to be built to achieve the 10% 8-30g target, which it is unlikely to be able to achieve.

Each year the Mayor prepares a Capital Improvement Program (CIP). This document is the multi-year, future scheduling of public physical improvements. It is prepared with the input of town departments, reviewed and approved by the Planning Commission and adopted by the Town Council. The CIP serves as a fiscal planning tool but does not commit the Town Council or taxpayers to specific projects or specific financial obligations. The following are areas of focus for future long-range capital expenditures:

Water Pollution Control Authority. Improving the provisions of water and sewer service is an important component for the long-range capital goals of the Town. Areas of focus for water mains include Aljen Heights and creating interconnections with other existing community and public water systems, such as Groton and Norwich Public Utilities. Sewer service areas should concentrate on Ledyard Center and the Route 12 area of Gales Ferry. Other areas may be appropriate to abate existing or anticipated abatements from septic system failures. Due to the limited existing treatment capacity of the Ledyard plant sewer main extensions may have to be accompanied by increases in treatment capacities. Intermunicipal connections should also be considered as a solution to expanding treatment capacity and main extensions.

Facilities. The Director of Public Works maintains a Capital Facilities Plan, which encompasses all town buildings and properties, with the exception of school, and should continue to be followed and funded.

Public Schools. Consider implementation of a plan for renovation of Juliet W. Long Elementary School in Gales Ferry.

III. Executive Summaries

Town Centers

Conditions and Trends:

Ledyard has two primary commercial districts that front on the two major state roads through town. Ledyard Center hosts the major town municipal facilities and has long been targeted for higher-density residential and mixed-use development. Gales Ferry is more commercial in nature and will require more redevelopment to site higher-density residential development.



FIGURE 2 RIVERSIDE MALL

Goals:

Creation of a walkable town green – The sale of the Ledyard Center School has created an opportunity to create a compact, accessible area that should be developed as a primary site for community events.

Improve Streetscapes- While a significant portion of streetscape was completed in 2018 in Ledyard Center and has made it a much more walkable area, Route 12 remains very difficult to walk in. Similarly, the streetscape in Ledyard Center needs to be extended to nearby areas.

Infrastructure – Development in both commercial districts will be enhanced by improved infrastructure.

Implementation:

Grant Funding	Streetscapes and walkability are only likely to be addressable through grant applications. Without state or federal funding, it is unlikely the conditions around Route 12 can be fixed.
Infrastructure	Pursue realignment of water service areas to increase utility access to Ledyard Center.
Encourage Development	Examine public-private partnerships to encourage the desired development in both commercial areas.

Land Use Regulations

Conditions and Trends:

A comprehensive revision of the zoning regulations and map (Map 1) was approved in 2018, effective 2/1/19. This followed a multi-year process starting with a Town Council sponsored ad-hoc committee in 2015. The ad-hoc committee was tasked with simplifying the regulations and providing more streamlined application process for commercial and industrial applications. The subdivision regulations have not been updated since 2012. Challenges such as balancing the needs for a variety of housing with watershed and open space protection require a continued evolution in land use regulation to keep with the changing needs and desires of Ledyard's population.

Goals:

Manage Development - Support and manage the growth and development of Ledyard in order to maximize both the environmental and functional quality of life. Regulations must carefully protect the character of Ledyard while providing the flexibility needed to continue to attract new residents and new businesses.

Maintain Regulations - Maintain suitable subdivision and zoning regulations that reflect the development pressures on the town and that maximize compatible uses, maintain property values, minimize the impact of new development on natural resources and manage the growth of public services and maintenance costs.

Support the POCD - Revise zoning, inland wetlands and subdivision regulations as necessary to implement the goals and strategies of the Plan of Conservation and Development and promote consistency between the Plan of Conservation and Development, regulations, and policies of all land use boards.

Implementation:

Zoning Regulations	Accessory dwelling units, changing definitions of families, and the need for alternative and affordable housing will require regulation for the town to evolve.
Subdivision Regulations	The subdivision regulations were last updated in 2012 and need to be updated to improve alignment with the zoning regs and to ensure consistency with the POCD.
Aquifer/Watershed Protection	Updated Zoning regulations and discussions with WPCA will be needed in order to implement effective aquifer and watershed protection.

Open Space

Conditions and Trends:

Ledyard's undeveloped land is critical in shaping the town's character as a rural suburb. The presence of wetlands, ledge, and lack of infrastructure limits the density of development in many parts of the town, which contributes to a rural characteristic that residents express a desire to protect and preserve. Undeveloped land is vulnerable to development pressures coupled with the continued lack of a cohesive open space policy has led to significant fragmentation of open and protected spaces.



FIGURE 3 RED-BACKED SALAMANDER

Goals:

Preserve Open Space - Acquisition and protection of high value open space to protect and sustain habitats, natural resources, and recreation areas

Promote Connections - Develop a town-wide and inter-town network of trails and open space. Facilitate and encourage the acquisition of open space which will provide connectivity between open-space parcels.

Protect Water Resources - Protect wetlands, watercourses, and vernal pools from pollution and minimize the impact of impervious surfaces which accelerate run-off and pollution.

Implementation:

Create Space Inventory	Unused or inaccessible open space discourages continued ongoing preservation. Easy digital access will promote usage.
Pursue Designations	Raise the profile of open space through participation in regional and state programs. Encourage use of by residents and visitors alike.
Encourage Education	Strengthen the education and outreach efforts so all Ledyard children should be aware of the natural resources in our town.

Agriculture

Conditions and Trends:

Farming and agriculture have long been important parts of Ledyard's history and is an important component of our economic diversity. Proper municipal planning and support is necessary for farming and agriculture to remain contributors to our economy and land use. Maintaining and growing Ledyard's agricultural base contributes to public health and happiness, provides jobs and agritourism opportunities, and contributes to the pastoral vistas that residents have come to associate with our community.



FIGURE 4 APPLE TREE

Goals:

Encourage Agriculture - Encourage continued use of land and aquatic based agriculture as both a historic and future land use through advocacy of farm activities for the current and future generations.

Promote Agribusiness – Consider what land use facilities can be used to enable agribusiness. Examine whether common accessory uses and agriculture building structures are currently allowed by zoning regulations

Encourage Watershed Protection – Encourage participation in NRCS and other programs that ensure agriculture works to protect and not damage our wetlands and watersheds.

Implementation:

Create Ag Inventory	The identification of the agriculture products allows this town-wide inventory of farm products to be made available to the community at large.
Staff Ag Commission	Proper support and advocacy of agriculture in town requires a group with the skills and energy to act as an interface between farmers and town commissions.
Encourage Citizen Participation	Examine support and allowances for expanding and supporting home husbandry, Community Supported Agriculture and Community Gardens.

Housing

Conditions and Trends:

Ledyard is a predominantly residential community principally comprised of single-family detached houses. Although classified as suburban by the Southeastern Connecticut Council of Governments (SCCOG) large parts of the town retain a strong rural character. It is this rural nature that has attracted many residents and it is a character many residents wish to retain. Of the approximately 24000 acres in the Town of Ledyard, about 22600 acres are zoned for residential use.



FIGURE 5 LEDYARD HOUSING AUTHORITY

Goals:

Encourage a diversity of housing - Viable communities are diverse in terms of age, income, family status, and should contain a reasonable mix of housing types to satisfy the needs of a diverse population.

Supporting Existing Affordable Housing – Ensure that available programs, such as Community Development Block Grant (CDBG) Small Cities Grants for housing rehabilitation & public housing modernization, are continued and expanded where possible to maintain existing affordable housing.

Implementation:

Examine ADU Usage	Continue trends to grow the zones and locations where Accessory Dwelling Units can be harmoniously implemented.
Promote Rental Housing	SECHA (Southeastern CT Housing Alliance) data demonstrates significant need for rental housing, but Ledyard has limited stock available.
Cluster Development	Expand on the strength of cluster development regulations to promote smaller, more affordable housing that promotes open space and watershed protection.

Utilities

Conditions and Trends:

Ledyard utilities that affect development are primarily water and sewer. Ledyard depends on Groton Utilities for all of its piped water supply. More than 5,200 acres of land (nearly 21 percent of Ledyard's total area) is located within a state-designated public water supply watershed that drains to the system of reservoirs owned by the City of Groton. Most of Ledyard uses on-site septic systems, with the important exception of the municipal Highlands wastewater treatment plant, which is capable of processing 300k gallons per day of waste.



FIGURE 6 HIGHLANDS WWTP EQUIPMENT

Goals:

Utilization of Highlands Treatment Plant - Increase sewer tie-ins to the upgraded Highlands sewage treatment plant in conformance with capacity limits established by the CT Department of Environmental Protection.

Pursue Expanded Infrastructure – Expansion of utility availability (sewer and water) along the primary development corridors in Ledyard and along Route 12.

Protect Water Resources - Subdivision, zoning and public works standards should be reviewed to ensure that calculations are required to show 0% increase in run off to man-made and natural drainage systems resulting from development to minimize impacts to property and the environment.

Implementation:

Utilize WWTP Capacity	Connect Gallup Hill School and the former Ledyard Center School to Highlands Treatment Plant.
Protect Water Resources	Subdivision, zoning and public works standards should be reviewed to ensure that 0% increase in run off to man-made and natural drainage systems resulting from development is enforced.

Community Resources

Conditions and Trends

Community facilities provide for the health, welfare, and convenience of residents and add to the quality of life. Such facilities support the operations of governmental functions, including governmental facilities, public works, public safety, and emergency services. Others provide educational and recreational opportunities for town residents, including schools, libraries, Parks and Recreation, and Ledyard's extensive system of outdoor trails and open space areas. The Planning Commission will review this chapter when evaluating the Mayor's annual proposed "Capital Improvement Plan."



FIGURE 7 ERICKSON PARK

Goals:

Provide and maintain adequate community facilities - Ensure that existing facilities are efficient and economical to operate and prepare for future demands.

Encourage recreational access – Encourage the development of healthy communities through promoting access to parks and recreational opportunities, including trails, greenways, community gardens and waterways.

Develop Transportation - Develop alternatives to single-occupancy vehicle transportation, including re-establishing a bus line, building commuter parking lots, and connecting and expanding current bicycle and pedestrian ways.

Implementation:

Conduct Vulnerability Assessment	Conduct a vulnerability assessment to identify threats and gaps in schools and emergency services.
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IV. Housing

Overview

Ledyard is a predominantly residential community principally comprised of single-family detached houses. Although classified as suburban by the Southeastern Connecticut Council of Governments (SCCOG) large parts of the Town retain a strong rural character. It is this rural nature that has attracted many residents and it is a character many residents wish to retain. Residential land use dominates all other land use categories in Ledyard. Of the approximately 24000 acres in the Town of Ledyard, about 22600 acres are zoned for residential use.

According to 2018 CERC (CT Economic Resource Center) data, Ledyard has 6297 housing units, 85% of which are single-family residences. With limited land zoned for higher density development, significant building challenges such as wetlands and ledge, and limited infrastructure nearly all the new development in the past 10 years has been in large lot subdivisions or individual, large-lot single family houses. Recovery from the 2008 Recession has been slow in the area, with only 153 housing units built between 2008 and 2018 (139 being single-family units).

Within the Town are large older subdivisions in the Highlands, Avery Hill, Aljen Heights and Gales Ferry area and newer and smaller subdivisions sprinkled throughout the town. There are few apartment complexes, rental units and minimal diversity of housing types. The 22 town SECOG area has a significant problem with access to affordable housing, with 37% of households considered to be cost-burdened (spending >30% of income on housing). However, Ledyard is below this value with only 27% of homeowners considered to be cost-burdened. Housing units are considered affordable if a person earning no more than the AMI (Area Median Income) pays no more than 30% of their annual income for it (CGS 8-39a). The household AMI for New London is \$84000, which corresponds to an affordable threshold of approximately \$2000 per month, or a home purchase cost of approximate 225k.

Goals

- ◆ To guide the residential growth and development of Ledyard and ensure high standards of design and quality of life.
- ◆ To encourage a diversity of housing types and ensure an adequate supply of housing at affordable cost.
- ◆ Encourage and expand on cluster subdivisions on large parcels.

- Adopt regulations that increase the zones where Accessory Dwelling Units (ADU's) are allowed.
- Adopt regulations to allow by-right development of multi-family and infill housing.
- Maintain existing affordable housing already present in older developments through blight control and housing rehabilitation grants.

Issues, Policies and Strategies

1. Quality Residential Development

The Town of Ledyard is predominantly residential. According to surveys done for the 1993 Plan of Development, and a workshop held in April of 1997 to gather input for the Economic Strategies Plan ("Mullin Report"), residents desire to maintain the town's low-density residential character. In general, the current existing, residential zoning districts and their bulk requirements support the desired development patterns. Since limited infrastructure is available, homes must rely on private wells and septic systems. Therefore, larger lot sizes (and therefore lower density) are necessary to provide sufficient room for these structures and the requisite separating distances.

The Town should continue to support higher density residential development and diverse housing type construction as a component of mixed-use development near Ledyard Center, along the Route 12 corridor and where water and/or sewer is available and continue lower density single family development in other areas.

The water quality in older developments, specifically Aljen Heights and Avery Hill must be addressed. Ledyard should plan to link the Route 12 water line or connect a water tower to the Aljen Heights and Avery Hill Developments. There is the potential for financing part of this work with Federal funds through the Department of Housing and Urban Development.

2. Cluster Development

The cluster development (Conservation and Open Space) regulations have provided a good tool for promoting quality development in large parcels that creates smaller building lots and allowing for more affordable housing while preserving significant open space and hence preserving Ledyard's rural character. These regulations have been heavily used and the recent refinements to the regulations appear to have helped encourage the desired development styles. However, because these regulations can only be utilized on large parcels, this encourages development on larger outlying parcels which tends to create sprawl instead of concentrating development nearer to commercial services. The current cluster regulations don't work on smaller parcels and are still designed for single family homes, not the higher densities desired in

Ledyard Center and Gales Ferry Center. The 2018 regulation update included an incentive housing zone, which allows flexible mixed-use development with the ability to include apartments, condo's, and townhomes. This zone allows the creation of a walkable neighborhood that helps support commercial businesses. The 2019 sale of the Ledyard Center School property should provide an opportunity to use these regulations as a prototype for high density mixed-use development. The cluster subdivision regulations should similarly be updated to include sidewalks, promote walkability and consideration given to allowing limited commercial areas inside the clusters. The subdivision cluster regulations should be updated to make them fully compatible with the 2018 zoning regulation update and to ensure that a reasonable level of flexibility is provided to developers.

3. Encourage Housing Diversity and Affordability

Viable communities are diverse in terms of age, income, family status, and should contain a reasonable mix of housing types to satisfy the needs of a diverse population. This means providing a balance of single-family homes, partially detached homes, and multi-family apartments. In its report, *"Housing a Region in Transition: An Analysis of Housing Needs in Southeastern Connecticut,"* the Southeastern Connecticut Council of Governments (SCCOG) analyzed the housing needs of the Southeastern Connecticut region. According to the report, the Southeastern Connecticut region is facing a serious affordable housing shortage. The report estimates the region will need an additional 7,200 housing units between 2015 and 2030, or 6.3%. It is expected that half of these new units will need to be rental units (as compared to the current rental rate of 35%). The need for rental units is also seen by looking at the projection that ~55% of the 7,200 additional households will earn less than \$50,000, which is the approximate threshold for a two-person household to qualify as "low-income". In addition to this increased pressure for the availability of affordable housing, the report highlights the aging population of the area.

Projected Household Growth
By Age of Householder

Age	2015	2030	Change
<15	0	0	0
15-24	3,761	4,019	258
25-34	15,726	16,986	1,260
35-44	18,262	20,384	2,122
45-54	24,612	21,508	(3,103)
55-64	23,273	21,585	(1,688)
65-74	15,276	19,638	4,363
75-84	8,428	11,839	3,411
85+	4,224	4,782	558
	113,561	120,742	7,180

Significant growth is seen in all 65+ age groups as well as the 25-44 age groups. These correspond to the large boomer and millennial generations age groups. Importantly, the 65+ households do not represent an influx into the area but aging in place by retiree's trying to stay in the area. In an effort to meet the needs of older Ledyard residents and allow them to remain within the community, regulations should encourage development of appropriately scaled retirement communities when it is consistent with overall plan goals and strategies. The town should review and revise the zoning regulations that pertain to elderly housing to ensure no obstructions exist to allow a diverse set of elderly housing types. The town should pursue using state or federal grants or subsidy programs to encourage this type of development.

However, providing senior housing cannot be the only way that Ledyard adapts to these changing demographics. Younger households are more likely to pursue smaller homes, partially detached homes, and homes that provide amenities and walkable commercial areas. Changes to the zoning regulations and encouraging Incentive Housing Zone-style development will be required to attract these younger households into Ledyard. Failure to develop this type of housing stock risks an unstable school-age population and losing the vibrancy of the town. The town must find additional means to allow duplexes and townhomes, either as infill development, or at some percentage of a subdivision.

Ledyard currently has ~4% housing that meets the 8-30g Affordability standard. With approximately 6,000 housing units in town, this means an additional ~400 exclusively affordable housing units need to be built to achieve the 10% 8-30g target. Using the 8-30g design ratios of 30% affordable units, ~3,000 new housing units in 8-30g developments would need to be constructed in order to achieve the 10% target! At the recent construction rate of 10-20 new homes per year, neither of these scenarios are achievable and therefore Ledyard will always be a target for 8-30g development. Instead, 8-30g should be considered as a tool that can be used to provide the type of density desired in Ledyard Center and Gales Ferry that can support further commercial development in these two town centers.

