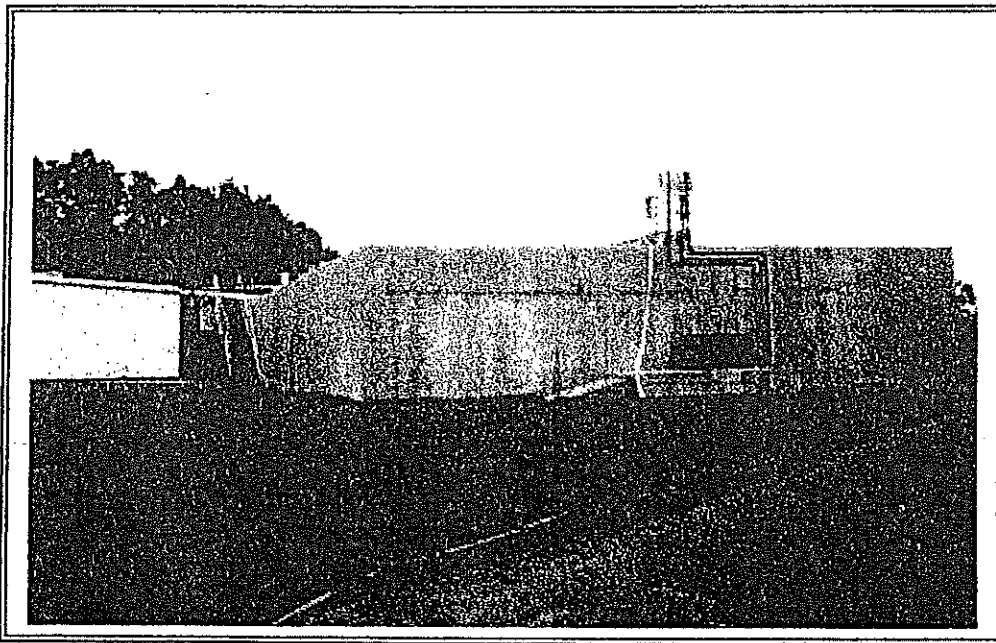


IV. Utilities & Energy

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 Facility – Sequencing Batch Reactor (SBR)

A. Public Sewer

Background

With exception of a municipal sewage treatment facility serving the Highlands area, another 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 will continue to use on-site septic systems for sewage disposal.

Goals

Public Sewer

Recognizing that sewer capacity in Ledyard is a limited resource, it is important to establish plans and policies in advance to govern its use. To that end the following goals are established:

1. Complete a Waste Water Facility Plan that plans future capacity expansions, shows existing service areas, future service areas, and sewer avoidance areas for a twenty year period
2. Focus future service areas to target economic growth in concentrated areas or to provide collection systems to prevent pollution of natural resources from failing septic systems.

Issues Policies and Strategies

Public Sewer

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



Because of Ledyard's dependency on groundwater and reservoirs for its water supply, 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 and 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; and
- ♦ 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 1997 in compliance with CT-DEP approved designs. In 2002, the WWTP treated about 129,200 gallons per day (GPD), approximately half its approved design capacity. A priority for WPCA is connecting the 140-unit Lakeside Condominiums located on Shewville Road to the WWTP. When this tie-in does occur, total flow to the Highlands WWTP will remain below capacity.

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

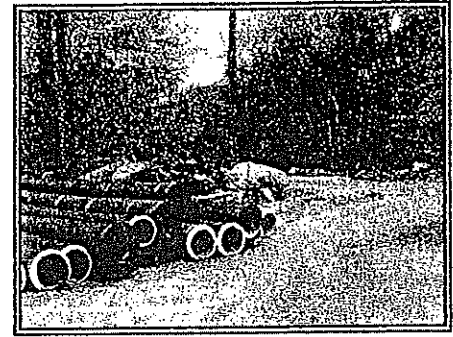
- ♦ Number and type of proposed units, and anticipated flows to WWTP;
- ♦ Cumulative number of other requested connections to the WWTP; and
- ♦ Remaining unused capacity of WWTP after the proposed development is connected.

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. Based on the Town's Economic Development Strategy Plan and the Ledyard Town Center Committee reports sanitary sewers should be installed to support growth in rateables in the vicinity of Ledyard Center and the Route 12 Corridor from the Gales Ferry Village south to the Town of Groton line. The Planning Commission should undertake in cooperation with the Town's Water Pollution Control Authority the completion of a Water Pollution Control Plan and Water Pollution Facility Plan to identify options for waste water treatment and discharge to support the treatment of flows from development and parcels in these areas. The map titled "Future Sewer Service Areas to support Economic Growth" shows parcels that should be included in a future sewer service area.



