Wastewater Management Study

September 10, 2011

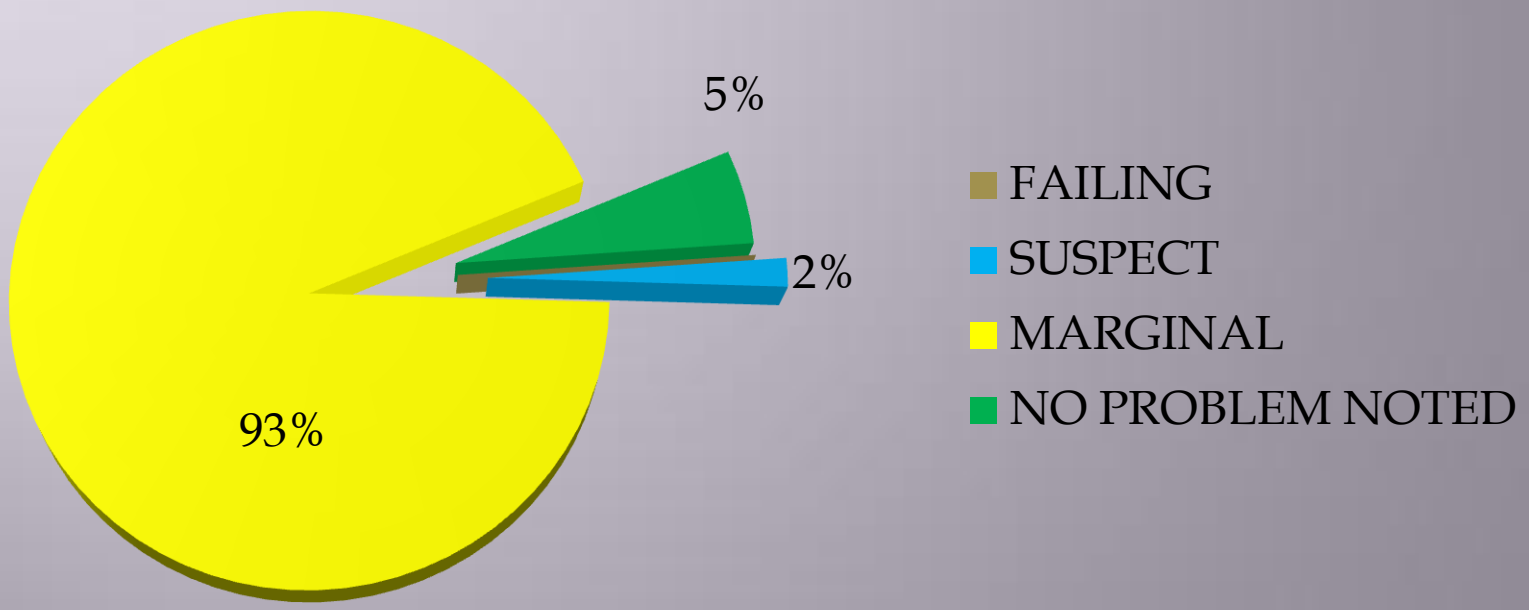
Agenda

- **Results of Soil Testing**
- **Results of Sanitary Surveys**
- **Results of Water Quality Sampling**
- **Results of Community System Site Screening**
- **Alternatives Under Evaluation**
- **Remaining Steps**

Soil Testing Results

- 4 test borings were advanced throughout the beach association using a hand auger.
- Borings were advanced up to 4’ deep (within the zone of disposal systems).
- Groundwater was encountered between 22” and 44” deep (groundwater gets shallower as you go southeast and towards the brook).
- Soils were uniform across the study area and are a coarse sand and gravel. Soils are very porous and transmit water easily.