The lack of infrastructure in many parts of Ledyard limits the density of development in many ways. However, as the recent apartment development on 117 demonstrated, reasonably large, high density developments can be built without the benefit of sewer. These rental units commanded a premium rental price, but rented out almost immediately, demonstrating that creative development can result in high quality, desirable, dense development.

In order to meet the needs for increased rental units and smaller more affordable houses, the town should consider allowing by-right development of ADU's. Current regulations allow attached ADU's, but currently prohibit detached ADU's. Properly regulated ADU's are an increasingly popular tool to provide affordable housing in many parts of the country, Ledyard should examine whether this tool could be effective here. Adaptation of existing subdivisions to

allow detached ADU's may be difficult, but development of regulations to allow expanded ADU's should consider how the regulations could be modified to allow construction of detached ADU's.

4. Supporting Existing Affordable Housing

Ledyard contains significant developments of smaller, affordable housing stock (such as the Highlands and Aljen Heights.), which are smaller homes on ~1/3 acre lots. The homes in these neighborhoods are excellent options for starter families or older residents looking to downsize, but only if the quality of the neighborhood is maintained. Active enforcement on the blight ordinance can help ensure that the values of the homes are maintained and that they remain an attractive option. In addition, grant opportunities to assist homeowners with larger repairs should be expanded on by the Land Use Department as a means to protect these properties.

V. Utilities

Overview

For the purpose of this chapter, utility infrastructure in Ledyard includes public water, public sewer, cellular and wired utilities such as electric, telephone and cable. The location and capacity of existing and proposed infrastructure is critical to the growth, particularly the commercial growth, of Ledyard and to the protection of the environment and the quality of life for residents.

Ledyard Highlands Wastewater Treatment

New Grit Pit



New Screen Compactor Building



New Blowers and Valving



New SBR Decanters



A. Public Sewer

Background

With exception of a municipal sewage treatment facility serving the Highlands area, a facility built by the Mashantucket Pequot Tribe to serve Foxwoods Casino, and a small private treatment plant at Dow Chemical, most homes and businesses in Ledyard use and will continue to use on-site septic systems for sewage disposal.

In 2018, a \$1.3 million renovation and upgrade to the Highlands wastewater treatment plant was completed. The project involved a new screen and compactor enclosed in a heated building, new decanters, 3 new blowers, new feed pumps, valves and automation. The newly installed automation and blowers now controls nitrogen oxides below state limits 24 hours a day, 365 days a year.

Goals

Public Sewer

Recognizing that sewer capacity in Ledyard is a limited resource, care must be taken to ensure that expansion to new areas is appropriate, efficient and fosters good, sustainable development.

- Ensure effective and efficient private and public wastewater collection systems.
- Increase sewer tie-ins to the upgraded Highlands sewage treatment plant in conformance with capacity limits established by the CT Department of Environmental Protection.
- Improve and support expansion of infrastructure in appropriately zoned areas to enhance economic/commercial development opportunities, particularly at Ledyard Center.
- Improve and support expansion of infrastructure to protect groundwater and surface water in environmentally sensitive areas.
- Encourage regional tie-ins, particularly in the Gales Ferry district.

Issues, Policies and Strategies

Public Sewer

1. Protection of Groundwater and Surface Water Supplies through Proper Septic System Design

Ledyard depends on groundwater and reservoirs for its water supply, therefore septic systems must be located, installed and repaired with great care. Many developable areas remaining in Ledyard are characterized by shallow depth to bedrock, steep slopes, a high groundwater table,

and/or the presence of wetlands. The subdivision requirement that all new building lots contain seventy-five percent contiguous non-wetland area should be enforced consistently, uniformly and not waived. Rezoning proposals that will increase density in areas served by on-site septic systems that would circumvent regulations intended to protect wetlands, well fields or neighboring wells should not be approved by the Zoning or Planning Commissions. Current minimum acreage and zoning requirements for building lots should be maintained in all environmentally sensitive areas served by individual on-site septic systems in order to guarantee sufficient primary and reserve leaching areas. All development projects that fall within the Groton watershed should be submitted to Groton Utilities by the applicant for review and comment and all comments submitted to the appropriate Ledyard land use commissions for consideration.

CT Public Health Code overrides local zoning and subdivision regulations. Local health officials should be contacted in advance of Commission review to find out:

- Whether an on-site septic system can be approved for a particular site;
- What lot sizes and other conditions are required for septic systems;
- How to apply for a septic system permit;
- Who must design, install and inspect new septic systems;
- Who is responsible for proper maintenance of the system;
- What must be done if the septic system malfunctions.

2. Highlands Wastewater Treatment Plant Improvements & New Tie-ins

Upgrades to the Town-owned Highlands Wastewater Treatment Plant (WWTP) were completed in 2018 in compliance with CT-DEP approved designs. In 2018, the WWTP treated about 129,200 gallons per day (GPD), approximately half its approved design capacity. A priority for WPCA is connecting the new Gallup Hill School complex and the Ledyard Center development area that was previously Ledyard Center school. Presently there WWTP serves 460 customers.

In order to ensure that cumulative effluent discharges from new developments do not exceed the treatment plant's capacity limitations, WPCA should provide the following written evidence during a land use board's development review when WWTP connections are requested:

- Number, type and anticipated WWTP flows of proposed units;
- Cumulative number of other requested connections to the WWTP including potential tie-ins that exist along the proposed route; and

- Remaining unused capacity of WWTP after the proposed development is connected.

The priorities for the WWTP's service area and remaining capacity should include projects of significant economic benefit to the Town and/or those that diversify the types and affordability of housing. Additional priorities would include projects that will remediate existing or prevent additional environmentally stressed areas.

3. Enhance economic development opportunities in appropriately zoned areas through expanded infrastructure.

Providing sewer and water infrastructure to commercial and industrially zoned areas of Ledyard such as along Route 12 and Ledyard Center could facilitate the growth of commercial development. The Town of Ledyard should conduct a cost-benefit analysis to determine if the construction of either a community sewer system or a public sewer main extension that will generate additional commercial/industrial development and the associated property tax revenues which can offset design and construction costs. In addition, investigate the future status of Dow Chemical plant infrastructure and in particular their industrial sewer treatment plant. There could be an opportunity to reconfigure the treatment plant to handle residential sewer (Gales Ferry) instead of abandoning and demolition of the facility. The Town should explore this opportunity with Dow.

B. Public Water and Water Supply Source Protection

Background

Ledyard receives all of its water supply from Groton Utilities. More than 5,200 acres of land (nearly 21 percent of Ledyard's total area) is located within a state-designated public water supply watershed that drains to the system of reservoirs owned by the City of Groton. This is the source of water for the water supply line along Route 12 from Groton through Gales Ferry to Aljen Heights. A separate line along Route 117 from Groton to just north of Ledyard Center that serves properties located along both state roads connecting to the existing lines that serves the Ledyard High school and Gallup Hill school extending to the Highlands. There are two water towers serving Ledyard's needs—one located at Ledyard Center (750,000 gallons) and one located in Holmberg Farms off Route 12 (1 million gallons) and Aljen Heights plus a hydro-pneumatic system serving the top of Avery Hill.

The Ledyard Water Pollution Control Authority (WPCA) combined with the Southeastern Connecticut Water Authority (SCWA) wellfields serve approximately 40 percent of the Town's population. Additional wellfields are located on the Mashantucket Pequot Reservation serves the

needs of the reservation. Remaining community water systems are quite small, serving individual subdivisions, mobile home parks and apartments.

Because the main reservoirs that provides water to Groton Utilities are located in Ledyard, the Town's drinking water is vulnerable to development activities. Protection of water quality remains an ongoing concern for the Town of Ledyard.

A regional water system that serves communities on both sides of the Thames River has been installed and includes the Holmberg water tower with an underneath the river connection from the east to the west side of the Thames River to supply regional customers in Montville and Mohegan.

Completed recently are emergency connections to all 6 Southeastern Connecticut Water Authority (SCWA) areas in Ledyard. The connections include a meter pit and a movable spool piece that can be quickly installed in the event of a water emergency. Also planned is an interconnection to the Norwich Water Utility on Route 12 in Preston.

Goals

Public Water and Water Supply Source Protection

- Ensure adequate potable water sources, supplies and distribution systems for Ledyard.
- Protect water quality and implement a source protection strategy through 1) proactive zoning; 2) natural resource-based planning and site design; 3) use of best management practices; and 4) water company review of proposed development projects located within designated source protection areas.
- Increase public water supply through an interconnected regional water supply system.
- Effectively manage and control stormwater drainage to minimize impacts to the environment.

Issues, Policies and Strategies

Public Water and Water Supply Source Protection

1. Expand public water distribution system

Ledyard's Water Pollution Control Authority (WPCA) has aggressively addressed water supply problems resulting from groundwater contamination and capacity limitations of private wells and small community wellfields. The Town should continue these efforts. The following areas are a priority for the provision of potable water:

- Neighborhoods located to the east of Route 12 (Terry Road, Woodland circle and Oakridge Drive)
- Existing houses surrounding Long Pond

Diverse water supply systems should be interconnected, both inter and intra-town, in an effort to increase reliability, supply redundancy, and decrease incidents of reduced capacity. Efforts should be made to establish service area interconnections throughout Ledyard utilizing main roads as pipeline corridors that include fire protection (hydrants). See **Table A**.

What are Best Management Practices?

Best management practices (BMPs) is a term used to characterize land management practices that are recommended, or required, to minimize human impact on the environment.

Over the years, engineers, water resource specialists and others have studied the causes of non-point source pollution, and investigated different, practical ways to lessen or control this type of pollution. As a result, the best most widely accepted techniques and strategies (BMPs) to manage land use activities are well documented.

From: The Watershed Guide to Cleaner Rivers, Lakes & Streams (1995)

Table A. Fire Protection Systems.

<u>System</u>	<u>Owner</u>	<u>Fire Protection?</u>	<u>Hydrants</u>
Ledyard WPCA	WPCA	Yes	161
Mashantucket	Pequot Tribal Nation	Yes	33
Tower-Ferry Division	SCWA	No	--
Barrett Division	SCWA	No	--
Chriswood Division	SCWA	No	--
Gray Farms Division	SCWA	No	--
Ledyard Center Division	SCWA	No	--

“Cluster Residential Developments” that take advantage of existing public water supply or provide for the installation and interconnection of a community water supply distribution system and/or wellfields should be encouraged. In addition, the Town should encourage the development of water infrastructure to commercial and industrially zoned areas of Ledyard such

as along Route 12 and Ledyard Center that could facilitate the growth of commercial development.

2. Implement Source Protection System

The State of Connecticut's *Conservation & Development Policies Plan, 2018* states that preservation and protection of watershed lands is a primary goal of the state, and that treatment technology alone cannot guarantee clean water. Source protection should be implemented in all state-designated public water supply watersheds and aquifer protection overlay zones, and groundwater recharge areas surrounding small community wellfields.

Ledyard contains two DEEP-designated aquifer protection overlay areas (**Table B**). This table shows the significantly large water systems (> 100 customers) and their sources of water that can be directly impacted by development. No future rezoning is recommended that will result in a decrease in lot size or in allowed density of development within any aquifer protection overlay area. Emphasis should instead be placed on instituting Best Management Practices (BMP) for new development, rehabilitating existing problems caused by past development, and careful monitoring of existing land uses by water companies whose wells are located in these areas (SCWA). Table C shows smaller water service systems (<100) that can be impacted by development. See **Table C**.

**Table B. CT-DEP Recognized Aquifer Protection Overlay Areas.
(Level "A" and/or Level "B" Aquifer Protection Overlay Zones)**

<u>System</u>	<u>Owner</u>	<u>Customers</u>	<u>Source</u>	<u>Source Material</u>
Groton Utilities	WPCA	1483	Reservoir	Surface run off and springs
Tower-Ferry Div.	SCWA	885	9 wells	bedrock/stratified drift
Mashantucket	Pequot Tribal	300	wells	bedrock

Table C. Small Community Wellfields Warranting Source Protection.

<u>System</u>	<u>Owner</u>	<u>Customers</u>	<u># Wells</u>	<u>Source Material</u>
Barrett Division	SCWA	75	2	bedrock
Chriswood Div.	SCWA	43	3	bedrock
Gray Farms Div.	SCWA	115	4	bedrock/stratified drift
Ledyard Center Div.	SCWA	27	2	bedrock

Additional source protection measures can be provided by development of subdivision, zoning and public improvement standards which address storm-water run-off, limit the extent of impervious surfaces and control runoff as development review criteria to minimize impact on natural and man-made drainage systems. Care should be taken to manage and control stormwater drainage. Subdivision, zoning and public works standards should be reviewed to ensure that calculations are required to show 0% increase in run off to man-made and natural drainage systems resulting from development to minimize impacts to property and the environment.

3. Regional Water Supply System

Drought conditions in 2001-2002 focused regional and state attention on the value of providing an interconnected water supply system in the region. As a result, a connection has been made between the Groton reservoir with Montville, Waterford and New London via the Rt. #12 waterline in Ledyard. These interconnections ensure supply redundancy and decrease incidents of reduced capacity. The project also benefits the Mohegan Sun Casino complex through the construction of a water line across the Thames River and a water tower in Gales Ferry.

It is recommended that the Ledyard WPCA should have oversight of community water systems that include broadcast communication for water outages, boil orders, and development activities that might affect water source contamination, fire protection and emergency services and connections.

C. Wired Utilities/Other Infrastructure

Background

Electric service in Ledyard is provided by Eversource. Wired utilities should be placed underground in new developments to improve reliability and enhance the aesthetics.

New telecommunication technology, including the Internet, creates demand for upgraded telecommunication infrastructure. The Town is currently working with providers to explore the installation of fiber optic and digital switching equipment along major corridors with an emphasis on the commercial and commercially zoned areas.

Wireless communication services are expanding in the region and additional facilities can be expected in Ledyard. The Town should support and encourage fiber expansion along major corridors.

Natural gas, provided by Yankee Gas, is available along the Route 12 corridor to the Gales Ferry area.

Goals

Other Utilities/Infrastructure

- Improve and expand telecommunication services.
- Identify methods and locations for extending underground utilities.
- Conserve energy and mitigate environmental impacts including alternate energy such as wind and solar. The Town has installed solar panels on its public buildings including a 225 Kw solar farm at its waste treatment facility.
- Increased opportunities to expand natural gas to dense development areas in Ledyard.
- Encourage alternative energy and ensure regulations don't preclude the installation of alternative and innovative systems.

Issues, Policies and Strategies

Other Utilities/Infrastructure

The Town of Ledyard should encourage placing wired utilities underground to improve the aesthetic appeal of the area and to improve reliability.

As development continues, efforts should be made to contain light pollution from buildings, streets, parking areas and public area lighting sources. Consideration should be given to creating energy conservation and light pollution protection measures in Town regulations including guidelines for number, location and types of light fixtures.

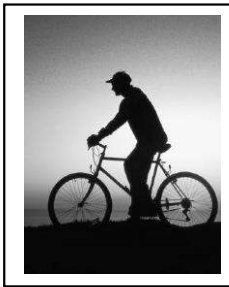
Improvements in computer technology and telecommunications have created marketing opportunities for the Town to encourage the growth of small office, professional establishments and home occupations. All efforts should be made to position the Town to take advantage of these emerging technologies to support both existing and potential businesses. Care should be taken to monitor all legislation and regulations that control wireless services.

It is important to ensure that the correct infrastructure is available in the correct areas. Natural gas along Rt 117 and Rt 12 is important for providing heat for large commercial and light industrial uses, where the disturbance and cost of installing natural gas in residential areas has less benefit. It is difficult to justify the cost and disturbance of natural gas installation to replace existing fuel-oil systems. Instead, reliable, underground electric service in residential areas, along with alternative micro-grid services, should be emphasized in residential area.

VI. Transportation and Roads

Overview

The transportation system in a community is an important factor that affects its capacity for growth and development and is a critical factor in shaping land use patterns. As a rural/suburban residential community and host to one of the most significant tourist attractions in the state, Foxwoods Resort, the provision of safe, efficient, cost efficient and well-designed roadways, public transportation, multi-modal and pedestrian systems that blend with the character of the town is critical.



A. Roads

Overview

Ledyard is served by Routes 12, 117, 214 and 2, state highways maintained by the State of Connecticut Department of Transportation, which link the town with Interstates 95 and 395. In addition, the town is served by the following arterial or collector streets:

- Avery Hill Road
- Church Hill Road
- Gallup Hill Road
- Lantern Hill Road
- Mathewson Mill Road
- Pumpkin Hill Road
- Shewville Road
- Town Farm Road
- Whalehead Road
- Christy Hill Road
- Colonel Ledyard Highway
- Lambtown Road
- Long Cove Road
- Military Highway
- Sandy Hollow Road
- Spicer Hill Road
- Vinegar Hill Road

All of the other roads and streets in Ledyard are classified as Local or Minor Local Roads, intended to provide access to properties. Several “pent ways” exist that are not accepted as Town Roads but are maintained, to varying degrees, by the Town. These “pent ways” serve residential properties and undeveloped land.

Goals

- Provide a safe and well-maintained system of state highways and local roads that blends well with the character of the town, serves the needs of Ledyard's residents and has minimal impact to the natural environment.

Issues, Policies and Strategies

1. Roadway and Bridge Improvements

One of the most significant roadway and bridge issues facing Ledyard is the impact on them from the volume of traffic to Foxwoods Resort and Casino and the Mohegan Sun Casino in Montville. According to the Connecticut Department of Transportation the average daily traffic count along Route 2 in Ledyard alone has increased 45% as traffic approaches Foxwoods from the north from Preston and east from North Stonington, along Route 117 south of Ledyard Center, and on Route 214 east of Ledyard Center. About 5.1% of all trips to and from the casino use Route 117 south of Ledyard Center.

