POLICY NAME: **CONTAINMENT BACKFLOW PREVENTION**

POLICY REF: **B04**

MEETING ADOPTED: **22 November 2018**
Resolution No. 221118/29

POLICY HISTORY: **231014/32; 220312/20; 251007/21**

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OBJECTIVE

The purpose of this policy is to outline council's commitment to appropriate levels of backflow prevention, cross-connection prevention and protection of our water supply. It specifies Council's position where the Plumbing Code of Australia, Plumbing and Drainage and AS/NZS 3500 provide scope for the local authority's requirements. It also defines Council and stakeholder responsibilities for backflow prevention.

This Policy:

- Provides clear guidelines to assist Council staff in making decisions relating to protecting the drinking water and recycled water supply via backflow prevention.

- Provides information to members of the public, plumbers and other stakeholders about the selection and installation of backflow prevention devices and the Council's role in backflow prevention.

- Ensures that the legislative requirements and methods for the prevention of contamination of the drinking water and recycled water within the water services and the water mains are known and implemented.

POLICY

1. General

1.1 All properties must comply with the requirements of the *Plumbing Code of Australia, and the Australian and New Zealand Standards AS/NZS 3500* or this policy which ever requires the highest protection level.

1.2 All properties connected to drinking water and/or the recycled water reticulation systems require a containment backflow prevention device and must comply with the site containment backflow requirements of AS/NZS3500. The type of device required will be identified by AS/NZS3500 Section 4 and tables G1, G2 and G3.

1.3 All properties that present a medium or high hazard rating must install and maintain a testable back flow prevention device appropriate for that hazard rating at the property boundary for site containment in accordance is AS/NZS3500

1.4 Properties with a low hazard rating must install a non-testable device (as a minimum). A Non-testable device is built into Council supplied water meters for 20mm and 25mm water meters.

1.5 Where hazard rating is unknown for a commercial, industrial, rural or mixed development, the hazard rating will default to high requiring the installation of a device appropriate for that hazard rating. If the hazard rating varies due to multiple processes or multiple tenants, the highest rating must be applied.

1.6 A containment backflow prevention device is required regardless of zone or individual protection. Council cannot guarantee the integrity of zone and/or individual protection on a customer's site and therefore cannot guarantee the protection of the water supply from a backflow incident.

1.7 Back flow prevention devices are to be installed in accordance with location requirements, AS/NZS 3500 Section 4.6 general installation requirements and location of devices and AS AS2845.

1.8 Council may, at any point in time, require any premises connected to the drinking water supply and/or the recycled water supply to be fitted with a backflow prevention device(s) for containment at the boundary.

1.9 Where, in the opinion of Council, a potential or physical cross-connection is found in the water service at or within any property the property owner shall, upon written advice by Council, ensure that such a cross connection is immediately disconnected or altered to comply with Council's requirements or otherwise be removed. Failure to comply within the period nominated by Council, may at Council's discretion, result in the immediate restriction or disconnection of the property from Council's water supply.

2. Fire Services

3.1 On a separate hydrant and sprinkler fire service on a non-residential property, the device shall be installed close to where the water service crosses the property boundary, prior to any booster assembly.

3.2 Separate hydrant and sprinkler fire services require the installation of a double check detector assembly as a minimum.

3. Rainwater Tanks

5.1 Where a rainwater tank is connected to or is topped up from the drinking water supply, site containment and zone backflow prevention is required.

5.2 If the rainwater tank is not connected to or cannot be topped up from drinking water supply, a backflow prevention device is not required

5.3 If there is a risk of cross contamination between the rainwater tank and Council's drinking water supply, suitable backflow prevention device must be installed in accordance with Ballina Shire Council requirements.

5.4 Council reserves the right to require greater backflow prevention or to disallow connection of a water supply to the rainwater tank if rainwater tanks are not installed or operated in strict compliance with Council requirements.

5.5 The connection to rainwater tanks shall be by a visible air gap external to the tank, or an approved auto change over device.

