



Still River Watershed Management Plan

Prepared for

The Still River Partners and the Connecticut Department of Energy and Environmental Protection

In support of the

Still River Watershed Action Plan for Nonpoint Source Pollution Reduction
(CT DEEP Contract #14-03f)

Prepared by

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HOUSATONIC VALLEY
— ASSOCIATION —

- Limit or eliminate the amount of fertilizers, apply fertilizers during dry weather conditions, and/or use slow-release fertilizers, organic fertilizers or compost as alternatives.
 - Plant pollinator gardens, rain gardens, bioswales and vegetative stream buffers
- Implement Green Infrastructure/LID incentive programs to assist residents with the cost of BMP installation. Resources include:
 - Still River Watershed Connections youth crew can help install and maintain garden and buffer installation.
 - Grants and give-away programs to support residential green infrastructure installation.
 - Property tax credits for residents who install green infrastructure, water quality improvements.
 - Create certification programs similar to the pollinator pathways program that offer recognition for homeowners who implement BMPs.
 - Workshop series to teach residents everyday water conservation techniques and green infrastructure installation.
- Encourage regular inspection, pumping, maintenance, and upgrades/repairs to septic systems.
- Work with neighborhood associations and developers to incorporate Homeowner BMPs on a neighborhood/community complex scale.

4.6 Septic Systems (Subsurface Sewage Disposal Systems)

Much of the watershed's human waste is treated by the Danbury Sewage Treatment Plant. Those that are not are typically on a septic system. Septic systems can contribute to excess nutrients in waterways when they fail or are located in floodplains. As such, homeowners should be aware of signs that indicate failing septs and regularly maintain septs to prevent leaching. One area in which this is a particular issue is along Dean Rd. in Brookfield. Below details the project proposed at Dean Road as well as general recommendations to mitigate the impact of septs on water quality.

Project Highlight - Dean Road Septic Systems

The Dean Road Septic Systems project includes properties along Pocono Road and Dean Road from Silvermine Road to Station Road on the east side of the Still River (See Figure 4.6.1). The study area is along the Still River in the mainstem 2 subwatershed (see Subwatershed map in Appendix C) that was identified as requiring 87% reduction in E-Coli to meet TMDL reduction requirements. There are 91 single family 1960- era homes with septic systems that are not conforming according to current standards. Many septic systems are located in the water table. The BWPCA has identified the study area as an area of concern for wastewater management and has investigated sewerage the area to address study

Figure 4.6.1 Dean Road Septic System Area of Study provided by Brookfield WPCA



area wastewater management problems. The cost of conventional sewer systems is greater than the properties can sustain by the typical Benefit Assessment approach.

Brookfield WPCA has proposed a study that will establish the attenuation capability of the soils which are expected to be low, given that nearly half of the properties have reported septic failures. If the soils do not remove appreciable amount of septic nitrogen and phosphorus, then the study area properties would be discharging approximately 1,870 lbs. of nitrogen per year (5.1 lbs. N/day) and 208 lbs. of phosphorus per year (.57 lbs. P/day) to the Still River. These estimates are based upon each property's wastewater flow of 150 gpd, septic tank effluent of 60 mg/L nitrogen with 25% removal in drainfield and 5 mg/L phosphorus with no drainfield P removal. Bacterial contamination from septic system occurs when there is less than 2 feet between the bottom of the drainfield and groundwater and/or surface breakout of septic effluent.

The Brookfield WPCA identified the Study Area as an Area of Concern in its Wastewater Management Map of the Town, with Figure 4.6.1 illustrating the boundaries of the area. Within this area, 47% of the properties were designated as Failure Recorded / Special Flood Area, 39% of the properties were designated as Possible Failure / Flood Area and 14% of the properties require additional information. Odors attributed to failing septic systems and conditions indicative of septic surface breakouts in the Study Area have been reported to the WPCA.

Creative solutions need to be developed to address the cluster of inadequate septic systems. This can be accomplished by first determining the impact of these properties on bacterial (*E. coli*), nitrogen, phosphorus, and PFAS to water quality of the Still River. This will be done in collaboration with HVA ambient water quality monitoring program adding an additional site and parameters to isolate the Dean Rd property impact. Moreover, Brookfield WPCA plans to contract with a consultant to measure attenuation in the study area's soil through subsurface probes. Those results will inform wastewater management solutions to eliminate negative water quality impacts due to septic leaching. Creative project solutions will be explored and implemented emphasizing the need for solutions that are passive, simple to operate and maintain. With additional funding, these design solutions will be implemented and water quality monitored for improvement in the subsequent years.

