

# PROCEDURE

<b>Name:</b>	<b>Backflow Prevention Procedure</b>	
<b>Approved by MANEX/Manager:</b>	<b>Date: 15 June 2021</b>	<b>By: MANEX</b>
<b>Last review date:</b>	<b>N/A</b>	
<b>Review timeframe:</b>	<b>4 years</b>	
<b>Next scheduled review date:</b>	<b>June 2025</b>	
<b>Related legislation, Guidelines, Standards and Codes:</b>	<ul style="list-style-type: none"><li>• <b>New South Wales Government Local Government Act 1993</b></li><li>• <b>New South Wales Government Plumbing and Drainage Act 2011</b></li><li>• <b>New South Wales Government Protection of the Environment Operations Act 1997</b></li><li>• <b>The Australian Drinking Water Guidelines under the New South Wales Government Public Health Act 2010</b></li><li>• <b>National Construction Code Series: Volume Three, Plumbing Code of Australia</b></li><li>• <b>Australian and New Zealand Standard (AS/NZS 3500.1) Plumbing and Drainage Part 1: Water Services</b></li></ul>	
<b>Associated policies/documents:</b>	<b>MidCoast Council's Backflow Prevention Policy 2019 MidCoast Council's Drinking Water Quality Policy 2018 MidCoast Council's Liquid Trade Waste 2018</b>	
<b>Responsible division:</b>	<b>Infrastructure &amp; Engineering Services</b>	

## Purpose

This procedure aims to protect the quality of Council's drinking water supplies by managing the contamination and pollution risk from backflow, back siphonage and cross connections. Such contamination can affect not only the water distribution system; but also impact on individual property owners. Council, as the supplier of drinking water to the public, must ensure that it meets its obligations under the Australia Drinking Water Guidelines and its Drinking Water Management System to provide safe drinking water to customers.

This Procedure provides guidance to both staff and customers on the requirements for the installation, testing and maintenance of Backflow Prevention Devices.

## Related documents

These Procedures should be read in conjunction with MidCoast Council's Backflow Prevention Policy adopted 3 March 2019.

## Definition of Terms

Term	Definition
AS/NZS 3500.1 and PCA 2011	Australian/New Zealand Standard for Plumbing and Drainage Part 1: Water Services and the Plumbing Code of Australia 2011
Backflow	The unplanned flow of water or mixtures of water and contaminants into the reticulated Water Supply System.
Backflow Prevention Device AS/NZS 3500.1	A device to prevent the reverse flow of water from a potentially contaminated source, into MidCoast Council's reticulated Water Supply System.
Backpressure	The difference between the pressure within any water service and a higher pressure within any vessel or pipework to which it is connected.
Back-siphonage	Backflow that occurs when the water supply pressure falls below atmospheric pressure.
BPAA	Backflow Prevention Association of Australia
Backflow Prevention Program	A program identifying existing properties having a medium or high hazard rating requiring to be fitted with appropriate containment protection.
Containment Protection	The installation of a backflow prevention containment device at the point of connection or property boundary, to prevent backflow from within the property entering the Water Supply System.
Cross Connection	Any connection or arrangements between the Water Supply System connected to the water main or any fixture that may enable non-drinking water or other contamination to enter the system.
Double Check Valve AS/NZS 3500.1	A medium hazard testable device in accordance with AS 2845 Part 1.
Drinking Water	Water that is suitable for human consumption, food preparation, utensil washing and oral hygiene (see AS/NZS 4020). Compliance with the Australian Drinking Water Guidelines 2004 (and as amended) is required.
Dual Check Valve	Low hazard non-testable device in accordance with AS 2845 Part 1.
Fire Service	Services comprising water pipes, fire hydrants, fire hose reels, fittings and including water storage or pumping facilities, which are installed solely for firefighting and extinguishing purposes in and around the building or property.

