

RAINWATER HARVESTING NATIONAL POLICY

Rainwater Harvesting Association

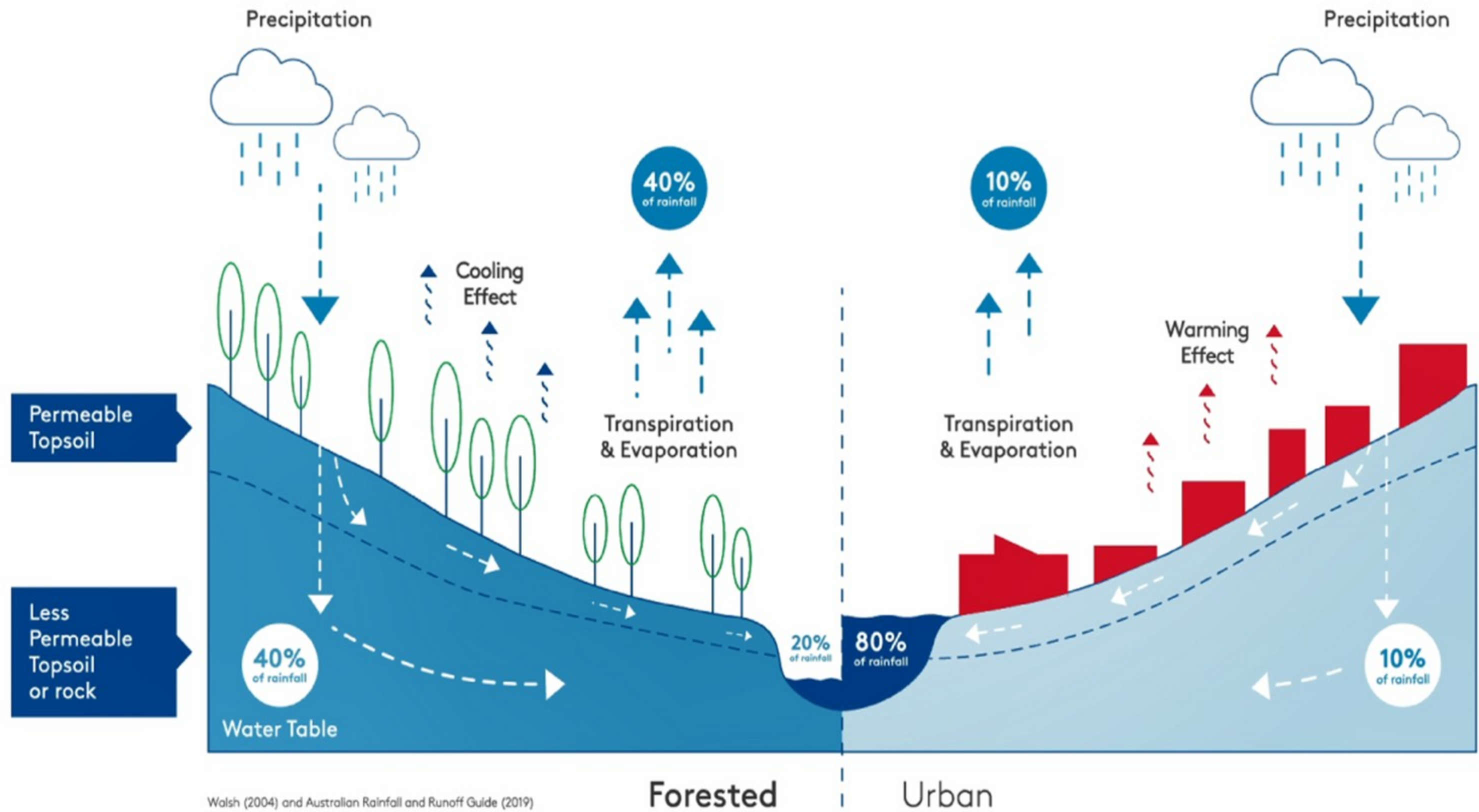


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- The Urban Water Cycle
- Why a Policy now?
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- Action
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- Summary





Why a Policy now?



Rising flood risks

Increasing Stormwater Infrastructure Costs

Higher Water Utility Charges – “The Revenue Wave”

Rainwater Harvesting is rain captured from a roof and stored for later use.

It is not rainwater captured from a street or public space

- Picture credit Michael Smit



Two Key Objectives



1. Reduce stormwater runoff generated by our cities and towns by 30%
2. Reduce demand for municipal water supplies by 30%

Resolution



POLICY



The policy requires rainwater harvesting designs to include:

- A connected roof area that directs rainwater to the tank.
- A specified volumetric tank capacity.
- Connections to designated appliances.

For example, planning approval for a detached residential home would require:

- 150m² of connected roof area.
- A 5000-litre rainwater tank.
- Connections to all toilets, washing machines and outdoor taps.

