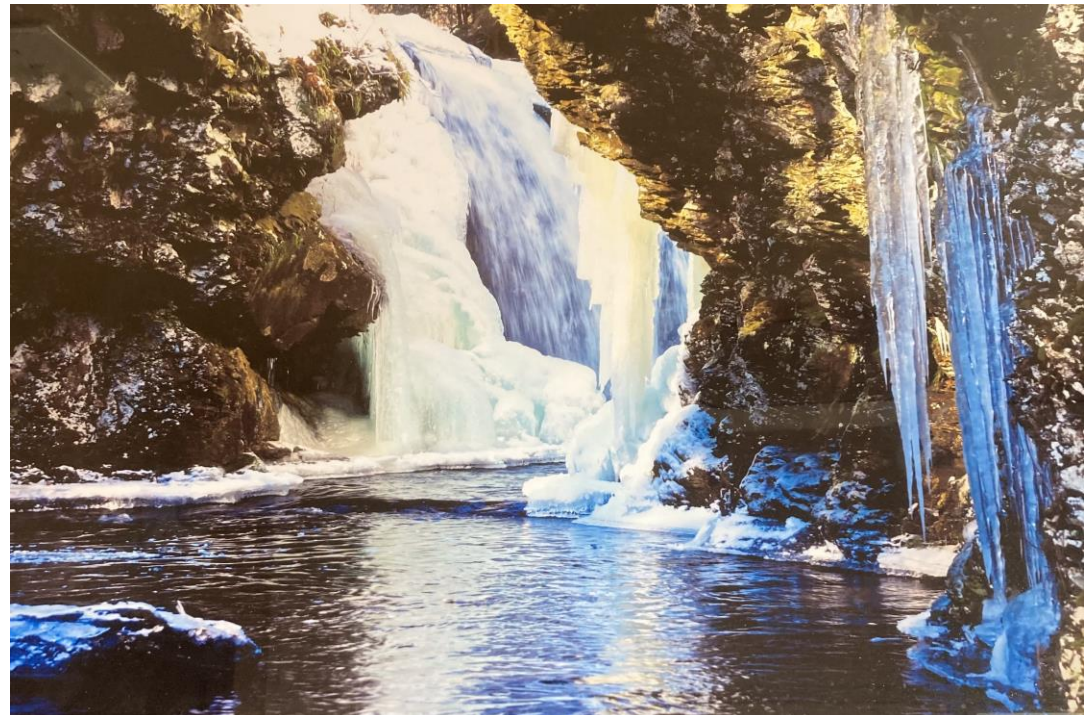


Winter Stormwater Management & MS4

MS4 is short for, "Municipal Separate Storm Sewer System",
"Separate," "Storm," "Sewer," "System."





The purpose of the Township's MS4 and Stormwater program is to protect the water quality of the streams, waterways, and groundwater (drinking water):

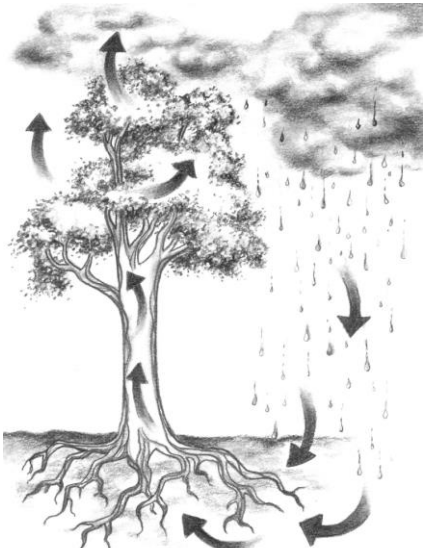
- By *reducing pollutants* and to *manage stormwater runoff* volumes
- In an effort to *reduce flooding* and *promote groundwater recharge* for wells and stream flow.





Stormwater originates from all corners of a community

- In a fully forested landscape, over 90% of stormwater and pollutants are absorbed by forests.
- In developed areas, stormwater “runoff” forms and is directed into creeks



Stormwater Runoff carries surface pollutants to nearby creeks

- Surface pollutants include septic tank drainage, laundry wash water, paint, automobile oil, automobile leaks, grease from restaurant grease traps, and sanitary waste among other things



