

<p><b>PUTNAM VALLEY CENTRAL SCHOOL DISTRICT 146 PEEKSKILL HOLLOW ROAD PUTNAM VALLEY, NY 10579</b></p>	
<p><b>MS4PY7 STORMWATER PROGRAM</b></p>	
<p><b>FACT SHEET #4 APRIL 2017</b></p>	
<p><b>PROTECTION OF YOUR WATERSHED</b></p>	
<p><b>FOR MORE INFORMATION, CONTACT YOUR STORMWATER COORDINATOR:</b></p> <p><b>PATRICK BELLINO AT: 845-528-8143 OR AT pbellino@pvcsd.org</b></p>	<p><b>1. WHAT IS A WATERSHED?</b> A watershed is all of the land area that drains water and snow melt to a common stream, river, lake, reservoir, or other body of water, or in some cases, the nearby ocean. The boundary limits and size of the watershed are dependent on the following factors:</p> <ul style="list-style-type: none"> <li>• <b>Boundary Limits:</b> The topography of the land dictates the boundary limits of the watershed</li> <li>• <b>Size of The Watershed:</b> The acreage or the size of the watershed is dependent on the topography of the land that drains water and snow melt to a common water body</li> </ul> <p><b>2. WATERSHED MANAGEMENT ISSUES</b> Protection of the streamside habitat is critical to the water quality of your watershed. Proper management depends on the following management issues:</p> <ul style="list-style-type: none"> <li>• <b>Step 1- Determine Limits or Boundary of the Watershed:</b> You should first know the boundary limits of your watershed. You can do so by first walking along the banks of the common water body</li> <li>• <b>Step 2- Determine the Watershed Land Use Characteristics:</b> Is your watershed located in an industrial, business or residential zone of the municipality? This will dictate what remediation activities you can undertake in the watershed, as permitted by the</li> </ul>

zoning regulations, i.e., clearing of onsite vegetation or land use changes

### 3. THE HUMAN ACTIVITIES WILL AFFECT THE HEALTH AND ECOLOGY OF YOUR WATERSHED

Protection of the streamside habitat is critical to the water quality. By nature, water flows by gravity from upstream segments and carries with the stream flow any soil and pollutants to the downstream corridor. Hence water quality is directly impacted by upstream flow processes. Stresses upstream, such as vegetation clearing, the installation of impervious surfaces from developments, will all impact erosion and nutrient loading downstream.

- **Public Participation:** Link up upstream owners along your streamside corridors to form citizen groups that will hook up with environmental groups to create a sense of citizen neighborhood to help monitor and protect the water body in their watershed
- **Maintain A Vegetated Buffer:** The diversity of plant types and species along the stream banks will provide food, cover, habitat and corridors for wildlife. Rainwater and snow melt flow by overland and subsurface pathways through the streamside and into streams. When channelized, overland flow is rapid and causes erosion in contrast to sheet flow which moves slowly and contacts more substrates, where filtering of stormwater contaminants can take place
- **Direct Runoff from Dwellings:** Direct runoff away from dwellings to grassy areas for filtering of stormwater contaminants

- **Minimize Impervious Areas Near Streamside:** Use porous pavements or blacktop that allows stormwater to infiltrate into the ground, removing surface water contaminants absorbed by tree roots and subsurface soil organisms
- **Cover Exposed Soil with Mulch:** Mulch will slow down the velocity of channelized flows and will reduce channelized erosion
- **Reduce Household Chemicals from Entering Your Watershed:** Do not add insecticides, pesticides, herbicides or insect repellents to your lawns and gardens as these chemicals are toxic or non-biodegradable and if washed into your watershed will severely impair the health of your receiving water body
- **Remove trash and debris from streamside:** Trash and debris will physically impede plant growth and may leach harmful chemicals into the nearby water body

### 4. BENEFICIAL IMPACTS OF STREAMSIDE PROTECTION

Vegetated buffers provide numerous beneficial impacts to your watershed.

- **Flood Control:** Plants intercept stormwater flows, slowing down water movement and reducing the peak height and duration of floods downstream. Water levels rise and drop daily with rainfall, seasonally with snow melt and summer heat and seasonally with droughts and wet years. Vegetated buffers reduce the velocity of the stream

flow when the stream overflows its banks. The vegetation intercepts the floodwaters, slowing down and reducing the height and duration of peak flooding

- **Sediment Trapping:** Plants and vegetated buffers intercept suspended sediments, allowing soil particles to settle out
- **Erosion Control:** Vegetated stream buffers intercept running water and slow down soil erosion
- **Plant Pollutant Filtering:** Phosphorus, metals and other stormwater runoff pollutants are absorbed by plant roots. Bacteria and other soil microbes absorb soil contaminants and transform nitrogen from manures into nitrates which are then absorbed by plants to maintain their growth. Finally, microbes and plants store nitrogen, phosphorus and other contaminants in their living tissues
- **Wildlife Habitats, Food and Water:** Vegetated buffers also provide wildlife habitats, food and water for birds and wildlife. Vegetated covers provide sources of organic litter and debris which are consumed by stream inhabitants. Overhanging vegetation shades and cools the stream waters

## 5. HOW CAN YOU HELP STREAMSIDE PROTECTION?

You can protect and improve the water quality of our streams, lakes and rivers in your watershed, by adopting the following simple but effective stormwater pollution prevention measures:

- **Home Repairs:** Make sure you utilize non-toxic, biodegradable products when

conducting home repairs. Before you start any outdoor project, locate storm drains to ensure that they are protected from your home repair products

- **Excessive Fertilization:** Test your soils before applying fertilizers. Excess fertilizers enter streams and lakes, where the phosphorus and nitrogen, promote algae growth, which deplete oxygen, and sunlight, causing fish kills and harm to aquatic plants and other organisms
- **Washing Your Vehicles:** Wash your vehicle on the lawn and not your driveway and only use phosphorus-free detergents. Better yet, go to a car wash where dirty water is treated and recycled
- **Septic Tank Maintenance:** Have your septic tank cleaned and pumped on a regular basis at least every three (3) years
- **Pet Clean Up:** Cleanup pet waste material, which is rapidly absorbed by rainfall and carried into our storm drains. Nutrients in animal waste material encourage the growth of pathogens and harmful bacteria in our waterways

The information contained in this fact sheet was extracted primarily from articles published by the Cornell Cooperative Extension and from various publications provided by the USEPA. For further information on your watershed location and boundary limits, you should contact the New York State Department of Environmental Conservation.