Road and drainage work on Fairway Drive

B. Public Water and Water Supply Source Protection

Background

Ledyard is dependent on groundwater and reservoirs for its 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. This is the source of water for the water supply trunk line along Route 12 from Groton through Gales Ferry that serves properties located along that state road.

The Ledyard Water Pollution Control Authority (WPCA) or 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 and serve the needs of the reservation. Remaining community water systems are quite small, serving individual subdivisions, mobile home parks and apartments.

The town's drinking water is vulnerable to development activities. Protection of water quality remains an ongoing concern for the Town of Ledyard. The town should continue to support efforts to provide potable water throughout the town in accordance with its current Water Supply Plan. The Town of Ledyard should continue to pursue water main expansions along state highways to increase the flexibility and capacity to respond to established settlement areas that may experience septic failures in the future. Additional recommendations regarding the protection of source water are contained in the natural resources section of this Plan. The map titled "Existing and Future Water Mains" at the end of this chapter shows recommended main locations to support the implementation of the Town's Water Supply Plan. Pipe sizes and pump

station locations will be subject to further considerations such as system compatibility, flow rates, and population growth.

Goals

Public Water

- ♦ Ensure adequate potable water sources, supplies and distribution systems for Ledyard.
- ♦ Protect water quality and implement a source protection strategy through:
- ♦ Effectively manage and control stormwater drainage to minimize impacts to the environment.

Goals

Water Supply Source Protection

Existing surface and subsurface water supplies should be protected through the following means:

- 1) proactive zoning;
- 2) natural resource based planning & site design;
- 3) use of best management practices; and
- 4) water company review of proposed development projects located within designated source protection areas;
- 5) acquisition of critical watershed lands;
- 6) extension of sanitary and storm sewers as a means of central collection to avoid pollution in areas previously identified as critical to the Town's economic development (Ledyard Center)

Existing water supplies should be protected with the following

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 by enhancing their capacity to respond to established settlement areas that experience water quality pollution due to septic system failures. The following areas are a priority for the provision of potable water:

- ♦ Aljen Heights
- ♦ Neighborhoods located to the east of Route 12 (Terry Road, Woodland circle and Oakridge Drive)
- ♦ Existing houses surrounding Long Pond
- ♦ SCWA Systems that are operating on subsurface water supplies

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)

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.

The following areas should be considered for interconnection:

- ♦ WPCA's Route 12 system with SCWA's FerryView Heights and Tower Divisions
- ♦ WPCA's System with SCWA Ledyard Center and Grey Farms Divisions
- ♦ WPCA's Gales Ferry system, with Groton, Preston and Norwich along the Route 12 corridor and Montville, Waterford and New London across the river.
- ♦ WPCA's wellfield on Route 214 with the Route 12 pipeline.

"Conservation Subdivisions" 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.

2. Implement Source Protection System

See the recommendations in the Natural Resource Protection Section of Source Water Protection.

**Table A. 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># Wells</u>	<u>Source Material</u>
Loftus / Highlands	WPCA	400 +	2	stratified drift
Tower Division	SCWA	764	4	stratified drift
Lantern Hill/Mystic Division	CT Amer.	-0-	2	stratified drift

Notes: 1) CT American Mystic Division wellfield is in Stonington, but western portions of its overlay zone are in Ledyard and lies within the Loftus Wellfield overlay area .

2) WPCA's old Highlands wellfield, while no longer in daily use, is maintained in "stand-by" status to be used during emergencies whenever the Loftus wellfield is inoperable. Accordingly, it also warrants source protection.

Table B. 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	41	3	bedrock
Ferry View Div.	SCWA	81	5	bedrock
Gray Farms Div.	SCWA	112	4	bedrock/stratified drift
Ledyard Center Div.	SCWA	4	2	bedrock
Salewoods	WPCA	49	2	bedrock/stratified drift
Village Water Co.	homeowners	47	1	stratified drift
Avery Hill Trailer Park	homeowners	50	1	bedrock

3. Regional Water Supply System

The Regional Water Supply System identified in the 2003 Plan of Conservation & Development has become operational. Cooperation should continue between Town's to ensure an adequate supply of water for public drinking water needs and to protect the viability economic growth in Southeastern Connecticut. Ledyard should continue to cooperate with other Town's to see that the burdens and benefits of maintaining safe water supplies are distributed equitably. Ledyard should look into developing other sources of water supply to both contribute to regional water needs and reduce its own dependence on water supplies controlled by other entities.