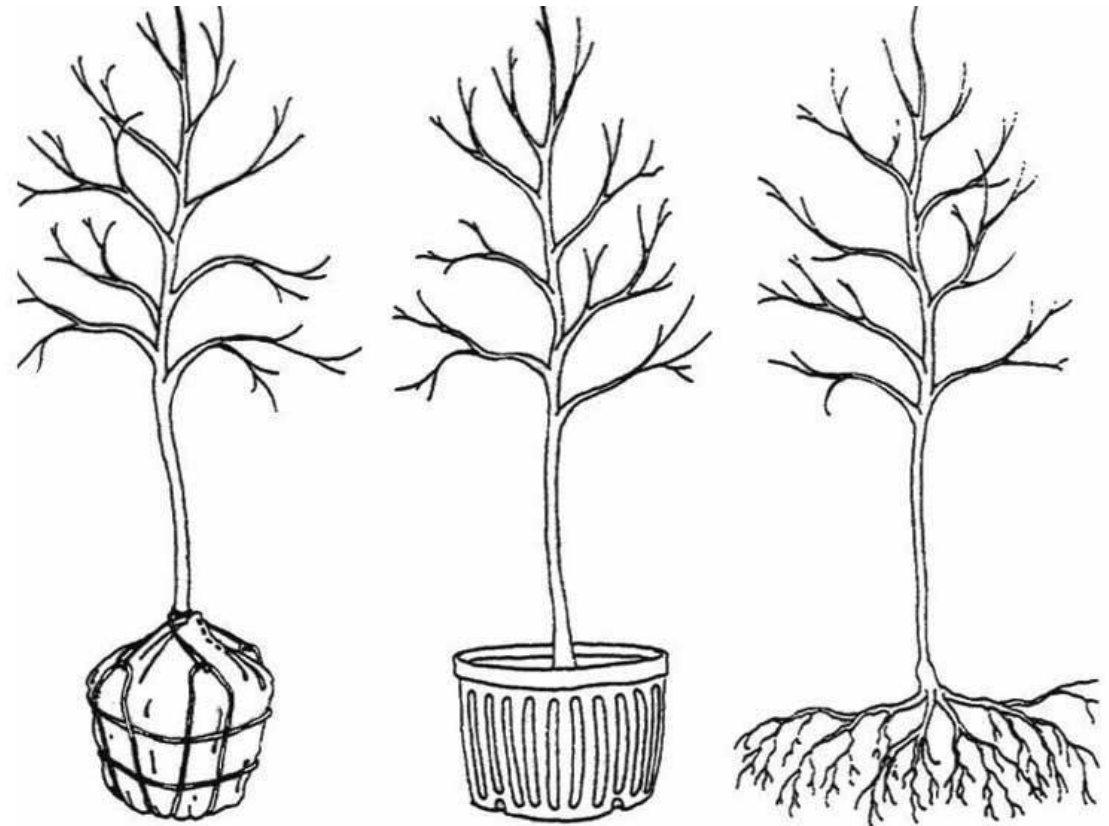
Winter Tips: Cover Bare Soil to Prevent Erosion and sedimentation

- Any earth movement activities in winter, such as moving soil during snow plowing, or preparation for construction activities can cause sedimentation issues when it rains or during snow melt
- The best way to protect disturbed soil from erosion by water is to keep it covered.
- An inexpensive and straightforward method is to cover bare soil with hay, or straw



Winter Tips: Plant New Trees & Shrubs

- Winter (when the ground is not frozen) is the best time to transplant and plant new trees and shrubs.
- Trees and shrubs will grow to absorb over 10X more stormwater than non-woody plants and grasses
- Provide aesthetic value and wildlife habitat



Winter Tips: Check Swales and stormwater inlets

- Winter can produce some of the most severe flooding events
- Important to check, report issues, and/or clear all culverts, swales, and/or stormwater inlets



Winter Tips: Septic systems and flushing

- For residents with on-lot septic systems: these are only designed for a certain # of gallons per day/week
- So if there's a lot of visitors, carefully monitor the systems, and be extra cautious of what is flushed!
- Always reminder to not flush pharmaceuticals, or other chemicals in any sewage system!



Winter Tips: Clean up after your pet

- Pet waste accumulates over many months in the winter ~!
- Contains bacteria, parasites, and nutrients that wash into local creeks and streams during winter rains and snowmelt
- Please clean up after your pets. Bag your pet's waste and throw it in the trash.



Winter Tips: Use de-icing chemicals and salt sparingly

- To reduce the use of salt, use no more than a cup or a cup and a half of rock salt for every 10 sidewalk squares or every 2 parking spaces. There should be about 3 inches between each of the salt grains.
- Rock salt works only down to pavement temperatures of 16F (-9C),
- Always shovel any snow or ice away before putting salt onto a hard surface. It takes less salt to do the same job and works more quickly.



