Homeowner Water Guide
Stormwater Management System

Help protect the water quality of our rivers with these stormwater tips:

- Point downspouts toward lawns and gardens or use a rain barrel.
- Limit the use of fertilizers and pesticides.
- Sweep up debris from your garage and driveway instead of washing it away.
- Wash your vehicle at a car wash instead of your driveway.
- Pick up after your pet at home and elsewhere.
- Never pour anything down the storm drain.

Calgary's original prairie landscape was a natural grassy sponge that was capable of soaking up almost all the rain and snow. Rainfall and snowmelt evaporated back into the air, or soaked into the ground which filtered water through layers of soil and plant roots eventually replenishing groundwater that flows into the Bow and Elbow Rivers.

As the city of Calgary has grown to over **1.2 million people**, encompassing a land area of over 850 square kilometers, **the prairie landscape has been replaced by many hard, impervious surfaces like roads, parking lots and buildings.**

Where rainfall and snow-melt runs off hard surfaces, stormwater reaches waterways more rapidly, in greater volumes and with more pollution which negatively affects the health of our rivers and watershed. If not properly managed, the impacts of stormwater include: localized flooding, river and creek flooding, pollution, and stream erosion. **When managed properly, stormwater can add value to our communities.**

Rain and runoff

Every time it rains or snow melts, our streets, driveways, parking lots and lawns get a bath. Dirt, oil, gasoline, garbage, animal droppings and chemicals such as fertilizers and pesticides are washed from these surfaces into storm drains. This water, called **stormwater**, and the pollutants within it flow for the most part directly into our rivers through outfalls – the concrete drains you see along the river. **Stormwater can affect the health of our streams, rivers and the land surrounding them, as well as the health of the wildlife and fish that rely on them.**

We all have a **shared responsibility** to control both the amount and quality of stormwater released into our rivers.

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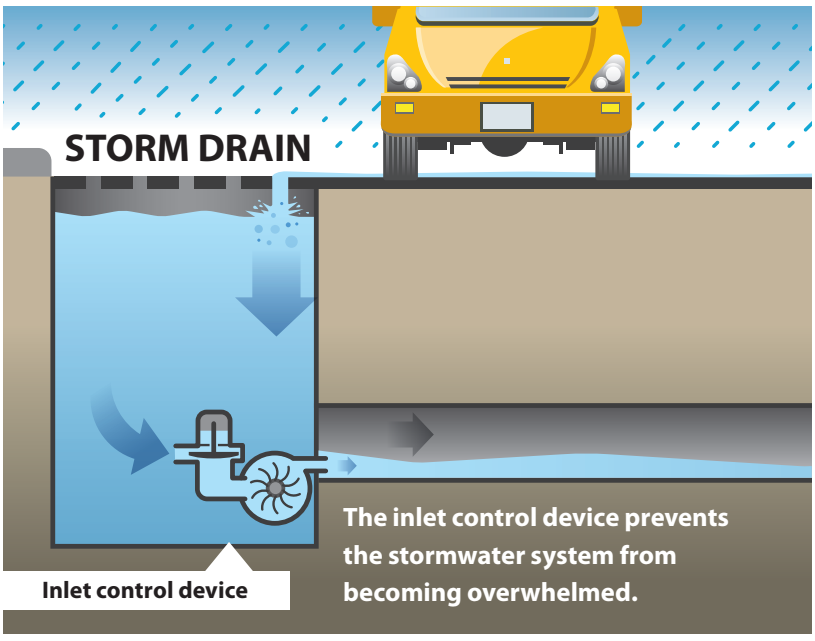
Storm drain in N.W. Calgary

Collection system

Storm drains (or catch basins) are the main way stormwater gets into the underground pipe system. There are about 60,000 storm drains in Calgary which drain water off sidewalks, streets and roads. The metal grates that can be seen at the edge of the road are only a portion of the catch basin structure. Under the sidewalk is a barrel that collects the water. The barrel is attached to a pipe that allows the water to be whisked away, eventually into our rivers.

Sometimes storm drains can become plugged with ice, hail or debris such as leaves and sticks. When this happens water takes longer to drain away. If it's safe and possible to do so, you can help keep your storm drain clear of ice, snow and debris to help keep stormwater flowing or moving.

In some areas, The City purposely installs **inlet control devices** in the storm drains to manage how fast water flows into the pipes from the storm drain. These devices are designed to keep extra water on the road until the stormwater system can accept the extra water. This prevents the system from becoming overwhelmed with stormwater, avoiding water backups into basements or flooding into houses, garages and businesses.



Our storm drain system enters into the Bow and Elbow rivers without going through a treatment plant, so we need to ensure the water draining into it is clean. The City of Calgary is working to reduce pollution entering our rivers from stormwater, as well as manage the amount of water which can result from storms and runoff. You may have seen one of these stormwater facilities in your community:

A **dry pond** is dry over 95 per cent of the time and can have playing fields in it. Dry ponds fill with water very quickly in heavy downpours, and can take as long as 24 hours to drain once the rain stops. Dry ponds are connected to stormwater infrastructure.

