

STORM DRAINS & THE AQUIFER



190 Flooding

WHAT IS STORMWATER?

Rain and snowmelt are important for healthy wildlife habitat, recreation, and replenishing groundwater supplies in the Spokane Valley - Rathdrum Prairie (SVRP) aquifer.

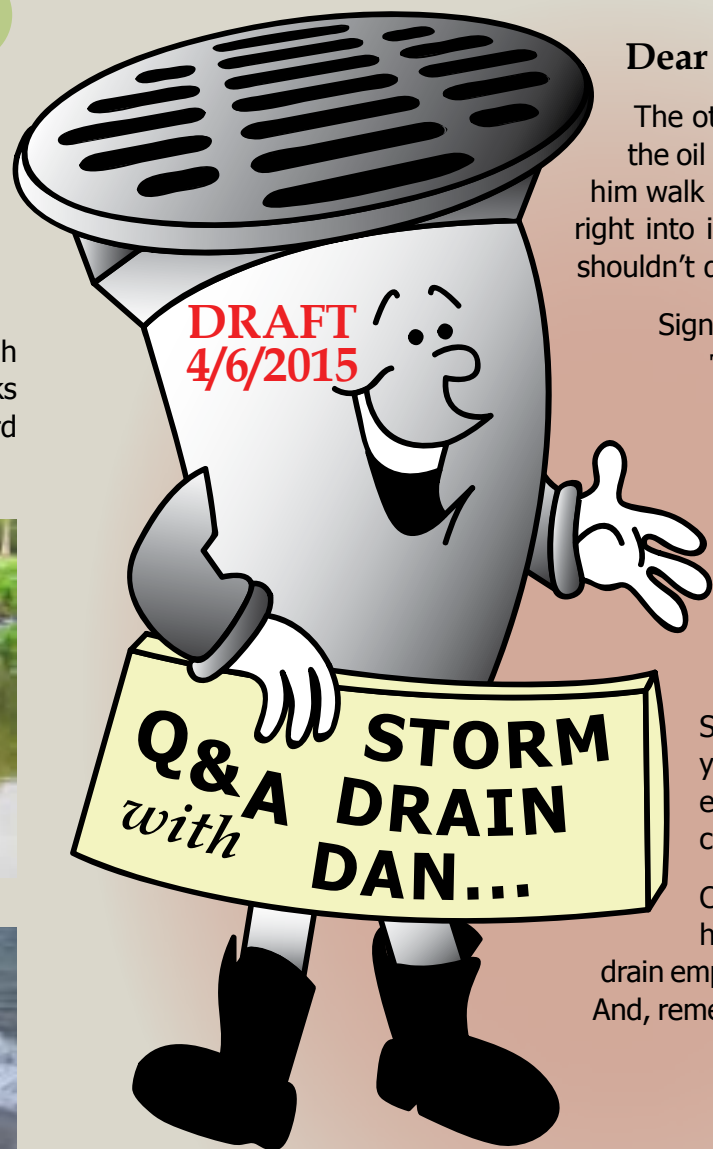
However, when we replace the natural landscape with rooftops, parking lots, and streets, the water no longer soaks naturally into the ground. Instead, it flows across these hard surfaces as stormwater runoff.



Eroded Streambank

It's important for local governments and businesses to manage runoff as quickly as possible to prevent flooding, erosion, and water pollution. In our region, storm drains are the most commonly used method to handle stormwater runoff, as they can easily be placed in the curb and gutter during road and parking lot construction.

Storm drains can pipe runoff to a variety of places. Check out the photos below to learn about the many different places storm drains lead, including to the SVRP aquifer!



Dear Storm Drain Dan,

The other day I saw my neighbor changing the oil in his car on his driveway. Then, I saw him walk over to a storm drain and pour the oil right into it! I ran over to tell him he probably shouldn't do that but couldn't explain why.

Signed,

To Dump, or Not To Dump?

Dear Not To Dump,

We can't tell where the water from a storm drain goes just by looking at it, but it either empties to a nearby waterbody or directly into the ground.

So, there's a good possibility that your neighbor's motor oil could eventually reach the SVRP Aquifer, and contaminate our drinking water source.

Call your local Stormwater Utility hotline to find out where your storm drain empties, or to report any problems with it. And, remember, only rain down the storm drain!

Sincerely,
Storm Drain Dan

Did you know?

Stormwater facilities are designed to help control flooding...

...They are not disposal systems for handling waste or trash.

PLEASE DON'T DUMP ANYTHING HERE!



Pollution in Stormwater

Water will carry a bit of everything it touches. Stormwater runoff becomes a really big problem for our rivers, lakes, and aquifer when pollutants from our everyday activities like lawn care, car maintenance, and dog walking are left on the ground for stormwater to wash away.

Other things left in the street can clog storm drains and cause the flooding that the storm drain was meant to prevent.



