



### Nature's Filter

Biofilters (also known as bioretention systems or raingardens) use the combination of plants and sand to filter and remove pollutants from stormwater run-off. Here's how they work:

- 1 Polluted stormwater from surrounding properties, footpaths and roads runs into the biofilter via street drainage.
- 2 Biofilters are customised for each site location and may include a gross pollutant trap to collect litter and leaves.
- 3 The stormwater then flows into a sediment basin or trap, which slows the flow of water, allowing coarse sediment to drop out for later removal.
- 4 Water disperses over the surface of the biofilter maintaining the volume of run-off to be treated. Native grasses, shrubs and trees are densely planted and selected on their proven capacity to absorb pollutants.
- 5 Run-off water is filtered as it percolates downwards through almost a metre of loamy sand. Biofilms remove pollutants (e.g. nutrients & heavy metals) through physical, chemical and biological processes, including filtration, plant uptake and microbial activity.
- 6 Slotted drainage pipes collect the treated water and direct it into a collection pit. These pits also act as overflow points during heavy rainfall.
- 7 Cleaner, treated water flows to local creek and estuary.

These biofilters have been installed at key locations across the Shire funded by the Catchments Remediation Plan – a special fund used to improve and protect the health of Hornsby Shire's waterways and catchments.

Leaves, litter, dog poo, cigarette butts, car wash detergent, paint, engine oil, garden run-off fertiliser and pesticides and sediment from building sites all pollute our water ways.  
Please remember: the drain is just for rain!

Labels in diagram: Fine woody debris sand, Coarse sand, Slotted drainage pipes, Slotted collection pipes.

HOW A BIO-FILTRATION BASIN WORKS