Sanitary Survey Results



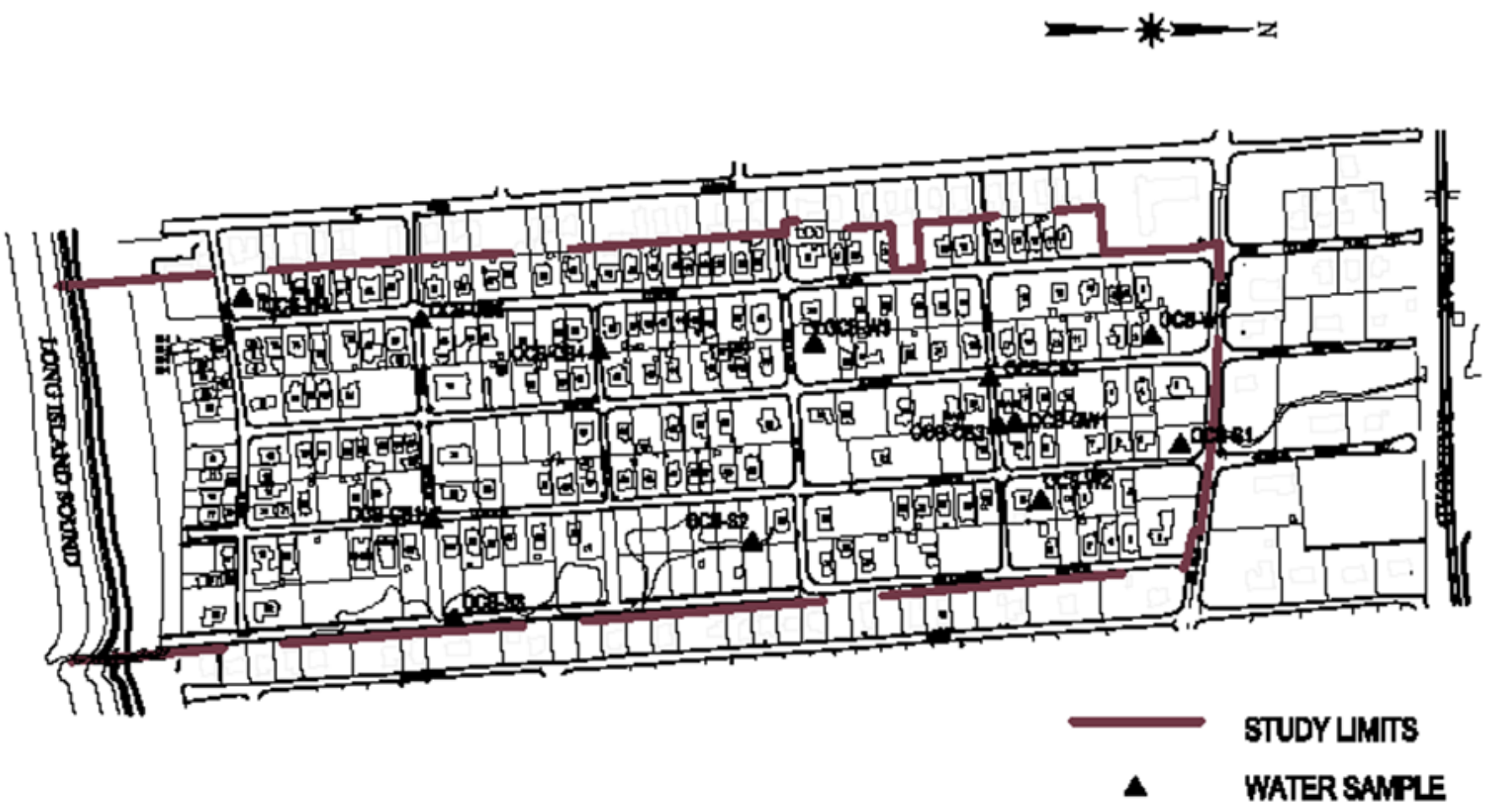
Sanitary Survey Results

- **84% of properties have only a small area available for wastewater disposal**
- **43% of properties have cesspools**
- **44% of properties were noted as having shallow groundwater**
- **40% of properties have wells (not all are in use)**
- **Average lot size is 0.12 acres (5,200 sq. ft.)**
- **Significantly high development density**

