

East Haddam WPCA

Clean Water Fund Project  
Onsite Septic System Management

Chatham Health District

7/1/05

# Project Description

- Prepare a community based plan for improving surface and groundwater quality in and around Lake Hayward.
- WPCA to prepare a sanitary engineering report.
- Assess potential problem areas for onsite septic system use and management options

# Major Topics

- 1. History and data of bacteria problems in the Lake Hayward area.
- 2. Treatment options and alternative treatment systems
- 3. Decentralize Wastewater Management Designation.

# History

Elevated E. Coli levels at First Beach –  
Report by Don Mitchell

# Bacteria Standards

- Bathing Water – Single Sample Result  
< 235
- Surface Water – Standard ?

# Lake Hayward Properties

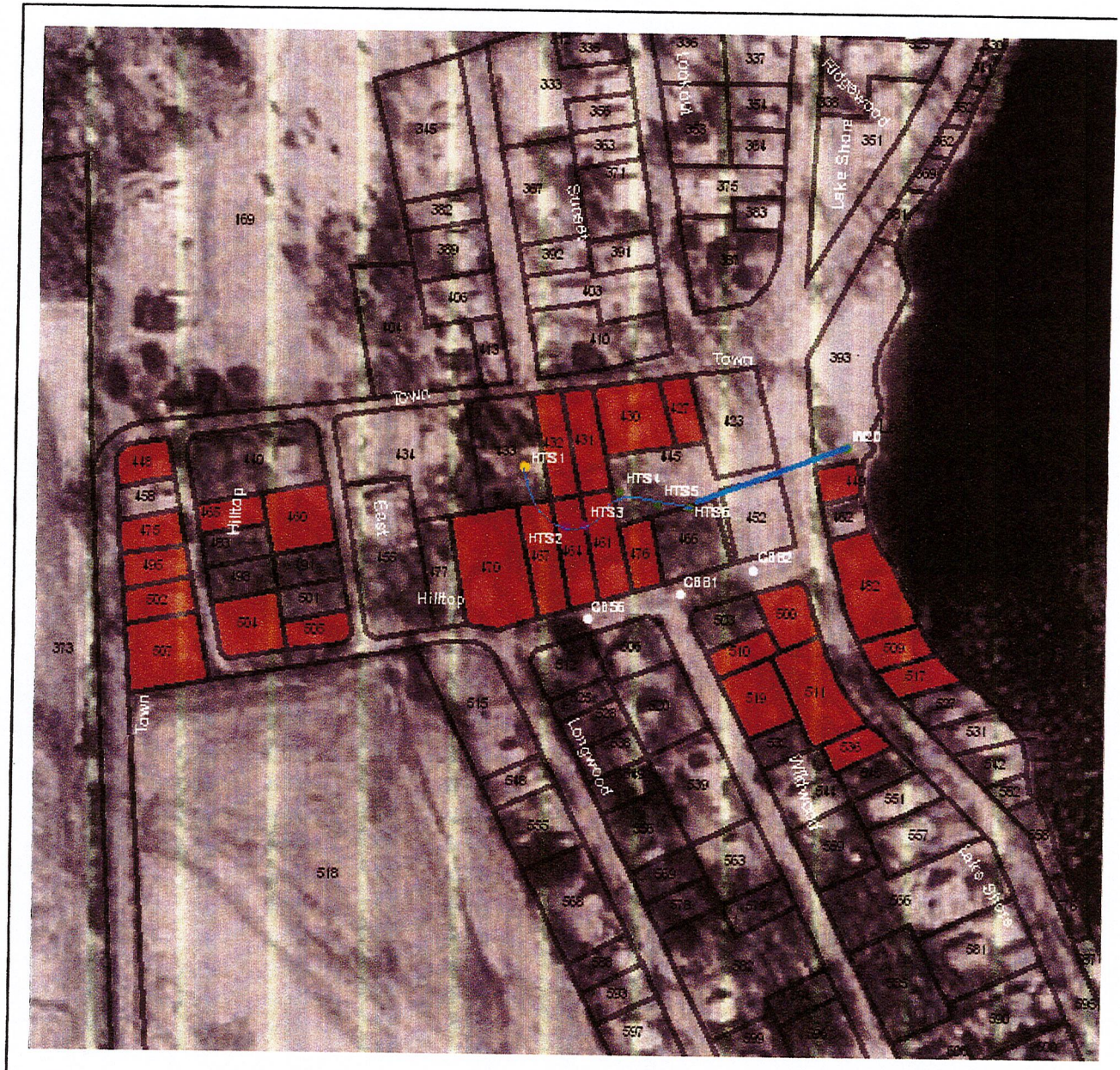
## Legend

### Lake Hayward Parcels

- Unknown or > .167ac
