



# Water sensitive urban design

## Living streams

### Summary

A living stream is a constructed or retrofitted stormwater conveyance channel that mimics the characteristics (morphology and vegetation) of natural streams. As well as conveying stormwater, they also treat it using physical and biological processes, and they create diverse habitats for wildlife. They can become complex ecosystems that support a wide range of plants and animals.

This brochure is part of a series that explain various aspects of water sensitive urban design. Please see *Water sensitive urban design in Western Australia* for background information on water sensitive urban design.

### Main benefits

- Living streams are capable of safely conveying large flows.
- They are an attractive feature of the landscape.
- They create diverse habitats and can restore environmental characteristics in urban areas.
- They can remove pollutants.

### Design factors

- Ensure they are integrated with the landscape design of public open space.
- Consider terrain (particularly slope) and geology in the design.
- They should not intersect the dry season watertable.

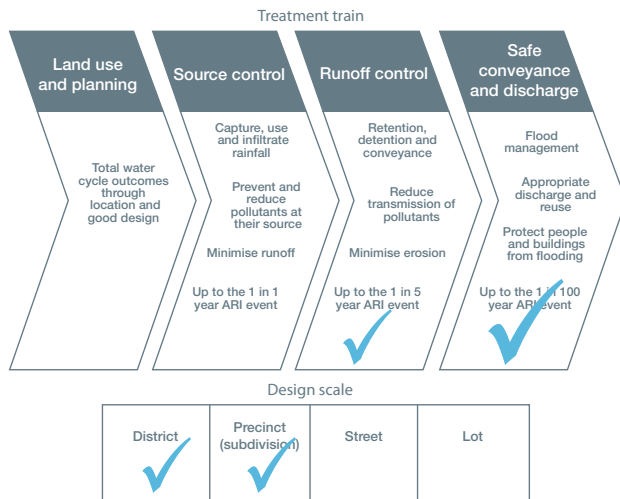
### Target pollutants

The effectiveness of living streams in removing pollutants varies greatly depending on the nature and type of systems. The location and density of vegetation is a particularly important factor.



Garvey Park drain retrofit, Ascot

### Where they can be used in the water sensitive urban design process



Bannister Creek drain retrofit, Lynwood



Geegelup Brook drain retrofit, Bridgetown

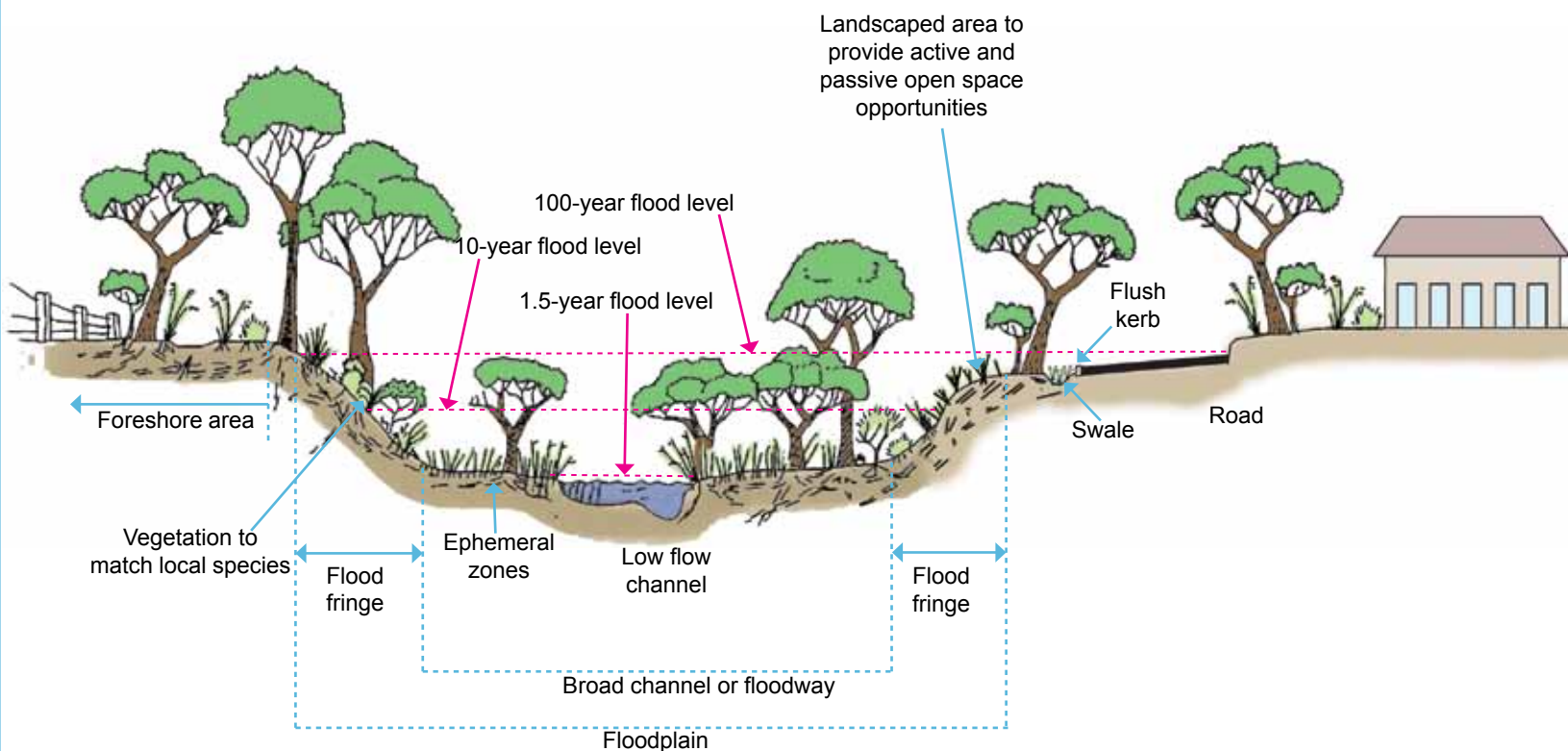


Newly constructed living stream, Byford

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Typical cross section of a living stream



(Adapted from the *Stormwater management manual for Western Australia*, Department of Water)

### Required reading

*Australian runoff quality: a guide to water sensitive urban design*, 2006, Engineers Australia, available at <[www.arq.org.au](http://www.arq.org.au)>.

*Stormwater management manual for Western Australia*, 2004–07, Department of Water, available at <[www.water.wa.gov.au](http://www.water.wa.gov.au)>. See Section 4.3 of Chapter 9 – Structural controls.

Department of **Water**

168 St Georges Terrace  
Perth Western Australia

PO Box K822 Perth  
Western Australia 6842

Ph: 08 6364 7600 • Fax: 08 6364 7601

[www.water.wa.gov.au](http://www.water.wa.gov.au)

