

Cottesloe Aquifer Recharge

Land use / development type	Scale
Retrofitting	Precinct

Stormwater controls	Scale
Infiltration basins	Street
Litter and sediment traps	Street
Non-structural strategy – education	Structure plan area

Water reuse	Scale
Managed aquifer recharge	Structure plan area

Local government
Town of Cottesloe

Declining rainfall recharge and increased demand for groundwater use has escalated the need for more sustainable groundwater management in the Perth metropolitan area by local government and water managers.

The Mosman-Cottesloe Peninsula is underlain by a thin fresh groundwater lens overlying salt water. The Peninsula is subject to saltwater intrusion due to reduced rainfall and a large number of uses including private schools, golf courses, parks and recreation reserves. Monitoring of the salinity levels has indicated a rise in the salinity within the groundwater.

In an effort to improve groundwater quality and prevent the intrusion of saltwater the Town of Cottesloe developed the aquifer recharge project with support from the Federal Government under the National Water Initiative. Issues such as risk of aquifer collapse, saltwater intrusion, polluted stormwater, ocean outfall discharge, and more sustainable household and garden water consumption were addressed by the Town of Cottesloe in their aquifer recharge project. Along with environmental benefits, the project also aimed to increase the community's awareness of local water resource management and use issues, as well as promote water efficient technologies.

The Cottesloe Aquifer Recharge project covers an area of approximately 4 km². It is designed to hold and infiltrate a one in five year flood event. In the event of a one in one hundred year flood event, the ten pre-existing ocean outfalls will assist in the drainage of the stormwater. These outfalls have been closed but can be easily re-opened for an extreme rainfall.

Key Project Features

- Pollutants are managed by seven underground sumps (see illustration below) and 400 stormwater pits which act as gross pollutant traps and aid stormwater infiltration for aquifer recharge
- Reduced risk of saltwater intrusion and collapse of the aquifer
- The 'Think water' education program was successful in reducing private groundwater use and decreasing the installation of new bores.

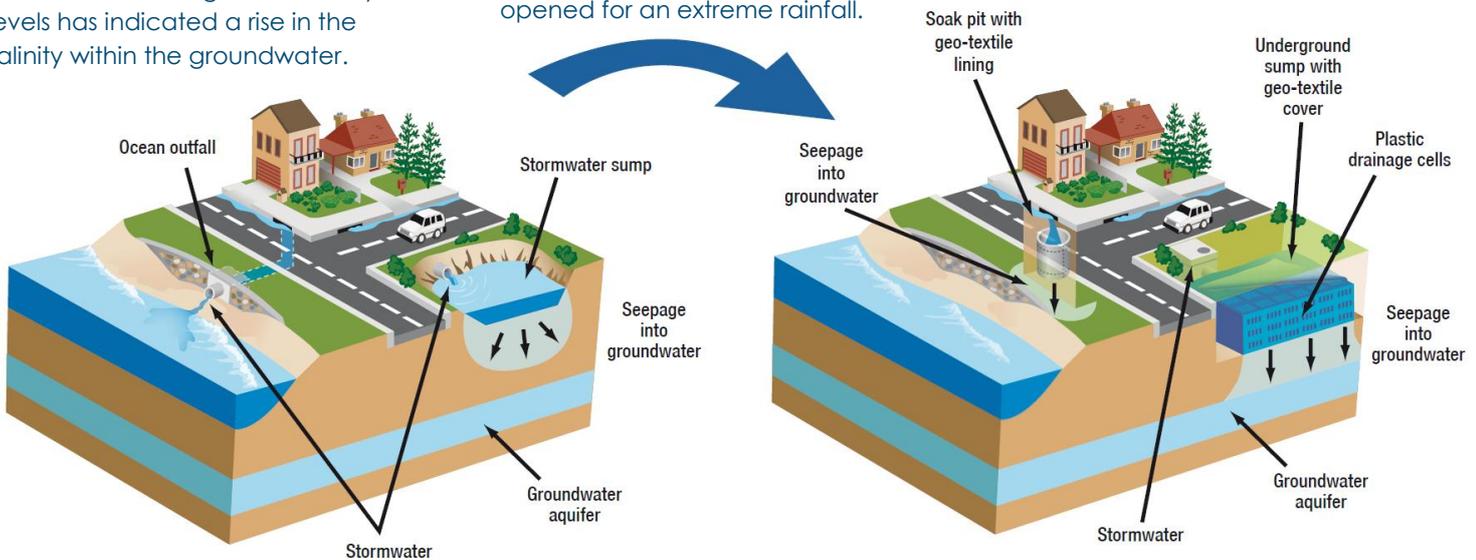


Image courtesy of Town of Cottesloe

Development Costs¹

Design costs	\$120,000
On-site supervision	\$100,000
Survey / site costs	\$80,000
Installation of soak pits	\$896,000
Ocean outfall close downs	\$400,000
Open sump replacements	\$700,000
Public education program funded by Department of Water	\$100,000
Total	\$2,396,000

¹All costs are an approximation given for guidance purposes only

Maintenance Costs

Pit cleanout¹ \$20 / pit

¹Pit cleanouts are undertaken opportunistically

Outcomes

Approximately 180 ML per year of untreated stormwater was directed into ten ocean outfalls prior to the development of the Cottesloe Aquifer Recharge project. As a result of using the stormwater for aquifer recharge, the ten ocean outfalls no longer discharge in small and minor events.

The 'Think Water' education program was funded to run for three years and has been able to reach out to the community with the aim of raising awareness about conserving water and reducing pollutants entering the groundwater. The program produced brochures on water

quality and quantity, fridge magnets, a word sleuth, a bumper sticker, a sheet of stickers with a Think Water theme and an illustration showing what installations the council were undertaking. A local plants growing guide was developed to help residents design their own local gardens. Town of Cottesloe residents were also entitled to a native plant subsidy scheme allowing the residents to purchase 80 seedlings at a subsidised price to encourage water wise gardening.



Image courtesy of Town of Cottesloe

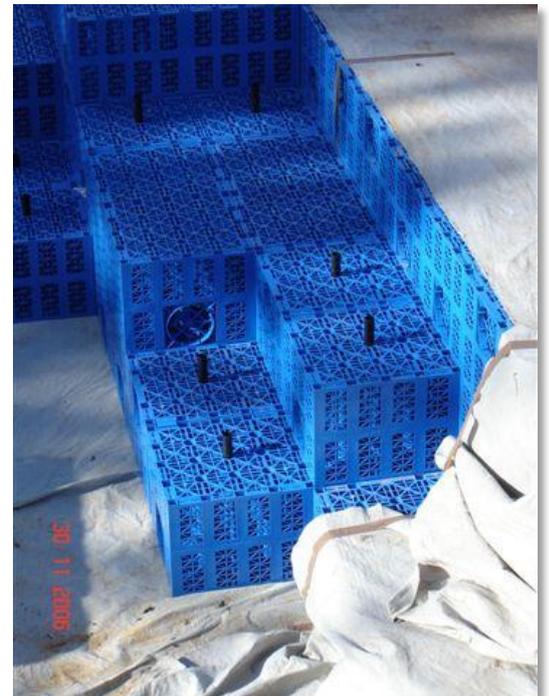


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Contact details for further information

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