

Executive summary

The National Water Initiative (NWI) is the blueprint for improving Australia's water management and use. Under the NWI, the state, territory and Australian governments have committed to encouraging innovation in water supply, encouraging re-use and recycling and increasing the efficient use of water within domestic settings. Rainwater (rain collected from the roof) and greywater (wastewater not containing human excrement) are both important sources of water that can contribute to household water requirements.

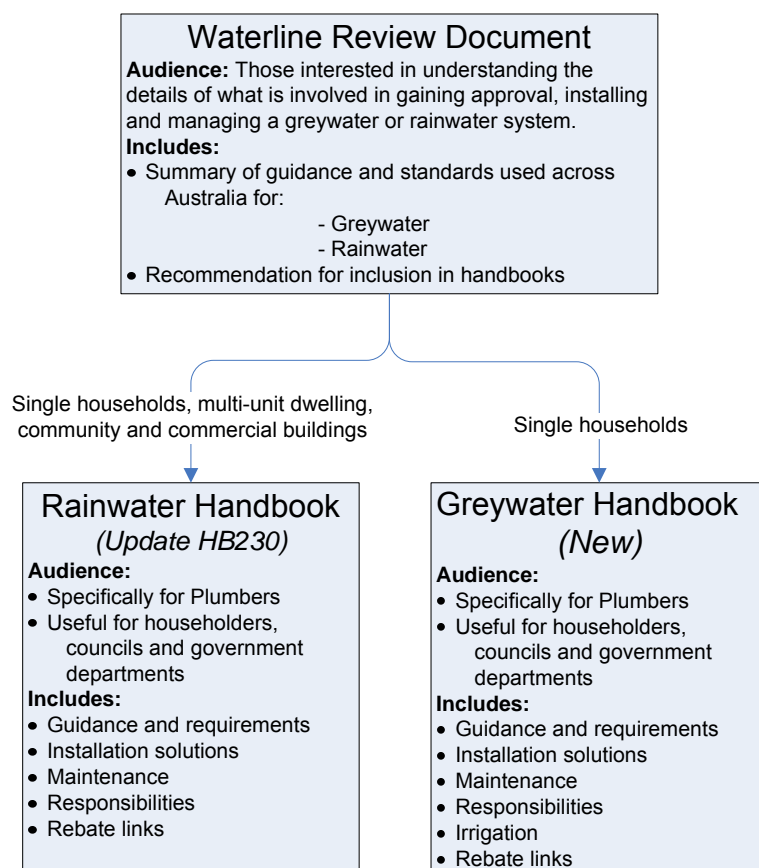
The increased use of rainwater and greywater in both domestic and commercial environments across Australia will improve water use efficiency and reduce pressures on drinking water supplies.

To help facilitate the safe and environmentally responsible use of rainwater and greywater, the National Water Commission (the Commission) funded the development of a rainwater and greywater package (Figure 1), comprising three parts:

- this National Water Commission Waterlines publication, which provides an overview of what communities need to know before pursuing the installation of greywater or rainwater re-use devices in a domestic setting. The publication sets out consent requirements, standards and codes for each state and territory. This publication was an outcome of the research undertaken in the development of the two handbooks described below
- a rainwater handbook, which provides practical and technical information for plumbers to gain approval, install and maintain rainwater systems for single households, multi-unit dwelling, community and commercial buildings (updating HB230 - Standards Australia et al. 2006)
- a greywater handbook, which provides practical and technical information for plumbers to gain approval, install and maintain greywater systems for single households.

This package aims to facilitate commitments under the NWI in progressing towards the 'Water Sensitive City'. The documents produced in this three-part package do not replace any national or state and territory codes of practice, guidelines or regulations. They have been designed to help householders and plumbers to understand in a practical sense the impact of these guidance documents with respect to gaining approval, installing, using and maintaining rainwater and greywater systems that are safe and environmentally sustainable. The information collated in this Waterline publication will also be valuable to government agencies to assess rainwater and greywater developments.

Figure 1: Overview of components of the NWC funded rainwater and greywater package



There are a number of issues and concerns with regard to consent arrangements for greywater installations.

For installation of both rainwater and greywater systems, the approvals required, reporting needed, and responsibilities of the householder, plumber and regulatory authority (for example, councils, health departments and environment departments) vary considerably across Australia. It appears that the installation and approval process is often complicated and difficult to understand. Initially this must discourage householders and have them turn to their own resources to install rainwater or greywater system. If not installed correctly (complying with the appropriate guidelines and standards), this could ultimately compromise human health or the local environment.

A number of guidelines currently available across Australia do not provide sufficient stand-alone approval process, design, installation and maintenance details at a technical and practical level for plumbers and householders to understand what is involved, and for plumbers to install rainwater and greywater systems. There is usually some referral to several other standards, codes or guidelines.

Some states and territories have produced documents to address this issue. For example, the *Rainwater plumbing guides for use and installation* (SA Water 2006b) and the *Sydney Water guidelines for rainwater tanks on residential properties. Plumbing requirements* (Sydney Water 2003 – Amendment) are a good step in the right direction. Many other states do not provide guidance, and the guidance that exists is limited technically (especially from a plumber’s perspective of the practicalities of installing systems).

Many states or councils offer some type of government rebate to encourage use of rainwater and greywater systems, most require licensed plumbers to install them

(bucketing or direct diversion of washing machine greywater doesn't usually require a plumber). The plumber must supply evidence of installation and that it has been done to a specific standard (in many cases there is no auditing of this process). The plumbing code (AS/NZS 3500 (AS/NZS 2003b)) relates only to the diversion of septic tanks, but not to greywater systems. What specific standards should they be installed to?

Plumbers are generally identified as the interface between the user (householder) and the relevant standards, guidelines and regulations. Technical solutions for plumbers are dispersed through at least 10 Australian Standards, a number of codes, several state guidelines, two Australian guidelines and numerous acts of legislation and local government requirements.

Plumbers are a crucial link in the householders' understanding of rainwater and greywater systems. In many cases plumbers gain the final approval and install the rainwater or greywater system. This Waterlines publication provides a national overview, and aims to facilitate a greater overall understanding of the approval, installation, maintenance and use of both greywater and rainwater for interested householders, new home builders and plumbers. For practical technical solutions for gaining approval, installing and maintaining rainwater and greywater systems the reader is referred to the additional two handbooks produced as part of the MPMSAA project discussed above.

The Waterlines and handbook publications have been developed by the Master Plumbers and Mechanical Services Association of Australia with assistance from the Steering Committee developed for the project.

The Steering Committee members consist of:

- Master Plumbers and Mechanical Services Association of Australia
- Arris Pty Ltd (Dr Daryl Stevens)
- National Plumbing Regulators Forum
- Australian Local Government Association
- Urban Development Institute of Australia
- Housing Industry Association
- Australian Rainwater Industry Development Group
- National Water Commission
- RMIT University
- Standards Australia
- Netafirm Water re-use
- Griffith University
- Labmark.