metrovancouver

A Homeowner's Guide to Stormwater Management

SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Stormwater and your property

Congratulations on your new home

Your property is equipped with special features to help manage rainwater. This guide is designed to help you understand what these features do and how to keep them working well.

The municipality requires that most new homes (single detached, duplex or triplex) include features that manage stormwater to help protect watershed health.

What is stormwater?

Stormwater is the water from rain or melting snow that is not absorbed into the ground. In nature, trees and soil help absorb rain slowly. This helps break down pollutants and refill groundwater, which keeps waterways healthy.

Urban areas are full of hard surfaces like roads, driveways and buildings, which don't absorb rain water. Instead, this water goes into storm sewers (the grated drains found on streets), which empty directly into rivers, creeks or the ocean. Managing stormwater is key to preserving the health of urban streams and rivers.

Protecting our local rivers and streams

Stormwater may look clean, but as it travels to storm sewers it picks up pollution along the way. Stormwater can contain motor oil, gasoline, dog poo, garbage, fertilizer and other contaminants. These materials go directly into the nearest body of water, where they are harmful to plants and wildlife. Heavy rains can also put high volumes of stormwater into streams and creeks, which can cause erosion and stir up sediment, making it hard for fish to breathe.

Managing stormwater is critical for protecting urban streams

Stormwater features on your property

The features on your property are designed to allow rainwater to absorb into the ground slowly and filter pollutants. These features include:

Not all features are used on all properties. The features used for your property may vary based on the amount of paved area, slope, and whether water (runoff) from your home leads to a stream.

What happens in heavy rain?

Where applicable, the stormwater features on your property have been connected to your municipality's existing stormwater sewer system. If there is too much rain for the features on your property to handle, any extra water will flow into the municipality's stormwater sewer system.

Maintenance

Specific maintenance requirements are listed in this guide under each feature. Your lot has been designed to ensure that all of its stormwater features work well together. The most important maintenance requirement is to not remove or significantly alter an existing feature.

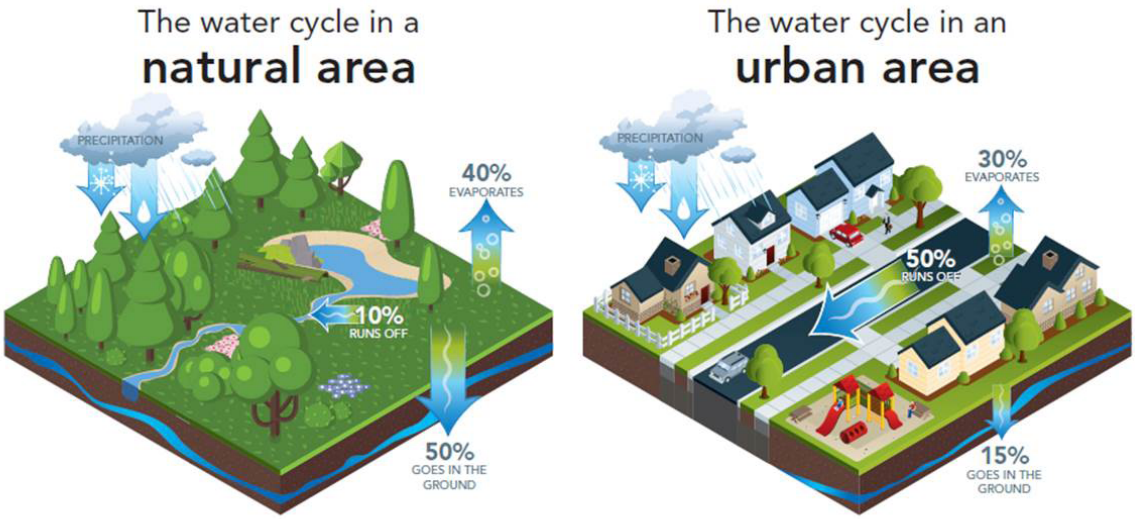
The stormwater features on your property are required as part of

Please choose...

