

councils

THE BIG LANDHOLDERS

Throughout urban areas, the local council is often the single largest landholder. Councils own local streets, parks and gardens, parking lots, sporting facilities, works depots, administration buildings and many other facilities used by the local community.

It's curious how councils spend millions of dollars building concrete stormwater drains and yet completely neglect water management on their own land.

Management plans for parks often contain designs for everything from bandstands to dog toilets, yet our local councils seldom see the opportunities for nurturing park lands to help make the water cycle healthier.

For many years councils have treated stormwater as if it were a problem and captured it in concrete gutters and drains.

Concrete drains are an ugly, smelly blot on our urban landscapes. There are, however, other ways councils can manage stormwater, which incorporate eco-designed wetlands and waterways.

STREETS, ROADS AND TAR

In urban areas, streets, roads and footpaths cover a large proportion of the land.

Streets and footpaths cover about ten percent of the land area in many parts of the Whites Creek catchment, Annandale. The wide, tree-lined streets of Annandale are famous in the inner city, where streets are often narrow and bare of vegetation.

All rainwater that lands on tarred roads becomes runoff, flows into gutters and becomes a stormwater problem further downstream.

In local streets, the tarred area need only be wide enough for the passage of cars and just enough parking spaces for locals. The

excess tar can be dug up so as to encourage water to infiltrate soils.

Water runoff from streets is a major source of diffuse pollution, especially lead, zinc and copper. Vegetation that grows beside streets acts as a filter, removing many pollutants before they enter sensitive waterways. If runoff from streets can be encouraged to infiltrate surrounding soils, it will help reduce water pollution.

Many pollutants create a much more severe problem in waterways than in soils, and many complex organic pollutants break down faster in healthy soils.

GREEN CORRIDORS

The wide streets of Annandale provide an ideal opportunity for the development of green corridors. The excess tar could be removed and replaced with native plants, which would allow more water to infiltrate the soils and reduce flooding and pollution.

Water flows very swiftly in concrete gutters, and this helps increase the height of flood peaks in downstream stormwater drains.

Concrete gutters can be converted into eco-engineered drainage lines, which use vegetation and small obstacles such as rocks, bumps and depressions to create a rough surface. The fast flowing water gets trapped by these obstacles, which act as an effective brake and slow it down. Concrete gutters, on the other hand, have smooth surfaces that allow water to flow swiftly.

Drainage lines must be protected with vegetation to reduce erosion and small banks may need to be built to act as checks and reduce water speed and erosion, especially on steep slopes.

The vegetation will form green corridors, which will act as habitat for native animals and birds and help them move through inhospitable, densely developed suburbs. Vast expanses of tar also look ugly — a little greenery will be a lot more attractive than wide bare streets.

PARKS AND GARDENS

The old idea of building concrete gutters and drains to control stormwater is now known to increase floods and pollution. Concrete drains are no longer viable and can be replaced by eco-engineered creeks. Councils now need to work with nature and restore waterways. One way of doing this is to establish wetlands in open spaces.

Local councils could install water management schemes on the large areas of public land that are used for parks, gardens and sports fields. These open spaces are ideal for water management schemes.

Streets, parks and gardens occupy a large proportion of urban land, and provide areas where water can be encouraged to infiltrate soils.

Wetlands can be built in parks if they're suitable — well designed ponds are a great attraction in parks and visitors love to sit by ponds and watch the water birds. The duck ponds in Centennial Park are a popular attraction for many Sydneysiders.

Wetlands can help to smooth out flood peaks and maintain the water flow in creeks during dry weather. Wetlands, which include

swamps and ponds, provide a constant supply of water and help drought-proof creeks. They also remove some pollutants from water.

Parklands can also be designed to increase the amount of water absorbed by soils. On farmland it's common to construct banks on the contours so as to capture water runoff and reduce erosion. Absorption banks can be incorporated into the landscape design of parks and cement drains can be replaced by eco-designed waterways.

A WETLANDS SYSTEM FOR WHITES CREEK

Leichhardt Council owns several parks in Whites Creek catchment. Styles Street Playground and Whites Creek Valley Park are next to the creek, while the War Memorial Park is further up the catchment.

Whites Creek Valley Park is an ideal site to construct a wetlands system. At the head of the system a gross pollution and silt trap could be installed to catch soil, sand and grit as well as litter and garbage. Water could then flow into a small artificial swamp and pond, while downstream an eco-engineered creek could meander through the park.

Initially the system would only manage to receive small flows of water. It will take several years for the new wetlands to become established and have enough vegetation to protect the creek's banks.

what councils can do

Councils need to develop policies that will

- Reduce urban stormwater runoff
- Increase infiltration and storage of rainwater in soils
- Increase stormwater retention and on-site use of rainwater
- Restore waterways and wetlands
- Reduce flooding and flood damage
- Reduce erosion and siltation
- Work towards **total catchment management** and cooperate with neighbouring councils and
- Improve water quality

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