Rural Town Center Growth Possibilities and Wastewater Challenges

June 13, 2019
Higganum Village

Development Area Capacity Study

Existing Condition

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Proposed Condition

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- Development Capacity
  - Assumes cross property collaboration
  - Resolution of waste disposal and water issues
  - Generally supportive of market demand (less commercial more residential)
  - Commercial uses only on ground floor of street side infill buildings
  - Standalone residential to the rear
  - Shared parking ratios
  - Limited to two to three storys (preserve existing character)
  - Preserve Historic Architecture
Infrastructure Needs

• Ongoing struggle for small towns to attract new small business into their town centers

• Traditionally need higher density to make economics of sewers work

• The desired density of village centers doesn’t leave enough room for onsite septic systems
Wastewater Facilities Planning

• Compare and Contrast
  – Public sewer extension
  – Mini treatment plant with surface water discharge
  – Community septic system

• Look at construction and lifecycle costs upfront
  – $$ is usually not intuitive
Summary of Individual Onsite Management (Septic Systems)

- Depth to restrictive layers
- Visible & non-visible problems
- Rapid Water movement
- Well proximities
- Sampling results

- Backyard drainage trenches
- 35%+ lots cannot meet PHC setbacks
- Extremely small lots
- Conventional repairs cost $10,000 - $14,000

Takeaway: Individual Onsite Management is a Serious and Worsening Problem
Wastewater Facilities Planning - Example

- That’s a lot of number crunching!
Wastewater Facilities Planning - Example

Estimate of Project Cost – Sewer Extension

- What will the *sewer* project cost to construct?
  - $4.8M to $7.1M
    - Assumes cost sharing of force main with Old Colony Beach Club
    - Assumes $0.5M Connection to East Lyme Sewer infrastructure
    - Order of Magnitude Opinion of Cost in FY12 dollars

- What will the *sewer* project cost the Association?
  - $3.6M to $5.3M (in 2012 dollars)
    - Assumes 25% DEEP Clean Water Fund (CWF) Grant and low interest loan reduces local community costs
    - Assumes cost sharing with Old Colony Beach Club

- How much will I be assessed for the *sewer* project?
  - $19,000 to $28,000 per parcel approx. in 2012 dollars
    - Cost split among 192 Association parcels

Takeaway: Annual costs can benefit from project cost sharing and DEEP CWF funding
State Wastewater Regulations

• Continues to evolve - ever so slowly

• Connecticut
  – Septic systems up to 7,500 GPD are State Health Department Regulated (might increase to 10,000 GPD)
  – CT DEEP community septic systems with mini treatment plant (25k to 50k GPD) can be a good option for Village Center Areas

• Rhode Island & Massachusetts
  – Allowing small scale Innovative/Advanced Treatment Units
    • *This allows smaller leaching system footprints because effluent is much cleaner*
    • *Only as good as the O&M of the equipment*
Infrastructure Funding

- Economic development grant’s are usually not large enough
- State environmental protection funding typically only available to solve existing water pollution issues and is not for economic development
- USDA Funding for Water and Environmental Projects
  - Funding available to develop a plan and construct the infrastructure needed to attract new small businesses
  - Preliminary Engineering Report and Environmental Report prepared during the loan/grant application
  - Funding can be applied to water, sewer, and stormwater improvements for the community
  - Grant calculated based on community household income
  - 40 year loan repayment terms
Considerations for Greater WW Disposal

• Pre-packaged treatment systems can reduce upfront costs but can also have much higher O&M costs

• New treatment plant with surface discharge comes with years of permitting

• There is an entirely different rule book for large community septic systems

• Make wastewater cleaner before discharging into a community septic system to reduce leaching field size

• You really don’t know the soils until you go out and dig test pits for a community septic system
Common Obstacles Small Communities Face

• Public concern that sewers may bring unwanted growth
  – Create plan to provide ‘just enough’ wastewater disposal capacity
  – Allocate wastewater capacity parcel-by-parcel

• Unable to solve all of the infrastructure needs
  – Think creatively!
  – Consider meeting ‘some’ of the community WW needs (not all)
  – Mandate water conservation to lower sewage volumes in those old buildings
  – Use multiple sites for distributed leaching fields

• Project Funding
  – Distribute the cost among more properties
  – Consider USDA 40-year loan terms