Water Quality Sampling

- **A total of 13 samples were collected:**
  - **4 wells**
  - **3 surface water (stream)**
  - **5 catch basins**
  - **1 sump pump discharge**

- **Samples were analyzed for:**
  - **Bacteria**
  - **Ammonia/Total Nitrogen**
  - **Nitrate/Nitrite**



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WATER QUALITY SAMPLING

The Old Colony Beach Club Association
P.O. Box 10 Old Lyme, CT

Date:	7/5/11
Scale:	1" = 200'
Drawn By:	RFP
Checked By:	RFP
Project No.:	2011.01

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Water Quality Sampling

- **All but 1 sample exhibited levels of bacteria above CT DPH drinking water standards**
  - **Total Coliform Bacteria ranged from <10 to >2000**
  - **E. coli Bacteria ranged from <10 to >1000**
  - **Allowable levels per DPH are 0 for both**

- **Most samples showed traces of Nitrogen, possibly from partially treated sewage**

Conclusions

- **The density of development is extremely high. Lots are generally small with little area available for sewage disposal. The ability to repair systems is extremely limited and in some cases non-existent. Limited space also inhibits the use of "alternative" treatment systems.**

- **Soils are generally porous and can transmit high volumes of water. Soils don't appear to restrict subsurface sewage disposal. As a result, large quantities of sewage are able to be discharged to the ground without the perception of a problem.**

Conclusions

- **Groundwater is shallow over a significant portion of the neighborhood. Many systems are likely to have been installed in or slightly above groundwater resulting in incomplete sewage treatment.**

- **There is evidence of bacteriological contamination throughout the neighborhood indicating incomplete sewage treatment. *People relying on an on-site well for drinking water should have their water tested regularly.***