[stormwater bylaw name]

Check with the municipality before making any major adjustments, such as paving, removing features or changing slopes on your property.

For more information



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Sump

What is it?

A sump is a pit or other hollow space in which water collects. Every house has a sump that collects rainwater and helps with drainage, keeping the house dry. In many houses, the sump drains to the municipal stormwater system. Water entering that system flows into creeks, streams or the ocean.

Benefits

Your sump keeps your house dry. It is also designed to collect debris or dirt that could clog your pipes.

Tip: It will be easiest to remove debris when it hasn't rained for a few days.

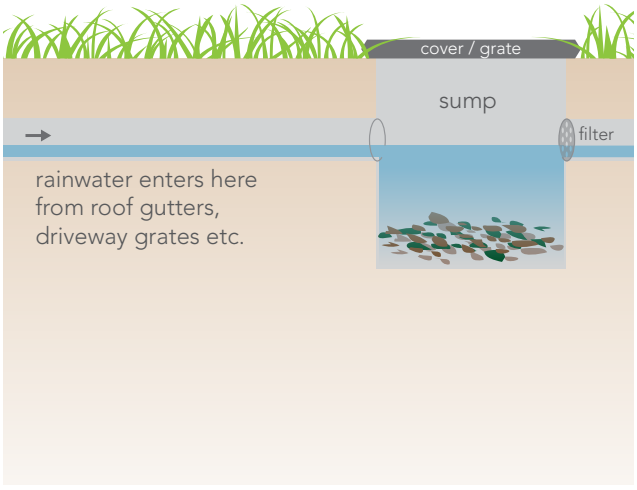
Maintenance

If you know the make and model of your sump, check the maintenance recommendations by the manufacturer.

Generally recommended maintenance:

- Your sump will have a small container that helps to filter out debris, making cleaning easy. It may be under a grate or a lid.
- Once per year, you should open the grate (or lid) and look for debris, such as leaves, wood, rocks or dirt. Using gloves for protection, remove as much of the debris as you can.
- If you have a landscaper, you can also ask them if they can clean it for you.
- Some sumps have pumps to move water away from the house. You will need to maintain the pump in accordance with the manufacturer's instructions.

Sump lid



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Absorbent Landscaping

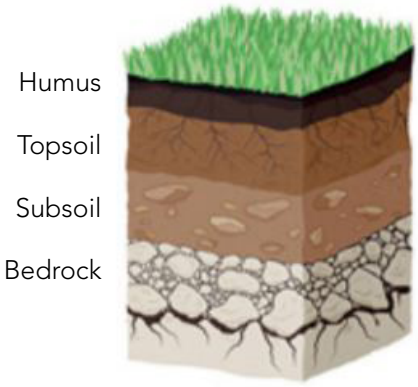
What is it?

Rain-friendly landscaping (absorbent landscaping) includes good quality soil and plants. Soil, trees and shrubs all play a role by absorbing rainfall, storing it, and filtering pollutants from stormwater.

Benefits

By allowing rainwater to be released slowly, deep topsoil and plants help prevent large amounts of water from flowing too quickly into local waterways via storm sewers. If water from driveways or rooftops are released onto planted areas, the soil and plants work together to filter out pollutants.

Deeper topsoil creates healthier grass and plants, and requires less watering during summer months. Healthy, green landscapes also look good, and help the environment.



Topsoil and planted areas help filter pollutants in rainwater.

Deeper topsoil creates healthier grass and plants

Maintenance and troubleshooting

Maintaining your rain-friendly landscape is similar to any other landscaping:

- Water as needed. Once a week is enough for most plants, even in summer months.
- Mow grass as needed.

Tip: you can mow without a bag and leave grass clippings – these will reduce the need for compost or fertilizer.

- Ensure regular spring weeding to avoid weeds going to seed and spreading. A bit more work in the spring can save a lot more work later.
- In planting beds, aerate or till surface 25 mm deep between plants each spring to reduce crusting and encourage healthier plants.
- The highest quality topsoil tends to feel spongy when wet. This is normal.