The only east-west corridor extending the breadth of Ledyard is Route 214. Approximately 12% of casino traffic travels Route 214 east of Ledyard Center, where daily traffic increased 56% within six months after the casino opening. Since Route 214 functions as a residential street with hundreds of individual driveway cuts, the Tribe and ConnDOT should continue their policy of routing casino-generated traffic elsewhere. If traffic along Route 214 continues to increase substantially, designation of this road as an unnumbered state highway should be evaluated (i.e., S.R. 600 to 699). Maintenance obligations for Route 214 should remain with ConnDOT. Through tractor-trailer trucks and commercial buses should be banned from all portions of Route 214 west of the Lantern Hill Road/Pequot Trail intersection. In addition to safety considerations, this road passes through a DEP-designated public water supply watershed and two proposed wellfield aquifer protection areas. A large truck overturning on this narrow and winding road could prove catastrophic to much of Ledyard's groundwater supply.

Significant increase in traffic volume has not been confined to state roads. Collateral casino-generated traffic by both visitors and employees contributes to the premature deterioration of locally maintained streets and roads. In 1998 a detailed infrastructure survey of roadway deficiencies revealed that about 60% of the town's arterial and collector roads are in very good or good condition, and the remaining 40% are in fair or poor condition. This study, updated annually, is used as the basis for allocating funds for a town-wide local road improvement and stormwater drainage repair program. As of 2002, the proportion of arterial and collector roads deemed very good or good has been raised to approximately 80%.

Road improvements to Route 12 should focus on access management. It is not recommended that Route 12 be reconstructed to add any additional travel lanes. The commercial viability of the Route 12 corridor would be negatively impacted by a reduction in exposure to traffic.

As a road is programmed for restoration, detailed engineering analysis of each roadway segment is conducted to ensure that public safety problems such as inadequate stormwater drainage or limited sight lines are adequately resolved. Efforts should be made to design discharge areas to eliminate or minimize paved leak off that injects pollutants into streams. The town should commit to a steady increase in catch basin maintenance funds to protect water quality.

A second major roadway issue facing Ledyard is the overall decline of infrastructure maintenance appropriations. Though there has been substantial progress in the restoration of arterial and collector roads over the last six years, the backlog of local streets in the fair and poor conditions categories remains high. Several miles of local streets have been resurfaced in the same time period, but continued progress is more dependent on sustained funding levels, since arterial and collector roads receive first priority for available funding. With present and

prospective appropriations, progress in local road restoration will stagnate. Progress relative to arterial and collector streets may also slow.

2. Access Management

Access Management is a critical component of maintaining and improving traffic flow and safety in Ledyard. Traffic flow and safety can be seriously compromised by a substantial increase in driveways along major roads. The placement, number, location, and design of driveways should be managed.

- A “reverse frontage” policy should be maintained, with driveway cuts located on subdivision streets rather than adjoining arterials or collectors. Where driveways must enter arterials or collectors, they should be encouraged to share curb cuts with other driveways. Curb cuts should be limited to locations with optimal vehicle sight line distances.
- Within new subdivisions, reserved street right of ways at appropriate locations should be conveyed to the Town to assure that vacant abutting land can be developed in an orderly fashion in the future.
- Within new subdivisions, stormwater drainage easements in favor of the Town should be sought at locations suitable for future drainage needs.
- There are few east/west roads in Ledyard. The Town should work with developers to assure that appropriate connections between existing arterial and collector streets can be created in areas that present significant development opportunities or to alleviate traffic or access problems in specific areas. Opportunities exist between Bittersweet Drive/Avery Hill Road and Deer Lane/Gallup Hill Road.

The special access management study of Route 117 in Ledyard Center was completed in 1998. The recommendations in that plan are adopted by this Plan of Conservation and Development by reference. The principles of this study can act as a model for implementing access management plans for other major corridors such as Routes 12 and 214.

3. Road Retrofits – Stormwater Erosion Prevention

Whenever resurfacing of a local street or road is planned, plans should include improved stormwater runoff controls capable of reducing serious pollution and erosion problems. These retrofits are considered “best management practices,” and include:

- Excavation of accumulated sediment and removal of brush and debris from the inlet and outlet sides of existing drainage pipes and culverts, including flushing out of existing pipes filled with sediments.
- Installation of new head and enwalls at drainage culverts, as necessary.
- Repair of erosion damage on the outlet side of drainage culverts by installing riprap lined plunge pools and channels.

- Identification of erosion gullies at the edge of existing pavement, and installation of preventative measures.
- Installation of additional stormwater collection systems.
- Installation and maintenance of erosion and sedimentation controls in conformity with the Connecticut Guidelines for Soil Erosion and Sediment Control, published by the CT Council on Soil and Water Conservation, pursuant to Section 22a-328 of the General Statutes.

4. New Roads

Private developers have built approximately 35 miles of new subdivision streets since 1970. Most have been built to standards set by the Town's road and stormwater management ordinances. Such roads must pass inspection before being accepted by Town Council into Ledyard's official street system. Performance security bonds posted by developers ensure that subdivision streets conform to proper construction guidelines. The requirement for bonds should not be waived.

The completion of Fairway Drive in Ledyard Center from Colonel Ledyard Highway to Route 117 should be encouraged. This would provide access to over 60 acres of developable land in the commercial center zoned for mixed use and encourage the economic diversification of the town.

B. Transit Services

Overview

With the exception of the Route 12 corridor, Ledyard is not served by public bus transportation. The regional bus system, Southeastern Area Transit (SEAT) serves the public on limited runs along the Route 12 corridor.

Goals

- Transit Services – Support innovative modes of transportation.
- Improve and enhance the provision of public mass transportation.

Issues Policies and Strategies

The demand for transit services is expected to increase as the population ages and as large, local employers such as the casinos must recruit new hires from farther away. The Town of Ledyard, in conjunction with SEAT, the Casinos and other nearby communities, should evaluate existing

bus service and routing with consideration given to increasing transit service. Expanded transit service can help achieve Ledyard's housing, employment, and economic development goals.

C. Sidewalks/Bikeways

Overview

Due to the dispersed development and low density, there are limited opportunities for the construction of sidewalks in Ledyard. Sidewalks have been constructed throughout Ledyard Center, most prominently along Route 117. However, the sidewalks are not continuous or linked to create a functional sidewalk system within the Town Center.

There are no bikeways in Ledyard. The ConnDOT's statewide bicycle transportation plan recommends two routes through Ledyard:

- Shewville Road from Preston town-line south to Groton town line, proceeding to River Road and Mystic Village.
- A circular route: Silas Deane Road to Shewville Road to Route 214, south again on Shewville Road to Gallup Hill Road, north to Spicer Hill Road to Church Hill Road and back again to Silas Deane Road.
- Other recommended bikeway routes include:
- Colonel Ledyard Highway from Ledyard Center to the High School and south to Highlands neighborhood.

Goals

- Enhance pedestrian and bicycle mobility and safety.
- Pursue design improvements to existing roadways that support bicycle routes including:
 - 🚲 Improved signage and pavement markings for designated bicycle routes.
 - 🚲 "Bicycle friendly" storm drain grates.
 - 🚲 Improved roadway shoulder maintenance.
 - 🚲 Widened shoulders to accommodate designated bike lanes having a 4' minimum width.

Issues Policies and Strategies

The sidewalks in Ledyard Center add to the character of the Center and encourage the safe movement of pedestrians. The existing sidewalks should be linked and extended to encircle the entire LCDD district. This will serve to enhance the pedestrian scale of the Center, reduce automobile trips within the Center, enhance recreation opportunities and help meet the needs of the disabled. Priority should be given to completing an uninterrupted stretch of sidewalks on both sides of Route 117 between the Route 214 and Colonel Ledyard Highway intersections.

Regulatory and financial support should be given to a sidewalk construction program within LCDD and the Gales Ferry Design District. Consideration should be given to eliminating or modifying the deferment policy on sidewalk installation in order to complete the existing sidewalk network. Along these roadways and elsewhere in Ledyard, recommended design treatments to accommodate bicycles are most easily implemented when new construction or major reconstruction is planned. Although retrofit and/or enhancement projects may be relatively limited in scope, opportunities to make at least minor improvements to accommodate the needs of pedestrians and bicycles should be investigated. New residential development should address walkability and require accommodations for non-automotive transportation. While this can include internal sidewalks, alternatives like bikeways, Complete Streets, Open Streets, and shared access should be considered. The Town should pursue providing connections between existing sidewalks and bikeways to provide a contiguous network.

VII. Economic Development

Overview

Ledyard is a rural/suburban residential community with limited commercial and industrial development within town borders. Existing commercial/industrial development is largely located along Route 12 from the Groton Town line to Gales Ferry Village and in Ledyard Center, with some isolated neighborhood commercial development in the Highlands neighborhood. The lack of sewer and water infrastructure in most of the town is a significant deterrent to the development of more intense commercial/industrial development.

The town's limited commercial/industrial development results in heavy reliance on residential property taxes to fund the increasing demand for services, particularly in education. This, coupled with decreasing levels of state assistance, has had a significant impact on the mill rate and taxes over the last ten years.

In recognition of the need to expand and diversify the town's economic base the town has made the following significant efforts to make economic development a priority:

- The Economic Development Commission was re-activated in 1991,
- In 1998 the town adopted an Economic Strategies Plan prepared by Mullin Associates,
- Municipal water was brought along the Route 12 corridor,
- New regulations for Gales Ferry commercial area were adopted to encourage attractive, well planned commercial development,
- A Tax Abatement Program and guidelines were adopted, and
- A grant for \$490,000 for economic development activities was received from the state through the Small Town Economic Assistance Program (STEAP).

Goals

- Encourage economic growth and diversification in order to expand the nonresidential tax base, provide new business and employment opportunities, and to improve the services and overall quality of life enjoyed by residents.
- Develop new utility and roadway infrastructure to serve portions of the Town zoned for commercial and/or industrial purposes with a focus on the Gales Ferry Business District and Ledyard Center.
- Continue to revise land use regulations to be pro-business without sacrificing a commitment to environmentally sound development.

- Encourage traditional village development in the LCDD and GFDD.
- Foster the development of vacant or underutilized commercial and industrial zoned land. Utilize a variety of traditional and nontraditional strategies to attract businesses to Ledyard.
- Encourage farm diversification to enable farming to be a viable economic enterprise.

Issues Policies and Strategies

Economic development in Ledyard should continue to improve the financial condition of the community and employment choice for its residents. Over the last decade, the economic climate of Ledyard and the surrounding region has seen significant changes. Following the downsizing of the defense industry in the late 1980's, the region's service economy has grown dramatically due to the development of the Foxwoods and Mohegan Sun Resort and Casinos. With the continued expansions of both casinos, the area has become the third largest in the nation for square footage of gaming space (behind Las Vegas and Atlantic City).

This increase in the service sector, the continued presence of Pfizer, Inc. and the continued prosperity of the Electric Boat Division of General Dynamics have combined to provide the region with a period of extremely low levels of unemployment. However, the shift to a service/tourism economy has also resulted in a decrease in the average salary for workers in the region. According the United Way ALICE report, 45% of jobs in CT now pay less than 20\$/hour. This income group represents an emerging segment of Ledyard's population that has need of affordable housing and potentially expanded municipal services.

Ledyard must respond to these changing conditions, leverage the positive elements (growth in tourism, large skilled-labor pool, and new job opportunities for engineers and research scientists), and create a pro-business environment in which a variety of new businesses will be welcomed and existing companies will be encouraged to expand. The Town and EDC have a number of ongoing efforts aimed at reducing the tax burden of residential property owners and making the town a more attractive place to open a business by expanding the opportunities and services available to commercial/industrial entrepreneurs.

With a new municipal water supply and increased traffic volumes, the Route 12 highway corridor will attract commercial development. Development that complies with the GFDD standards will be designed to provide safe traffic and pedestrian circulation, architectural and building site aesthetics, and a unified approach to signage.

1. Implement Economic Strategies Plan

Ledyard should continue to implement priority action items contained in the 1998 Economic Strategies Plan prepared for the Town of Ledyard by Mullen Associates. Recommendations include:

- Improve the town's infrastructure in targeted areas.
- Improve commercial/industrial zoning and regulations.
- Further develop the existing commercial/industrial areas such as Lorenz and Terra Firma (Sonoco).
- Improve relations with the Mashantucket Pequot Tribal Nation.
- Encourage retail activities.
- Identify and target opportunities in tourism and civic sectors.
- Support appropriate economic development initiatives.

In order for the plan to remain relevant, it must be revised from time to time. It is important to reconcile the plan to clearly reflect changes in the local and regional development climate. Goals and the timetables to complete them must be updated, revised, or removed. Additionally, changes in local infrastructure, demographics, existing local businesses, existing land use regulations, the town's administrative structure, and current economic development efforts need to be reflected in updates to the Economic Strategies Plan.

The Economic Development Commission (EDC) and designated staff bear the responsibility for ensuring that the plan remains current.

2. Build New Infrastructure to Stimulate Economic Development

Commercial and industrial land uses often require water and sewer infrastructure. Ledyard's dependence on septic systems and private wells has contributed to its evolution as a bedroom community. Although the provision of a new water supply along Route 12 has the potential to bolster economic development in this area, Ledyard will continue to be passed over by many commercial or manufacturing enterprises that require greater infrastructure.

Elected officials and the EDC should take an active role in encouraging additional infrastructure investment in locations where commercial/industrial development is appropriate and a financial return on taxpayer investment can be demonstrated. Town staff and the EDC should explore alternative funding sources for the construction of infrastructure.

Ledyard Center's Fairway Drive should be completed, extending through the heart of the Design District from Colonel Ledyard Highway to Route 117. This important economic development initiative will provide access to about 60 acres of mostly vacant commercially zoned property.

Property tax revenues from new buildings and businesses will eventually offset construction costs of the road, should tax dollars be utilized for a portion or all of the construction.

A community septic facility or connection to the existing WWTP should be considered and supported in Ledyard Center. This would allow for more creative and denser development in Ledyard Center.

3. Support Home-Based Business

The State of Connecticut and regional groups such as Southeastern CT Enterprise Region (seCTer) and the Southeastern CT Council of Governments (SCCOG) have identified the growth of small home-based business as an emerging economic development generator. Many Ledyard residents have and will continue to start home-based businesses. Zoning Regulations encourage unobtrusive home-based business with the goal of retaining skilled residents and their families. Information on assistance for small businesses should be made readily available. While the Town has recently seen a dramatic upgrade in the caliber of residential high-speed Internet service available, we must continue to advocate for expanded service and lower cost technology to compete with surrounding communities.

4. Support Appropriate Retail/Commercial Expansion

Historically, Ledyard residents have made major purchases (automobiles, appliances, electronics, building materials, etc.) in surrounding towns. Other than purchases at small convenience stores, gasoline stations, and small restaurants, Ledyard residents primarily shop outside of Ledyard. (Two notable exceptions to the fact that most retail businesses in town are the Holdridge Farm Nursery and Ocean State Job Lot.) Retail development that does not alter the character of the town and which improves the quality of life for residents should be encouraged. The challenge will continue to be to encourage commercial and mixed-use development where appropriate, while protecting the quality of life, property values, and the environment of the existing residents. The quest to increase the commercial tax base should also include the encouragement of land uses that preserve open space. Studies have shown that towns with a lot of open space are appealing to businesses looking for quality “campus like” settings.

The current Gales Ferry Design District, a mixed-use district, should be expanded to suitable parcels along Route 12. This district allows for both residential and nonresidential (commercial/office) uses. The Gales Ferry Design District also contains provisions that would allow for existing uses to continue as they are but require that new construction meet standards that are in keeping with the existing Gales Ferry Village.

An important part of commercial expansion may be the building of office space. Modern office facilities would attract businesses that would have little impact on the environment and would

require little in the way of industrial infrastructure but would create jobs and increase the tax base. Companies involved in financial services, insurance, real estate, software development, and data processing are examples of “low impact” enterprises that should be encouraged.

An inventory of vacant or underutilized and “potential” development sites should be maintained and updated regularly. The database should be integrated into the town GIS system. The owners of these properties should be contacted and provided information that would be useful if they decided to investigate selling, leasing, or developing their property. The Town should also participate in site finder services provided at the regional and statewide level.

Ledyard has title to a significant amount of acreage. Each parcel of town-owned land should be examined, and a determination should be made as to whether it should be (a) retained for historic, open space or environmental reasons, (b) retained for future town use, or (c) zoned for development and subsequent sale.

As current commercial and industrial zoned land is developed, additional property, where appropriate, should be considered for rezoning, specifically adjacent to existing commercial and industrial zones along major thoroughfares. While it may be necessary to expand nonresidential zoned areas, there must continue to be an emphasis on efforts to limit sprawl and associated traffic congestion, protect residential areas from incompatible forms of development, and concentrate capital infrastructure in areas where there will be greatest return on tax dollar investment.

5. Support Improved Relations with the Mashantucket Pequot Tribal Nation and Continue to Support Resort Commercial Development in Appropriate Locations

The relationship between the Tribal Nation and Town of Ledyard has frequently been troubled. However, it is imperative that the Town continues to work with the Tribe on certain issues, especially economic development. The Tribal Nation is currently the largest employer, landholder and taxpayer in Ledyard. There is clearly much potential for a mutually beneficial relationship between these two entities and it is important to keep the lines of communication open and to work to find partnerships where possible.

Increased casino-generated traffic volumes on Route 117 passing through the Ledyard Center Design District also fosters commercial development opportunities, potentially benefiting casino patrons, employees, and local residents alike. However, virtually all casino-generated traffic using Routes 117 and 214 originates from within southeastern Connecticut. This point-of-origin factor will be a primary determinant of the nature of new business in Ledyard Center.

