

## 11.5 Policy (Draft Review) - Backflow Prevention

**POLICY NAME:** DRAFT REVIEW  
BACKFLOW PREVENTION

**POLICY REF:** B04

**MEETING ADOPTED:** 25 October 2007  
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**POLICY HISTORY:**



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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 NSW Code of Practice, 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 potable 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 within the water service and the water main are known and implemented.

## BACKGROUND

### Water Supply Services

Ballina Shire Council as a Local Water Utility (LWU) operates three separate water supply schemes. Treated water from Marom Creek is provided to Wardell, Meerscham Vale, Cabbage Tree Island and some rural customers. For these systems Council is responsible for the complete distribution and reticulation of the drinking water supply up to and including individual property meters. As a LWU Council is required to ensure that it provides a safe and good quality potable water supply. Backflow prevention is one important step in achieving this outcome.

Rous Water supplies bulk water for the Ballina/Lennox Head and Alstonville/Wollongbar systems. For these systems, Council is responsible for the distribution and reticulation systems from the bulk supplier.

A cross-connection is any connection or arrangement, physical or otherwise, between any potable water supply system connected to any water authority's supply and any storage tank, which permits backflow of water or other contaminated/polluted liquids to enter the potable water supply.

Backflow is the flow of liquids in a direction contrary to the normal or intended direction of flow or the unintended flow of water from a potentially polluted source into a potable water supply.

**DEFINITIONS**

Backflow can occur in two ways:

**Back Siphonage** A condition where the water or other contaminated/polluted liquid enters the potable 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.

**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 enter the potable supply.

**Council** Ballina Shire Council

**LWU** Local Water Utility (for the purposes of this policy; Ballina Shire Council)

**GDD** Greywater Diversion Device; a device installed in sewerage areas used to divert greywater to an approved subsurface or subsoil disposal area within the property.

**SCOPE OF POLICY**

This policy applies to

- Council employees
- Community members
- Committees of Council
- Consultants/Contractors
- NSW Licensed Plumbers

**RELATED DOCUMENTATION**

- NSW Public Health Act 2010.
- Environmental Planning and Assessment Act 1979 (NSW)
- Local Government Act 1993 (NSW)
- Local Government (General) Regulation 2005
- Protection of the Environment Operations Act 1997 (NSW)
- (Draft) NSW Public Health Regulation 2011.
- NHMRC/NRMMC Australian Drinking Water Guidelines 2004.
- NSW Code of Practice: Plumbing & Drainage, 3rd Edition 2006
- Australian & New Zealand Standard AS/NZS 3500.1 :2003

Ballina Shire Council documents:

- Ballina Shire Urban Water Management Strategy.
- Community Strategic Plan 2010-2025.
- Enforcement Policy
- Water Meter Policy

**POLICY**

As a supplier of water to the public, Council undertakes to provide safe drinking water to customers' properties that is free from contamination or pollution. This will be achieved by implementing backflow prevention devices within the service area as follow:

**1. General**

- 1.1 All properties within Ballina Shire connected to the reticulation system require a backflow prevention device. The device required will be identified by the hazard rating of the processes conducted onsite defined by AS/NZS 3500:1 section 4, table 4.1 and table F1, F2 and F3 or detailed below.
- 1.2 Boundary containment will have equal too or higher rated protection than any individual or zone requirement. A containment backflow prevention device is required regardless of zone or individual protection. As Council cannot guarantee the integrity of zone or individual protection on a customer's site, we cannot guarantee the protection of the drinking water supply from backflow unless; the site is contained at the boundary, and if applicable the backflow prevention device is regularly serviced and tested in accordance with AS/NZS 3500:1 (or any subsequent amendment to this standard by the appropriate authority) and the manufactures requirements. The device to be installed on the property is determined by the hazard rating of the processes on site. If the hazard rating varies due to multiple business processes, the highest hazard rating should be applied.
- 1.3 Council may, at any point in time, require any residential or non residential premises connected to the water supply to be provided with a backflow prevention device(s) for containment at the boundary.
- 1.4 Where, in the opinion of Council, a potential or physical cross-connection is found in the water service at 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 the Council, may at the Council's discretion, result in the immediate restriction or disconnection of the property from Council's water supply.
- 1.5 All properties must comply with the requirements of the NSW Code of Practice: Plumbing & Drainage, 3rd Edition 2006, and AS/NZS 3500.1:2003 or this policy which ever requires the highest protection level.
- 1.6 Customers are to meet the full cost of complying with this policy.

**2. Domestic Services**

- 2.1 All domestic meters will have a dual check device as a minimum requirement as supplied by Council. These are contained within the water meters provided by Council for 20mm and 25mm meters, larger meter will require separate devices.
- 2.2 Council is responsible for the installation of containment protection upon application; see Council's Water Meter Policy for details. On a drinking water service, the device shall be installed on the customer's side of the water meter with no connections between the water meter and the device.