The most important thing is not to pave over your yard or garden. Adding new hard surfaces (concrete, asphalt, stone or brick) creates more stormwater.

More information

You can visit **www.growgreenguide.ca** for specific information on creating and maintaining a sustainable garden or lawn space. Qualified landscapers can also help you to maintain a healthy landscape.

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Disconnected Downspout

What is it?

Downspouts, also called "roof leaders", are pipes that carry water down from your roof. Most downspouts are connected into the municipality's storm sewer system, where the water is released into creeks, streams or the ocean.

The downspouts on your home may be disconnected from the municipality's system. Depending on the design, they may release water directly onto your grass, or they may run underground and connect to a **rain garden** or **rockpit**.

Benefits

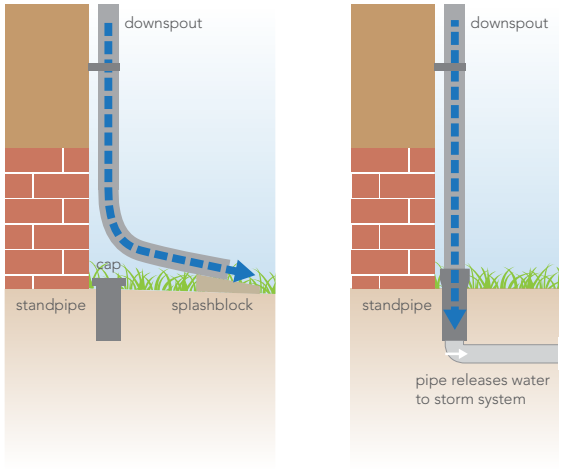
An amazing amount of water comes flowing off of your roof. In the lower mainland, a typical house roof area of 100 m2 (or 1,000 square feet) receives around 150,000 litres of rain. Instead of entering the ground as it would have before the house was built, all that water goes down the drain.

Disconnected downspouts release water so that it can be used by your plants. This can help reduce the amount of water you use in the summer. Disconnected downspouts also release water gradually into the ground, slowly refilling creeks and streams, which is important for keeping a consistent water level and protecting stream health, fish and other wildlife. In very heavy rainfall, extra water is captured by your property's drainage system, where it can enter the municipality's storm system. This helps keep your house protected and dry.

Maintenance

- The maintenance is the same as with a typical house – consider cleaning your gutters, or hiring someone to do it, in the fall or winter each year.

- If you see problems (such as overflowing gutters) they may need immediate cleaning.



Disconnected downspout flowing directly onto the ground

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Rain-Friendly Driveways & Paving

What is it?

Driveways and walkways tend to have a lot of hard surface, turning rain into **stormwater**. Rain-friendly driveways and paving is designed to get rainwater into the ground instead of into the municipality's storm sewer.

Your rain-friendly driveway may be gently sloped, allowing water to make its way onto grass or other vegetation along the side, instead of running onto the street. You may have a "Hollywood Driveway" with narrow strips of concrete for your car's wheels, leaving a vegetated strip in the middle (see figure 1). You might also have special asphalt, concrete, gravel or paving stones, all designed to allow water through and into the ground (see figure 2).

Benefits

For paved areas, using special asphalt, concrete or paving stones allows water into the ground. Plants with deeper roots, such as trees or large shrubs, will be able to soak up some of the water released into the ground. This keeps your plants healthy and can help reduce the amount of water you use in the summer.

Rain-friendly driveways and paving also release water gradually into the ground, slowly refilling creeks and streams, which is important for keeping a consistent water level and protecting stream health, fish and other wildlife. In very heavy rainfall, extra water is captured by your property's drainage system, where it can enter the municipality's storm system. This helps keep your house protected and dry.

Maintenance

- For sloped driveways and "Hollywood Driveways", maintain your **landscaping** as needed.
- For special asphalt, concrete or paving stones, try to keep surfaces free of dirt and leaves. The best way to do this is occasional sweeping of debris off to the side.
- Gravel driveways may need new layers of gravel over time.

FIGURE 1

"Hollywood Driveway" – paved materials only where the wheels go, with a vegetated strip in the middle to allow water to soak in.