- Less than .167ac/bedroom

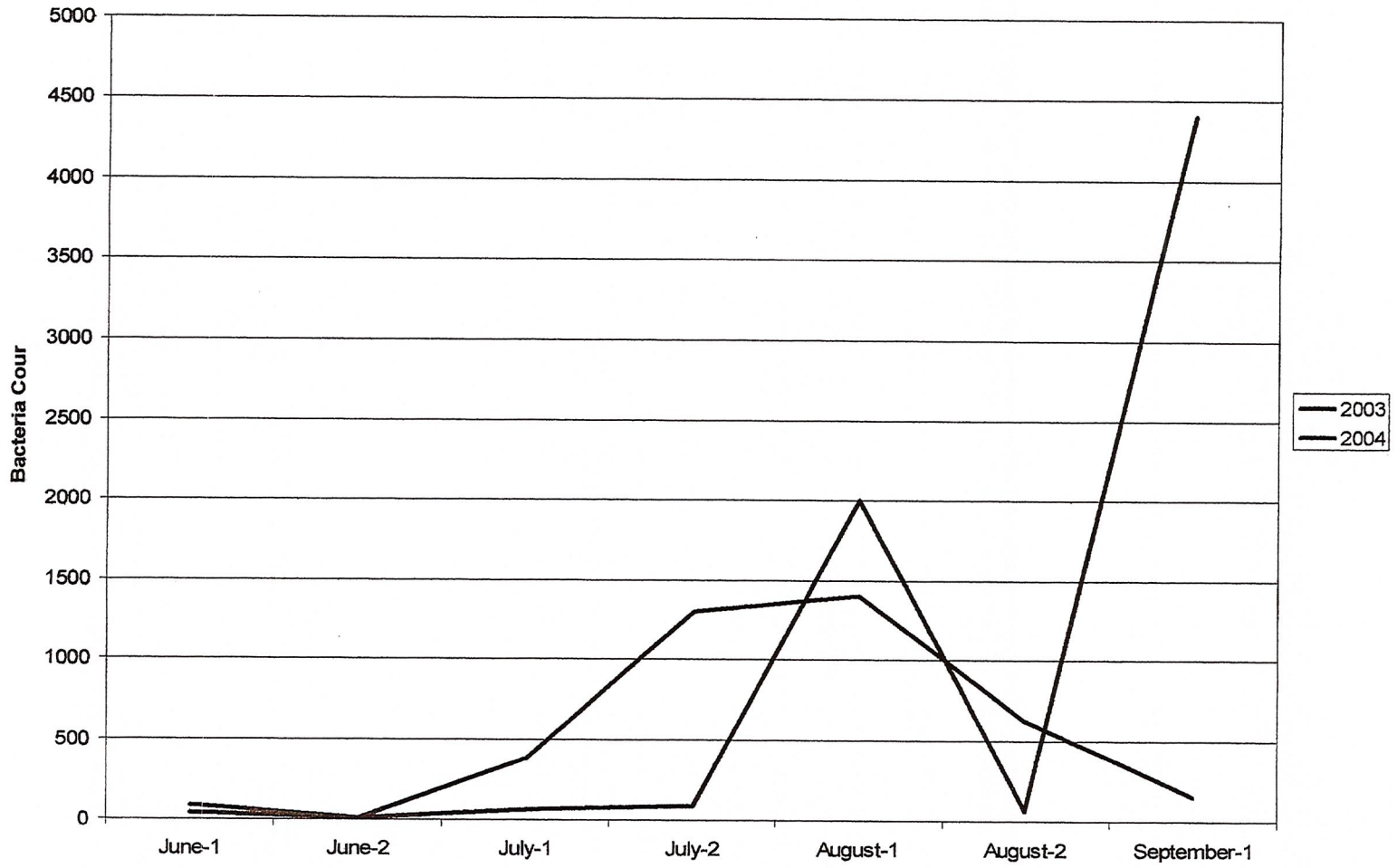
### NITRATE Results

- 0
- 2
- 3
- 4
- 5



<b>Bacteria</b>				
	<b>WDP1</b>		<b>W20</b>	<b>B1M</b>
<b>Location</b>			<b>Lot 49</b>	
<b>8/5/2002</b>	160		20	10
<b>6/10/2003</b>				<10
<b>6/24/2003</b>	<10		42	10
<b>6/30/2003</b>	42		10	31
<b>7/7/2003</b>	10		64	31
<b>7/28/2003</b>	20		87	31
<b>8/2/2003</b>	6900			
<b>8/4/2003</b>			2000	190
<b>8/18/2003</b>				
<b>8/25/2003</b>	31		63	
<b>9/2/2003</b>			4400	
<b>6/8/2004</b>	110		10	<10
<b>6/9/2004</b>				
<b>6/10/2004</b>				
<b>6/22/2004</b>			87	<10
<b>6/16/2004</b>	<10		10	10
<b>7/6/2004</b>			2000	
<b>7/12/2004</b>	<10		380	<10
<b>7/19/2004</b>	20		830	
<b>7/26/2004</b>	10		1300	87
<b>8/9/2004</b>			310	10
<b>8/16/2004</b>	99		1400	42
<b>8/18/2004</b>				
<b>8/23/2004</b>	160		620	87
<b>8/30/2004</b>	<10		150	10
<b>9/7/2004</b>			63	