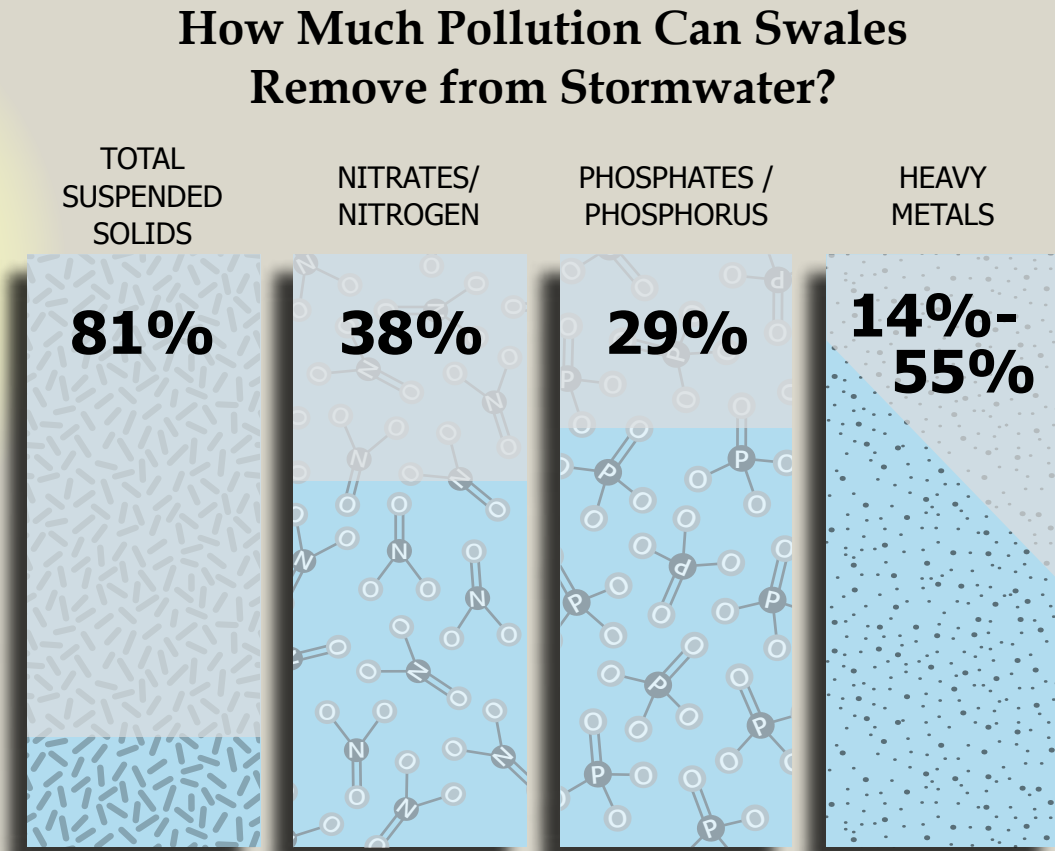
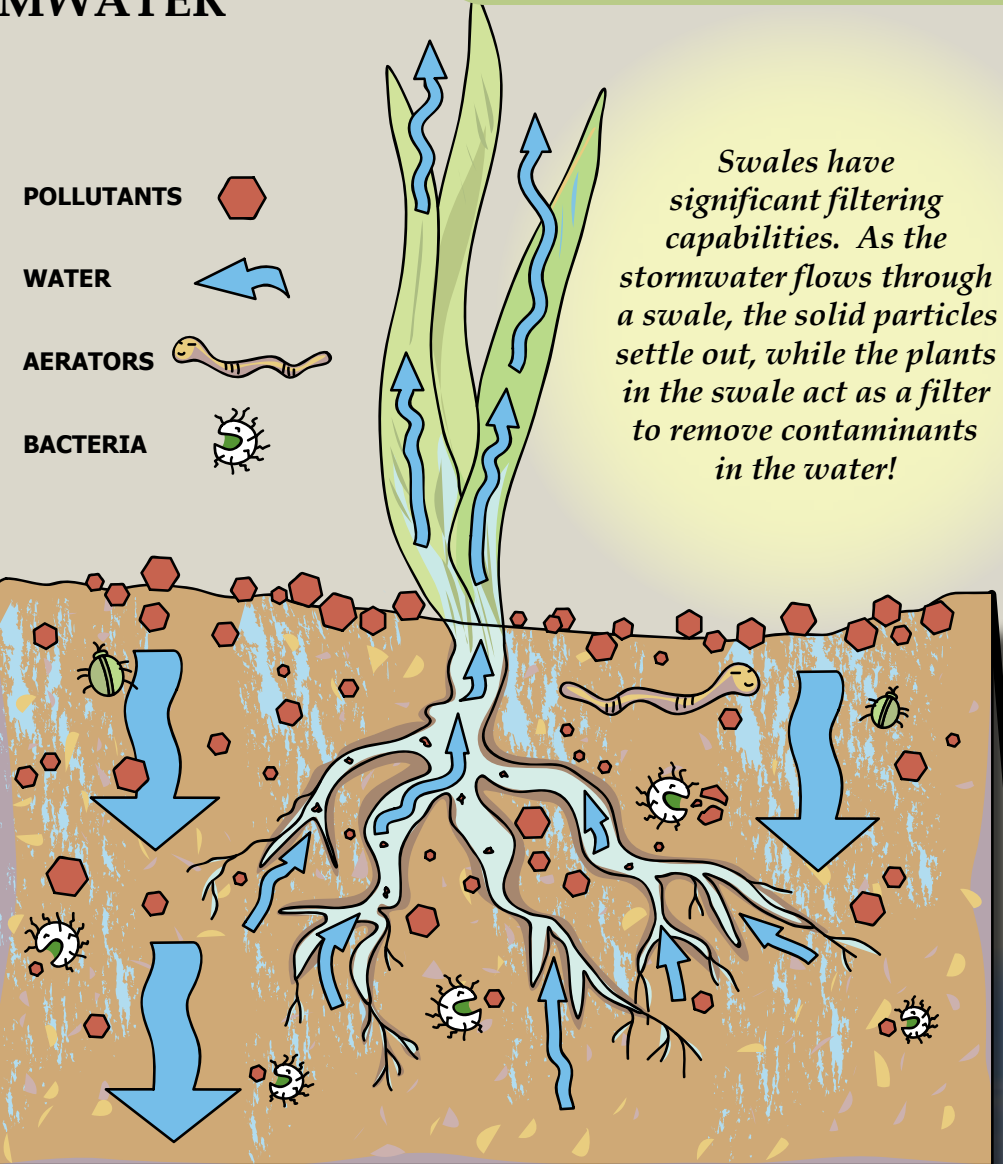
STORMWATER SWALES & THE AQUIFER