Term	Definition
Grey and Black Water Treatment System	A system that provides a localised water treatment system owned and operated by the Local Water Utility and/or private operator.
Hazard Ratings:	<p>Hazard Ratings – The three hazard ratings as prescribed within AS/NZS 3500.1, being:</p> <p><u>High Hazard Rating</u></p> <p>Any condition, device, or practice, which in connection with the Water Supply System, has the potential to cause death <u>Medium Hazard Rating</u></p> <p>Any condition, device, or practice, which in connection with the Water Supply System which has the potential to endanger health.</p> <p><u>Low Hazard Rating</u></p> <p>Any condition, device, or practice, which in connection with the system, is a nuisance but does not endanger health or cause injury.</p>
Individual Protection	Installing a Backflow Prevention Device at the point where the water pipes connect to a fixture or appliance.
Local Water Utility (LWU)	The organisation responsible for the supply and on-going management of Reticulated Water Supply Systems in a designated area of supply.
Mixed-use Development	A property with both commercial and residential classifications on-site
New Properties	Any new or existing property, undergoing construction or redevelopment that must submit a development application.
Potable Water	Water that is intended for use as drinking water and should materially meet the Australian Drinking Water Guidelines 2011, or equivalent
Qualified Person	A licensed plumber who has undertaken accredited backflow training from a registered training organisation.
Recycled Water	The process of converting wastewater into water that can be reused for other purposes. Reuse may include irrigation of gardens and agricultural fields or replenishing surface water and groundwater.
Reduced Pressure Zone Device AS/NZS 3500.1	A high hazard testable device in accordance with AS 2845 Part 1.

Term	Definition
Registered Air Gap	<p>A device or system installed for backflow prevention registered by, or on behalf of, a Local Water Utility for inspection and maintenance.</p> <p>Air gap for Water Supply System is specifically defined as the unobstructed vertical distance through the free atmosphere between the lowest opening of a water service pipe (or fixed outlet) supplying water to a fixture or receptacle and the highest possible water level of that fixture or receptacle.</p> <p>Installation of a Registered Air Gap will be applied to sites rated as a high hazard backflow risk.</p>
Registered Break Tank	<p>A tank system specifically designed for backflow prevention registered by, or on behalf of a Local Water Utility, for inspection and maintenance.</p> <p>Installation of a registered break tank will be applied to sites rated as a high hazard backflow risk.</p>
Water Supply System	<p>The reticulated supply system into which the Local Water Utility delivers drinking and/or non-drinking water.</p>
Zone Protection	<p>Installing a Backflow Prevention Device at the connection point of specified sections of a plumbing system within a building or facility.</p>

## Introduction

This Procedure outlines how Council prevents backflow of water from customers' properties into the Water Supply System. The Backflow Prevention Policy objectives are achieved by:

- Providing clear guidance to assist Council staff in making determinations relating to protecting the drinking water supply via backflow prevention.
- Providing information to members of the public, plumbers and other stakeholders about the selection and installation of backflow prevention devices and Council's role in backflow prevention.
- Ensuring that non-complying properties are brought into line with the requirements of the Policy, the Plumbing Code of Australia and the Australian Standard AS 3500 Part 1.
- Maintaining backflow records/register for containment devices.
- Ensuring containment protection devices are appropriate for the hazard rating for the property.
- Ensuring annual certification testing is carried out by a qualified person.
- Investigating non-compliance and ensure enforcement of this policy.

## **Council Responsibilities**

Council will operate a system of compliance to ensure that customers meet the requirements outlined in this Procedure.

Council will maintain records of each property's backflow hazard rating. In the absence of any site specific information, Council will assign a hazard rating to a property based on the assessment of the primary activities being undertaken on site with reference to AS3500 and hazard allocations of leading Australian water authorities.

Council may update a rating from time to time. If the customer has more site specific information and requests a review of the hazard rating then Council will review the rating and may determine that a different hazard rating is more appropriate. Following which Council will amend its records. Council may also ask customers to certify their hazard rating periodically and that this certification be carried out from time to time by a Qualified Person.

Council will keep records and ensure that minimum requirements for Testable Devices are carried out. These are:

- All testable backflow protection containment devices must be registered with Council and certified on installation by a Qualified Person.
- All testable backflow protection containment devices must be certified on an annual basis by a Qualified Person.
- Council will advise customers 30 days prior to the date by which the containment device is required to be annually certified.

## **Customer Responsibilities**

On properties that are assessed as a "medium hazard" or "high hazard" the customer is responsible for the installation, on-going maintenance and annual certification of a testable Backflow Prevention Device installed within the property boundary in accordance with AS/NZS 3500.1 and the Plumbing Code of Australia 2011. No connection may bypass the backflow prevention containment device

Property owners are required to ensure appropriate backflow protection devices are fitted. The property owner must register, maintain and test the backflow prevention containment device(s) at intervals of no more than 12 months from the date of the initial commissioning or as otherwise determined by Council.

The customer must engage a Qualified Person to install, commission and annually test the Backflow Prevention Device(s). for new and existing connections and have the results forwarded to Council's Water Planning & Assets Group within 14 working days of the test being undertaken. Further information on backflow prevention is available of Council's website.