To help manage stormwater, Smithfield Township Updated its Act 167 Stormwater Ordinance

- Updated the Act 167 Stormwater Ordinance for land use related activities:
 - Maintains **buffer provisions** for the purpose of stormwater management to protect water quality of all streams, wetlands, and lakes/ponds
 - **Drainage Plan** provisions for large projects works to reduce sedimentation, erosion & pollution and helps to ensure measures are taken to protect existing water quality.



Explore Smithfield Townships New Educational Kiosks at Minisink Park!

CLEAN WATER is up to you

Support land protection programs where you live. *Apoye los programas de protección de la tierra donde vive.*



The floodplain, where water comes and goes

These fields flood all the time — both here and across the railroad tracks. And that's fine!

The Broadhead and Cherry creeks often overflow and flood these fields and forests. When the creeks subside, the floodwater naturally seeps into the soil, leaving rich sediment behind. The fields dry out, naturally.

Houses, strip malls or a park-and-ride would be a mess in the floodplain! Instead of fighting nature, Smithfield Township protects this land from development so these floodable soccer fields can work with nature.

Protected land keeps drinking water safe, provides healthy recreation — and lifts the spirit.


Normal conditions  **Flood conditions** 

Old river channel and floodplain sediments

Los arroyos Broadhead y Cherry a menudo se desbordan e inundan estos campos y bosques. Cuando los arroyos bajan, el agua de la inundación se filtra naturalmente en el suelo dejando un rico sedimento atrás. Los campos se secan, naturalmente.

¡Ubicar casas, centros comerciales o un parque de diversiones en la llanura aluvial resultaría destruido! En lugar de luchar contra la naturaleza, Smithfield Township protege la tierra ante el desarrollo de urbanizaciones para que estos campos de fútbol inundables y la naturaleza vayan de la mano.

La tierra protegida mantiene el agua potable segura, brinda recreación saludable y levanta el espíritu.



Flood photos courtesy Robert Lowmeyer, Smithfield Township paper mill

Smithfield Watershed Association **ONE PERCENT FOR NATURE** **WILLIAM PENN FOUNDATION** **Smithfield Township** **Rotary** **Club of the Stroubsburgs**

Our creeks and rivers serve people, plants, and every living thing. Nuestros arroyos y ríos nos benefician a las personas, a las plantas y a todos los seres vivos.

CLEAN WATER is up to you

If you must cut down trees, replace them with native trees. *Si tiene que talar árboles, reemplácelos con árboles nativos.*

Trees: Our best way to keep water clean — and Earth safe for humans

Trees capture and store carbon dioxide, one of the greenhouse gases that disrupt Earth's climate

Los árboles: nuestra mejor manera de mantener el agua limpia y la tierra segura para los humanos

Los árboles capturan y almacenan CO₂, uno de los gases de efecto invernadero que alteran el clima del planeta.

Los árboles absorben dióxido de carbono del aire, atrapan el carbono y lo almacenan en la madera y en la tierra. ¡Los árboles pueden eliminar el 30 por ciento del carbono que los humanos arrojan al aire!

Por lo tanto, mantener los bosques a salvo elimina el CO₂ del aire, cuesta menos que otros métodos y brinda a todos los seres vivos un agua más limpia y un aire más puro.

Los árboles incluso ayudan a reducir las inundaciones: durante las fuertes lluvias, los árboles absorben gran parte del agua y a su debido tiempo la van devolviendo a la tierra y a la atmósfera.



Trees even help reduce flooding — during heavy rains, trees absorb much of the water, then release it back into the earth and atmosphere over time, rather than all at once.

Appreciate your trees.

Smithfield Watershed Association **ONE PERCENT FOR NATURE** **WILLIAM PENN FOUNDATION** **Smithfield Township** **Rotary** **Club of the Stroubsburgs**

The Delaware River provides drinking water to 5% of Americans. El río Delaware proporciona agua potable a 16 millones de estadounidenses.

Additional Resources:

- Homeowner's Watershed Friendly Certification (Penn State Extension)

<https://watershedfriendlypa.org/>

- Homeowner's Stormwater Handbook (Pennsylvania Environmental Council, PEC)

https://pecpa.org/wp-content/uploads/2022/07/Homeowners-Stormwater-Handbook-_Smart-Stormwater-Management.pdf

- Guide for Larger Property Management (PEC)

https://pecpa.org/wp-content/uploads/2022/07/green_guide-for-property-management.pdf