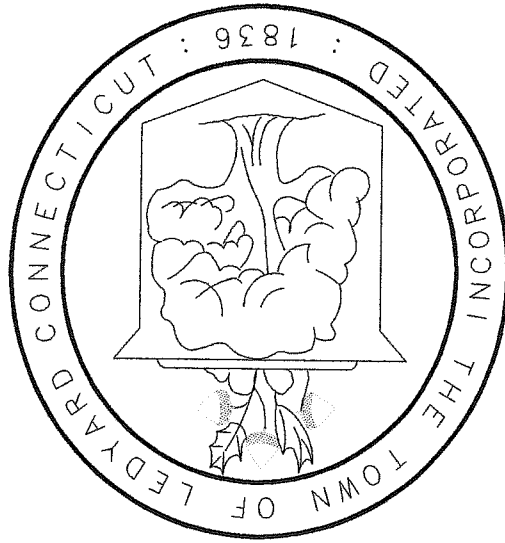


ATS Engineering  
Ledyard, CT  
860-464-6064

September 2005

# Water Supply Plan



Town Of Ledyard  
Water Pollution Control Authority

Pond area depending on available yield. Currently, land use in the proposed aquifer protection zones justifies procurement of additional land to facilitate source protection. Purchase of the Lotus well field includes 11 acres of surrounding land for source protection. Proposed development in any proposed aquifer protection zones will be reviewed and subjected to approval by the Planning Department and the WPCA. As can be seen Figure 9, all land owned by the WPCA is operated in direct conjunction with an existing or proposed facility or utilized for recreational activities. Currently the Town Of Ledyard does not own excess land associated with water supply needs.

## **B. Land Use Compatibility**

As detailed in Section VII, land use in all well field areas is compatible with current needs. Commercial development in this area is not proposed.

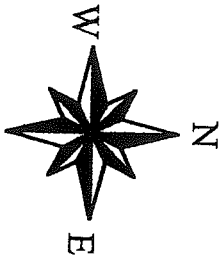
## **VII Future Service Areas**

Several new water service areas are currently being proposed by the WPCA. In each case, water supply systems proposed for each area are required to correct deficiencies in private wells water quality or to stimulate economic development. The 2003 Ledyard Plan of Conservation and Development details development of several areas in the Town. In addition, resident complaints and protection of human health must be addressed. Service to areas such as Long Pond or Aljen Heights, as shown on Figure 13 are considered long-range projects. The WPCA is retrieving data and documentation on these areas and will determine the feasibility of supplying water to these areas when all pertinent information is obtained

# Town of Ledyard - Open Space



- Stateprop.shp
- STATE PARK SCEN RS
- WATER ACCESS
- WILDLIFE AREA
- Existingoppspace.shp
- Roads.shp
- Townboundary.shp



**A. Long Pond**

Service of future areas by the existing Loftus well field is limited to the immediate vicinity due to the limited safe yield of the system. One such area presently being assessed for possible supply is the Long Pond area. Figure 15 depicts this area. The water quality of private wells in the Long Pond area have periodically been compromised due to failing septic systems, inadequate lot sizes and proximity to the pond. Table 19 details the projected demand in the Long Pond Area.

**Table 19**

	2000 Pop./GPD	2005 Pop./GPD	2020 Pop./GPD	2050 Pop./GPD
Total Demand	10,530	10,920	11,765	13,195
Residential	162/10,530	168/10,920	181/11,765	203/13,195