## **Procedures**

Council's Procedure applies to all properties connected to Council's Water Supply System requiring Backflow Prevention Devices and reinforces the requirements for owners of all commercial, industrial and mixed-use developments to install suitable backflow protection devices. It is focused on the testing and reporting of Containment Protection devices only, as this level directly impacts our water supply. Containment Protection refers to the installation of Backflow Prevention Devices to the Water Supply System at the point of connection (property boundary).

Owners of properties with a High Hazard Rating must install a Reduced Pressure Zone

device, Registered Break Tank or Registered Air Gap. Owners of properties with a Medium Hazard Rating must install a testable device in accordance with AS/NZS 3500.1.

Standpipes (portable and fixed for tankers / water carrying / temporary supply purposes) connected to Council's Water Supply System shall be rated as a high hazard.

Fire Services require a single testable check valve as a minimum on hose reels accessing potable water. If Fire Services using alternative water are inter-connected to the Fire Service, a higher hazard level would apply in this instance. Where fire appliances are provided in a high hazard area, backflow prevention commensurate with the hazard level must be installed.

Drinking and non-drinking water services must not be cross connected without the installation of an appropriate backflow prevention containment device. The device installed must be the same on both the drinking and non-drinking water services. These properties include mixed developments and areas serviced by Grey and Black Water Treatment Systems.

Testable backflow devices require annual testing, certification and registration. Council will charge each property an annual registration fee per backflow containment device payable by owners to cover Council's costs of administering the backflow program. This fee may change from time to time in line with Council's adopted Fees & Charges.

Council will notify customers with testable backflow containment devices 30 days prior to the annual testing and certification being due. The customer must submit certification of the satisfactory operation of the containment backflow device to Council by the due date.

Additional fees will apply to those customers who do not provide test result by the due date.

While properties with Zone and Individual backflow protection levels are required to conduct annual testing and regular maintenance to confirm they are functioning, the annual registration fee will not apply to;

- Zone Backflow Prevention Devices – the connection point of specified sections of a plumbing system within a building or facility.
- Individual Backflow Prevention Devices - the point where the water pipes connect to a fixture or appliance

Council's system for the management of the Backflow Prevention Device inspections, maintenance, repairs and reporting uses modern QR codes. This system is endorsed by the Backflow Prevention Association of Australia (BPAA) and allows for real time updates on the status of backflow containment devices that impact the Water Supply System.

All inspections and test reports are monitored and recorded through a cloud-based system using a mobile device. The secure QR tag simplifies the registration, inspection and maintenance of each testable Backflow Prevention Device, and makes it easier to identify devices not registered.

All testers will be required to be Qualified Persons and registered within Council's database. Council's Water Planning & Asset Services staff will provide training in the use of the system.

Where the customer fails to provide the certification by the due date, Council may do one or more of the following:

- Issue a reminder notice(s) to the customer,
- If the hazard presented by the activities on the property are considered to present sufficient contamination risk to the water supply, or the customer has failed to respond

to a reminder notice, Council may use the provisions of the Local Government Act 1993 and the Plumbing and Drainage Act 2011, to enforce compliance and charge the appropriate fee specified in the Council's Fees and Charges;

- If Council believes that the hazard presented by the activities on the
- property present an unacceptable contamination risk to the water supply and the containment backflow device fails its certification testing, disconnect the water service and charge the appropriate fee specified in the fees and charges for disconnection/reconnection;
- Council reserves the right to install the appropriate containment device at the relevant property and to take necessary action to recover all associated costs.

The requirements outlined in this Procedure are for the protection of the Water Supply System and public health. As such it is vital that all parties cooperate by observing the statutory requirements of relevant Acts, Regulations and Standards.

### **Review and revision**

The Backflow Prevention Procedure is to review every four years in line with the Backflow Prevention Policy review.

### **Responsible officer**

Director – Infrastructure & Engineering Services

### **References and related documents**

- MidCoast Council Backflow Prevention Policy 2019.
- Water Directorate (2013) *Backflow Prevention and Cross Connection Control Guidelines*.
- New South Wales Government (2017) *Local Government Act 1993*.
- New South Wales Government (2017) *Plumbing and Drainage Act 2011*.
- Australian and New Zealand Standard (AS/NZS 3500.1) *Plumbing and Drainage Part 1: Water Services*
- Australian Drinking Water Guidelines 2011
- National Construction Code Series, 2012: Volume Three, Plumbing Code of Australia

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<sup>i</sup> As amended from time to time