

Constructed Wetlands

Constructed wetlands are artificial versions of a natural wetland system that use vegetation, enhanced sedimentation, fine filtration and biological pollutant uptake processes to improve water quality.

Wetlands function to improve water quality by:

- Removing sediments and suspended solids, together with their attached pollutants
- Removing a range of dissolved nutrients and contaminants.

Wetlands also reduce peak flows from frequent rainfall events and thus reduce downstream erosion potential, and can facilitate stormwater harvesting.

In addition to playing an important role in water treatment, wetlands can also have significant community benefits. They provide habitat for wildlife and a focus for recreation, such as walking paths and other passive recreational pursuits. They can also improve the aesthetics of a development (and therefore the value) and be a central feature in a landscape.

The Barker Inlet Wetlands are situated at the downstream end of each major catchment being assessed in the SMP. These wetlands play an important role in improving the water quality before it is discharged into the North Arm Creek and Gulf St Vincent.



Stormwater Harvesting

The collection and harvesting of stormwater is an important way to reduce the flowrate and volume of water that is discharged into receiving waters.

At a small scale, households and businesses can install rainwater tanks that can reduce stormwater runoff while also meeting greywater demands, such as garden irrigation and toilets.

At a larger scale, Aquifer Storage and Recovery (ASR) can allow treated stormwater to be stored underground in aquifers through pumping or natural means. ASR provides a cost-effective method to store stormwater during periods of excess rainfall for subsequent recovery (re-use) during summer dry periods. ASR limits the need for above ground water tanks, or reservoirs which are subject to significant water evaporation. The use of properly managed ASR provides long term sustainability to aquifer water.

In order to undertake an ASR scheme the stormwater is required to be treated so the injected water does not pollute the aquifer. This treatment is generally achieved using a wetland, bioretention system or mechanical filtration system.



Gross Pollutant Traps

Gross Pollutant Traps (GPTs) are proprietary devices that are designed to remove man-made waste and coarse sediment from stormwater flows, before it enters receiving waters. There are many different makes and models of GPT, ranging from below ground "wet sump" devices to above ground trash racks and capture nets on pipe outlets.

GPTs can be used in isolation, or as pre-treatment for other water quality improvement devices located further downstream in what is known as a stormwater "treatment train".

For more information

Information from this poster was based upon and modified from the Water Sensitive Urban Design Technical Manual Greater Adelaide Region, prepared by the (then) Department of Planning and Local Government. More information is available at <https://www.sa.gov.au>