Tank Installation	**Hazard Rating**	**Backflow Prevention Devices Required**	
		At property boundary water meter	**At connection point of rainwater tank control valve or top-up point**
Above ground	Low	Non testable Dual Check Valve	Non testable Dual Check Valve *
Below ground	Medium	Testable double check valve or Vented check valve**	Testable double check valve or Vented check valve**

* Council may permit a non-testable backflow prevention device to be used as zone protection for above ground rainwater tanks, only when installed with a water meter that has an integral dual check valve for containment provided the drinking water service is DN 20 - DN 25 only in size.

** Council may permit a non-testable (Vented Dual Check Valve (VDCV)) backflow prevention device to be used for containment protection and a non-testable device for zone protection for any fully or partially buried rainwater tank(s) installation provided the drinking water service is DN 20 - DN 25 only in size.

6. On-Site Sewage Management Systems (OSSMS) and Grey Water Diversion Devices (GDDs)

6.1 All properties that have an OSSMS (i.e. Septic systems, Grey Water Treatment System, Aerated systems etc) and are also connected to the Council's reticulated water supply, shall have a testable backflow prevention device installed at the boundary on the customer's side of the meter.

6.2 Where a greywater diversion device fitting is installed on a single residential property, the property owner shall notify Council to ensure that a meter with an integral dual check valve is installed on the water service for the property.

8. Responsibilities

8.1 Customer

8.1.1 Customers are responsible for arranging for the installation, commissioning, annual testing and maintenance of all backflow prevention devices in accordance with AS/NZS 3500.

8.1.2 Installation, commissioning, maintenance and annual testing of backflow prevention devices shall be carried out by an authorised NSW Licensed plumber, who is accredited to carry out testing procedures AS/NZS 3500

8.1.3 The Customer shall arrange for all devices to be commissioned after installation with both "Registration Form for Properties with Backflow Prevention Devices" and "Backflow Prevention Inspection/Testing Maintenance Report" to be provided with the prescribed fee to Council.

8.1.4 Testable backflow prevention devices shall be maintained in working order and tested for operational function at intervals not exceeding 12 months. A "Backflow Prevention Inspection/Testing Maintenance Report" is to be provided with the prescribed fee to Council.

8.1.5 Council may also impose a late fee on the property owner where the testing of backflow prevention devices, submission of the required "Backflow Prevention Inspection/Testing Maintenance Report" and/or payment of the prescribed fee is not completed by the date specified.

8.1.6 If the use and hence site contaminant hazard rating of a premises changes, the customer must install the appropriate site containment backflow prevention device for the new use.

8.1.7 All backflow prevention devices and associated costs are the responsibility of the owner.

8.2Council

8.2.1 Council will audit adequacy of backflow prevention device and whether it satisfactorily meets all requirements in this policy

8.2.2 Council may register, inspect, test, and carry out maintenance on backflow prevention devices for a fee.

8.3Plumber

8.3.1 The accredited Plumber shall ensure that backflow testing gauges/test units are certified for calibration every year by a qualified instrument maker, and details are affixed to the unit.

8.3.2 The installation of a backflow prevention device(s) may significantly reduce the pressure and flow rate of the water supply within the premises. The potential for this to occur needs to be taken into consideration by the licensee when fitting backflow prevention devices and the property owner/occupier advised in writing accordingly by the licensee. It is the property owner's/occupier's responsibility to undertake at their cost, any works on the premises necessary to provide an adequate water flow rate.

BACKGROUND

As a LWU, Council is required to ensure that it provides a safe and good quality drinking water supply. Backflow prevention is one important step in achieving this outcome.

The drinking water supply and the recycled water supply require suitable protection to prevent backflow of harmful substances into the supply and cross connections with the drinking water supply.