# TOWN OF LEDYARD WATER POLLUTION CONTROL AUTHORITY FUTURE SERVICE AREAS

1 Aug 2005

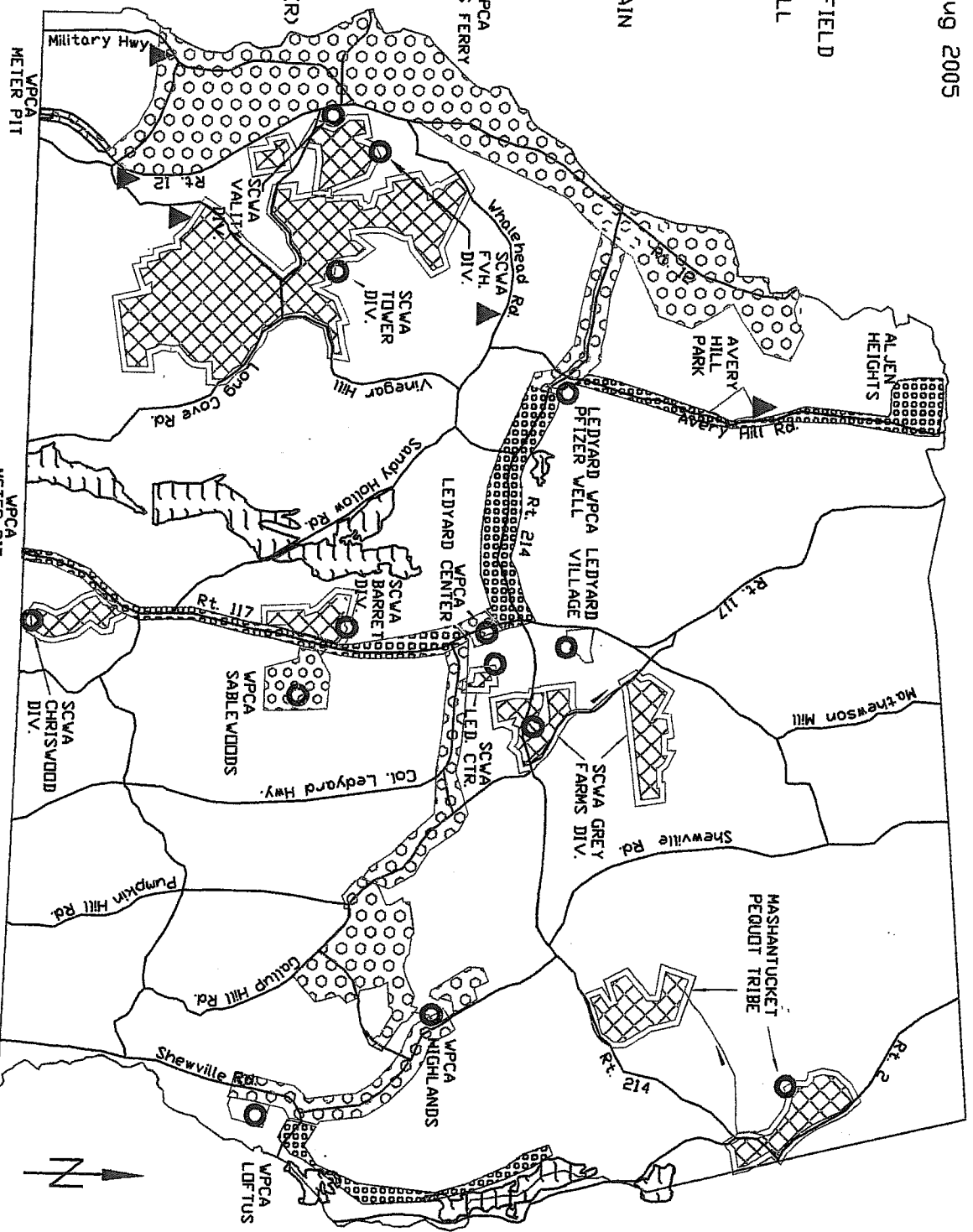
- COMMUNITY WELL FIELD
- ▲ TRAILER PARK WELL

EXISTING WPCA  
WATER SUPPLY  
DISTRIBUTION

FUTURE WPCA  
TRANSMISSION MAIN  
SERVICE AREA

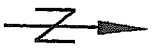
EXISTING SCWA  
WATER SUPPLY  
DISTRIBUTION

FUTURE SCWA  
& TRIBE SERVICE  
AREA (200' BUFFER)



Scale in Feet  
0 1000 2000 3000 4000 5000

FIGURE 13



**B. Aljen Heights**

The Aljen Heights community (see Figure 13) is also experiencing periodic failures of septic systems, possible contamination of private wells and wells going dry. Causes of these problems are similar to the Long Pond area, inadequate lot sizes and location of wells. Installation of a community water system in this area will be considered if all other options, such as septic system rehabilitation, etc. are found to be ineffective.

Projected population and demand data is listed in table 20. Possible sources for supply to this system include the City of Norwich or extension of the proposed Rt 12 Gales Ferry system to the Aljen Heights area. This project is in the preliminary planning stages and will be further investigated pending notification of additional issues in the Aljen Heights area.

