

BACKFLOW PREVENTION POLICY

Responsible Department: Infrastructure Delivery
Responsible Section: Water Services
Responsible Officer: Manager Water Services

Objective

- To separate and protect the potable water supply from real or potential hazards by the installation of backflow devices.
- To minimise cross connection and thus reduce the possibility of backflow.
- To contain any real or potential hazard within the boundaries of the consumer's property.
- To ensure that non potable water from each end user does not infiltrate the Council water supply.

Introduction

Backflow is the reverse flow of waters or other liquids from a potentially polluted source into the Council managed water supply. This is caused by several conditions:

- Back siphonage –where the pressure in the reticulation system becomes less than atmospheric, this causes water from connected properties to flow backwards into the town's supply, for example, water main break.
- Backpressure –when the consumer's water pressure is greater than the pressure in the town's water supply.
- Cross-connection – direct or indirect physical connection of a potable water supply to a line that is non-potable, for example, town water supply to a rainwater supply.

Narrabri Shire Council as the supplier of water to the public undertakes to provide safe potable water to the consumer's property. Council ensures this by protecting the systems from contamination or pollution. Council aims to make all new and existing water connections compliant with the *Local Government Act 1993* (NSW) and Australian Standards.

Policy

1. Definitions

Term	Meaning
Back siphonage	Where the pressure in the reticulation system becomes less than atmospheric, this causes water from connected properties to flow backwards into the town's supply, for example, water main break.
Backpressure	When the consumer's water pressure is greater than the pressure in the town's water supply.
Cross-connection	Direct or indirect physical connection of a potable water supply to a line that is non-potable, for example, town water supply to a rainwater supply.
Authorised Persons	Within the meaning of this Policy, those who are either a licensed plumber or are accredited to carry out works in accordance with AS/NZS 3500.

Term	Meaning
Code of Practice	Within the meaning of this Policy, the current NSW Plumbing and Drainage Code of Practice.
Water Service	The cold potable water supply pipeline from the water main to and including the water meter, automatic meter reading device, backflow prevention assembly and flow restricting advice where fitted.
Fire Service	A water service dedicated only to service fire hydrants, fire hose reels, fire service fitting, including water storages, installed solely for firefighting in and around a building or property. Under certain conditions part of a fire sprinkler system may be included. A fire service that can be used for other purposes is deemed to be a water service and shall be fitted with a water meter, automatic meter reading device and when deemed appropriate a backflow prevention assembly.

2. Scope

- 2.1. Property owners are to meet the full cost of complying with this policy.
- 2.2. Customers are responsible for arranging the installation and maintenance of the backflow prevention devices in accordance with AS/NZS 3500:1 and AS/NZS 2845.
- 2.3. 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 at the property owner's expense.
- 2.4. All properties must comply with the requirements of the NSW Code of Practice for Plumbing and Drainage and AS/NZS 3500:1 or this policy which ever requires the highest protection level.

3. Appropriate Backflow Prevention Device

- 3.1. The appropriate backflow prevention device to be installed on the property is determined by the hazard rating of the processes on site.
- 3.2. All properties within Narrabri Shire Council area that are connected to a water reticulation system require a backflow prevention device for containment at the property boundary as follows:
 - (a) Domestic Services:
 - (i) All domestic meters will have a check valve as a minimum requirement.
 - (ii) Check valves are incorporated within the water meters provided by Council for 20mm and 25mm meters.
 - (iii) Water meters larger than 25mm will require a separate device.
 - (iv) All check valves for domestic use for meters 25mm and smaller are non-testable.
 - (b) Commercial/Industrial Services:
 - (i) Owners of properties with water connections larger than 25mm will be required to install an appropriate backflow prevention device on both potable water and fire services to the property.
 - (ii) Appropriate Backflow Prevention Device are **subject** to an assessment of the property's water use activities.
 - (c) Hose Taps:
 - (i) Hose taps within 18 metres of a zone protected area within the same premises shall have a backflow protection device of the same hazard rating as the protected zone adjacent to the hose tap's location (AS/NZS 3500.1).

- (ii) This will apply to high hazard rating areas such as those that facilitate the mixing of chemicals.
- (iii) All external domestic garden hose taps are to have a vacuum breaker device (AS/NZS 3500.1).

3.3. The Appropriate Backflow Prevention Device required will be identified by the hazard rating detailed below (AS/NZS 3500:1 Section 4 table 4.1 and table F1, F2 and F3).

