

Homeowner Stormwater FAQ

- **What is an impermeable surface?**
 - A surface that won't allow water to soak into the ground. Examples are concrete & asphalt driveways, sidewalks, patios, roofs, and highly compacted soils.
- **Water has always flowed out of my faucets, why should I be concerned about water?**
 - There is a finite amount of water on the planet, of which only about 1% is freshwater which is available for human use. The more we contaminate our water supply and not allow water to soak into the ground naturally, the harder it will be to supply ourselves and the environment with enough clean water.
- **Are there regulations that are making people manage their stormwater?**
 - Yes. The Clean Water Act requires communities of 100,000+ and 10,000+ to implement stormwater management plans that aim to limit stormwater pollution. Communities with a combined sewer system (CSS) are also required to manage their systems to limit the combined sewer overflow (CSO) of stormwater and sewage from overflowing into nearby waterways.
- **How much does my property contribute to stormwater runoff?**
 - For every 1,000 sf of impermeable surface on your property, every 1" of rain generates approximately 626 gallons of water. Lawn areas will commonly generate between 45-90% of that, depending on underlying conditions of the lawn. Compare that to the size of a common rain barrel, 55 gallons!
- **Is stormwater runoff really that dirty?**
 - YES. As stormwater flows over the surface of your property, sediments, animal droppings, tire residue, brake dust, air pollution fallout, deicing compounds, fertilizers, pesticides, vegetation, trash, heavy metals, and many more pollutants are picked up and carried to the nearest gutter.
- **Is the problem of dirty water the only issue?**
 - NO. The volume and timing of stormwater runoff is also a major issue. When it rains and hits impermeable surfaces, it flows toward the gutter, gaining in volume, speed, and temperature. In the sewer, it continues to pick up speed and volume, to the point that once it discharges to the creek or river, it erodes the sides and bottom of the waterway. Most streams and rivers are unable to handle this huge influx of water volume and speed, and eventually lead to steep, almost vertical, sides that can encroach on adjacent property. The higher temperature of stormwater also can inhibit animals and microorganisms who depend on these creeks and rivers
- **Where does my stormwater go when it rains? (What type of sewer system does my community's stormwater flow through?)**
 - There are 2 main types of sewer systems in the USA that manage stormwater. Municipal Separate Storm Sewer System (MS4) is where stormwater flows in one pipe and the sewage from homes and businesses flow in a separate pipe. Combined Sewer Systems (CSS) is where stormwater and sewage flow together in the same pipe.
- **The water that goes down the gutter in the street is treated, isn't it?**

- For those with separated sewers, NO. Most communities in Nebraska have separate sewers. The sewage is treated at a treatment facility; stormwater is directly discharged into the nearest stream, creek, or waterway with whatever was picked up along the way.
- **Are sewers and storm drains the same thing?**
 - No. Usually they are two completely separate systems. A sewer system (sanitary sewer or wastewater sewage system) conveys household, commercial and industrial wastewater through an underground sewer pipe system to a wastewater treatment facility. Wastewater in this system includes water and waste from toilets, washing machines, car washes, and kitchen sinks. This water is extensively treated before it is discharged to a stream.
 - The storm drain system on the other hand, discharges without treatment directly into streams, infiltrates into the ground, or other body of surface water.
- **Is all the water in a combined sewer system treated?**
 - NO. When it is dry, the treatment facility can handle the sewage, but when it rains, sometimes as little as 0.25", it can overwhelm the facility. When this happens, the sewage and stormwater flow bypasses the treatment facility and discharges, untreated, into a nearby stream or river. This is called a Combined Sewer Overflow (CSO).
- **As a homeowner, what can I do to help with stormwater issues?**
 - The best thing you can do as a homeowner is to manage the stormwater runoff that your property generates on your property. This can be accomplished by installing a rain garden, rain harvesting system, permeable pavements, green roof, disconnecting downspouts that discharge onto impermeable surfaces, or creating a landscape that utilizes native or adapted plants that need little additional water to what naturally falls. Applying proper amounts of fertilizer when needed and sweeping the fertilizer off of sidewalks and driveways will help to limit those chemicals running off your property. Water your lawn, as needed, during the early morning hours when winds and temperatures are low. If you have an in-ground sprinkler system, look into using a rain sensor, solar sensor, or a smart controller that will help you to apply water only when it is needed.
- **What is a rain garden?**
 - A rain garden is a relatively shallow depression designed to collect runoff, maximize infiltration and convey excess water slowly to the nearest outflow or channel. They are called gardens because, in addition to their intended storm water function, they should be attractive amenities that can complement the landscape of your home and the community. (Link to rain garden page)
- **What is a green roof?**
 - A green roof is a roof assembly system that has planting medium and plants above the waterproof layer. This protects the waterproofing of the structure below and extending its life by 2-3 times, a typical roof will last approximately 20 years. This is accomplished by the green roof limiting the extreme ranges of temperatures on a roof and by hiding the waterproofing from UV light, which will degrade it. Greens roofs also clean and manage stormwater runoff, provide insulation properties to the building, energy savings, sound insulation, improved

aesthetics, biodiversity, potential for food production, and provide an expanded living area amenity. (Link to Green roof page)