	2000	2005	2020	2050
Pop./GPD	135/8,775	270/17,550	405/26,325	567/36,855
Total Demand	8,775	17,550	26,325	36,855

**Table 20**

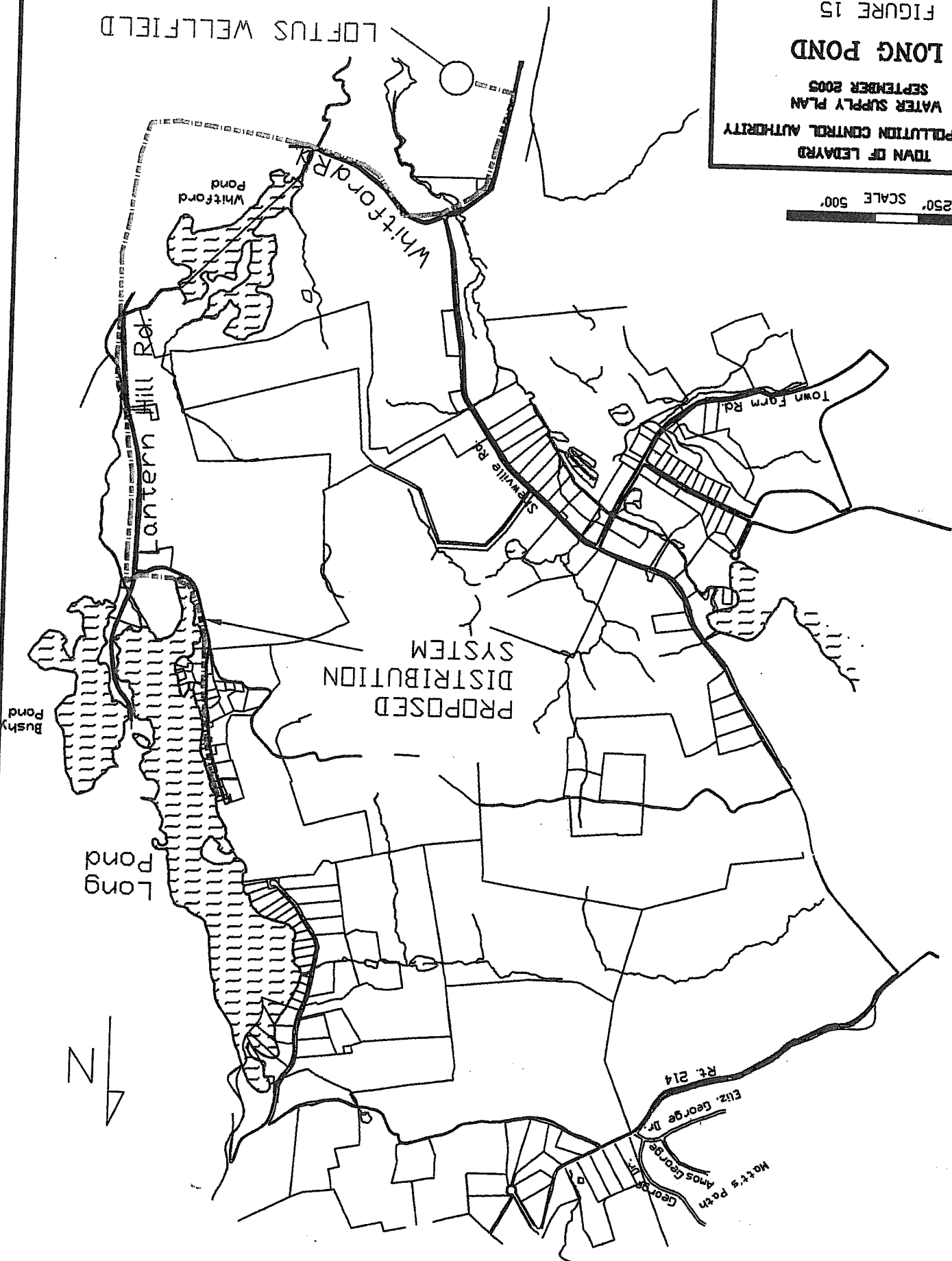
**C. Thames River Basin Regional Consortium**

Due to increased water supply demands by the Mohegan Sun Casino and the limited supply that existed in the Norwich system, additional water supply sources were required to meet future demands. The Mohegan Tribe commissioned a regional water supply study to identify alternatives to meet the predicted demand deficit. It was concluded that the Groton Reservoir system contained adequate capacity to meet future demands. Transmission route alternatives were analyzed and it was determined that utilizing the existing Groton/Ledyard RT 12 16" pipeline to feed a river crossing

section from Gales Ferry to Montville would be the most effective solution. To meet pressure and storage requirements for the new system an additional storage tank was required to be installed in the northern section of the RT 12 system. Elevation requirements lead to the selection of the current Bittersweet Road location. In addition to satisfying the storage requirements for the new regional system, installation of the pipeline from the RT12 system to the proposed storage tank will facilitate future expansion of the distribution system to the Avery Hill trailer park and Aljen Heights subdivision. This proposed tank location is therefore an integral step in the strategy to meet future water supply requirements in the Town of Ledyard. Funding for construction of the pipeline and storage tank has been secured and construction is pending a positive result of current litigations. Construction is expected to commence in 2006.