3.4. Hazard Ratings:

High Hazard	Any condition, device or practice within the water supply system and its operation, which has the potential to cause death.
Medium Hazard	Any condition, device or practice within the water supply system and its operation, which could endanger health.
Low Hazard	Any condition, device or practice within the water supply system and its operation, which would constitute a nuisance but not endanger health.

3.5. Zone or Individual Protection

- (d) Boundary containment will have equal to or higher rated protection than any individual or zone requirement.
- (e) A containment backflow prevention device is required regardless of zone or individual protection.
- (f) Council cannot guarantee the protection of the drinking water supply from backflow unless the site is contained at the boundary.
- (g) If the hazard rating varies due to multiple business processes, the highest rating should be applied.

3.6. Cross-Connection

- (a) Where a potential or physical cross-connection is found in the water service at any property, the property owner must ensure such cross-connection is immediately disconnected or altered to comply with:
 - (i) Council's written advice and requirements provided to the property owner at the detection of the cross-connection; and
 - (ii) Industry standards as established by AS/NZS 3500.1
- (b) If Council's requirements are not met within seven (7) days, or a lesser period nominated by Council if there is a serious immediate risk to public health, Council will:
 - (i) Immediately restrict the water service to the property; or
 - (ii) Disconnect the water service to the property.

3.7. Fire Services

- (a) The Separate hydrant and sprinkler services require the installation of a double check valve assembly at a minimum.
- (b) On a separate hydrant and sprinkler fire service at a non-residential property, the device shall be installed close to where the water service crosses the property boundary, prior to any booster assembly.
- (c) A hydraulic design is required for any fire service assembly,
 - (i) Unit demand of 4 and greater, and

(ii) 32mm assemblies or greater.

(d) All designs are to be submitted by a competent person (*Code of Practice 2.2.8*) along with Narrabri Shire Council's design/compliance certificate. Backflow prevention devices reduce pressure and must be taken into account during the design process.

3.8. Existing Properties without Backflow Prevention

(a) In cases where Council becomes aware that an existing connection does not have backflow prevention protection Council will instruct the property owner to comply with this policy within seven (7) days of Council's notice.

(b) If the property owner fails to comply with Council's notice, Council will:

(i) Engage an authorized person to enter the property (within the powers of sections 191, 191A or 192 of the *Local Government Act 1993* (NSW), and install a backflow prevention device (supplementary containment, zone, or individual devices as deemed appropriate under this Policy); and

(ii) Recover all costs incurred from works completed in accordance with clause 3.8(b)(i) of this Policy from the property owner.

3.9. Rainwater Tanks with Council Supply Back Up Connection

(c) Where interconnection of rainwater tanks with a Council Water Service potable or non-potable supplies does occur, rainwater tanks are to have:

(iii) If the tank is above ground, a dual check valve as a zone and containment protection; or

(iv) If the tank is fully or partially buried; a testable double check valve as a zone and containment protection (in accordance with Code of Practice).

3.10. Standpipes

(a) Council has a number of fixed hydrant points in each township available for public use where bulk water is required directly from the main (due to flow rate and pressure requirements).

(b) Private non-fixed standpipes are not to be used to draw water under any circumstances.

(c) If a standpipe is required, a Council employee will supply, install, and monitor the water supply from a Council standpipe at the applicant's cost (as per Council's Fees and Charges within Council's current Operational Plan).

3.11. Testable Devices

(a) In circumstances where the appropriate backflow prevention device is located at a property with a high hazard rating, annual testing is required to ensure that they are operating appropriately.

(b) Testing will be undertaken by an appropriately authorised person as according to AS/NZS 3500.

(c) Council will maintain a database of all registered backflow devices.

(d) All testable devices must be registered with Council tested upon installation and then annually thereafter.

(e) All testing of backflow prevention devices is to occur at the owner's expenses.

4. Review

4.1. This policy will be reviewed within 12 months of an Ordinary Council Election or from time-to-time on an as-needs basis.

References

- *Local Government Act 1993* (NSW).
- *Local Government (Water Services) Regulation 1999* (NSW).
- NSW Plumbing and Drainage Code of Practice
- Australian Standard AS/NZS3500:1 – Section 4.
- AS/NZS 2845 – Mechanical Backflow Prevention Device

History

Minute Number	Meeting Date	Description of Change
819/2009	December 15, 2009	Adopted
26/2012	February 21, 2012	Reviewed
607/2013	September 3, 2013	Reviewed
164/2017	August 15, 2017	Reviewed
	September 1, 2021	Rebranded
336/2022	October 18, 2022	Adopted