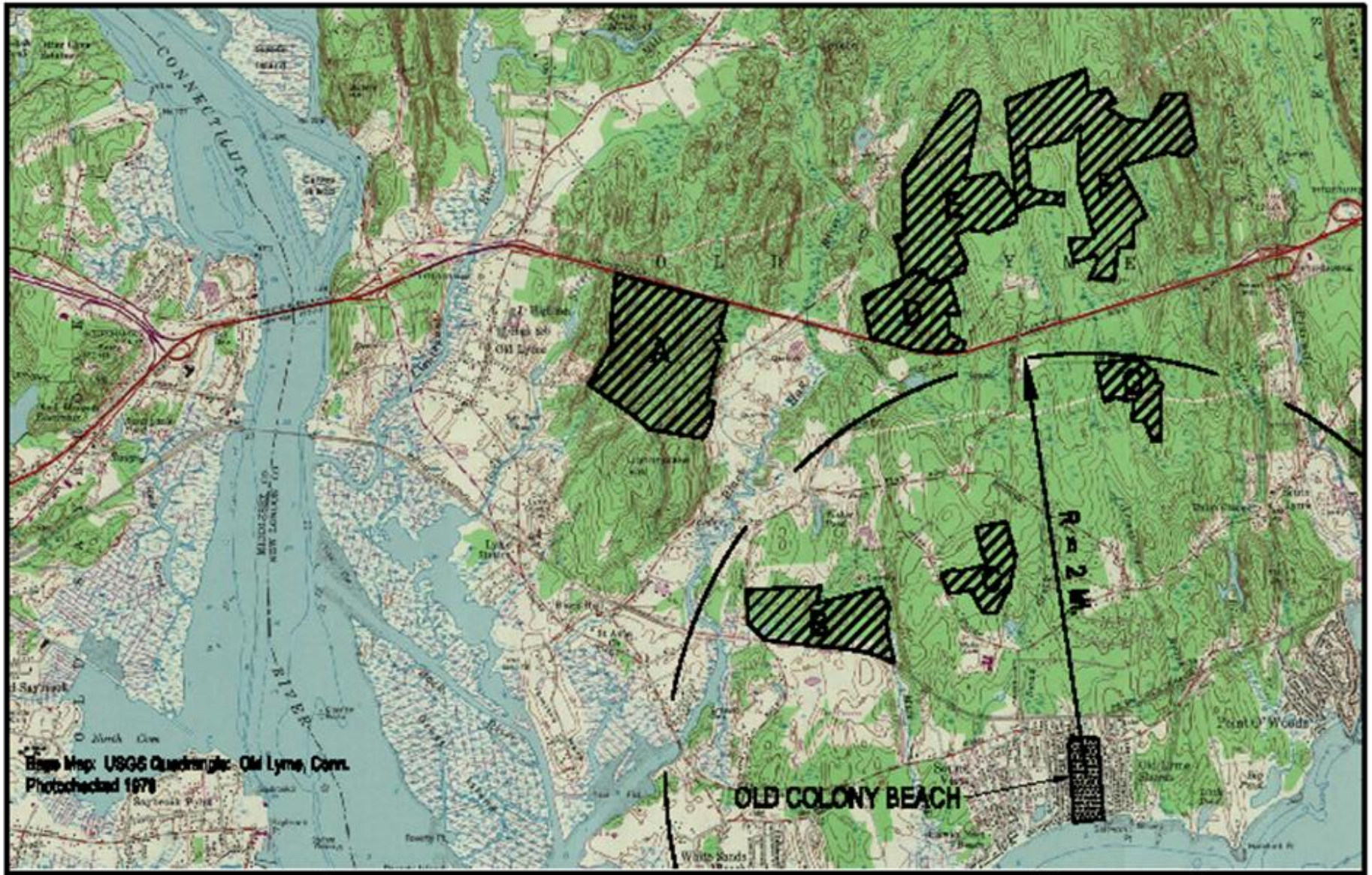
Conclusions

- **Groundwater will continue to be degraded as existing disposal systems reach their effective life spans.**

- **Continued reliance on on-site wastewater treatment is not considered to be a long-range, feasible alternative for the community; off-site treatment and disposal will be required.**

Community Treatment Site Screening

- **Search made for potential sites within a 2-mile radius of Old Colony Beach**
  - **Candidate lots must be large enough to accommodate maximum (future) wastewater flow (minimum lot size = 55 ac.)**
  - **Candidate lots must have suitable soils for subsurface wastewater disposal per published mapping**
  - **No site testing was conducted**
- **Only 1 site was identified that meets criteria. Site is on Buttonball Road.**



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POTENTIAL COMMUNITY TREATMENT SITES

The Old Colony Beach Club Association
P.O. Box 10 Old Lyme, CT

Date	07/12/11
Scale	1" = 3,000'
Drawn By	RFP
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Project No.:	2011.21