Outlet Pipe - First Beach (W20)





	HTS1	HTS2	HTS3	HTS4	HTS5	HTS6
	Lot 45	Lot 44	Lot 43	Lot 42	Lot 41	Lot 36
8/5/2002						
6/10/2003						
6/24/2003						
6/30/2003						
7/7/2003						
7/28/2003						
8/2/2003						
8/4/2003						
8/18/2003						
8/25/2003						
9/2/2003						
6/8/2004						
6/9/2004						
6/10/2004						
6/22/2004						
6/16/2004						
7/6/2004						
7/12/2004						
7/19/2004						
7/26/2004						
8/9/2004						
8/16/2004						
8/18/2004	180	950	1100	660	450	660
8/23/2004	960	480	470	530	410	550
8/30/2004						
9/7/2004				73	160	63

<b>Bashan</b>	Seasonal	Year round	Vacant Land
Number of Lots Surveyed	39	13	12
Average Property Size - Acres	0.175	0.34	0.288
Range of Lot Size	.07 - .33	.1 - .69	.1 - 1.21
Lots with .167 Acres/bedroom	2	1	
Septic Tank Sized to Code	3	3	
Leaching Field Size to Code	0	2	
Percentage of Lots with Code Complying Septic	0%	15%	
<b>Moodus</b>	Seasonal	Year round	Vacant Land
Number of Lots Surveyed	16	12	13
Average Property Size - Acres	0.143	0.35	0.321
Range of Lot Size	.07 - .38	.18 - .57	.08 - .75
Lots with .167 Acres/bedroom	2	4	
Septic Tank Sized to Code	3	6	
Leaching Field Size to Code	1	1	
Percentage of Lots with Code Complying Septic	6.25%	8.33%	
<b>Hayward</b>	Seasonal	Year round	Vacant Land
Number of Lots Surveyed	25	9	8
Average Property Size - Acres	0.17	0.134	0.351
Range of Lot Size	.06 - .34	.11 - .55	.09 - .23
Lots with .167 Acres/bedroom	1	2	
Septic Tank Sized to Code	0	1	
Leaching Field Size to Code	0	1	
Percentage of Lots with Code Complying Septic	0%	11.10%	

# Conclusions

- Elevated E. coli levels continue to occur.
- Chemistry results inconclusive.
- The evidence of sewage contamination does not have a point source.
- Additional site specific information on existing septic systems is needed.

# Remediation Options

- Sanitary Sewer System – Through Order by DEP
- Community Systems –
- Onsite Treatment –
  - a) Conventional -new, repairs, pumping ordinance.
  - b) Alternative – other engineering options through Wastewater Management District

# Alternative Treatment Systems

Reduce BOD, TSS, and Nitrogen through  
Oxygen Introduction and Applies Effluent through  
Dose Control

Some Types -

- Recirculating Sand Filters
- Peat Filter Systems
- The Ruck System
- Trickling Filters
- Aerobic Units
- Fixed Activated Sludge Treatment (FAST)
- Sequencing Batch Reactors

# Decentralized Wastewater Management District

- Sewage treatment and disposal systems with discharge design flows  $< 5,000$  gal/day:

- Community sewerage systems

- Alternative treatment systems

- Managed subsurface sewage disposal systems

# The Legislation –

Section 140-144 of House Bill 6806, Effective 10/03

- Conditions that must be met to create such a district:

- **Submit engineering report** that must

- show existing sewage disposal systems are detrimental to public health or the environment

- be approved by DEP and DPH

# The Municipality

## Establishes:

- May establish remediation standards in the management district
  - May include removal or old systems too close to ground water, steel tanks, cesspools
- Criteria where alternative treatment systems can be installed
- More stringent standards for design and construction of subsurface sewage disposal systems than in the Public Health Code



# Local Health/WPCA

- Authority to designate Wastewater Management Districts is with the local Water Pollution Control Authority (WPCAs)
- Language recognizes that sewage systems being addressed are under local health jurisdiction
- Obligation for WPCA to work with local health (and DEP to work with DPH)

# Benefits

- Offers variety of ways to manage community pollution issues
- Opens door for permitting alternative treatment
- WPCA has ability to generate revenues which can be used for ongoing management + operation
- Maintains appropriate authority of local health

# Concerns

- No Technical Standards have been developed for alternative systems
- Costs – Clean Water Funds are available for planning and implementation on a percentage basis.
- Alternative systems may not be appropriate for desired area
- Non-Conventional Systems require **active** management

# The Pitch

The East Haddam WPC Plan

Section 1-3 subsection D –

Sewer Avoidance

The Request for Qualifications and the Scope of Services