

Stormwater Pollution

Dealing with rainwater and stormwater on development sites

Rainwater that falls on your development site will quickly become stormwater. The standard way to deal with stormwater is to direct it to a gutter or a pit, down the pipe and into the drain.

But did you know that rain water picks up pollution along the way to the drain? From the air, off the roof, from paved areas and from the garden? When rainwater becomes stormwater it carries this pollution with it. By the time stormwater reaches the Moonee Ponds Creek and Merri Creek, and then the Yarra River and Port Phillip Bay, it carries a large amount of pollution collected from all over the city. This pollution can damage our water environments.

We can reduce the movement of pollutants into stormwater runoff by being careful about the way we clear ground areas, demolish, build and store materials. This is especially important when land is developed.

But no matter how careful we are, urban areas have a wide range of pollutants floating around the system, and they will find their way into stormwater.

The pollutants that are typically found in stormwater in urban areas and their frequent sources are shown in the following table. These sources are created by urban development and by every day activities.

Water Pollutant	Frequent sources
Litter	Commercial areas, food outlets, larger plant waste
Nutrients	Sewer overflow, sullage, animals, fertilisers
Oxygen depleting substances	Sewer overflow, sullage, animals, grasses, leaf litter
Pathogenic organisms	Sewer overflow, sullage, animals
Sediments	Construction sites, roads, garden areas
Toxic materials including metals and salts	Cars, car parking areas, roads, industry, spills, deposits from the air

Many of these pollutants are too small to be seen and so it is easy to ignore their existence. For example, these photographs show typical pollutant sources. But the pollution may not be visible even though it is washed into the stormwater drain.



Carpark areas are a source of stormwater pollution – eg. litter, oil, sediments



Typical pollutant sources – eg. houses, gardens, driveways

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Pollutants need to be removed from stormwater before it leaves your site or else you will add to the sources of pollution. The main way to do this is by including some form of **Water Sensitive Urban Design (WSUD)** treatment when designing your development project. Most WSUD treatments remove pollutants by creating controlled processes that mimic natural processes to clean the stormwater.

In Victoria, there is an environmental standard for removing or treating pollutants. To achieve the standard, your development needs to use WSUD so that once the development is completed, its stormwater runoff can be cleaned every time it rains. The standard includes the pollutants that are most damaging to creeks, rivers and bays.

Victoria's environmental standard for treating stormwater pollution

Pollutant type	Standard measure/target for treatment
Litter	70% reduction of the typical annual load
Total suspended solids	80% retention of the typical annual urban load
Total phosphorus	45% retention of the typical annual urban load
Total nitrogen	45% retention of the typical annual urban load

Although the environmental standard is written in technical terms, it means that stormwater should be cleaned before entering the stormwater drain or else prevented from running off your site (for example, by holding it in a rain water tank). The standard requires removing 80% of sediments and 45% of the phosphorus and nitrogen in your stormwater runoff. The standard is based on what can be achieved by using proven WSUD treatments. The standard can be achieved in most development projects.

If you are planning a development project, you must aim to achieve the environmental standard by using WSUD in your project design. You have a choice about which WSUD treatments you will use to remove stormwater pollutants. Your choice of WSUD treatments will likely depend on the characteristics of your development proposal. Some WSUD treatments will be familiar to you and some will be new.

The Council has further information to help you design and use WSUD in your development proposal.

If you think you will need further help, then you can contact:

- The Council's ESD Unit
- Green Plumbers for installing rain water tanks
- Environmental engineering firms
- Melbourne Water web site (search for "stormwater")