Recommended Actions

- Identify and map areas where there is a concentration of septic systems near bodies of water. Coordinate with municipalities and CT DEEP to review records related to system performance and determine areas of high leaching potential. Work with the municipality and town to study and address leaching.
- Seek and secure funding to study and implement solutions at Dean Road Study Area.
- Encourage regular maintenance of septic systems through education and outreach. Teach residents how to identify malfunctioning systems.
- Develop a septic maintenance fund to assist low-income residents with proper septic inspections, cleaning, repairs and upgrades. Utilize this fund to provide discounted group septic maintenance in hotspot areas.
- Strengthen local regulation to:
 - Require the regular inspection and maintenance of septic systems as well as upgrades/repairs to septic systems found malfunctioning.
 - Build all new septic systems within a safe required minimum setback from all wetlands and floodplains.
 - Require septic systems to pass an inspection upon the sale of property.

Table 4.5.1 Homeowner BMPs Recommendations

Recommended Actions & Milestones	Who	Timeframe (Schedule)	Deliverables & Evaluation Criteria	Estimated Costs	Potential Funding Sources
Educate homeowners on RiverSmart practices Distribute RiverSmart materials and collect pledges (see Education and Outreach recommendations)	HVA	0-2 years	- Education materials distributed - Households pledged	\$\$\$	CT DEEP 319 Grant Funding
Disconnect rooftop drainage - Establish rain barrel giveaway program - Distribute materials	Municipalities	2-5 years	Number of rain barrels distributed	\$\$	Business sponsors
Encourage sustainable landscaping practices - Distribute materials on lawn care, pollinator pathways, and vegetative buffers - Reach out to landscape companies and work with them to alter business practices to sustainable lawn care and landscaping practices	HVA	0-2 years	- Number of households signed on to the Pollinator Pathway - Education materials distributed - Number of landscape companies integrating sustainable practices	\$	
Establish GI/LID incentive program - Utilize Still River Watershed Connections youth crew can help install and maintain garden and buffer installation. - Research grants and give-away programs to support residential green infrastructure installation. - Explore property tax credits for residents who install green infrastructure, water quality improvements. - Create certification programs similar to the pollinator pathways program that offer recognition for homeowners who implement BMPs. - Workshop series to teach residents everyday water conservation techniques and green infrastructure installation.	HVA, Municipalities, Local school groups	2-5 years	- Certification program established and homes certified - Number workshop participants - Number of GI/LID projects established	\$\$\$	

Recommended Actions & Milestones	Who	Timeframe (Schedule)	Deliverables & Evaluation Criteria	Estimated Costs	Potential Funding Sources
Encourage responsible septic system maintenance Develop and distribute materials around septic system impact (as part of RiverSmart, see Education and Outreach recommendations)	HVA, Brookfield WPCA, Municipalities	0-2 years	Education materials distributed	\$	

\$ = \$0 to \$5,000

\$\$ = \$5,000 to \$10,000

\$\$\$ = \$10,000 to \$50,000

\$\$\$\$ = Greater than \$50,000

HVA = Housatonic Valley Association, CT DEEP = Connecticut Department of Energy and Environmental Protection, GI/LID = Green Infrastructure/Low Impact Development, WPCA = Water Pollution Control Authority

Table 4.6.2 Septic Systems (Subsurface Sewage Disposal Systems) Recommendations

Recommended Actions & Milestones	Who	Timeframe (Schedule)	Deliverables & Evaluation Criteria	Estimated Costs	Potential Funding Sources
Study and address septic system leaching in priority areas such as Dean Rd. in Brookfield - Identify and map areas where there is a concentration of septic systems near bodies of water - Coordinate with municipalities and CT DEEP to review records related to system performance and determine areas of high leaching potential - Seek and secure funding to study and implement solutions	Brookfield WPCA, Municipalities	2-5 years	- Mapping of septic systems in potential high leaching areas - Funding secured for study to determine impact of leaching in priority areas on water quality - Solutions implemented and follow-up monitoring results published	\$\$\$\$	NFWF Long Island Sound Futures Fund, CT DEEP 319 Grant
Develop a septic maintenance fund to assist low-income residents with proper septic inspections, cleaning, repairs and upgrades Research program feasibility and potential funding sources for fund	Municipalities	5-10 years	- Funds raised for program - Number of households accessing funds and upgrading septic systems	\$\$\$\$	Community Block Grants?
Strengthen local regulation to reduce impacts of septic systems on pollution loading in the watershed. - Review septic system regulation - Amend regulation where necessary to: - Require the regular inspection and maintenance of septic systems as well as upgrades/repairs to septic systems found malfunctioning - Build all new septic systems within an X setback from all wetlands and floodplains - Require septic systems to pass an inspection upon the sale of property	Municipalities	2-5 years	Municipal ordinances reviewed	\$	Municipal funds

\$ = \$0 to \$5,000

\$ = \$5,000 to \$10,000

\$\$\$ = \$10,000 to \$50,000

\$\$\$\$ = Greater than \$50,000

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