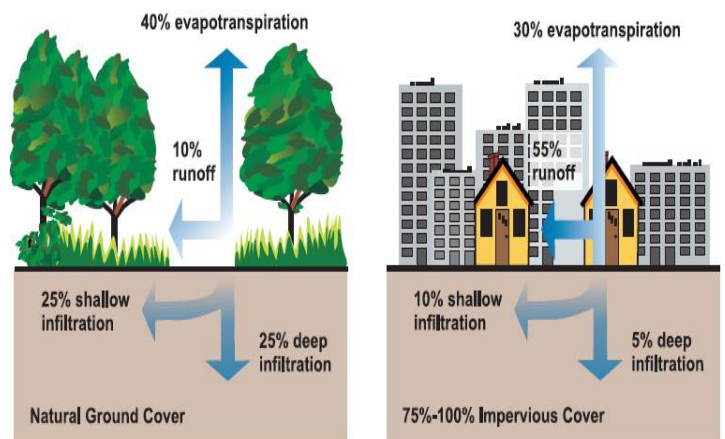


## DAUPHIN COUNTY MS4 PROGRAM IMPACT OF STORMWATER RUNOFF

When rain hits the surface of the earth it will either infiltrate (soak into the earth) or runoff (flow over land until it reaches a stream or sewer). Under natural conditions runoff is minimal. When land is developed, runoff can increase significantly. The changes are shown in the graphic to the right. Note that not only is runoff increased, but groundwater recharge is decreased. The increased volume of runoff negatively affects streams in two different ways.

1. Increased volumes of runoff erode stream beds and banks causing harmful sediment deposits, increased flooding and damage to infrastructure.

2. Stormwater running over surfaces washes a wide range of pollutants into streams. These pollutants enter streams either directly or through storm sewer systems that discharge to streams. The Dauphin County MS4 program has been developed primarily to address this second effect of stormwater runoff.



### RUNOFF CARRIES POLLUTANTS

Anything that ends up on the surface of the earth can end up in a stream. This includes both pervious and impervious surfaces. Pervious surfaces are natural surfaces such as lawns and fields that allow water to infiltrate the soil. Impervious surfaces are surfaces such as parking lots, sidewalks, streets and roofs that do not allow water to enter the soil.

As runoff washes over surfaces it carries pollutants with it. Runoff carries these pollutants directly to streams or to storm sewers which discharge to streams.

Typical pollutants include:

-pesticides	-herbicides	-fertilizers
-detergents	-chemicals	-heavy metals
-auto fluids	-pet waste	-sediment



### EFFECTS OF POLLUTANTS

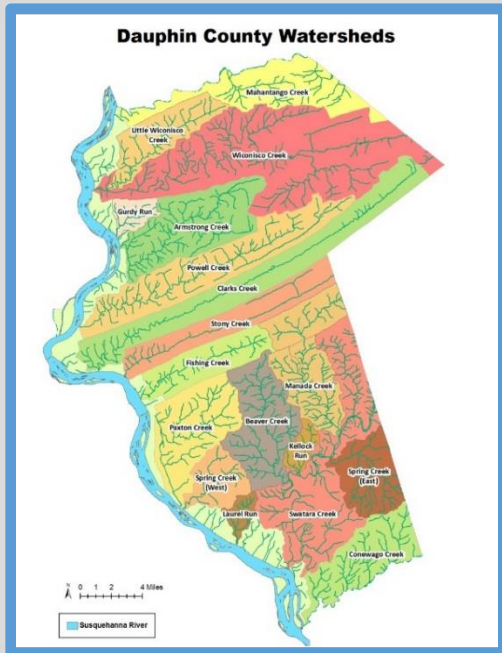
Toxic substances that enter streams have a negative impact on the stream in several ways. These substances:

- can harm aquatic life
- make stream unusable for recreation, such as swimming, fishing and boating
- increase costs for water treatment

Sediment, by volume, is the largest source of pollution in Pennsylvania. Sediment carries other pollutants, such as phosphorous, that attach to the sediment particles. Sediment has a negative impact on streams. Not only does sediment change the stream physically, it also adversely affects the aquatic life in a stream.

Nitrogen and Phosphorous, present in fertilizers, can increase algae growth. When the algae dies, decomposition uses up the oxygen that other aquatic life, such as fish, rely on.

## WATERSHEDS



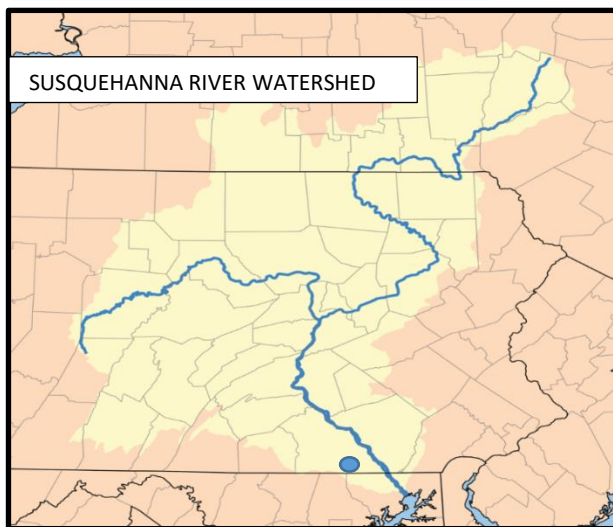
A watershed is the land surface area that drains to a specific point or body of water.

-Everybody Lives in a Watershed

-Dauphin County facilities regulated under the MS4 program discharge to one of five watersheds:

- Paxton Creek
- Spring Creek
- Susquehanna River
- Fishing Creek
- Manada Creek

The map to the left shows the major watersheds in Dauphin County. The bottom left map illustrates that Dauphin County (Blue Dot) is part of the Susquehanna River watershed, shown in yellow. The bottom right map illustrates that the Susquehanna River is a part of the Chesapeake Bay watershed, shown in green. Pollutants that enter a local watershed have an effect on watersheds to which they discharge.



## YOUR ROLE

As a staff member at a regulated facility, you should be aware of the link between stormwater runoff and the quality of the streams to which the runoff discharges. Follow these recommendations to keep Dauphin County streams clean:

- 💧 Be aware of your workplace. Look for spills or other pollutants in parking lots, driveways and sidewalks. Report these to your maintenance staff or county maintenance staff.
- 💧 Always be careful with chemicals and other substances. Use them properly.
- 💧 Never dispose of any substance in a storm drain or on the ground.
- 💧 Know what substances are stored at your workplace and where spill kits or other clean up materials are located
- 💧 For more information visit the DCCD website at: <http://www.dauphincd.org/swm/swmgmt.html>