Action



DEEMED TO SATISFY RAINWATER HARVESTING

HOUSING TYPE	ROOF CATCHMENT AREA	MINIMUM TANK SIZE	USAGE
Detached Housing	150sqm roof catchment	5000 L Storage	Connected to Toilets and Outdoor Taps
Semi-Detached Housing	100sqm roof catchment	3000 L Storage	Connected to Toilets, Laundry, and Outdoor Taps
Unit Housing	18sqm roof catchment	2500 L Storage	Connected to Toilets, Laundry, and Outdoor Taps.
Non-Residential Buildings based on eight classes of land use.	100sqm roof catchment	Generally, 2000 L storage/100sqm roof area	Connected to Toilets and other indoor and outdoor water applications.

Proofs



Case Study - Sustainable Buildings SPP NSW

500,000 BASIX Compliant Homes, increasing by 30,000 each year since 2004

Each year BASIX is saving 79 billion litres of potable water, 49 billion from water efficient devices, 30 billion litres rainwater harvesting reducing stormwater volumes by the same amount. Water Bills in NSW are about half those in SEQ.

BASIX is a land use planning policy, not a water industry policy

2015 Senate Enquiry: Stormwater infrastructure is not designed to meet future challenges

By managing stormwater at the source of the problem, smaller flood events, which occur often and generate a lot of the costs, can be reduced or eliminated.

Reducing the impact of urban stormwater on natural waterways

Professor PJ Coombes's modelling reveals yields of 50-100kl/annum in Greater Sydney suburbs and shows that rainwater harvesting and water efficiency could meet 45%-60% of household water demand with subsequent stormwater benefits.

This reduces the demand for water and infrastructure across the urban system, providing long-term savings by deferring and reducing new infrastructure costs.

Stormwater South Australia – Policy Response

- Policy identifies infill area runoff increasing to 250% of design capacity
- Cost Benefit analysis supported rainwater harvesting in infill areas
- Rainwater harvesting is a deemed to satisfy response for WSUD in the SA Planning Scheme

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature												
PO 1.1 Residential development is designed to capture and re-use stormwater to: (a) maximise conservation of water resources (b) manage peak stormwater runoff flows and volume to ensure the carrying capacities of downstream systems are not overloaded (c) manage stormwater runoff quality.	DTS/DPF 1.1 Residential development comprising detached, semi-detached or row dwellings, or less than 5 group dwellings or dwellings within a residential flat building: (a) includes rainwater tank storage: (i) connected to at least: A. in relation to a detached dwelling (not in a battle-axe arrangement), semi-detached dwelling or row dwelling, 60% of the roof area B. in all other cases, 80% of the roof area (ii) connected to either a toilet, laundry cold water outlets or hot water service for sites less than 200m² (iii) connected to one toilet and either the laundry cold water outlets or hot water service for sites of 200m² or greater (iv) with a minimum total capacity in accordance with Table 1 (v) where detention is required, includes a 20-25 mm diameter slow release orifice at the bottom of the detention component of the tank (b) incorporates dwelling roof area comprising at least 80% of the site's impervious area Table 1: Rainwater Tank <table><tr><th>Site size (m²)</th><th>Minimum retention volume (Litres)</th><th>Minimum detention volume (Litres)</th></tr><tr><td><200</td><td>1000</td><td>1000</td></tr><tr><td>200-400</td><td>2000</td><td>Site perviousness <30%: 1000 Site perviousness ≥30%: N/A</td></tr><tr><td>>401</td><td>4000</td><td>Site perviousness <35%: 1000</td></tr></table>	Site size (m ²)	Minimum retention volume (Litres)	Minimum detention volume (Litres)	<200	1000	1000	200-400	2000	Site perviousness <30%: 1000 Site perviousness ≥30%: N/A	>401	4000	Site perviousness <35%: 1000
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OPTIONS ANALYSIS:
Costs and Benefits of Stormwater Management Options for Minor Infill Development in the Planning and Design Code

A Report to the Attorney-General's Department

September 2020

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BDO

Increasing levels of stormwater run-off

Infill development can create up to 80% impervious surfaces (designed originally for 65%) and increase run-off by 2.5 times what the system was designed to manage (Jensen, 2011). This can result in:

- Increased flood risk
- Polluted stormwater run-off to coast
- Increased council infrastructure costs
- Loss of opportunity to use water to green and cool suburbs.

Therefore WSUD (e.g. rainwater tanks and rain gardens) have an important role to reduce the run-off stormwater off-site.

PEOPLE AND NEIGHBOURHOODS



POLICY DISCUSSION PAPER

September 2019

Summary

Download the policy and supporting information at
rainwaterharvesting.org.au



The policy establishes a framework for Australian cities that prioritises small, incremental changes to every building and alignment with the natural water cycle as the first response. Large-scale infrastructure investment can then be pursued where necessary.



The rain is falling where we need it

The roofs are already built

Stormwater overwhelms our Cities

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2. Reduce demand for municipal water supplies by 30%