VIII. Community Resources

A. Community Facilities

Overview

Community facilities provide for the health, welfare, and convenience of residents and add to the quality of life. Such facilities support the operations of governmental functions, including governmental facilities, public works, public safety, and emergency services. Others provide educational and recreational opportunities for town residents, including schools, libraries, Parks and Recreation, and Ledyard's extensive system of outdoor trails and open space areas. The Plan of Conservation and Development reviews these facilities concentrating on whether they are appropriately located, sized, and in adequate condition to meet the current and anticipated future needs of the community. The Planning Commission will review this chapter when evaluating the Mayor's annual proposed "Capital Improvement Plan."

Goals

- Provide and maintain adequate community facilities, ensure that existing facilities are efficient and economical to operate, and prepare for future demands.
- Encourage and promote access to parks and recreational opportunities, including trails, greenways, community gardens and waterways.
- Develop alternatives to single-occupancy vehicle transportation, including re-establishing a bus line, building commuter parking lots, and connecting and expanding current bicycle and pedestrian ways.
- Conduct a vulnerability assessment of critical facilities to identify threats to community facilities such as schools, police departments, Fire departments, and emergency shelters. Retrofit properties with wind-proofing and water proofing as needed to prepare for the effects of climate change.

Town Government

Ledyard operates under a home rule charter established on November 2, 1971 and updated most recently in 2018. The charter established a mayor-council form of government with a Mayor as Chief Executive, along with a nine-member town council and nine-member Board of Education. Voters elect the Registrar of Voters, Mayor, Town Council, and Board of Education. Town Council appoints the Town Treasurer, Town Council Clerk, Fire and Deputy Fire Marshals, Inland Wetlands and Watercourses Commission, Water Pollution Control Authority, Cemetery Committee, Historic District Commission, Housing Authority, Library Commission, Parks and

Recreation Commission, Senior Citizens Commission, Permanent Municipal Building Committee, Building Code Board of Appeals, Board of Assessment Appeals, Southeastern CT Water Authority, Southeastern CT Regional Resources Recovery Authority, and the Planning and Zoning Commission. The Mayor appoints the Town Attorney, Town Clerk, Director of Finance, Director of Public Works, Director of Public Health, Chief Building Code Official, Director of Land Use & Planning, Director of Public Safety, Director of Civil Preparedness and Emergency Management, Social Services Board, Nursing Services Board, Zoning Board of Appeals, Conservation Commission, Public Safety Commission, Cable TV Advisory Council, and Economic Development Commission. The Board of Education appoints the Superintendent of Schools. Except for the Treasurer, Council Clerk, Fire Marshals, and Board of Education employees, the Mayor appoints all Town of Ledyard employees. Justices of the Peace are elected at local political party caucuses every four years.

Town Hall

The Town's general government functions are located in Town Hall in Ledyard Center. The building and its annex are centrally located and the co-location of governmental functions allows for close communication and coordination between departments, which include Finance, Human Resources, Land Use, the Regional Visiting Nurse Agency, Public Works, Registrar of Voters, Tax Assessor, Tax Collector, Town Clerk, and Youth & Social Services. However, the space is physically constrained, storage space is limited, and additional space will be needed within the next ten years.

Due to their limited interaction with other town departments, relocating the Social Services and Nursing departments off site is an option that could provide additional space in town hall, with minimal impact to the functions of the departments. In addition, the relocation could provide the public better and more private access to those services.

Fire and Emergency Services

The Town of Ledyard has an Emergency Management Department, Fire Marshal, two fire departments, and the contracts for ambulance service. There are also hospitals and ambulances in nearby towns that provide service to residents of Ledyard. Ledyard Emergency Management exists to ensure Ledyard Emergency Services are ready to respond in times of emergency to assist residents and to restore services to normal as soon as possible following emergency conditions. It is the mission of the Fire Marshal's Office to prevent and/or reduce the incidence of fire by increasing the awareness and knowledge of the residents and businesses respecting fire safety, and by ensuring compliance with the Connecticut Fire Safety Code and applicable regulations of the State of Connecticut. The mission of the Gales Ferry Fire

Company is to minimize the loss of life and the damage to property of all residents and visitors of the Town of Ledyard from the hazards of fire, medical emergencies, and hazardous conditions. The Ledyard Fire Company is a combination (volunteer and career) Fire Department comprised of approximately 75 volunteer firefighters, fire police, cadets and administrative members.

Ledyard is also home to the Emergency Management Department, which exists to ensure Ledyard Emergency Services are ready to respond in times of emergency to assist residents and to restore services to normal as soon as possible following emergency conditions. LEM is staffed by volunteers and key town department heads. Personnel are involved in the development of emergency plans and the operation of the Emergency Operations Center. The Town of Ledyard established a Public Safety Commission in 2010. To comply with federal regulations, that group is augmented to also serve as the Local Emergency Planning Committee (LEPC) to coordinate the town's emergency response systems and resources to develop an emergency response plan for hazardous materials incidents. The Ledyard LEPC is composed of representatives from state and Ledyard government, the town's emergency services and business representatives.



FIGURE 8 LEDYARD POLICE DEPARTMENT

Besides the town emergency services, the nearest emergency rooms are at Westerly Hospital, Lawrence and Memorial in New London, and Backus Hospital in Norwich. There are also nearby walk-in urgent care clinics in North Stonington, Pawcatuck, and Groton.

Police Department

The Town of Ledyard Police Department provides service and protection to its citizens and visitors. This mission is accomplished by maintaining a highly trained force consisting of its Patrol and Detective divisions, along with assistance from its Emergency Telecommunications and Animal Control divisions.

The Patrol Division is responsible for the protection of life and property of residents and visitors to the Town of Ledyard. The Ledyard Police Department Patrol Division is highly proactive in its approach to law enforcement, providing a visible proactive patrol presence at all times.

Within the Patrol Division, the Ledyard Police Department operates 3 subdivisions which are extremely beneficial to its operation.

The 1st is the department's K9 unit, which consists of 1 K9 and his handler.

The 2nd subdivision is the Marine Patrol Division. The Ledyard Marine Patrol provides active patrols to the waters of the Thames River to provide a proactive presence to enforce boating laws, ensure safe boating, and to provide necessary infrastructure protection for facilities located on the Thames. The 3rd is the Ledyard Police Department Accident Reconstruction Team. Recognized as one of the premier teams in the State of Connecticut, this team is called upon when a serious injury or fatal motor vehicle accident occurs in the Town of Ledyard. Consisting of several re-constructionists, these officers have undergone extensive training and their experience is invaluable to this department.

The Detective Division is responsible for the investigation of serious and in-depth criminal activity, as well as the safety and proactive programs within the Ledyard Public Schools and community. The Detective Division has extensive training in the field of forensic science and criminal investigation. This knowledge has been highly useful in the investigation of multiple complex crimes with Ledyard. The expertise of this division has also been used outside the Town of Ledyard to assist other agencies in need of our technical assistance. A Patrol Officer is assigned on a part time basis to work with the Town of Ledyard Schools to promote a safe environment in our schools. It also provides the D.A.R.E. program, plus other positive interactions, to provide a positive police/community interaction.

The Ledyard Emergency Communications Center (LECC) operates as the public safety answering point for the Town of Ledyard and the Town of Preston. All 911 calls originating in either community, along with all calls for service to the Ledyard Police Department, are received by the center. Dispatchers employed by the center are highly trained and certified by the State of Connecticut as Emergency Telecommunicators, as well as being certified to provide Emergency Medical Dispatch. In addition to dispatch services provided to the Ledyard Police Department, the LECC provides complete dispatch services to Gales Ferry Fire Company, Ledyard Center Fire Company, Poquetanuck Ambulance, Poquetanuck Fire Department, and Preston City Fire Department.

The Ledyard Police Animal Control Division has become one of the most highly respected in Southeastern Connecticut. The condition of its facility, its involvement in many proactive community events, as well as its highly professional service all have led to this sterling reputation. The Animal Control Office exists to prevent cruelty, abuse and neglect of animals in the Town of Ledyard by enforcing all state, county and town ordinances to the fullest extent

possible. Animal Control shelters homeless animals and attempts to place them in safe and loving home environments. They also educate the public on all animal issues, to foster a more aware and caring community.

Ledge Light Health District

Ledge Light Health District (LLHD) is the local health department for East Lyme, Groton, Ledyard, Lyme, New London, North Stonington, Old Lyme, Stonington, and Waterford, Connecticut. From restaurant inspections to smoking cessation classes, they promote healthy communities and prevent disease, illness, and injury. Programs and services offered include education to prevent chronic diseases (i.e., diabetes, heart disease, asthma), education on preventing communicable diseases, and drug abuse prevention programs. LLHD also is a key member of the Ledyard Prevention Coalition, which is made up of local youth, parents, teachers, police, civic organizations, healthcare professionals, government, tribal, faith, media representatives, youth-serving organizations, businesses, and other volunteers of the Ledyard community, and strives to foster a healthy, safe and drug free environment for Ledyard through community partnerships.

Ledyard Regional Visiting Nurse Agency

The Ledyard Regional Visiting Nurse Agency is a Home Care Elite Top Tier Agency, which represents the top 25% of the 10,000 Medicare certified agencies in the country, providing quality care at home, at school, and in the community. They provide home healthcare for the elderly, disabled, uninsured and chronically ill, while maintaining dignity and promoting independence. Available 24 hours a day, they provide specialized services and personalized care plans to meet the needs of the patients, including home health aides, medical social work services, physical and occupational therapy, skilled nursing, and speech and language services. They also provide free local flu clinics and blood pressure clinics throughout the year at Town Hall and the Senior Center, as well as free physical exams for Ledyard Emergency and Fire Personnel.

Social Services

Ledyard offers a variety of Social Services, including back to school backpacks, case management, emergency financial assistance, emergency utility assistance, emergency shelter assistance, the Ledyard Food Pantry, Furniture Bank referrals, holiday food and gift assistance, information and referral services, and Parks and Recreation scholarships for youth programs.

Youth Services

In addition, Ledyard Youth Services provides individual, couples, and family counseling for residents of Ledyard and Gales Ferry, Connecticut. No one will be denied service based on an inability to pay. Youth Services provides individual and group counseling at all Ledyard Public Schools. After school counseling is available at the Youth Services office located in the Town Hall. All counseling services are provided by master's level clinicians. Youth Services provides additional services for children and teens, including Anger Management Group, Bullying Prevention, Dealing with Divorce Group, Self-Esteem Group, Seven Habits for Highly Effective Teens, Social Skills Group, Social Support Group, and Teen Issue Group. Several programs are also available for parents, including Active Parenting for Stepfamilies, sex education programs, Launching Your Student to College, STEP- Systemic Training for Effective Parenting, and Cooperative Parenting Through Divorce.

Schools

Education Vision - Ledyard is a diverse and empowering community that inspires in each child a continuous love of learning, self-confidence and commitment to excellence.

The Board of Education has completed major renovations/improvements to Ledyard Middle School and Gallup Hill Elementary school to accommodate additional students resulting of anticipated population growth and closing of a very outdated Elementary School. These major renovations per the 2020 CIP include an Asbestos Consent Order, Elementary School Roofs, LHS Track Replacement, LHS Stage Floor, JWL Playground Pavement, Fire Alarm Systems, Outdoor Athletic Lavs/Storage, and the LHS Media Center Roof. Now that the Educational campuses have two renovated-as-new facilities, curricular, quality teachers, preventative and corrective maintenance remain the primary focus.

An example of Ledyard Public Schools forming a partnership with Ledyard Education Advancement Foundation (LEAF) has resulted in these enrichment programs.

- In math, art, music, reading, and engineering.
- Project Lead the Way Expansion to Ledyard Middle School students.
- In Automation and Robotics our 8th grade students learn about the history and impact of automation and robotics as they explore mechanical systems, energy transfer, machine automation, and computer control systems using the VEX Robotics® platform.

LEAF's mission is to marshal the community's resources in support of educational programs that promote excellence, innovation and enhance student achievement in Ledyard Public Schools.

www.ledyardeducation.org

Libraries

The Bill Library and Gales Ferry Library are assets to the Town of Ledyard and rank high with residents in terms of the level and quality of services. Our Libraries remain a conduit to history, science, politics, religion, imagination and understanding for all ages. It is an independent Educational and Social oriented facility. However, a 1998 space needs assessment concluded

there was not enough space to provide the kind of services sought by Ledyard residents, particularly at Bill Library. Town Council then appointed a building committee and authorized funds for an architectural study. Tuthill & Wells Architects has developed a plan based on a building program detailing the needs in every part of Bill Library for the next twenty years.

Conceptual architectural plans endorsed by the Library Commission and Bill Library Addition Building Committee call for an addition to the existing facility. Benefits of an addition to Bill Library include an

expanded children's room, quiet reading and research areas, and complete compliance with the American's with Disabilities Act. The Library Commission, Building Committee, and non-profit Bill Library Association are aggressively seeking federal and state financial assistance and charitable contributions to help finance this project and alleviate the burden on local taxpayers.



FIGURE 9 LEDYARD BILL LIBRARY

The community demand for library services in Gales Ferry indicate that the town should continue to support the operation of both libraries at a level that is fiscally prudent.

Parks and Recreations

The Parks and Rec Department in Ledyard provides a variety of facilities and classes for people of all ages. Some of the facilities maintained by this department include parks, pavilions, ball fields, schools, the senior center, Highlands Lake, the Nathan Lester House, and the Gales Ferry Community Center. Programs included classes for both adults and children, youth sports

programs, adult fitness programs, and day trips to nearby tourist spots. Parks and Rec also maintains maps and provides information on their website about Ledyard's extensive trail system, including the trails at the Nathan Lester House, Glacial Park, White-Hall, Burton Trail and more.

Senior Center

The Ledyard Senior Center promotes the physical, emotional, and economic well-being of senior citizens and promotes their participation in all aspects of community life. The center continually evaluates the needs of senior citizens and ways to meet their needs and provides an atmosphere that will be conducive for the senior to find companionship and develop friendships. Services included activities, book clubs, advocacy services, insurance and healthcare assistance programs, and the TRIAD program, which assists law enforcement in providing for the safety and welfare of the elderly population in Ledyard.

Public Works

The Public Works Department is responsible for a wide range of town services associated with:

- Road and building management, maintenance, and improvements
- Vehicle fleet maintenance
- Waste collection and disposal

Regular roadway maintenance is important and a cost-effective way to maintain the integrity of the Town's road system. The Town has a Pavement Management Program capital plan and coupled with the Town's annual crack-sealing policy, has been effective at extending the quality of public roads.

Even though the growth rate of Town-road-related infrastructure has slowed in the last decade, as new housing complexes are being developed, this additional 1.1 miles of roads require maintenance as well as snow and debris removal.

The department also administers engineering design and review associated with town infrastructure projects and development and satisfies various compliance requirements related to federal and state programs governing both roads and waste management.

B. Historic Preservation

Background

Ledyard's cultural heritage is one of Connecticut's richest. Native Americans have occupied and used these lands from 12,000 years ago to the present, while European settlement dates to the late 17th Century. Established in 1666, the Mashantucket Pequot reservation is one of the oldest in America. Approximately 213 acres of the Mashantucket reservation have been designated a National Historic Landmark. The Town has numerous prehistoric archaeological sites, European and Indian cemeteries, several Colonial-era industrial archaeological sites and dams, and at least 140 well-documented historic houses and buildings. The glacially deposited stones that occur in such abundance in Ledyard have been used to make walls, root cellars, and other stone structures that have been an important part of the town's landscape for hundreds of years. Map 2 shows the locations of some of the town's principal historic resources. In 1992, a National Register District was established in Gales Ferry encompassing the core of this maritime village west of the railroad track. In 2002, additional areas of Gales Ferry Village, specifically the vicinity of Allyn Lane, Hurlbutt Road, Ledyard Lane, Library Lane, Maple Corners Road and Military Highway were listed on the National Register of Historic Places.

Two local historic districts, the Up-Down Sawmill and Nathan Lester House, are owned by the Town and administered by the Historic District Commission. The grounds of the Nathan Lester House include 135 acres of open space with over three miles of walking trails known as the Great Oak Park. In 2018, the Great Oak Park was included in a State of Connecticut designated Greenway, the Great Oak Greenway. The combined Greenway corridor connects and expands upon the Great Oak Park.



FIGURE 10 GALES FERRY SCHOOLHOUSE

A number of individual farmsteads are also listed on the National Register recognizing Ledyard's agricultural settlement pattern between 1700 and 1830.

Goals

- Protect historic resources and minimize encroachment and impacts of development or road widening or realignment projects on historic homes, barns and other outbuildings,

stone walls and other stone structures, cemeteries, ancient burial places, and archaeological sites.

- Promote preservation through education, appropriate regulations and through listing of significant historic homes and buildings on the National Register of Historic Places.
- Maintain appropriate regulations.

Issues Policies and Strategies

1. Identify and Protect Historic Buildings and Resources

Identify and protect cemeteries, historic sites, and archaeological remains prior to site disturbance. Ledyard's subdivision regulations enable the Planning and Zoning Commission to require professional archaeological assessments where there is potential for adverse impacts to cemeteries, human burials, or archaeological sites.

Utilize and expand the existing comprehensive historic and architectural resource survey. An historic and architectural resource survey of Ledyard was completed in 1992. One hundred forty standing buildings were mapped, photographed and documented on CT Historical Commission inventory forms. This survey process should continue for Colonial and 19th century archaeological sites.

