Stormwater Management: It is a neighborly thing to do!

What is the problem in Peter's Brook, Somerset County?



Peters Brook has a Total Maximum Daily Load for fecal coliform (NJDEP 2003) with primary source identified as suburban stormwater. Peters Brook remains on the impaired list for Recreation use for Aquatic Life (general) and for recreational use. Studies show that bacteria are adsorbed to total suspended solids (TSS) in stormwater. Therefore a reduction in TSS can help to reduce bacteria concentrations in the stream, along with the simple reduction that will occur as we reduce the stormwater reaching the stream.



Stormwater from these residence (the neighborhood) lead directly to the outfall

Peters Brook Project: Lead Pat Rector, Environmental County Agent, Morris/Somerset Counties: Partners: Rutgers Water Resources Program: Dr. Christopher Obropta; Sean Walsh, Engineer; Ben Pearson; Engineer; Kate, Rich, Dan, Tolin Summer interns. New Jersey Water Supply Authority: Ken Klipstein, Director Watershed Program, Robert O'Neil, Principal Environmental Specialist; Heather O'Neil, Environmental Specialist.

Part of the solution? Neighborhood Rain Barrel workshops!





During a 1-inch rainfall event an 88 ft² roof section will fill a 55gallon barrel (The Rutgers Water Resources Program values were utilized, developed by Dr. Chris Obropta, Specialist Water Resources).

Average roof size in Peters Brook watershed is 1500 ft², therefore estimated average drainage to 1 barrel = 375ft².

With this information we know what we are shooting for: 1 rain barrel will capture 41% of annual roof runoff on a residential property. To capture the roof runoff from the 0.5-in storm we would need 8+ barrels or 4 at each downspout, each directed to pervious surfaces.



Figure 1. Data from National Weather Service Cooperative Observing station in Somerville observations 1971-2005 courtesy of Dave Robinson, NJ State Climatologist.

•Ninety-eight people were trained and brought home rain barrels.

•Of these participants 42% were from the "targeted neighborhoods" and 76% were from the Peters Brook watershed.

•A minimum of 75 rain barrels were distributed in the watershed. Several families took home more than 1 barrel.

•The number of Class II properties (residential) in the Peters Brook watershed is 5,769. Therefore we have distributed rain barrels to a minimum of 1.3% of the residential properties with a potential to disconnect 41% of roof runoff annually from 1.3% of these residences, plus the first flush from the 0.5-inch storm





impact.

"Workshops were well run. Interest in my area of Somerville is keen. I've had a number of neighbors stop by to se the barrel in "operation" and have me describe how it was built and installed."

With the 4 Rain Barrel Workshops in the Summer of 2010 we have provided training and rain barrels for approximately 1.3% of the residential properties in the Peters Brook Watershed. During the Winter of 2011 we will be working with the municipalities and the Environmental Commissions to keep the momentum going and pass on the Neighborhood Rain Barrel Program. We may change format to focus on disconnection of impervious surfaces, perhaps through a rebate program.

Preliminary Survey

At this time the Preliminary results show a 90% installation rate in the watershed, while statewide installation rates are approximately 67%. We will continue to monitor the installation rates to determine whether neighborhood workshops yield a higher