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- 2.3** For Dual reticulation services a dual check device supplied with the meter is required and no interconnection with the potable supply is permitted - for further information refer to Councils Dual Reticulation Plumbing Guideline.
- 2.4** Council may at any point in time require any residential or non-residential premises connected to the water supply to be provided with a backflow prevention device(s) for containment at the property boundary. The containment backflow prevention device(s) and individual or zone backflow prevention devices (accepted in lieu of containment devices) shall be suitable for the degree of cross connection hazard rating deemed applicable by Council. Where required by Council backflow prevention devices shall be:
- 2.4.1** registered with Council where the backflow prevention device is a break tank, registered air gap, reduced pressure zone device, pressure vacuum breaker or testable double check valve assembly;
  - 2.4.2** of an authorised type;
  - 2.4.3** installed according to the provisions under the *NSW Code of Practice: Plumbing & Drainage, 3rd Edition 2006*;
  - 2.4.4** maintained in a satisfactory operating condition;
  - 2.4.5** If required by Council as part of the registration process, subject to an agreement between the Council and the property owner regarding their installation and maintenance.
- 2.5** All backflow prevention devices are the responsibility of the owner.

### **3. 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.
- 3.3** In accordance with Council's Water Meter Policy a hydraulic design is required for any fire service assembly, Unit demand of 4 and greater, and 32mm assemblies or greater. All designs are to be submitted by a competent person *NSW Code of Practice: Plumbing & Drainage, 3rd Edition 2006*, along with Council's design/compliance certificate. Backflow prevention devices reduce pressure and must be taken into account during the design process.

### **4. Maintenance and Testing**

- 4.1** Customers are responsible for arranging for the installation, annual testing and maintenance of all backflow prevention devices in accordance with AS/NZS 3500.1: 2003.
- 4.2** Testable backflow prevention devices shall be commissioned and tested after installation and prior to service. They shall be maintained in working order and tested for operational function at intervals not exceeding 12 months.

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- 4.3** The maintenance and testing of backflow prevention devices shall be carried out by authorised persons, who are accredited to carry out testing procedures AS/NZS 3500.1: 2003.
- 4.4** Hose taps within 18m of a zone protected area within the same premises shall have a backflow protection device of the same hazard rating as the zone protection adjacent to which it is installed AS/NZS 3500.1: 2003
- 4.5** All hose taps are to have a vacuum breaker device AS/NZS 3500.1: 2003.
- 4.6** The accredited person shall ensure that backflow testing gauges/test units are certified every year by a qualified instrument maker, and details are affixed to the unit.
- 4.7** The property owner shall arrange for all devices to be tested and a "Backflow Prevention Inspection Testing Maintenance Report" be provided with the prescribed fee to Council at least on an annual basis. Council may require more frequent testing.
- 4.8** Council may register, inspect, test, and carry out maintenance on backflow prevention devices for a fee. 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.
- 4.9** 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.

## **5. Rainwater Tanks**

- 5.1** Rainwater tanks are to have a dual check valve as zone and containment protection if the tank is above ground or a testable double check valve or a vented check valve as zone and containment protection if fully or partially buried NSW Code of Practice: Plumbing & Drainage, 3rd Edition 2006.
- 5.2** Council does not recommend the interconnection of rainwater tanks with the potable or non-potable water supplies. The reason being that the New South Wales department of health does not recommend consumption from rainwater tanks where a potable water supply is provided.

## **6. On-Site Sewage Management Systems (OSSMS) & Grey Water Diversion Devices (GDD's)**

- 6.1** All properties that have an OSSMS and are also connected to the Council's reticulated water system shall have a testable backflow prevention device installed at the boundary on the customers' side of the meter at the property owners cost. (NSW Code of Practise for Plumbing & Drainage 3rd Edition 2006)
- 6.2** Where a greywater diversion device is installed on a single residential property, the licensee or property owner shall notify Council to ensure that a meter with an integral

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dual check valve is installed on the water service for the property. (NSW Code of Practise for Plumbing & Drainage 3rd Edition 2006).

## **7. Standpipes ~~Other~~**

- 7.1 Council has a number of fixed public standpipes available for use. These are located at Wardell, Southern Cross Drive, Alstonville and Ross Lane.
- 7.2 Private non-fixed standpipes are not to be used to draw water in Ballina Shire. If a standpipe is required a council employee will supply, install and monitor the water supply from a council standpipe at the applicants cost.

## **8. Auditing of backflow prevention devices**

- 8.1 Council has identified the need to carry out audits of premises requiring backflow prevention devices, and has begun this process.
- 8.2 Pro-active and reactive audits of commercial and industrial activities will be carried out by qualified Council staff from time to time.
- 8.3 Where in the opinion of Council a potential or physical cross-connection is found in the water service at any property, or if the water service is installed in a manner that will enable backflow to occur, the property owner shall, upon written advice of the Council, ensure that such cross-connection is immediately disconnected or altered to comply with Councils requirements or otherwise removed. Failure to comply within the period nominated by Council may at the Council's discretion, result in the immediate restriction or disconnection of the property from the Council's water supply.
- 8.4 Audits will focus on the following;
- 8.4.1 The adequacy of the backflow prevention device and whether it satisfactorily meets all legislative requirements.
  - 8.4.2 Servicing of the backflow prevention device,&
  - 8.4.3 Whether or not the device has been tested and is in test.
  - 8.4.4 Ensuring the customer takes the necessary steps to comply with all backflow prevention requirements.

## **REVIEW**

This policy is to be reviewed every four years.