Existing inventories should be used in all review processes for development, road, and infrastructure projects. The existing survey and inventories should be updated, and it should not be forgotten that distinctive structures of the latter part of the nineteenth, twentieth, and twenty-first centuries may be valued in future decades as much as we value eighteenth-century ones today. Locations of known archaeological and historical sites should be included in the Town's computerized mapping system. The following are recommendations to consider for additional listings on the National Register:

- Schoolhouses built between 1735 and 1940;
- Nineteenth Century farmhouses; and
- Homesteads of Fort Griswold defenders (13 are identified in the 1992 town-wide survey).
- Casino-related development along roads leading to either Mohegan Sun or Foxwoods resorts, or road widening/realignment projects proposed to improve access to Foxwoods Resort and Casino, have the potential to jeopardize historic sites. Care should be taken by the Town to assess all road projects and proposed developments

along primary and secondary access roads to the casino for their possible impact on historic sites.

2. Maintain Historic Resources

- Maintain appropriate regulations. Review of zoning and subdivision regulations to ensure that the preservation of sites and/or renovation and reuse of historically significant structures is encouraged, that there is flexibility and incentive to preserve historic sites and properties, and that archeological assessments are provided routinely where appropriate.



FIGURE 11 UP-DOWN SAWMILL

- Expand education efforts in order to foster a cooperative, community-wide approach to preserving the town's historic resources. Establish educational programs to promote awareness of historical and cultural resources.
- Use appropriate signage and displays for existing historical sites.

3. Promote Historic Preservation Efforts

- Seek outside financial assistance to continue to inventory and nominate appropriate historic sites. As a "Certified Local Government," the Ledyard Historic District Commission is eligible to receive matching grants for its preservation activities. The Commission should seek additional federal grants to continue the process of nominating properties to the National Register, undertake an inventory of historical archaeological sites, and explore cooperative educational and survey projects with local Native American groups regarding preservation of burial grounds and cemeteries.
- The Ledyard Historical Society partners with the town, via the Historic District Commission, in the preservation and display of local and period farmhouse and farming artifacts at the Nathan Lester House. The Historic District Commission and Town Historian work closely with this voluntary organization. The Society and the Town Historian partner with the town, via the Library Commission, in maintaining an archive of historic documents and photographs, housed at the Bill Library. These activities should be continued and expanded to include more recent history before it is forgotten.

- Continue the work of the Ledyard Cemetery Committee to maintain and preserve approximately thirty of Ledyard's historic abandoned burial grounds including gravestone restoration. Under the Committee's Adopt a Cemetery Program, these cemeteries are cared for by volunteers including families and civic organizations.

4. Promote Gales Ferry Historic District

Actions in 1992 (Historic District #1: <https://catalog.archives.gov/id/132353528>) and 2005 (<https://catalog.archives.gov/id/132353530>) created a National Register Historic District in significant parts of Gales Ferry Village. However, this district receives little attention and there is a profound lack of awareness of the state and extent of the district as well as local regulations governing this district. These districts include >70 contributing properties and represent a significant asset for the town. The existence of this important town resource should be promoted and protected through more active action from the Historic District Commission to promote and ensure long-term preservation of the structures and character of the district.

C. Open Space

Background

Ledyard's undeveloped land is critical in shaping the town's character as a rural suburb. The presence of significant wetlands, ledge, and lack of infrastructure limits the density of development in significant parts of the town, which contributes to a more rural characteristic that residents express a desire to protect and preserve. Undeveloped land continues to be vulnerable to development pressures coupled with the continued lack of a cohesive open space policy has led to significant fragmentation of open and protected spaces.

Agreeing on a definition of "open space" is a challenging issue, and experience has demonstrated that many residents consider any land which is not developed to be "open space." However, this perceived open space is actually privately owned and may eventually be proposed for development. For the purposes of this Plan of Conservation and Development, open space is defined as land that is privately or publicly owned but is permanently protected and held in the public interest. This includes managed open space. "Perceived open space" can be transformed into "preserved open space" through the creation of a cohesive vision that helps the community grow "by choice not by chance." Guided by this unified open space system the community can *act* with purpose to create and maintain their overall vision for the future rather than simply *reacting* to individual development proposals. Figure 1 shows existing open space in the Town of Ledyard.

Following adoption of the 2003 Plan of Conservation and Development, the town of Ledyard established an limited duration Open Space Committee (2004) which established a Plan for the Preservation of Open Space with the objective to provide the Town of Ledyard with a

comprehensive strategy to “identify, protect, and preserve open space, and manage town-owned open properties to achieve the maximum benefit to town residents and wildlife. These efforts realized several goals such as the establishment of the “Open Space Acquisition Fund” and the adoption of an ordinance to designate a portion of the Municipal real estate conveyance taxes to be directed that fund. These open space preservation efforts should continue and be enhanced to ensure the goals of protecting vulnerable habitat and to ensure connectivity of our green spaces.

Goals

- **Preserve Open Space** – Acquire, protect, conserve, and manage high value open space to protect and sustain habitats, natural resources, and recreation areas. Work cooperatively with private non-profit organizations and private landowners to acquire high value open space parcels through purchase, gifts, easements, and other strategies.
- **Promote Connections** – Develop a town-wide and inter-town network of trails and open space. Facilitate and encourage the acquisition of open space which will provide connectivity between open-space parcels. Provide for contiguous and linked open-space by requiring that subdivision open-space set asides be located in areas where they can be linked to other existing open space tracts or areas that are targeted for future open space acquisitions.
- **Promote Education and Recreation** – Educate the residents on the benefits of open space for recreation, habitat, and natural resource conservation. Encourage creation of trails, passive recreation areas, and wildlife corridors so that the citizens of Ledyard may maintain active, healthy lifestyles, appreciate the community’s natural resources, and strengthen community’s image as a desirable place to live. Work to quantify the use and users of the open space to allow better quantification of the current and future economic benefits of open space.
- **Protect Water Resources** – Protect wetlands, watercourses, and vernal pools from pollution and minimize the impact of impervious surfaces which accelerate run-off and pollution. Protection of these resources benefits both natural habitat as well as critical water supplies.
- **Inventory Space and Access** – Generate a thorough inventory of existing open space as well as their current uses. Provide a more accessible way for residents to identify open space near them, how to access it, and what uses are acceptable there.

Issues, Policies, and Strategies

1. Expanding and preserving open space for natural resource and habitat protection

Ledyard is rich in natural resources. Wetlands, lakes, vernal pools, forests, coastal areas as well as productive farmland soils contribute to the landscape of the community. The natural environment is a primary influence on the quality of life and character of the Town of Ledyard that must be protected.

The benefits of open space are multifold. Enhanced quality of life for residents is achieved through access to areas set aside for passive and active recreation. Hikers, birdwatchers, photographers and other naturalists can enjoy the ability to observe from within protected parcels, while causing minimal impact to them. Residents can enjoy walking or biking safely away from roads and cars. Connected corridors of open space provide habitat for many species of mammals, birds, reptiles and amphibians. Rare or endangered flora and fauna identified in the Natural Diversity Data Base can be provided undisturbed living space. Furthermore, protecting our open space provides a natural drainage, flood storage and/or erosion control reducing the speed of runoff from developed areas and mitigating the inevitable pollution that accompanies human activities.

At the beginning of 1999, over sixteen percent of Ledyard's total land area, approximately 4,120 acres, was permanently protected open space. This figure includes over 100 parcels owned by the Town of Ledyard, Groton's extensive reservoir system, lands of the Nature Conservancy, Avalonia Land Conservancy, Department of Environmental Protection, and tracts for which farmland development rights have been acquired.

The continued acquisition of open space for passive recreation and habitat protection is a positive step for the community. However, much of Ledyard's open space, such as the reservoir property, remains off-limits to the general public. Other preserved lands, although considered open to the public, are largely inaccessible due to lack of trails or the presence of thick swamps and wetlands. Further, other open space holdings are small and fragmented between various residential subdivisions. These parcel set-asides were required by regulation, and often located haphazardly following no open space development or linkage plan.

Open space preservation efforts must be targeted to preserve critical and valuable land and natural resources and maximize open space benefits to the community. Efforts should be made to:

- Inventory protected open space and undeveloped land that is desirable for open space. Particular attention should be paid to areas that provide connections to other open space land that has significant ecological value for wildlife corridors.
- Update the wetlands map, include vernal pools and floodplains. Vernal pools are seasonal water bodies are essential breeding grounds for certain amphibian and insect species. Vernal pools and their surrounding habitat are key to maintaining biodiversity. Nearby development disrupts or destroys these fragile ecosystems. Flood plains are integral in conveying water during times of heavy rain and depletion of their flood conveyance capacity will have a negative impact on downstream properties. No inventory of vernal pools or flood plains exists in Ledyard and furthermore the wetlands map is outdated. Landowners and developers should be encouraged to protect these areas as much as possible.
- Work cooperatively with private non-profit organizations and private landowners to acquire high value open space parcels that encourage connectivity and natural resource protection through a variety of funding mechanisms including grants, gifts, easements, and other strategies. Furthermore, the Town should continue to pursue other avenues available for the continued funding of the Open Space fund, such as a limited buyer's conveyance fees which can help fund open space and farmland acquisition, stewardship, and other environmental projects such as invasive species control, trail maintenance etc.
- Provide for contiguous open space by utilizing by ensuring that subdivision open-space set asides be located in areas where they can be linked to other existing open space tracts or areas that are targeted for future open space acquisitions.

Greenways and wildlife corridors reduce the problem of fragmentation by linking larger natural areas, providing pathways for seed dispersal and animal movement. Connecting open space areas with trails within Ledyard as well as with adjacent communities will enhance the value and accessibility of open space to Ledyard residents. While work has been started on this worthy project, Ledyard should continue to prioritize establishing a series of trails that connect important open space areas. Ledyard has the opportunity to provide connected open space, trails and greenways that can link local and regional parks providing close-to-home recreation opportunities while protecting fragile wildlife habitat and safeguarding our water quality. In order to continue to provide for contiguous and linked open space, future subdivision open space set-asides should be required to be located in areas of each development where they can be linked to other existing open space tracts, or areas targeted for future open space acquisition on land that has not yet been developed.

In 2018, the Town of Ledyard in partnership with Avalonia Land Conservancy was awarded recognition of the Great Oak Great Oak Greenway, a State of Connecticut Greenway (Figure 2).

The Great Oak Greenway consists of two adjacent town owned properties and the connection to 250 acres of Avalonia land. Through an Open Space Subdivision application, approximately 25 acres of open space was transferred to the Town was owned property at 800 Long Cove Road. This property sits adjacent to the Nathan Lester House and Great Oak Park which has nearly 2.5 miles of existing trails. The property also is the site of the historic 18th century Nathan Lester Homestead and Tool Museum. The greenway also includes the Avalonia Pine Swamp Wildlife Corridor which extends from the north of the Nathan Lester property encompassing multiple trail systems and extensive swamps and upland woods habitat protection.

The Great Oak Greenway will serve to enhance existing recreational opportunities while augmenting a significant educational/historic asset in Ledyard. The Great Oak Greenway will guide planning decisions to preserve significant natural resources and wildlife habitats while providing new recreational opportunities.

- *Natural resource protection:* The Greenway contains numerous high value habitats which support known populations of New England Cottontail, a candidate for Federal listing as endangered. It is also a corridor for many endangered, threatened and special concern birds. The parcels contain numerous vernal pools, bogs, marshes, shrub land, wetlands, and riparian areas. Greenway designation would enhance ongoing conservation and wildlife protection efforts including an existing local effort to provide and protect habitat for the New England Cottontail.
- *Water quality preservation:* The Greenway protects the Groton reservoir and several watershed areas including Thompson Brook, Allyn Brook and one of the area's major aquifers.
- *Recreational opportunities:* Greenway will serve to as initial greenway in Ledyard through spectacular and varied terrain, from highly accessible trails to single track. The potential exists to expand the existing trail systems and provide alternate access to Tri-Town Trails which has been an issue of on-going concern in Ledyard (Appendix C).
- *Educational opportunities:* Boosts visibility and access to the historically significant Nathan Lester House and Tool Museum and offers opportunities for CT wildlife and habitat education.

The endorsement of the Great Oak Greenway creates the first greenway in Ledyard. The Great Oak Greenway promotes the natural, recreational and historical resources of the Great Oak Park and the Pine Swamp Wildlife Corridor Through the establishment of the Great Oak Greenway, Ledyard has the opportunity to prioritize connections over fragmentation, provide linked open

space and trails for close-to-home recreation opportunities, reduce essential habitat loss, protect vital watersheds and importantly provide guidance for future targeted land conservation.

Indeed, Ledyard has the opportunity to expand this Greenway through the conservation of undeveloped land on either side of this proposed greenway. These currently unpreserved areas contain indispensable conservation land comprised of native shrub, grassland, and a large tract of currently unprotected Coastal Forest. The encompassed ecoregion provides critical habitats which serve to offer food, protection, nesting sites, and resting areas for a variety of native bird species some of which are state-listed species of special concern or endangered (brown thrasher, eastern meadowlark, sharp-shinned hawk, barn owl, black-billed cuckoo). There is also a thriving population of mammals including coyote, red fox, bats, and deer. In addition, the freshwater wetlands, brooks, and vernal pools are home to a large variety of amphibian species including blue and yellow spotted salamanders, marbled and northern redback salamanders, northern leopard and spadefoot frogs, and turtles. The Thompson Brook originates within the specified greenway and supports a healthy population of wild Brook Trout, the only native species of trout in CT and whose population has plummeted due to dramatic habitat loss. This greenway space is within the Ledyard Coast Focus Area (Figure 3) and would expand and support existing local efforts to provide and protect habitat for the New England Cottontail (Figure 4). At the northern end of the proposed expanded Greenway, Poquetanuck Cove is home to bald eagle and osprey as well as valuable brackish marshes. The cove is home to one of the most expansive wetlands areas on the Thames River south of Norwich.

The Great Oak Greenway and potential expansion areas represent a noteworthy combination of natural resource and wildlife protection coupled with recreation and educational opportunities. By connecting existing open space and trail segments within Ledyard and other municipalities, the Town can create a significant regional recreation corridor that simultaneously protects high value conservation land and habitat while providing educational opportunities for areas of historical and ecological significance.

2. Education and Recreation.

Ledyard residents have been strong proponents of acquiring and protecting our open space and natural resources. The town should ensure this continued support by educating the community of the benefits of open space, wildlife corridors, and natural resource protection. Strengthen the open space education materials and outreach efforts throughout all facets of the community. The Town should consider various methods to engage the specific property owners and enlist cooperative efforts to promote responsible private ownership and stewardship that complements the Town's effort and desire to protect open space, encourage connectivity, and safeguard water resources. The placement of wetlands placards should be enforced in buffer areas as a best practice in order to educate landowners about the vulnerability of these sensitive areas.

The Town of Ledyard recognizes that the spread of invasive plants is a serious environmental problem which poses a threat to our local natural ecosystems. Specifically, non-native invasive plants such as Asiatic Bittersweet, Multiflora Rose, Autumn Olive, Japanese Knotweed, etc. have been identified in the area. Many hours of volunteer labor have been expended in an effort to control or eradicate these plants. The Town should make a continuing effort to preserve, restore and protect native plant communities. Efforts should be made to raise public awareness about invasive species to reduce migration from private to public lands and landowners and developers should be educated about invasive landscape plantings in an effort to minimize their spread. The town should be more proactive in ensuring that ground disturbances are diminished as these disturbances provide an increased opportunity for invasive plants to propagate.



FIGURE 12 COMMUNITY HIKE

Furthermore, the Town should increase its efforts to enlist the support of citizen involvement in trail and open space maintenance and management using diverse media approaches. Educational and recreational hikes, walks and forums for the public should be promoted. Efforts should be made to evaluate and execute ways to improve signage and visibility of open space properties that allow public access in order to increase visibility of existing trails and to increase usership. Trails within Ledyard should be mapped using GPS technology running through a platform such as Google Maps to create a more interactive map system that clearly indicates difficulty, uses, and length of trails.

3. Water Resource Protection

Continuous linked open space corridors and greenways provide a natural stormwater management system for Ledyard very different from the conventional method. The natural approach relies upon the preservation of streams, ponds, and other wetland areas, as well as nearby forested uplands, to perform natural functions of conveying, storing and filtering stormwater. With the adoption of the stormwater drainage ordinance in 1995, reliance on natural control measures has become an integral part of Ledyard's stormwater management policy.

Protection of water quality is a significant issue in Ledyard. The health of surface waters is affected by wastewater discharge, water diversions, dredging, storm water runoff and wetlands alterations. One of the greatest threats to Ledyard's water quality is non-point pollution sources such as effluent from septic systems and storm water runoff carrying pollutants such as fertilizer, pesticides, petroleum products, road salt and sand. We can protect our community's water resources with proper management. Protection of water quality can be furthered by the following types of strategies:

- Continue to protect wetlands and watercourses from pollution and erratic flow levels.
- Protect wetlands and buffer zones, enforce placement of wetlands placards.
- Implement "low impact development" practices using vegetation and infiltration to better manage stormwater quality and quantity.
- Complete the "Aquifer Protection Zone (APZ)" mapping and designate aquifer protection area boundaries.
- Seek to minimize the impact of impervious surfaces which accelerate runoff and pollutants. Efforts should be made to ensure that new developments result in a zero-net increase in storm water discharge. For all land-uses, limits should be placed on the allowed amount of impervious surfaces. Incorporate an impervious surface fee ordinance into subdivision regulations in order to encourage the use of novel pervious materials in new developments.

4. Open Space Inventory and Promotion

The open space in town is that space preserved permanently by a variety of organizations, including town, state, NGO's, and private ownership. This mishmash of ownership makes it difficult for residents, let alone visitors, to identify and access the existing open space. Each property has a different access plan and may have different restrictions on the acceptable type and times of access. With no central location where people can find this information, some of this open space is either inaccessible or only a select few area aware of their existence. It is difficult to promote open space if people can't easily find what is available to them. In order to help address this, it is recommended that the town pursue providing a centralized listing of open space as well as pursue region, state, and national level designations to promote the resources that are available.