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Wet pond

Engineered rain garden

Wetland

A wet pond (which includes storm ponds and constructed wetlands) captures and contains stormwater – for a while. Storm ponds slow down water long enough to settle out some of the sediments and pollutants, helping return cleaner water to our rivers and streams through the stormwater system. They are a critical piece of infrastructure that also help protect downstream communities from flooding. There are 200 storm ponds throughout the city.

Engineered rain gardens, **green roofs** and **permeable pavements** are landscaping and design practices that work with nature to manage stormwater runoff where it falls. They slow water down, spread it out and allow it to soak in.

A **wetland** is a natural area of land that is saturated with water either permanently or seasonally. It contains plants and the water is quite shallow before a storm. A wetland is not directly connected to Calgary's stormwater system.

These practices improve the quality and decrease the volume of stormwater entering our waterways.

The City also works to protect, manage, and restore **riparian areas** – the areas bordering rivers and creeks. Wetlands and healthy riparian areas provide natural filtration systems to help capture, store and filter a wide range of pollutants coming from stormwater.

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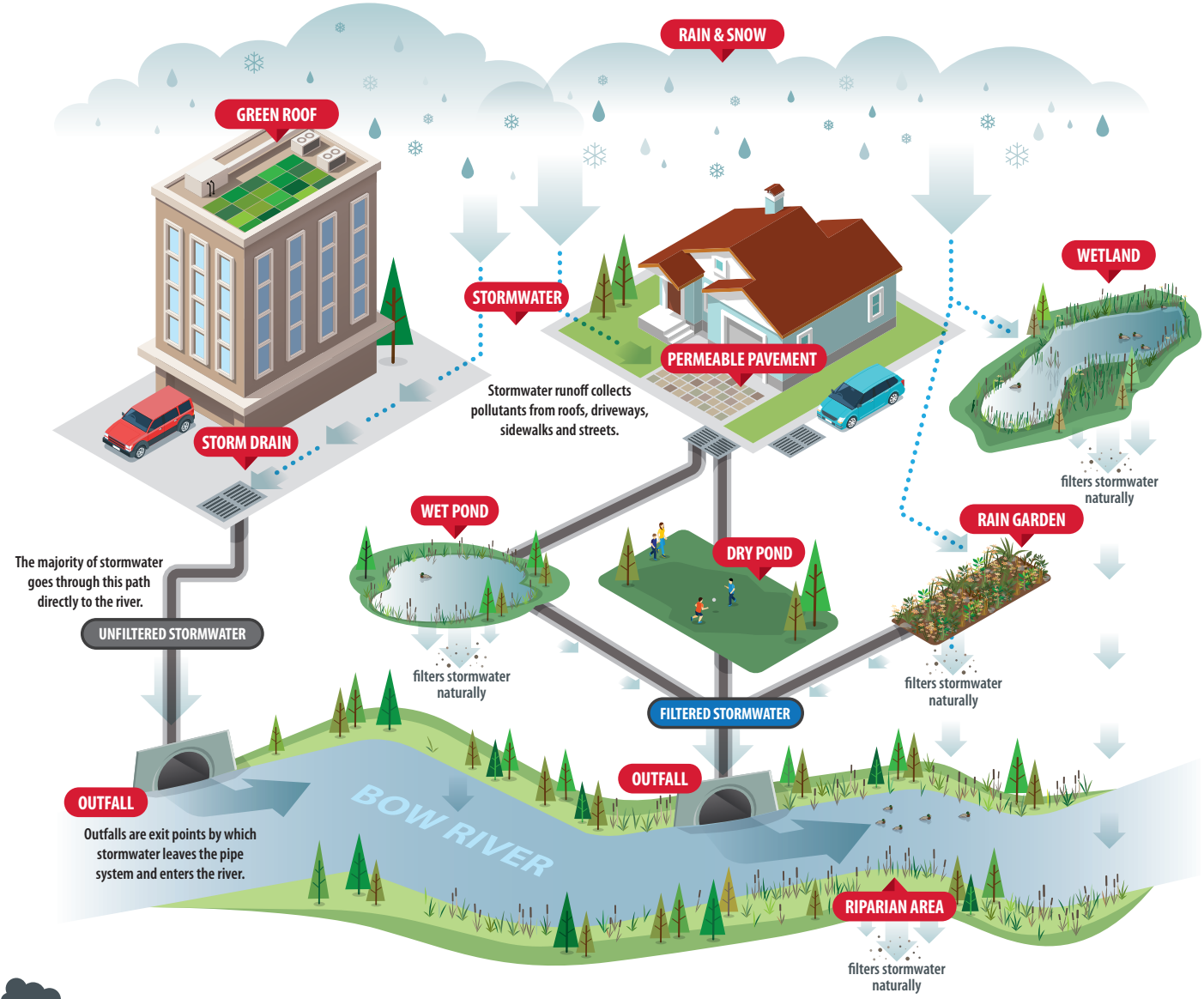
Bow River outfall

No matter where you live in Calgary, stormwater travels from drains and stormwater facilities to our rivers through a series of underground pipes. These pipes start out small and get larger the closer you are to the river. They direct the stormwater to the river by way of gravity.

Outfalls

Outfalls are exit points by which storm water leaves the pipe system and enters the river. There are more than 800 outfalls located across Calgary.

Stormwater Management



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