FIGURE 2

Permeable Pavers may be widely spaced to allow water into the ground. Some driveways may use concrete strips with holes to allow water through. Some designs allow grass to grow in between the paving, while others use gravel.

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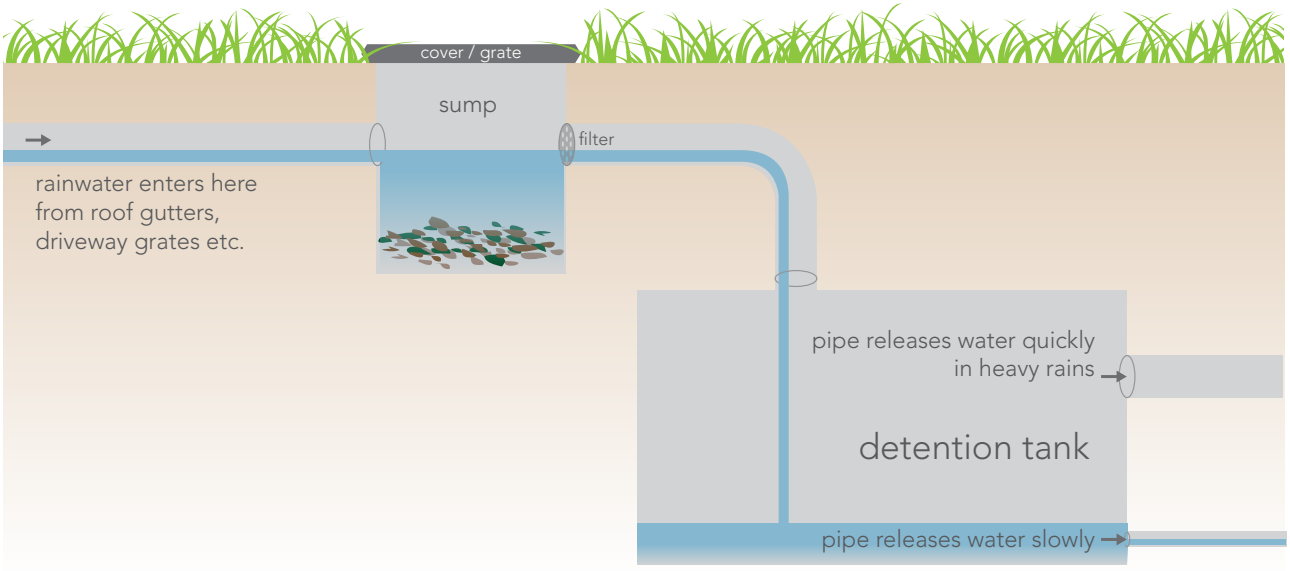
Detention tanks

What is it?

A detention tank is a tank that temporarily stores rainwater collected on your property and releases it slowly. Tanks can be located above or under ground.



Benefits

By allowing rainwater to be released slowly, detention tanks help prevent large amounts of water from flowing too quickly into local waterways via storm sewers. Some tanks also release water into the ground, which helps to filter some of the pollutants in stormwater.

Look for lids or grates to locate your detention tank

Where to find your detention tank

Detention tanks can be located anywhere on your property. If you have an underground detention tank, you will likely see some kind of grate, lid or other cover on your property.

- If you do not have a drawing showing the location of your detention tank, ask your builder.

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Maintenance and troubleshooting