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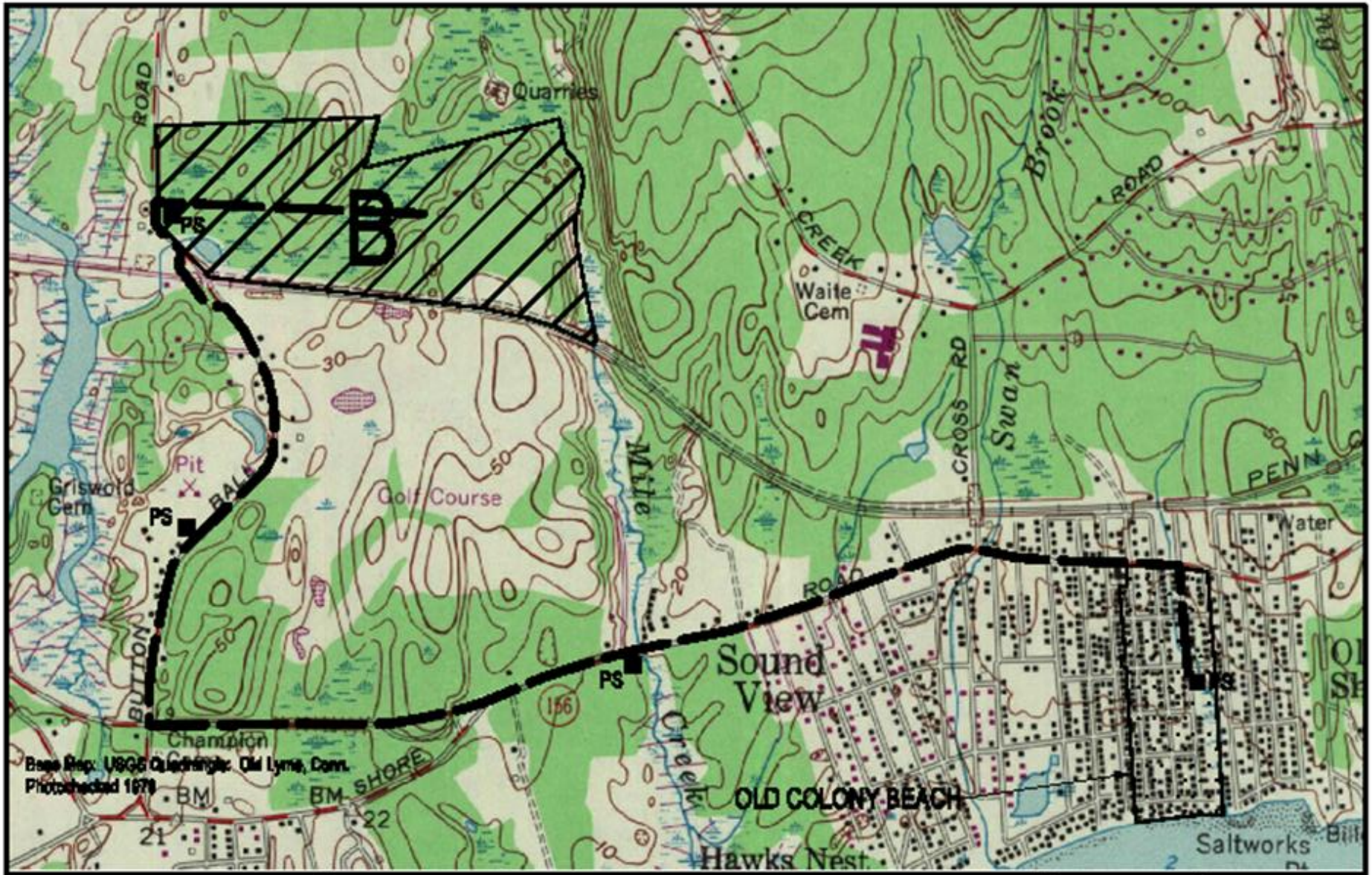
Alternatives Under Consideration

- **Community treatment system on Buttonball Road**
- **Sanitary sewer to Point O'Woods' sewer system**
- **Sanitary sewer to East Lyme's sewer system**



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BUTTONBALL ROAD
COMMUNITY SYSTEM SITE

The Old Colony Beach Club Association
P.O. Box 10 Old Lyme, CT

Date:	07/13/11
Scale:	1" = 1,000'
Drawn By:	RFP
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SEWER ALTERNATIVE 1:
DISCHARGE TO POINT O' WOODS

The Old Colony Beach Club Association
P.O. Box 10 Old Lyme, CT

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Remaining Steps

- **Estimate costs of identified alternatives**
- **Determine costs to users**
- **Finish draft report**
- **Conduct public hearing (11/19/11)**


QUESTIONS?