

Recommendation	2016	2017	2018	2019	None	2021	2022	Owner	Time Frame	Action/Expectation/Results
2016 Select Board Parsons Creek Committee										
Develop an ordinance to require that properties in the PC watershed that transfer ownership document that the septic systems are function property and, if not, repair replace them as necessary	x									
Consult with Town Counsel to see if the town can require commercial institutions, within the watershed to demonstrate that they are operating within the permitted flow limitations	x									
Develop an inspection criteria for a certified septic system evaluators that meets the needs of the watershed. For example, nitrogen loading is not considered an issue in this watershed	x									
Consider whether advanced treatment, other than septic tanks should be required by local ordinance in close proximity to tidal areas	x									
Consider whether the ordinance should address permitting and enforcement of holding tanks	x									
Suggest that a new separate committee be formed to guide the ordinance through the drafting and acceptance process	x									
Quantify impact on town staff to implement the requirements of the current ordinance for septic pump outs including updating the data base and potential future staff impacts should the suggested real estate transfer ordinance be adopted and approved. Determine if additional staff are merited	x									
Apply for State 319 Grant money to continue monitoring of the watershed for 2017. Consider adding a sampling location at the outlet of Awcomin Marsh at Rye Harbor and Eel Pond for comparison purposes	x									
Review the current dog waste ordinance and town signage to increase visibility, awareness of fines and impacts to the watershed associated with the illegal disposal of dog waste to the do walking public	x									
The Town should investigate buried piles at Wallis Beach seep locations	x									
Work with DOT to evaluate and remediate channel constrictions under the route 18 bridge over Parsons Creek resulting from embankment movement next to the bridge abutments	x									
Recommend that all new test results in the Parsons Creek Watershed area be explained by narrative on the Rye website and or Rye Newsletter										
FBE: Address Groundwater sources of fecal										
Update the septic system database on a regular basis		x	x	x		x	x			
Continue to enforce the septic system health regulation that requires pump-outs every 3 years		x	x	x		x	x			
Continue evaluation of individual properties for septic system functioning near hotspots		x	x	x		x	x			
Evaluate the proper functioning of the septic system at 290 Brackett Rd			x							
Consider incorporating stricter guidelines for septic system replacement or installation to town ordinances		x	x	x		x	x			
Consider groundwater study of homes near beach seeps at the outlet and along the marsh edges to determine proper septic system functioning		x								
Consider a town sewer system to connect homes in low-lying areas along the marsh and beach			x	x		x	x			
FBE: Address surface runoff sources of fecal contamination										
Continue to locate candidate sites for BMP implementation to address stormwater runoff		x	x	x		x	x			
Continue to secure funding that implements these candidate BMP sites		x	x	x		x	x			
Continue to track and monitor existing BMP conditions and fix or improve sites as necessary		x	x	x		x	x			
Maintain installed pet waste signs		x	x	x		x	x			
FBE: Enhance Public Outreach program										
Post and maintain a wet-weather advisory at the beach		x	x	x		x	x			
Continue to distribute educational materials and reports to the public via the Town's website		x	x	x		x	x			
Continue to educate homeowners on proper disposal of pet water and maintenance of septic systems		x	x	x		x	x			
Continue (Restitute) regular meetings with the Parsons Creek Water Quality Committee		x	x	x		x	x			
FBE: Continue Monitoring program										
Continue water quality sampling through the Parsons Creek watershed under varying weather conditions to track changes in FIB over time, especially as failing septic systems are replaced		x	x	x		x	x			
Continue to measure co-indicators along with FIB to better pinpoint human sources of fecal contamination. Co-indicators include optical brighteners and inorganic nutrients present in human wastewater (added microbial DNA source tracking methods like PhyloChip in 2021)		x	x	x						
Complete a groundwater testing study of the marsh area draining BCH11			x	x		x	x			
Retest the area around the large marsh pool to determine whether the elevated fecal indicators are from wildlife or possibly remnant from a failing septic system that was recently replaced on a property draining to a large marsh pool			x	x		x	x			
Consider updating the 2011 Parsons Creek Watershed Management Plan		x	x	x		x	x			

Limitations of Individual Sewage Disposal Systems

Depth to Water Table or Impermeable Layer

- Clear link between vertical separation of Effluent Disposal Area (EDA) and the seasonal high water table or impermeable layer (Humphrey et al., 2015; Humphrey et al., 2011; Pfluger et al., 2009; Meeroff, 2008; Mallin et al., 2004; Van Cuyk et al., 2004) (Figure 1).
- Two to five feet of aerated soil below the bottom of the EDA required for adequate treatment.
- **Though the depth to the water table and impermeable layer is not known at all locations in the Parsons Creek watershed, many of the soil types are characterized by having seasonally shallow water tables (Table 1).**

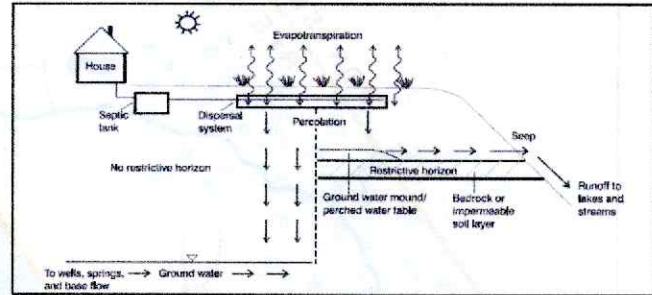


Figure 1 - ISDS in area with and without adequate distance below the Effluent Disposal Area

Soil Percolation Rates

- The soil percolation rate, or rate at which water can be absorbed into the soil, is an indicator of how well a specific type of soil will treat pollutants.
- Soils are considered unsuitable for ISDS if percolation rates are too slow (> 60 minutes/inch) or too fast (< 1 minute/inch) (Harrison et al., 2000; Otis et al., 1980, pg. 214).
- **The Soil Conservation Service (1994) ranks essentially all of the soils in the watershed as "severe" and poorly suitable for onsite wastewater disposal. Treatment is possible for some of these soil types in areas where the depth to bedrock or the SHWT is or can be made sufficiently large (Figure 2, Table 1).**

Proximity to Surface Waters and Wetlands

- Plumes of pollutants below the EDA have been shown to range from 30 to 300 feet depending on soil conditions and distance to water table and/or bedrock (Schneeberger et al., 2015; Scandura and Sobsey, 1997; MPCA, 1999).
- **Of the 843 parcels in the Parsons Creek watershed, 383 parcels are within a 100-foot buffer of a surface water body or wetland. 357 parcels are within 75 feet and 331 parcels are within 50 feet (Figure 3).**

The Number of ISDS in the Watershed

- Too many ISDS in an area may overwhelm the area's carrying capacity for treatment as individual plumes may intermingle and pollute large areas of groundwater.
- A density of more than 0.26 septic tanks per acre has been shown to lead to fecal contamination (Malin, 2004; Yates, 1985).
- **In the Parsons Creek watershed, the density was estimated to be 0.45 ISDS per acre.**