- **What is rain harvesting?**
 - Rain harvesting is the capture and reuse of rain. Technically, a rain garden can be considered a rain harvesting system, but we will use this term as meaning the use of a container to capture rain so that we can use it somewhere, such as irrigation or a water feature. Rain barrels are simple rain harvesting systems, where you place a barrel in-line with a downspout, it fills up, and a spigot is at the bottom of the barrel where it can flow out and be used. Large cisterns can also be used above or below ground, and with a pump and/or a filtering system, can be used as landscape irrigation or used indoors for non-potable uses. (Link to Rain harvesting page)
- **What is a permeable pavement?**
 - Permeable pavements are hard surfaces, like your driveway or patio, which allow rain to flow through them instead of running off. (Link to permeable pavement page)
- **I've been told to 'disconnect my downspouts' to help with runoff, what is this and how do I do it?**
 - When downspouts are piped directly to the street, driveway, or storm sewer they are connected with the sewer system. Modifying those downspouts to flow over grass or vegetated areas, flow into rain gardens, or into a cistern for harvesting is disconnecting it from the sewer system.
- **Will things like rain gardens and permeable pavements work during our winters?**
 - Yes. Rain gardens may not infiltrate as much water, but with the slow rate of snow melt and pores still open within the soil, it is still functioning during the winter. Permeable pavements provide some of their greatest benefits during the winter. The permeable pavement system itself acts like an insulating blanket and stays slightly warmer during the winter. With the void space within the aggregate below, snow melt and rain are able to freely flow downward during the winter and are provide room to expand and not heave the surface. Puddling, refreezing, multiple applications of sand and salt can all be avoided with permeable pavement in the winter.
- **How much rain can rain gardens, green roofs, etc... handle?**
 - This is determined by the design. These systems can be designed to handle a variety of rain events, but their best performance and costs occur when designed for 1.5" or less.
- **What if we get a big rain and these strategies are overwhelmed?**
 - If designed properly, large rain events have been considered and should not pose a serious threat. Rain gardens always have an inlet and an outlet, this allows the garden to fill up to its capacity and then overflow without backing water up upstream.
- **Why should I be worried about cleaning stormwater runoff for people downstream from me?**
 - Everyone is downstream from someone. If a neighbor piped all of their downspouts to one location that discharge onto your property and created issues, what would be your response?

- **Managing my stormwater sounds expensive, is it?**
 - Depends. Are you building a rain garden or rain harvesting system by itself? Then yes, it can be expensive, but if planned in conjunction with other landscaping projects or a new home build it can actually cost the same or less, in the short and long term.
- **My neighbor dumps all his stormwater runoff onto my property and I'm having problems because of it, what can I do?**
 - First thing is to talk with your neighbor and discuss the issue at hand. If this does not work, then contacting your building code or public works office would be the next step to see what can be done in your community.
- **The last thing I want is more maintenance, are things like rain gardens and permeable pavements high maintenance?**
 - If designed properly, no they are not high maintenance; rather they are low-maintenance and require little inputs. They are not 'no-maintenance' because landscapes in the urban environment all require some level of maintenance. In nature, maintenance is called 'ecosystem services' and it is the natural processes that provide waste management and stormwater management. Without those ecosystem services, higher standards for aesthetics, and public safety maintenance we must provide those services.
- **How much rain can a rain barrel collect?**
 - In a one inch rain event the water off 10 sq ft will produce roughly 60 gallons of water. This means a 55 gallon rain barrel can collect the water from 10 sq ft of roof – the rest of it will still runoff.
- **Are sewers and storm drains the same thing?**
 - No. Usually they are two completely separate systems. The sewer system, also known as the sanitary sewer or wastewater sewage system, conveys household, commercial and industrial wastewater through a separate plumbing system into an underground sewer pipe system. Wastewater in the sanitary sewer system is from sources such as water and waste from sinks, toilets, washers, and car washes, to name but a few. Discharges to the sanitary sewer system receive extensive treatment and filtration at a wastewater treatment plant prior to being discharged to a stream. The storm drain system on the other hand, discharges without treatment directly into streams, infiltrates into the ground, or other body of surface water.
- **What kinds of pollutants are found in the storm drain system?**
 - This is not a complete list but stormwater pollutants include sediments, animal droppings, tire residue, antifreeze, brake dust, oil, gas, air pollution fallout, deicing compounds, fertilizers, pesticides, vegetation, trash, heavy metals, and many more as it flows over surfaces.
- **I see people dumping things into storm drains all the time. What can I do?**
 - Remember: only rain goes down the drain. One quart of oil can contaminate up to a quarter million gallons of drinking water or cause an oil slick almost 2 acres in size. To report illegal dumping, contact your County's Environmental Services department.