The town must find the means to map existing open space, identify their uses, and provide a listing of this information online. The majority of people today are relying on the internet and digital maps when looking for a place to go hiking, birding, or bicycling. As such, Ledyard must follow suit and create digital maps of open space and post these on the town website. Similarly,

some way to integrate with land trusts operating in town should be pursued so that that information can be combined.

The state-level designation of the Great Oak Greenway has provided one way to promote Ledyard's open space. The greenway is included in state lists and raises the public awareness of this resource by making connected properties easier to find. While we are well served to promote open space connected to this greenway, we would be similarly well-served to pursue other designations that would raise awareness of other town properties. To this end, it is recommended to pursue designation of the Ledyard Glacial Park as a natural landmark. The remarkable geologic features in the park are worthy of greater promotion and the increased visibility could allow the development of a significant educational resource.

IX. Business Districts

A. Ledyard Center

Background

Creation of a village center was first embodied in the 1965 Plan of Development, and its importance has been acknowledged in each of Ledyard's comprehensive plans since that date. The creation of a Ledyard Center Design District in the mid-1980's and a Corridor Access Management Plan for Route 117, coupled with a shade tree and streetscape design Program, and stretches of newly constructed sidewalks, have begun to define Ledyard Center as a village area. The adoption of Village District Regulations in 2005 and the mechanism of a design review board have shaped development in the town center.

A new police station was approved by voters in 2010 and constructed at the site of the old emergency services building next to the Town Hall in Ledyard Center. This new building is a major contributor to the village appearance of the center.

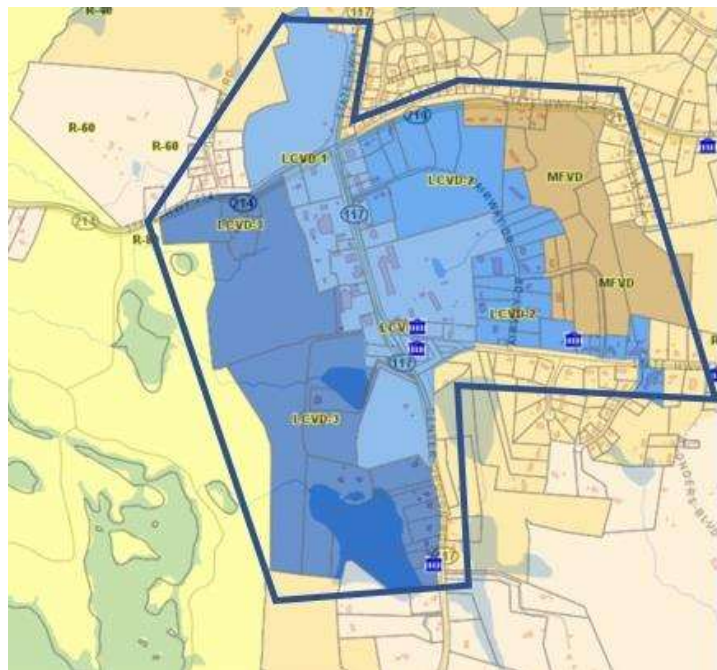


FIGURE 13 LEDYARD CENTER BUSINESS DISTRICT (BLUE OUTLINE)

A town-wide school building improvement program was approved by voters and implemented in 2015. School building refurbishment and new construction at both Gallup Hill grammar school and the middle school was completed in 2019. The program included retirement of the Ledyard Center School (LCS) building as a school. Although funding was included in the program to demolish the building and remove the old septic system, more recent plans have included reusing the building for commercial and multiunit residential purposes.

Since 1945, a large tract of town-owned land behind LCS has been used for the annual Ledyard agricultural fair. But other than for the three-day fair, this land has been underutilized. Some recent new uses have included a weekly farmer's market during the warmer months and periodic events such as the Halloween trunk-or-treat for children and their parents.

Numerous roadway plans, focusing primarily on the construction of new local roads to access an area located east of Route 117, LCS, and the fairgrounds, and south of Route 214 have been debated for decades. These plans have been intended to access a large parcel of land for commercial development.

Goals

- Short term goals include completion of sidewalks on both sides of the street from the new Best-Way convenience store in the Ledyard Center Transition Zone, just south of the Route 117/Colonel Ledyard Highway intersection, north to the Route 214 intersection.
- Long term goals include development of property for commercial and mixed use through the extension of Fairway Drive to Route 117 with a possible separate branch of Fairway Drive connected directly to Route 214.
- Long term goals also include appropriate infrastructure to support the higher density due to existing development plus the additional development associated with the reuse of LCS and the extension of Fairway Drive.

Issues, Policies, and Strategies

1. Access Management

According to ConnDOT, average daily traffic on Route 117 in Ledyard Center was 10,500 in 2005. This volume included the effects of through-traffic to and from the Foxwoods and Mohegan Sun casinos. Traffic volume and timing of peak volume in Ledyard Center going forward will tend to be driven up by some local anticipated changes and driven down by others. Decommissioning of Ledyard Center School in 2019 will lessen 2 of the daily peaks, while increased commercial activity and multi family housing should increase the general background volume.

2. Public Spaces & Streetscape

Continue implementation per guidelines in the 1999 streetscape and shade tree master plan for Ledyard Center as follows:

- Complete sidewalks from the Ledyard Center transition district on the south end to the intersection with Route 214 on the north end.
- Improve Ledyard Center appearance by burying the overhead utility wires.
- Work with SEAT to identify a bus stop in Ledyard Center.
- Give consideration to creating a small pocket park at the corner southeast of the Route 117/Colonel Ledyard Highway intersection having limited parking and a picnic area.

3. Completion of Fairway Drive

Completion of a branched road linking the existing Fairway Drive cul-de-sac with Route 117 – Ledyard Center Main Street – and with Route 214 via the second branch, would provide access to over 60 acres of undeveloped land within walking distance of the main street.

4. Ledyard Fairgrounds/Town Green

Other than for the annual three-day Ledyard Fair, which is held in late August, the fairgrounds have been underutilized. Formalizing a “green” on a portion of the fairgrounds will encourage additional uses of this property at different times of the year. Some actual recent new uses of the property have included a weekly farmer’s market during the warmer months and periodic events such as the Halloween trunk-or-treat for children and their parents.



FIGURE 14 LEDYARD CENTER SCHOOL

5. Commercial & Mixed-Use Development

In May 2019, voters authorized the sale of the Ledyard Center School building, the school grounds, and a portion of adjacent fairgrounds property. This action was precipitated by an offer from a commercial developer. This offer would preserve most of the school building for reuse, including an historically significant section, rather than demolishing it. Additional portions of the proposed plan comport with

longstanding town plans to extend Fairway Drive and reap the benefits of commercial development this will bring. Multi-family, owner-occupied and rental housing that would tend to be more affordable than much of Ledyard's existing single family housing is part of the development concept. This supports the increasing need for this type of housing in the region. However, this action will make it not possible to have the fair at this site in the future. The fair will have to be relocated for it to continue. Investment by a developer and/or a public-private partnership by way of a scheme such as tax increment financing might be useable. The state legislature passed a law effective in October 2015 that establishing tax increment financing for projects exactly like development of Ledyard Center.

6. Infrastructure

Infrastructure for delivery of adequate potable water to Ledyard Center is in place, although businesses and municipal buildings still use individual wells. Under the auspices of the town's Water Pollution Control Authority (WPCA), a water main has been extended northward along Route 117 from the Groton Utilities source into Ledyard Center. Much of Ledyard Center is within the service area of the Southeastern Connecticut Water Authority (SCWA), which sources its water from local wells. Thames Aquatic Club opened for business in Ledyard Center in 2019 having a new individual public well owned by SCWA.

More water use due to increased density in Ledyard Center means that additional sewer capacity will also be necessary. The Regional Plan of Conservation and Development states that with today's public health code and with the technology used to construct onsite septic systems, there is much less chance for groundwater contamination than when the region's sewer system was first being developed. However, Ledyard Center sits on the edge of Groton Utilities watershed so that plans for increased density should include maintaining source quality as well as avoiding chances for local contamination.

Ledyard has a sewage treatment plant located about 4 miles from Ledyard Center and it would be logical for Ledyard Center to tie-in to the plant depending on cost, potential other users along the pipeline, and use of possible mechanisms like tax increment financing. There have been cases where businesses have been prevented from using existing vacant commercial sites in Ledyard Center due to insufficient onsite septic system capacity for the proposed use. Therefore, outfall capacity of the

treatment plant would have to be adequate for at least some of the pre-existing users for this to be a perfect solution.

B. Gales Ferry Village

Background

The Route 12 highway corridor and Gales Ferry Village have coexisted with one another for years. Commercial strip development is juxtaposed with a dense settlement of single-family homes dating back as far as 1750 but are predominately from 1800 and later. Gales Ferry is defined geographically by a postal code and school district which roughly includes the western half of the town. Gales Ferry Village is composed of the residential village which includes historic districts

1(<https://catalog.archives.gov/id/132353528>)

and

2 (<https://catalog.archives.gov/id/132353530>), a

more densely settled newer residential area, a dense commercial area around Riverside mall, and less dense commercial development

extending south on Route 12 toward Groton. The business district discussed here is shown in Figure 16 and includes the dense commercial area alongside Route 12 extending from Chapman Lane to Kings Hwy and east from Route 12 to Military Highway including the Landing and the former Alice Acres site.



FIGURE 15 GALES FERRY BUSINESS DISTRICT (BLUE OUTLINE)

In 2017, the former Gales Ferry school, which had been successfully converted to a commercial incubator, was sold by the town to a commercial developer. Since then, rental income and maintenance costs to the town have been replaced by tax revenue paid by the developer. This has resulted in a net improved balance sheet for the town.

In 2018, Riverside Mall (which includes the Ocean State Job Lot and Dollar Tree stores) completed a series of improvements to their 12-acre site that dominates the east side of the Route 12 corridor. These improvements included repaving of the parking lot, installation of new low

intensity parking lot lighting, improved signage, improved building facades, and addition of island merchant buildings at the street side of the parking lot. In 2012, a CVS pharmacy/convenience store was opened on the west side of the corridor on the corner of Hurlbut Road. These physical site improvements have led to enhanced village ambiance and to a modest increase in commercial activity. The number of merchants in the village has increased during this period. While this continued development is welcomed, it must be accomplished according to a corridor access management plan, and with emphasis placed on pedestrian circulation, architectural and site aesthetics, and a unified approach to signage, stormwater drainage, and sewage capacity.

Goals

- Continued growth and development of the Gales Ferry business district as a mixed-use commercial center, focusing on development of the Route 12 corridor between Chapman Lane and Kings highway for commercial development.
- Pursue grant opportunities to put in sidewalks to connect Riverside Mall to the many small strip malls on the opposite side of Route 12 and south to the commercial properties on Kings Hwy.
- Examine the use of the limited waterfront properties in Gales Ferry. Determine if the current regulations are sufficient to promote these properties for water dependent business or if they are exclusively residential.
- Preserve the historic and well-known structures that are present throughout the district. Commercial development should encourage awareness of these structures and not damage or threaten these properties.

Issues, Policies, and Strategies

1. Walkable commercial district

The Route 12 corridor provides the largest number of out of town traffic anywhere in town. While commercial development is growing significantly in Groton along this corridor, many oppose the style and attractiveness of the corridor. The town should work to capture more of this traffic and guide the development to provide a robust commercial district that provides services needed by residents. The work at Riverside Mall dramatically improved the look of the area and this should be continued by pursuing grant opportunities to allow pedestrian traffic safe movement throughout the area. This should include extending existing sidewalks east into the residential part of Gales Ferry as well as connecting existing commercial parcels. In addition, improving the appearance of the corridor via tree plantings and low maintenance landscaping along the road should be addressed. Allowing customers of any business in the area to easily walk to other

businesses should help to promote the entire area. In addition, the Town should pursue advertising and any other means to fill out the remaining commercial storefronts in the area, including the available commercial pads in Riverside Mall. Commercial growth in the area has been slow but directionally correct and novel means may be needed to help ensure the growth continues.

2. Transit Hub

The Riverside Mall represents the largest commercial parking area in town and is adjacent to Route 12, which has several SEAT regional bus lines. However, there is little use of the SEAT system and multiple bus changes are required for residents to use the system to travel from Riverside Mall to Pfizer/EB, Olde Mystik Village, or the Crystal Mall. Several communities have embraced novel public/private partnerships that have used subsidized Uber-like systems to provide improved public transit in areas that are poorly served by mass transit systems. The Town should explore whether CTDOT transit-oriented development funds could be used to explore, design, and implement a public transportation system. Linking such a system to Riverside Mall would provide additional visibility and customers to the commercial district and take advantage of the existing location.

X. Land Use

A. Land Use Regulations

Background

Land use regulations and controls can ensure that the growth and development of Ledyard meets high quality standards. These regulations and standards protect the overall quality of life by maximizing compatible uses, maintaining property values, minimizing the impact of new development on natural resources and managing the growth of public services and maintenance costs. Sound, coordinated land use and community planning decisions based on recommendations in this plan should guide the growth of Ledyard, maintain its primarily residential quality, allow for the growth and diversification of residential and non-residential uses, all while protecting the environment.

The Town of Ledyard's legal guidelines for land use are embodied in its zoning map (Map 1) and written zoning regulations, as adopted and amended by the Zoning Commission. Any zone changes or revision to the zoning regulations requires an evaluation of whether the change or revision is consistent with the Plan of Conservation and Development.

Subdivision regulations detail the design and infrastructure improvements that must be applied when converting raw land to building lots. The intent of the regulations is to ensure that whatever development takes place meets appropriate quality standards and will be of such character that it can be used for building purposes without danger to health or public safety.

The Inland Wetlands and Watercourses regulations regulates development that could impact inland wetlands and watercourses by minimizing their disturbance and protecting their quality.

The Conservation Commission maintains an index of all open space within the town for the purpose of obtaining information on the proper use of such areas and advises the other Land Use Boards on the proper use of existing and potential open space.

Goals

- Support and manage the growth and development of Ledyard in order to maximize both the environmental and functional quality of life.

- Maintain suitable subdivision and zoning regulations that reflect the development pressures on the town and that maximize compatible uses, maintain property values, minimize the impact of new development on natural resources and manage the growth of public services and maintenance costs.
- Revise zoning, inland wetlands and subdivision regulations as necessary to implement the goals and strategies of the Plan of Conservation and Development and promote consistency between the Plan of Conservation and Development, regulations, and policies of all land use boards.

Issues, Policies and Strategies

1. Special Issues – Tribal Land Use

The planning and zoning process in Ledyard are complicated by the unique status of tribal reservations within and adjacent to the town's borders. The state land use laws, which apply to all municipalities within the State, do not address tribal nations. The reservations of these tribal nations, which are held "in trust" by the federal government, are exempt from the reciprocal land use responsibilities described in the zoning and inland wetlands statutes.

The Ledyard Planning, Zoning and Inland Wetlands Commissions should continue to maintain open communication with the land use and development staff at the Mashantucket Pequot Tribal Nation in order to ensure that development within the reservation boundary is done with as much consideration of the town's regulations as possible and in an attempt to mitigate any impacts of development outside the reservation boundary.

2. Zoning Regulations

The existing zoning is shown on Map 1 and the recommended pattern of land use and zoning in Ledyard is shown on Map 3. It is based on a variety of factors, including: locations of existing land use, ability of the road system to safely handle traffic, physical limitations such as topography, wetlands or 100-year flood zones, proximity to existing or proposed utilities and infrastructure, the presence of critical groundwater aquifers, the need to provide for adequate land for well and septic systems and the need to protect certain natural and cultural resources. A comprehensive revision of the regulations was approved in 2018. This followed a multi-year process starting with a Town Council sponsored ad-hoc committee in 2015. The Ad-Hoc Committee was tasked with simplifying the regulations and providing more streamlined application process for commercial and industrial applications. As a part of this process, several significant revisions were made to the zoning regulations: 1) Removal of the Village Districts; 2)

Reduction in the number of zones, including removal of R-80, RCCD-2, GFDD-2; 3) Expansion of the affordable and incentive housing; 4) Conversion of many special-permit uses to by-right; 5) Revising cluster subdivision regulations to better direct desired development.

The regulations should continue to encourage focusing commercial development in the Ledyard Center (Rte. 117) and Gales Ferry (Rte. 12) areas where infrastructure is available and significant vehicle traffic exists to support commercial businesses. Increasing the density of development and encouraging redevelopment of these corridors remains preferable to allowing commercial sprawl outside of these areas towards existing residential and low-density areas. These high-density commercial and mixed-use areas result in cost-effective development of water supply infrastructure and lead to better recognition at the regional and state level when infrastructure grants are considered.

The regulations should be amended to allow high tech industrial uses. Connecticut has long been a home for advanced technology and our region is the same with Pfizer and Electric Boat both having large campuses in the area. However, Ledyard's current industrial regulations are designed for manufacturing and light industry and don't support the technology industry. Uses like research laboratories, computing centers, and advanced assembly are a poor fit for current regulations. However, with proper regulations these are high-value industries that can provide good paying jobs but have low impact on the surrounding area and require few resources from the town.

Future recommended amendments to the zoning regulations include:

- Expanding accessory apartments and other low-impact affordable housing units such as duplexes that encourage alternative housing means.
- Watershed and aquifer protection are increasingly important as the regional population grows and stress increases on existing water sources. Protection of these areas in zoning regulations will help guide development that is in concert with protection of safe drinking water.
- Farming should continue to be protected and farmers given further financial incentives in an effort to maintain the rural character of the town. Zoning regulations should be reviewed to ensure that farming and agricultural uses and agriculturally based businesses and retail ventures are allowed in appropriate residential zones.
- Home husbandry and backyard farming continue to be evolving accessory uses that require vigilance to support this desired use without causing undue impact on neighboring properties on smaller lots. Recent Farm Bureau guidance should be used to guide necessary regulation of these uses.

