Urban Stormwater

An example of the way water can move in an urban area . . . . . .

Photo 1;

Water falls on impervious surfaces such as house rooves, concrete footpaths and ashphalt roads. It runs straight off into spouting, downpipes, roadside gutters and down stormwater pits.

Water travels very quickly off hard surfaces.

Anything on those hard surfaces can be washed into the stormwater system with the water; dirt, leaves, oil, grease, detergents, litter, dog poo, etc.

This stormwater pit has a grate covering it – many do not.

In contrast, pervious areas such as grass and gardens allow rain to soak in and filter pollutants.

Photo 2;

In many housing estates, stormwater pipes travel underground for a distance then surface again allowing stormwater to fill swales and water retention basins.

The house from photo 1 can be seen in the background.

Having water sit here first before entering waterways does help to filter out some pollutants such as sediment, oil, grease and detergent. It also allows organic materials such as dog poo, autumn leaves and grass clippings to decompose.

Litter is left stranded here after the water soaks in or evaporates. Plastic items can be seen in the photo.

Photo 3;

The whole water retention basin can be seen here.

The extent of litter left behind is obvious. If the filtering process is to work properly, it is important that this litter is picked up before the next large rainfall event when it could get washed into the waterway with large flows.

The best water-sensitive urban design develops these water retention basins further to include native reeds and sedges to absorb nutrients and other layers of adjacent native vegetation such as grasses, shrubs and trees to provide habitat for native aquatic and terrestrial fauna.

That way, the wetland is playing multiple roles of stormwater retention, filtration, habitat provision and an attractive addition to the neighbourhood.

Photo 4;

The water retention basis can be seen in the top third of the photo on the left.

Standing further back we can now see that in times of high flow a pipe takes water from the basin to another outlet further along.

Photo 4;

And from further back again we can see that the secondary pipe leads directly into the nearest waterway.

Unlike the sewerage system stormwater enters waterways untreated, depositing pollutants (both natural and man-made) into creeks, rivers, wetlands.

In coastal areas, stormwater ends up in our oceans.