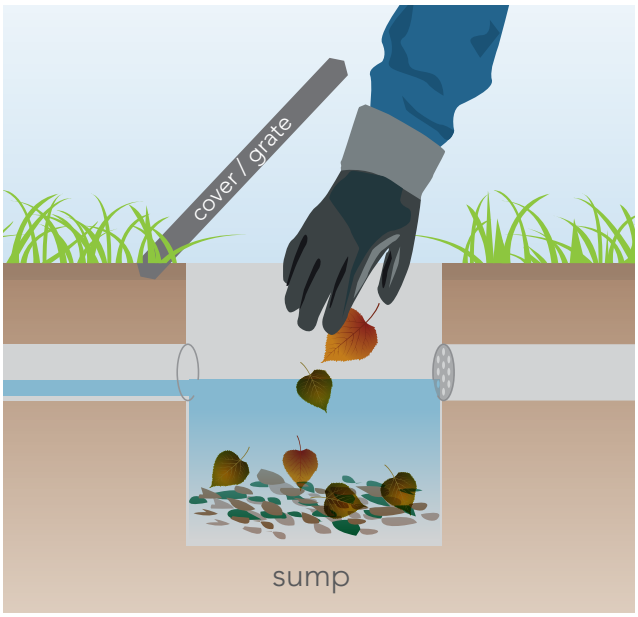
If you know the make and model of your detention tank, check the maintenance recommendations provided by the manufacturer.

Goal: keep drain pipe at bottom of tank from getting clogged.

Generally recommended maintenance:

- Most detention tanks have a small container (sump) that helps to filter out debris, making cleaning easy. It may be under a grate or a lid.
- Once per year, you should open the grate (or lid) and look for debris, such as leaves, wood, rocks or dirt. Using gloves for protection, remove as much of the debris as you can.
- If you have a landscaper, you can also ask them if they can clean it for you.
- Every 2-3 years, open the inspection port. You can also try dipping a wooden broom handle. If the handle comes out wet, you have a possible clog.

Tip: It will be easiest to remove debris when it hasn't rained for a few days.



What happens if the tank gets too full?

Detention tanks are connected to the municipality's stormwater sewer system. When there is more rainwater than the detention tanks can hold, the tanks are designed to channel any extra rainwater into the municipal system.

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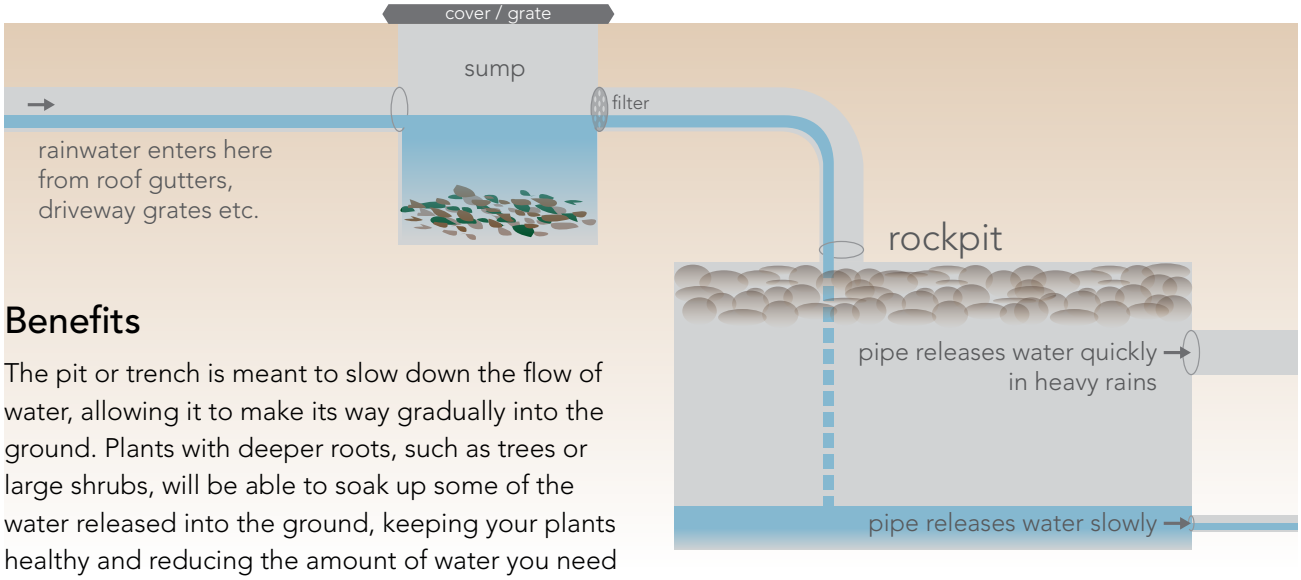
Rockpits & Infiltration Trenches

What is it?