C. Wired Utilities/Other Infrastructure

Background

Electric service in Ledyard is provided by Connecticut Light and Power. Wired utilities in new developments are placed underground to improve reliability and enhance the aesthetics of the development.

New telecommunication technology, including the Internet, creates demand for up-graded telephone 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.

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.
- Conserve energy and mitigate environmental impacts.

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.





D. Alternative Energy/Energy Dependence

As traditional energy costs continue to rise there is increasing pressure on the Town to allow alternative types of energy supply both for residents looking for economic relief and for business models looking to take advantage of legislation that mandates companies to provide a percentage of energy from "green" sources. While it is important to provide for economic relief for our residents from increasing energy costs, the proliferation of alternative energy systems creates a growth management problem in terms of the potential for visual and noise pollution. To cope with these potential problems the Town should be very cautious about allowing these types of systems and may want to consider geographic limitations on the types of zones where these systems are allowed. As an alternative strategy the Town should consider the feasibility of creating an energy improvement district pursuant to the Public Act 07-242 and/or consider creating or partnering in a municipal utility system to provide a cost advantage for residents and businesses.

Draft Future Sewer Service Areas to Support Economic Growth



Legend

-  Zoning Districts
-  Parcels
-  Existing Sewer Service Areas
-  Future Sewer Service Areas

Notes: Map Drawn to facilitate discussion for inclusion in the Plan of Conservation & Development. Existing Sewer Service Area Mapping based on Department of Environmental Protection Files and corrected to include existing tile lines. Future service area mapping based on identified economic development areas. To be interpreted and used in conjunction with the Plan of Conservation & Development. For planning purposes only.

Notes: Map Not to Scale.

Draft Existing and Future Water Mains

Legend

- Future Water Mains
- Existing Water Mains
- ▭ Parcels
- ▭ SCWA Service Areas
- ▭ MPTN Utility Service Area



Notes: Map Drawn by
Planning Department for Plan of
Conservation & Development
Date: September 12, 2008
Revision: 4 Dated May 21, 2009.
Source: Ledyard Shapefiles
& Ledge Light Health District
Data is authoritative only for
interpreting the Plan of Conservation
& Development. MPTN stands for Mashantucket
Tribal Nation. MPTN service area file provided
by MPTN Planning Office. Note: SCWA stands for
Southeastern Connecticut Water Authority.
For planning purposes only.

Agricultural Subcommittee Report

The Subcommittee the Planning Commission appointed has finished their report and it is available tonight for your review. The report provides a history of agriculture in Ledyard and makes recommendations for town agencies to implement to support agriculture.

At this time, the Commission is requesting feedback, comments and/or approval on a Final Report issued by an Agricultural Subcommittee that was appointed by the Planning Commission pursuant to Section 8-23 of the Connecticut General Statutes. The report was prepared with the assistance of the Farm Viability Grant the Town was recently awarded.

The report will serve as the background for addressing agricultural policies in the POCD. It is possible that some of its contents may be integrated into the POCD or integrated as a whole into an appendix. It is being presented as a proposed amendment to the POCD as an appendix.

Following the feedback, comments and/or approval, the Commission will hold a public hearing as required by Statute on the proposed amendment.

Chapter II (Conditions) & Chapter IV (Utilities)

Included with the cover letter are two copies of the proposed amendments. For ease of seeing the proposed changes, one version highlights the additions and deletions. The other version shows the proposed amendments completely integrated into the text and does not show the old language. Also enclosed is a summary of the additions and deletions to these sections.

Once the amendments are transmitted to the Council their 65 day comment or approval period is initiated. Following receipt of feedback or approval of the amendments, the Planning Commission will consider the feedback received from the Council and other town agencies and will hold a public hearing on the proposed amendments.

Open Space Preservation & Management Plan

At their regular meeting on July 2, 2009, the Planning Commission initiated the process for incorporating the Open Space Preservation & Management Plan into the Plan of Conservation and Development (POCD). The Open Space Preservation & Management Plan (OSPMP) was developed by an ad-hoc committee of the Town Council.

The nature of the amendments are to incorporate the Open Space Preservation & Management Plan the Commission approved in the Fall of 2008 into the Plan of Conservation & Development as an appendix. There are minor textual changes to Chapter VI where they refer to an open space plan to align those references with the plan that will be included in the appendix.

The Commission is proposing this incorporation to coincide with the proposed ordinance regarding the abatement of taxes for open space. The OSPMP would be an appendix to the POCD. Minor text changes are proposed for Chapter VI of the POCD to make reference to the appendix.