250' SCALE 500'  
TOWN OF LEDAY RD  
WATER POLLUTION CONTROL AUTHORITY  
WATER SUPPLY PLAN  
SEPTEMBER 2005  
LONG POND  
FIGURE 15

LOFTUS WELLFIELD



## VIII Analysis of Future Needs and Assessment of Options

The Highlands System has adequate capacity to supply the current population of the Highlands community. Well yield reduction has been evident in the last several years and alternative sources of water will be required to meet future demand. The installation of the RT 117 interconnection with Groton will replace the existing well field and satisfy future demands. Audible leak tests have shown that there are no appreciable leaks in the system. Implementation of a conservation program has greatly reduced the demand in this system. Current per capita demand is estimated at 60 gpcd based on consumption data. This figure is below the accepted daily average of 75 gpcd and demonstrates that the current conservation program is effective.

Installation of the 16" transmission main on Route 12 has been completed to the Ledyard/Freston Town Line. Installation of a 16" transmission main on Route 117 (See Figure 16) from the Ledyard/Groton town line to Ledyard Center has recently been approved to meet future supply demands and to eventually develop a redundant water supply feed via a water main along Route 214 connected with the existing Route 12 transmission main. This redundancy will allow for an alternative water supply feed in the case of a water main break in the Route 12 system between the Ledyard/Groton town line and Route 214. The proposed interconnection between Ledyard and the City of Groton on Route 117 has been negotiated and a diversion permit is in the process of being submitted to the State of Connecticut.

Pending the installation of the new water storage tank in the northern section of the RT 12 system, the proximity of the new tank to the existing Avery Hill water system will support a possible interconnection of the two systems, thus replacing the 45 year old well. This pipeline path will also support the future interconnection of the Allen Heights system via a pipeline extension north on Avery Hill Rd. As is evident in the long range plan, the proposed location of the Bittersweet storage tank is critical in

implementing an effective water transmission strategy in the northern section of Ledyard.

### IX Cross Connection Program

The Ledyard WPCA complies with all cross connection control regulations. The Ledyard WPCA has two certified cross connection control inspectors and conducts all inspections on regulated devices. Table 21 lists the backflow preventors currently in use.

Wastewater Facility	McDonalds Rt12 (2)	J.W. Long School
Ledyard High School (3)	Riverside Mall RT 12	Harris Building (2)
Board Of Education Bldg (2)	Henny Penny RT 12	Yale Boat House
Gales Ferry Fire House	Gales Ferry Elementary	Yale Crew House
Dow Chemical (6)	Dunkin Donuts RT 12	

Table 21

### X Metering Program

Meter installation is mandated by the WPCA for all services. Meters are calibrated on a 5 year schedule or on an as needed basis for repair. Calibration is currently performed on a contract basis. The recent incorporation of two unmetered systems (Avery Hill & Ledyard Village) into the WPCA franchise accounts for the only customers within the Ledyard system that presently do not have meters. A project to standardize the meters utilized by the WPCA was initiated in the spring of 2005. All residential meters are currently being replaced with Neptune remote meters to improve data quality and reduce manpower requirements for the meter-reading program. Avery Hill and Ledyard Village system meters are scheduled to be installed with the new distribution systems in 2005/2006 respectively.

**XI. Financial Planning**

Table 1 details the current financial status of the Ledyard WPCA. Table 22 below lists the current project funding. The Town of Ledyard is utilizing general obligation bonds in concert with State grants/loans to finance current projects. The existing rate structure for the Highlands system is shown in Figure 17.

**Table 22**

Project Title	Description	Cost Estimate	Funding Source	Year
Replace Avery Hill Distribution System	Eliminate Excessive leaks	\$800K	General Obligation Bonding	2005
RT 12 Storage Tank	Construct storage tank in northern section of RT12 system to meet fire flow demands	\$1M	Regional Consortium	2006
RT 117 Interconnection	Install 16" Main along Rt 117 to supply Sabewoods, Ledyard Center and Highlands	\$5.8M	General Obligation Bonding	2006
Ledyard Village Distribution System	Replace Deteriorating Well/ Distr. System	\$750K	General Obligation Bonding	2007

**Short Range Plan**

Project	Need	Schedule
Bittersweet/Avery Hill Interconnection	Replace Aging Well	2009
Alien Heights Interconnection/Distribution system	Protect Against Expected Falling Septic systems	2015
Long Pond Distribution System	Protect Against Expected Falling Septic systems	2020

**Long Range Plan**