A rockpit, sometimes called an Infiltration Trench or French Drain, is a trench that is generally filled with rocks. The rocks help to keep it from getting filled in when empty of water, or when people walk over top of it. The rocks may be surrounded with a special fabric that allows water in and helps keep dirt out. Some designs include a perforated plastic pipe to move water through the rocks.

Your rockpit may be there to manage water from **disconnected downspouts**. In some cases, the rockpit may be located under a driveway or other paved surface.



Benefits

The pit or trench is meant to slow down the flow of water, allowing it to make its way gradually into the ground. Plants with deeper roots, such as trees or large shrubs, will be able to soak up some of the water released into the ground, keeping your plants healthy and reducing the amount of water you need to use in the summer.

Slowing down the flow or water into the ground also allows for the gradual refilling of creeks and streams, which is important for keeping a consistent water level and protecting stream health, fish and other wildlife. In very heavy rainfall, extra water is captured by your property's drainage system, where it can enter the municipality's storm system. This helps keep your house protected and dry.

Maintenance

- Similar to a detention tank, most rockpits will have a sump. The maintenance instructions will be the same as with your detention tank.

If you know the make and model of your sump, check the maintenance recommendations by the manufacturer.

Generally recommended maintenance:

- Your sump will have a small container that helps to filter out debris, making cleaning easy. It may be under a grate or a lid.
- Once per year, you should open the grate (or lid) and look for debris, such as leaves, wood, rocks or dirt. Using gloves for protection, remove as much of the debris as you can.
- If you have a landscaper, you can also ask them if they can clean it for you.
- Some sumps have pumps to move water away from the house. You will need to maintain the pump in accordance with the manufacturer's instructions.
- It is important to keep the overflow drain from getting clogged:
  - Remove leaves in the fall
  - You may need to clear debris, such as grass clippings or mulch, from the overflow drain
- As with other landscaping, you may need to weed annually or cut grass as needed.

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Rain Gardens

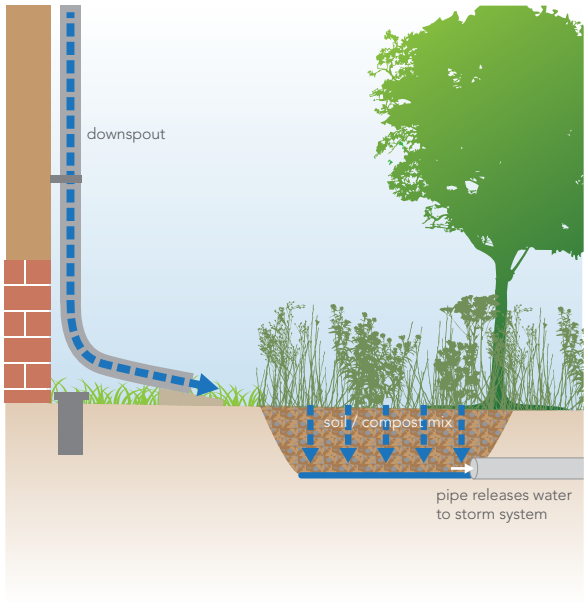
What is it?

Rain gardens are landscape features, usually involving a sunken area where water can pool and make its way slowly into the ground below. In most cases, the rain garden will receive water from disconnected downspouts. Most rain gardens include specially selected plants that can thrive in both wet and dry periods.

Benefits

Rain gardens help to capture and slowly release water. Plants with deeper roots, such as trees or large shrubs, will be able to soak up some of the water released into the ground, keeping your plants healthy and reducing the amount of water you need to use in the summer.

Slowing down the flow or water into the ground allows for the gradual refilling of creeks and streams, which is important for keeping a consistent water level and protecting stream health, fish and other wildlife. In very heavy rainfall, extra water is captured by your property's drainage system, where it can enter the municipality's storm system. This helps keep your house protected and dry.



Maintenance:

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