DEFINITIONS

Above Ground Water Tank	A water tank clear of any embankment, fill or the like
Authorised Type	Authorised and Approved by Water Industry Codes, Standards and Bodies as fit for connection to a reticulated water supply.
Back Pressure	A condition where the pressure downstream of the cross connection becomes greater than the pressure upstream of the cross connection, thus allowing water or other contaminated/polluted liquid to reverse its normal flow and enters the water supply.
Back Siphonage	A condition where the water or other contaminated/polluted liquid enters the water supply by siphonage caused by a negative pressure (vacuum or partial vacuum) in the reticulation system. Back siphonage can be created when there is a stoppage of the water supply due to fire-fighting, repairs or breaks.
Backflow	Flow in a direction contrary to the normal or intended direction. The unintended flow of water from a potentially polluted source into a water supply.
Backflow prevention device	A device or method to prevent backflow
Below Ground Water Tank	A tank where any sides of rainwater tank are buried, or have soil or other such material in contact with walls of the tank, the tank shall be treated as a fully buried tank for backflow prevention purposes
Containment Protection	A backflow prevention device installed at the water meter(s) on the property boundary, to prevent backflow from within the property.
Cross Connection	Any connection or arrangement, physical or otherwise, between any potable water supply system either directly or indirectly connected to a water main and any fixture, storage tank, receptacle, equipment or device through which it may be possible for any non-potable, used, unclean, polluted or contaminated water, or any other substance, to enter any part of such **potable water supply system**, under any conditions.
Council	Ballina Shire Council
Fire Service	Water connection to supply essential fire measures
Greywater Diversion Device	A device/plumbing fitting approved and installed in sewered areas used to divert greywater to an approved subsurface or subsoil disposal area within the property.

Plumber	Is a *NSW Department of Fair Trading* licensed plumber with certification to test and install backflow prevention devices.
Hazard Rating - High	Any condition, device or practice that, in connection with the water supply system, has the potential to cause death.
Hazard Rating - Medium	Any condition, device or practice that, in connection with the water supply system, has the potential to endanger health
Hazard Rating - Low	Any condition, device or practice that, in connection with the water supply system, constitutes a nuisance but does not endanger health or cause injury
Individual Protection	Installing a backflow prevention device at the point where the water pipes connect to a fixture or appliance within a building or facility.
LWU	Local Water Utility (for the purposes of this policy; Ballina Shire Council)
Testable Device	Any backflow prevention device that is provided with test taps for the purpose of testing its operation, and a registered break tank or registered air gap
Zone Protection	Installing a backflow prevention device at the connection point of specified sections of a plumbing system within a building or facility. Zone protection aims to isolate any real or potential hazard within a section of a consumer's property water supply system. No potable outlets are permitted downstream of a zone protection device.

SCOPE OF POLICY

This policy applies to:

- Property owners
- Water customers
- Council employees
- Committees of Council
- Consultants/Contractors
- NSW Licensed Plumbers

RELATED DOCUMENTATION

Related documents, policies and legislation:

- Local Government Act 1993 (NSW)
- Local Government (General) Regulation 2005
- Environment Planning and Assessment Act 1979 (NSW)
- Public Health Act 2010 (NSW)
- Public Health Regulation 2012
- Protection of the Environment Operations Act 1997 (NSW)
- Protection of the Environment Operations Regulation (General 2009) (Waste 2005) (Administration 2012) (NSW)

- Australian Sewage Quality Management Guidelines 2012
- Integrated Water Cycle Management Guidelines for NSW Local Water Utilities 2004 - NSW Department of Energy, Utilities and Sustainability (DEUS)
- Plumbing Code of Australia (PCA)
- Australian and New Zealand Standards AS/NZS 3500
- Australian Standard Water Supply – Backflow Prevention Devices – AS2845
- Liquid Trade Waste Regulation Guidelines 2009 - NSW Department of Industry
- NSW Government's Best-Practice Management of Water Supply of Sewerage Guidelines, 2007
- Dual Water Supply Plumbing Policy 2013 (BSC) D10 231117/30
- Enforcement Policy 2103 (BSC) E02 231117/10
- Water Meter Policy 2012 (BSC) W02 240817/22
- Drinking Water Management System (BSC)
- Recycled Water Management System (BSC)

REVIEW

This policy is to be reviewed every four years.