- The recent comprehensive regulation change made large changes in the balance of by-right vs special permit uses for commercial uses. The remaining special permit uses should be evaluated to ensure that applicable special standards are in place.
- Consider adopting a zoning regulation requiring that all lots contain a minimum buildable square.
- The majority of current significant subdivisions have been submitted as some sort of cluster subdivision. The zoning regulations should consider modifications that allow needed developer flexibility while also providing meaningful and contiguous open space both inside and outside the development.
- Consider adopting technology park zoning regulations.

Any proposed zoning amendments will be reviewed by the Planning and Zoning Commission during a public hearing process to determine if the proposed change is consistent with the “comprehensive plan” described in the zoning regulations and depicted on the zoning district boundary map. Any proposed amendments must also be evaluated in the context of this POCD. In general, a proposed zoning amendment will be approved if it can be demonstrated that the town will benefit from the change and that the change will harmonize with existing uses.

3. Subdivision Regulations

Subdivision regulations are the rules that guide the division of a parcel of land into lots. Well-crafted subdivision regulations can be very effective in minimizing the negative impact of development. Subdivision regulations do not determine where, or if, development can take place; they merely ensure that whatever development does take place meets appropriate quality standards.

In the five years prior to 1999 the rate of subdivision applications was relatively steady, averaging 5 applications per year. From 1999 to the mid 2000’s, applications rose substantially, averaging 9 per year. Following a lull during the recession of the late 2000’s, the rate of subdivisions has rebounded. The Town has seen ~4 applications per year since 2014, with at 1-2 per year that result in >10 lots.

More significant, the development constraints inherent in sites now being presented for subdivision are marked. Much of the most developable land in Ledyard has been developed. What is left is land replete with constraints such as wetlands, ledge, and difficult topography. These development constraints have contributed to the increased use of the cluster subdivision regulations, which account for most large subdivisions at this time. The ability to develop smaller more-affordable houses on these lots has also made this type of subdivision an attractive one. With these subdivisions efforts should be made to identify priority preservation areas and

require open space set asides maintain and create an interconnected open space system. Undevelopable land such as wetlands should not be accepted as the sole open space allocation required by the subdivision regulations.



FIGURE 16 EXAMPLE OF AN OPEN SPACE CLUSTER SUBDIVISION

The “conservation” or “cluster” development on the right retains the entire density of the developer’s more traditional subdivision but arranges it in a more compact village-like manner that preserves a substantial greenbelt around its perimeter. Source: “Designing Open space Subdivisions,” Randall Arendt, MRTPI, September 1994.

The Town’s subdivision regulations, written in 1963 and amended in 2013, need to be studied and revised to address the realities of the types of land that are now being proposed for subdivision. Road and driveway widths, site design standards, environmental protection, vegetation buffers, and accessibility to arterial roadways all need to be reconsidered to ensure that future development in town is regulated in an effective way. The subdivision regulations regarding open space should be revised to establish a more uniform standard for provision of open space and to support the zoning regulations open space bulk requirements. The subdivisions regulations should be evaluated for conflict with the zoning regulations and updated to be in concert with the POCD and zoning regulations.

The Town's subdivision regulations do not make provisions for “variances”; however, they do permit “waivers” provided the waiver does not conflict with zoning regulations and there is an affirmative vote from three-quarters of the members of the Planning and Zoning Commission. It

is important that waivers are not granted where a town-wide precedent would be established; in this case, it may be more appropriate to amend existing zoning or subdivision regulations.

4. Inland Wetlands and Watercourses

As sites containing more wetlands are proposed for development, the regulations should be revised to:

- Require conservation easements of no less than 25 feet and specified, delineated non-disturbance cushion areas around wetlands. This would provide stronger environmental protection to threatened inland wetlands and protect groundwater and quality of life.
- Require larger conservation easements, as appropriate, to protect specific and/or critical habitats

5. Aquifer Protection

Regulations should be considered that provide for better protection of watershed and aquifer zones. 40% of Ledyard's homes are served by public water and 75% of the region's homes are served by public water. This water is supplied by wells and reservoirs. The aquifers, wetlands and watercourses that serve these water supplies require careful consideration throughout zoning and subdivision applications. Additional regulations that control and guide development in these regionally important areas should be considered.

Aquifer protection overlay zones should restrict certain uses with potential to contaminate groundwater and establish best management practices for current uses (such as integrated pesticide and herbicide management, hydrocarbon storage, and manure disposal).

Aquifer Protection Overlay Zones: DEP's mandated aquifer protection areas, proposed aquifer protection overlay zones are shown here in **Figure 17**.

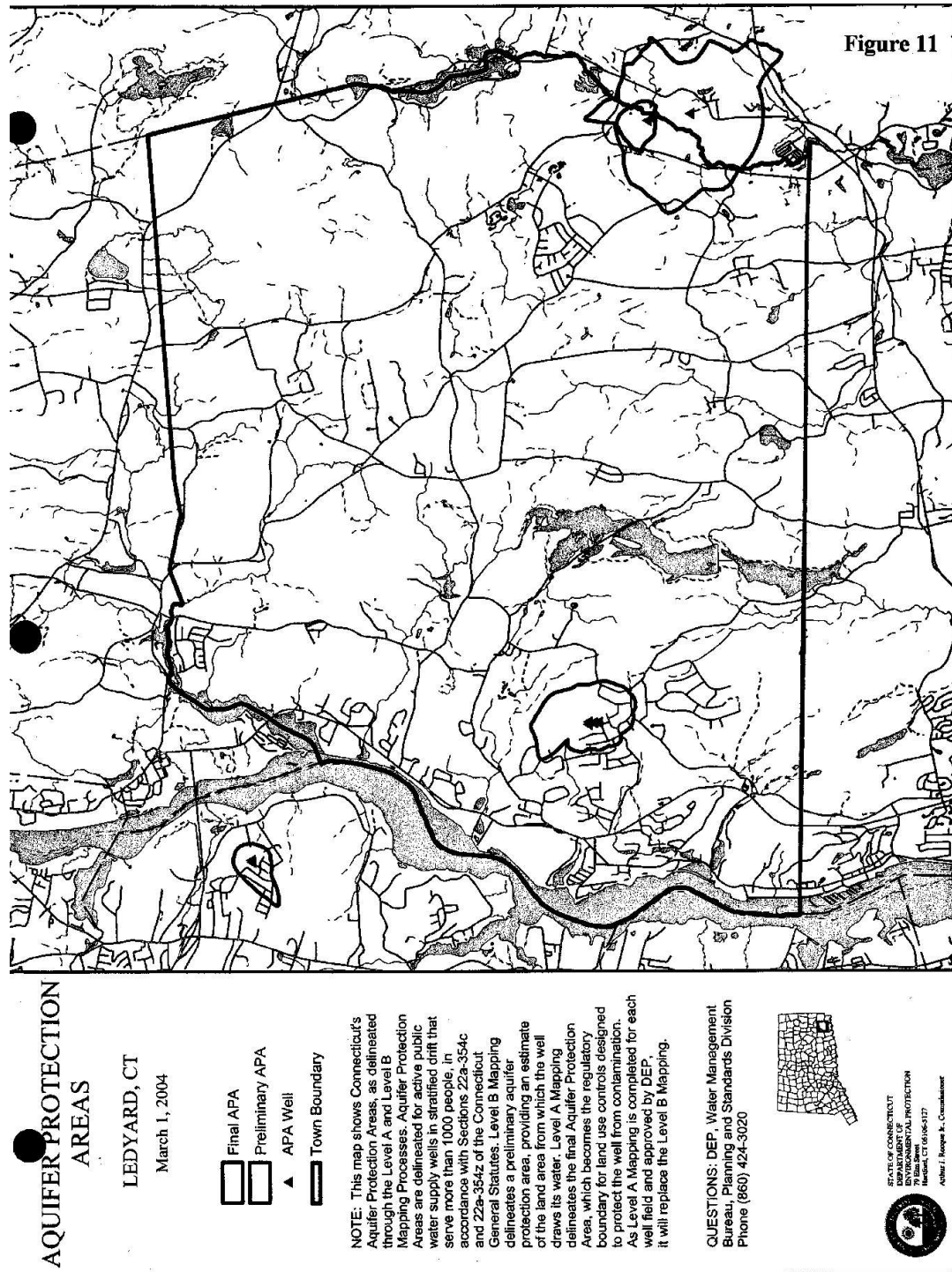


FIGURE 17

VI-32

B. Coastal Area Management

Overview

Ledyard is a coastal community adjacent to the Thames River and Poquetanuck Cove. Ledyard's coastal area management (CAM) zone boundary is depicted on the town's official zoning map and is not less than 1,000 feet landward from the edge of the river, its various embayment's, and related tidal wetlands (Figure 10). This statutorily defined coastal management area is subject to the state's Coastal Area Management laws, administered by the Town of Ledyard and DEP's Office of Long Island Sound Programs. Within this coastal area zone, local land use agencies must review development applications to determine their impacts on coastal resources and future water-dependent uses.

The riverfront includes the Navy Base and a variety of industrial, commercial and residential uses, with railroad tracks running along the length of its shore. Poquetanuck Cove is relatively pristine, with only a handful of homes in the Aljen Heights neighborhood located along its southeasterly shore. This brackish and freshwater tidal estuary is bordered by significant tracts of open space owned by the Nature Conservancy, Department of Environmental Protection, and Avalonia Land Conservancy. There are several other small estuarine embayment's along Ledyard's shoreline; the largest are Clark Cove, Long Cove and Mill Cove. Public access to the Thames River and Poquetanuck Cove is very limited, confined to a private marina on Clark Cove, a small boat launch at Stoddards Hill State Park and at the end of Hurlbutt Road, the newly purchased Erickson Waterfront Park at Mill Cove and a car-top boat ramp adjacent to the Route 12 bridge crossing Poquetanuck Cove.

Goals

- ♦ Develop and implement best management practices to guard against degradation of visual and ecological characteristics of the Thames River, Poquetanuck Cove, other smaller embayment's, and adjoining freshwater and tidal wetlands.
- ♦ Establish a comprehensive protection plan and management strategy for Poquetanuck Cove and its surrounding undeveloped uplands.
- ♦ Enhance public access to the Thames River and Poquetanuck Cove.

Issues Policies and Strategies

1. Protection of Ecological and Coastal Resources

When development activities are proposed within Ledyard's coastal area zone, potentially adverse impacts to coastal resources and water-dependent uses should be avoided. Impacts should be minimized to the extent possible, primarily through implementation of best management practices advocated by DEP, the Natural Resources Conservation Service, and the U.S. Army Corps of Engineers.

Reasonable consideration should be given to protection and restoration of natural habitat. Proposed development should be designed to minimize or reduce hypoxia, pathogens, toxic contaminants and floatable debris in the river and coves.

All site plan applications for projects located fully or partially within the coastal boundary and landward of the mean high-water mark are defined by statute as “coastal site plans,” and shall be subject to requirements for CAM review found in Ledyard’s zoning and subdivision regulations. In addition, plans must demonstrate that the plans are acceptable and consistent with Section 22a-92 of the Connecticut General Statutes.



Mill Cove from Military Highway

FIGURE 18

2. Poquetanuck Cove Natural Area Preserve

Establish Poquetanuck Cove and adjoining protected uplands as a component of DEP’s Natural Area Preserve Program. The proposed Natural Area Preserve would include the cove’s open waters and tidal saltmarsh/mudflat (approximately 640 acres), DEP’s 35-acre wildlife area in Preston, the Nature Conservancy’s 256-acre tract in Ledyard, a small amount of acreage owned by Avalonia Land Conservancy, and a public access point for car-top boats adjacent to the Route 12 bridge crossing the cove. Nothing of this size exists in the lower Thames River basin that has not already been heavily dredged, developed or significantly altered by human activity. This area has already been identified on SCCOG’s *Regional Conservation & Development Policy Guide Map* (October 1997) as a “wildlife preserve.”

Creating a Natural Area Preserve requires consensus between Preston and Ledyard, affected property owners, and the DEP. The goal is to establish a single management framework for the

largest remaining open space on the Thames River, and enhance chances of obtaining federal and state funds to address problems like contaminated stormwater runoff, Phragmite invasion, and lack of public access. Local elected officials and Conservation Commissions in both Ledyard and Preston should take a leadership role and seek support from the region's General Assembly delegation. This position is consistent with Section 8-23 of the General Statutes, which calls for restoration and protection of the ecosystem and habitat of Long Island Sound.

Poquetanuck Cove and the adjacent Nature Conservancy tract have been designated an "Area of Special Concern" in DEP's Natural Diversity Database, with specific reference to "habitat areas of unusual significance to an aquatic fauna community...plant communities of unusual diversity and productivity." The U.S. Fish & Wildlife Service's *Northeast Coastal Area Study: Significant Coastal Habitats of Southern New England and Portions of Long Island, New York* (August 1991), identifies Poquetanuck Cove's marshes as an important coastal habitat site.

Legislation Protecting Poquetanuck Cove:

- An Act Concerning the Establishment of Poquetanuck Cove as a Bird Sanctuary, pursuant to Section 26-101 of the CT General Statutes, June 1969.
- Special Act 82-14 -- An Act Concerning the Closure of Poquetanuck Cove to Waterfowl Hunting Pursuant to Section 26-101 and Chapter 54 of the CT General Statutes, June 1982.
- Public Act 95-22 -- An Act Transferring 35 Acres of Norwich Hospital Land in Preston abutting Poquetanuck Cove to the DEP, July 1995.
- Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303(c)) provides that the Secretary of Transportation "may approve a transportation program or project requiring use of a wildlife or waterfowl refuge of national, state or local significance only if -- (1) there is no prudent and feasible alternative to using that land, and (2) the program or project includes all possible planning to minimize harm to the wildlife and waterfowl refuge. A Section 4(f) study is the heart of an environmental impact statement.
- Key Fish & Wildlife Coordination Act (16 U.S.C. 661-667) -- Requires federal agencies to consult with USFWS and with DEP regarding proposed actions that could adversely affect fish and wildlife resources.

3. Thames River Public Access

Unlike many shoreline towns, Ledyard maintains limited publicly accessible waterfront or riverfront parks. Ledyard residents have historically been cut off from the Thames River due to extensive private land holdings, steep coastal bluffs, and a railroad that runs parallel to the river almost at sea level.

Creation of a town-owned waterfront park at #110/#114 Military Highway in 2002/2004 will provide scenic views and public access to the Thames River. Although a town-operated marina is not envisioned, residents could establish motorboat moorings within Long Cove, and moorings for sail boats just west of the railroad track. Such mooring locations are regulated by the Office

of Long Island Sound Program at the Department of Environmental Protection. A proposal to establish a Harbor Management Commission would allow the town to regulate those moorings and should be pursued.

Other undeveloped and less publicized public access points to the Thames River and Poquetanuck Cove already exist at ends of Hurlbutt Road, Riverside Place and Royal Oaks Drive. Taking into account the scale, the lack of opportunity for public parking and environmental constraints at these locations, public benefit could be enhanced by informational signage. The town should also explore, with Yale University, possibilities for securing or sharing a small picnic and parking area at their Hurlbutt Road boathouse.

4. Ledyard's Coastal Area Management Plan

The Town's coastal area management plan was first adopted in 1982. It is officially amended by the Planning Commission's adoption of this Plan of Conservation & Development in accordance with Sections 22a-101, 102 & 103 of the CT General Statutes. The objective is to strengthen and update this earlier document, and to integrate coastal area management goals with other municipal policies.

Future amendments to the Coastal Area Management Plan should focus on the sewage disposal problem in Aljen Heights. As noted elsewhere in this Plan of Conservation & Development, on-site septic effluent in this neighborhood has potential to contaminate nearby private wells and seep into the Town's stormwater drainage system.

Part of the proposed solution is to establish an integrated municipal water supply distribution system. This will be very expensive, and while it will eliminate the need for individual private wells, has potential to spur additional development and construction. Since soil conditions are poorly suited for on-site sewage disposal in this part of Ledyard, new development could exacerbate contaminated groundwater seepage and discharges to Poquetanuck Cove. The second part of the solution is to identify those properties with leaking septic systems that fail to comply with Public Health Code and compel owners to take corrective actions. Grants to identify and resolve this problem may be available from the State of Connecticut.

C. Agriculture

Background

Farming and agriculture have long been important parts of Ledyard's history and is currently a

vital component of our town's economic diversity. Proper municipal planning and support is necessary for farming and agriculture to remain fundamental contributors to our economy and land use. Maintaining and growing Ledyard's agricultural base contributes to public health and happiness, provides jobs and agritourism opportunities to the local economy, and contributes to the pastoral vistas that residents have come to associate with our community.

Agriculture is a component of Ledyard's and the greater region's economy and is broadly defined to include the cultivation of the soil, dairying, forestry, raising or harvesting any agricultural or horticultural commodity and as more specifically defined in CGS 1.1q. Most farm production dollars are spent locally. Ancillary business such as machinery and operators, feed and fertilizer, fuel and tires, and veterinary services help make up the agricultural economy. Land and aquatic agriculture are important land uses in Ledyard and maintaining farming as a part of our community is a desirable goal. This is accomplished by advocating and protecting farm activities for the current and future generations; promoting agriculture based economic opportunities; and allowing agricultural uses and related activities to thrive as our town grows. The importance and existing town investment in Agriculture is exemplified by the towns STE program. Ledyard High School Agri-science and Technology program is a magnet program available to all students in Southeastern Connecticut. The Agri-Science Department offers career training in a variety of areas such as Animal Science, Aquaculture, Natural Resources, Agricultural Mechanics/Technology and Plant Science.