SWALES: THE NATURAL WAY TO CAPTURE STORMWATER

When it rains, the water runs over pavement and other hard surfaces, picking up pollutants along the way. Much of this polluted stormwater runoff historically flowed only to storm drains, which ultimately empties into rivers, lakes, or infiltrated to the SVRP aquifer.

In recent years, local governments have been turning to swales rather than storm drains and drywells to manage runoff. In fact, swales are now the preferred method to handle stormwater runoff!

Swales not only provide for immediate collection of stormwater to reduce flooding, but the ponding of rainfall and snowmelt in the swale allows the water to naturally soak into the ground.



Source: EPA NPDES Menu of BMPs - Grassed Swales, 1997

DRAFT
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SWALE MAINTENANCE TIPS FOR HOMEOWNERS

A properly maintained swale can help to keep our aquifer clean. The following list will assist homeowners by ensuring their swale can manage runoff efficiently:

- Mow grassed swales to promote healthy growth.
- Don't replace the grass or plants with rocks.
- Minimize the use of lawn and/or garden chemicals.
- Avoid overwatering; water should pond in the swale only when it rains.
- Remove sediment, litter, branches, leaves, and other debris that accumulates at the inlets so that runoff can flow into the swale.

- Dig up and replace any dead plants or patches of grass.

LOW-IMPACT DEVELOPMENT: NATURALLY REDUCING STORMWATER RUNOFF

Low-impact development (LID) preserves and recreates natural landscape features, minimizing hard surfaces and their effects to create functional and appealing site drainage that treats stormwater as a resource rather than a waste product. LID techniques can include bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and porous pavement.

Porous pavement prevents stormwater runoff and allows any rain or snowmelt to soak through the pavement itself and into the soil below. Rain barrels store the rain from rooftops to use for watering lawns or other plants. Vegetated rooftops can reduce stormwater runoff and act as insulation. Rain gardens and bioretention facilities function like swales and are planted with native and ornamental grasses, shrubs, and trees to filter stormwater. Rain gardens can easily be installed in your front yard to reduce stormwater runoff. Bioretention facilities are engineered for water quality and flow control.

LID over the SVRP Aquifer

You can spot LID facilities over the SVRP aquifer in many places, including the Panhandle Health District in Hayden, Coeur d'Alene High School, Broadway Avenue near Maple in Spokane, and Country Homes Boulevard in Spokane County. You can even see rain barrels in residential yards!

THE FOUR IMPORTANT FUNCTIONS OF A SWALE

Adsorption: The pollutants in water attach to the surface of soil particles, where roots and bacteria can use them, or where they just remain indefinitely.

Storage: Roots, insects, and worms increase the space between soil particles, making more room for stormwater storage.

Plant Uptake: Water, nitrogen, phosphorus, and other trace elements are used for plant growth.

Recharge: The excess stormwater (the water not used by the plants) recharges the groundwater supplies in the aquifer via infiltration.