Goals

- Encourage continued use of land and aquatic based agriculture as both a historic and future land use through advocacy of farm activities for the current and future generations; promoting agriculture based economic opportunities; and allowing agricultural uses and related activities to thrive as our town grows.
- Complete the implementation of Ledyard's agricultural commission. This group should have the expertise and interest to both support, advocate for, and provide knowledge of agriculture in the town through a variety of means.
- Explore means to encourage agritourism. Visitors and residents alike enjoy an exciting calendar of agricultural events throughout the year. From farmers' markets and wineries to pick-your own farms, harvest festivals and agricultural fairs, farms are valued for their seasonal events, outdoor activities, as well as their pastoral landscapes.

- Inventory farm types, location, and produce. The identification of the agriculture products allows this town-wide inventory of farm products to be made available to the community at large.
- Encourage citizen participation in agriculture through opportunities such as community gardens, Community Supported Agriculture (CSA) farms, and backyard gardening. These opportunities could be sited on town land and optimally provide an opportunity to connect children with experienced gardeners and farmers.
- Encourage local farmers are participating in education and grant programs, such as NRCS Conservation Stewardship Grants and the NRCS Environmental Quality Incentives Program to ensure that Agriculture uses preserve and protect town resources, particularly watershed and aquifer protection.

Issues, Policies and Strategies

1. Utilization of PA 490 for Farmland Preservation

Public Act 490 is Connecticut's law (Connecticut General Statutes Sections 12-107a through 107-f) that allows farm, forest, or open space land to be assessed at its use value rather than its fair market or highest and best use value. This is one of the primary tools available to the town to help preserve active farmland in Town. The amount of PA 490 land has largely been stable in the last 10 years, at approximately 6400 acres. Approximately 1/3 of that 6400 acres PA 490 land is designated as Farm, which is slightly higher than the state average of ~1/4, though slightly lower than some neighboring towns with significant agriculture histories such as North Stonington and Preston. In addition to the 4000 acres of land under the Forestry designation, there are also significant tracts of undeveloped, forested land.

Ledyard	2010		2019	
P.A. 490	Acres	Percentage	Acres	Percentage
Farm	2,419	38%	2,289	35%
Forestry	3,947	62%	4,175	65%
Total	6,366	26%	6,464	27%

2. Encourage Agritourism

Wineries, pick-your-own farms produce; orchards, corn mazes, Farmers Markets and other Agritourism businesses are direct draws for tourists and community members alike. Working

farms also help define the scenery that people enjoy on country drives and visits to communities around the state. On-farm retail uses should be encouraged. Connecting directly to consumers improves profit margins for farms and provides the opportunity for consumers to better understand and appreciate the products that are grown here. On-farm retail can include, farm stands, pick-your-own operations and other farm retail facilities which while similar in some respects to retail establishments can also differ significantly and may not fit within commercial retail uses. While encouraging the implementation of uses such as on-farm retail the Planning and Zoning commission should investigate the variety of accessory uses. As farms are typically found in residential zones, some more intensive accessory uses may become an undesirable nuisance in these areas. It is important to balance agriculture needs with their neighbors and a staffed Agriculture commission would be invaluable in providing information on this topic.

3. Buildings and Equipment

Farms often require building and equipment that differs greatly from the residential properties they typically abut. Farm tools, machinery of an assessed value of up to \$100,000 and farm products including produce, nursery products and animals are presently exempt from property taxes under Connecticut state law provided the farmer meets the statutory thresholds for income and expenditures. It is recommended that Ledyard town council put forth an ordinance to exempt the first \$200,000 in farm equipment, animals and other property from municipal taxes for working farms in Ledyard. Additionally, the town should consider providing a similar \$200,000 exemption for farm buildings or portion thereof. Temporary devices or structures used in the seasonal production, storage or protection of plants or plant material, including, but not limited to hoop houses, poly houses, high tunnels, overwintering structures and shade houses should be completely exempt from Ledyard personal and property taxes. Flexibility in regulations governing agricultural structures is another area where Ledyard can be supportive of agriculture. Structures needed for farming operations present challenges to traditional regulations as they are often unlike other commercial buildings. Limitations placed on the height or size of farm structures, access requirements and other restrictions on farm buildings can affect the viability of agricultural operations. Many of these requirements, such as large septic systems, foundation, siting, grading and restroom accessibility, may create unexpected financial burdens as farms transition their operations.

4. Provide Agriculture Use Zones

Agricultural zones, or agricultural overlay zones, are zoning tools that can help mitigate

problems between farms and non-farming neighbors, reduce the footprint or impact of new development on farmland, and identify priority farming areas in which certain zoning provisions are waived or instituted. An agricultural zone is a district identified on a town map within which certain uses are allowed or prohibited. An agricultural zone may limit the type of non-agricultural development allowed. Ledyard should consider identifying candidate areas for agriculture-use zones and limit the expansion of infrastructure into these zones to reduce development. Zones can be used to institute additional development guidelines, such as buffers or site plan reviews that can limit the impacts of new development on neighboring farms. When forming these zones, consider including tools that limit the footprint of any new development, such as conservation subdivisions, as well as siting requirements for new non-farm construction. Consider holding a public forum to educate landowners about farmland protection options. Implementing an agricultural zone as a floating zone may also provide a way of separating the lengthy list of agricultural accessory uses from the relatively shorter list of residential accessory uses. Connecticut state law presently includes the processing, packaging and storing of farm products incident to ordinary farming operations within the state definition of agriculture.

An Agricultural use zone could facilitate the development of value-added products by allowing processing facilities by right on farms and/or by minimizing the information required for special permit applications.

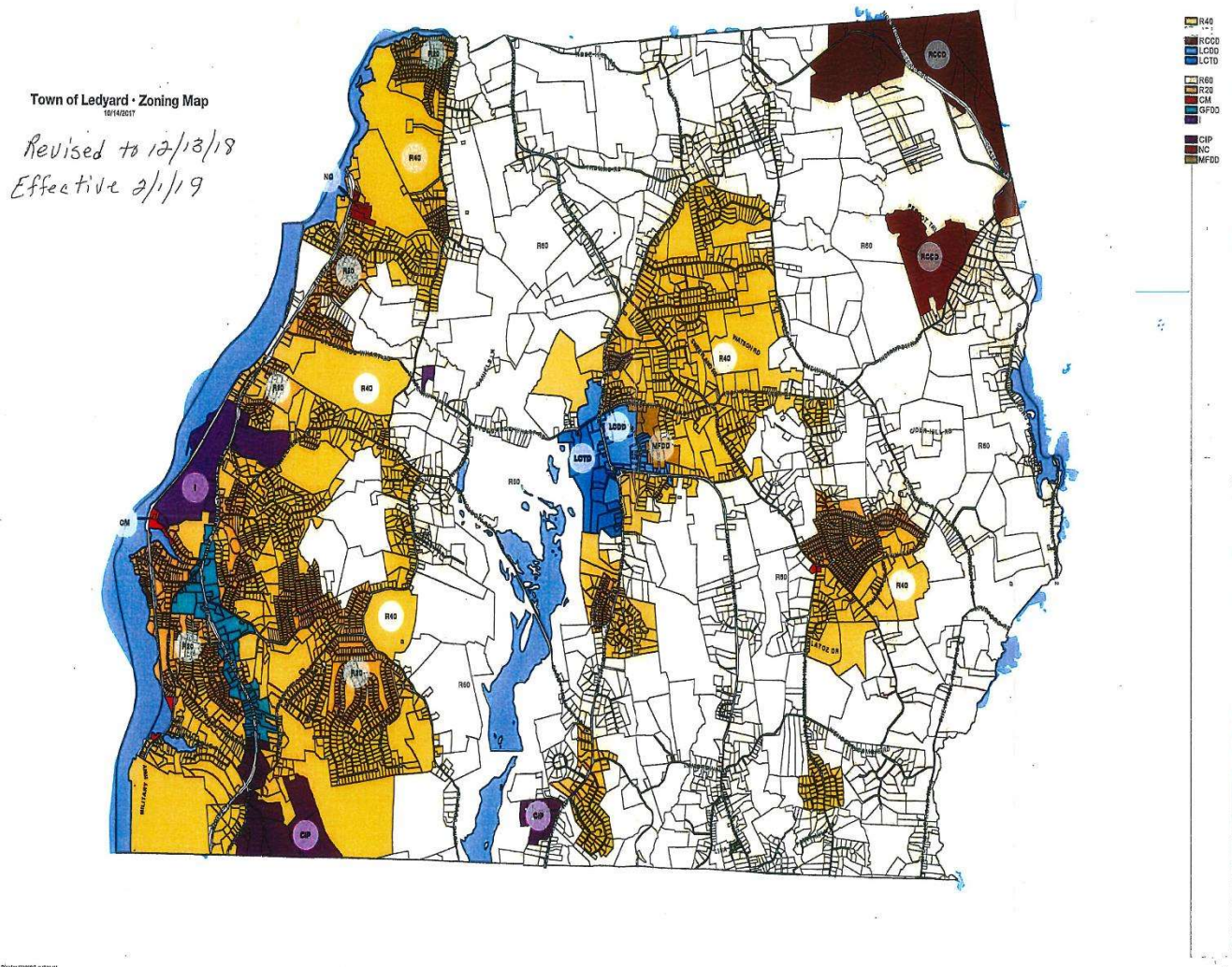
5. Agricultural Commission

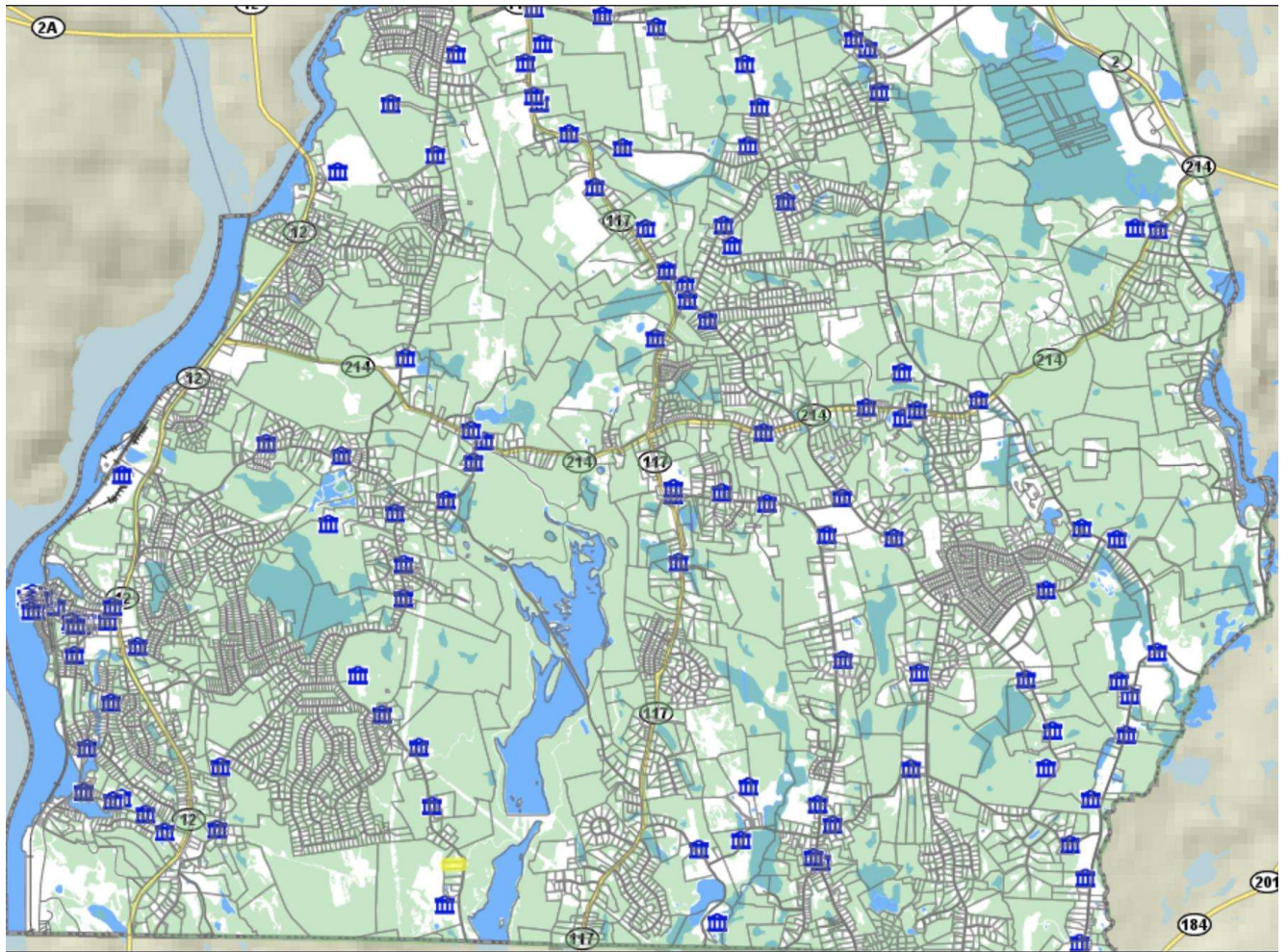
Many of the POCD agricultural goals are likely to be more successful with a staffed agricultural commission. This commission would facilitate input from the agriculture community about proposed changes in zoning regulations or new ordinances that impact their farm operations. The commission will need to develop priorities from a lengthy list of activities in order to be effective. The Connecticut Farm to School program, coordinated by the Connecticut Department of Agriculture, connects schools (K-12) and local farms with the objectives of serving healthy meals, improving student nutrition and supporting local and regional farmers. Many school districts actively participate in the ‘CT Grown for CT Kids’ week in the fall. All of these programs require an active agricultural commission that is interested in promoting farming and providing farmers input to the town. Develop right-to-farm ordinances to maintain a supportive environment for farmers by limiting farmer/non-farmer neighbor conflicts. Ensure the municipality has appropriately specified locally important soil types for inclusion in the state Local Important Farmland Soils program.

6. Municipal Benefits

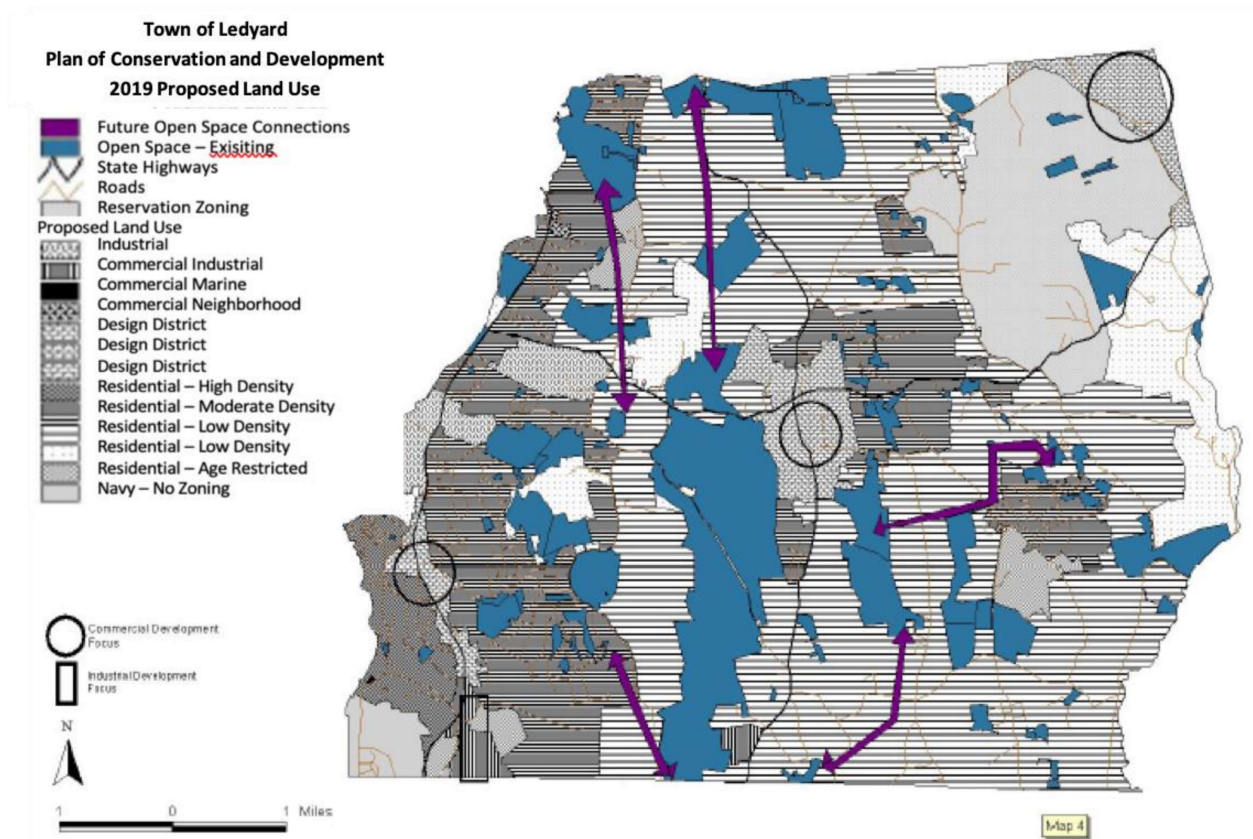
The agricultural industry in Connecticut has a \$3.5 billion economic impact on the state's economy and generates an estimated 20,000 jobs. Connecticut's 321,000 acres of cropland, pasture, and farm woodlands provide food and cover for wildlife, help control flooding, protect wetlands and watersheds, and maintain air quality. Our 4,916 farms help to stabilize municipal budgets, requiring on average 31 cents in municipal services for each dollar of property tax paid.

Map 1 – Zoning Map – 2/1/2019





Map 2 – Ledyard Historic Properties



Map 3 Proposed Land Use