TWEED SHIRE COUNCIL

Draft Policy

Backflow Prevention and Cross Connection Control

Version 2.0

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Backflow Prevention and Cross Connection Control

Policy Objective

The principal objective of backflow prevention is to protect the quality of water supplies by reducing the risk of contamination by backflow, back siphonage and cross connections. Such contamination can affect not only the wider water distribution; it can also impact on individual property owners.

This policy outlines Council's duty of care for the protection of the potable water supply to safeguard public health. It also outlines the duty of care of property owners to prevent such an occurrence, as well as their responsibility to maintain a safe water supply within their own property boundaries.

Definitions

Air Gap	The unobstructed vertical distance 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 such fixture or receptacle.
AS/NZS 2845	Australian/New Zealand Standard for water supply – Backflow Prevention Devices – materials, design and performance requirements.
AS/NZS 3500.1	Australian/New Zealand Standard for Plumbing and Drainage: Part1: Water Services.
Backflow	The unintended reversal of flow in a water pipeline whereby water that has already passed beyond the meter assembly into the customer's pipeline system returns to the Council's water supply.
Backflow Prevention Device (BPD) - AS/NZS 3500	A device which will prevent reverse flow of water from a potentially polluted source into the water supply system.
Backsiphonage	Backsiphonage occurs when the water supply pressure falls below atmospheric pressure.
Containment Protection	The installation of a Backflow Prevention Device on the water service at the property boundary between the distribution system and the owner's property.
Council	Tweed Shire Council
Cross Connection	A direct or indirect physical connection of a potable water supply to a line that is non-potable e.g. town water supply to a non-potable bore.

Hazard Ratings:

High Hazard (AS/NZS 3500)	Any condition, device or practice that, in connection with the water supply system has the potential to cause death.
Medium Hazard (AS/NZS 3500)	Any condition, device or practice that, in connection with the water supply system has the potential to endanger health.
Low Hazard (AS/NZS 3500)	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	The installation of a Backflow Prevention Device at the water connection to an individual apparatus.
PCA	National Construction Code Series, 2012: Volume Three, Plumbing Code of Australia
Qualified Person	A licensed plumber who has undertaken accredited backflow training by a registered training organisation.
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 a registered air gap.
Zone Protection	The installation of Backflow Prevention Devices within sections of the owner's property.

References

The policy is consistent with the aims of Local Government Act 1993, *The Plumbing and Drainage Act 2011,* National Plumbing Code of Australia (PCA) and Australia Standard AS/NZS 3500.1

The Water Directorate Backflow Prevention and Cross Connection Control Guidelines (July 2013) were considered in the revision of this document.

Key Words

back flow
bypass
check valve
contamination
cross connection
hazard
prevention

Background

Backflow, in relation to water supply systems, is any unwanted flow of potentially contaminated water into the potable (drinking) water distribution system. This occurs when water flows backwards, or opposite to its normal and intended direction of flow. This usually results when water pressure to a property is not maintained or if a pump is connected to a property's water plumbing system.

Cross connections are direct or indirect physical connections of potable and non-potable water which can also contaminate water supply systems. Cross connections between potable and non-potable supplies are illegal.

Both backflow and cross connections can present a risk to public health.

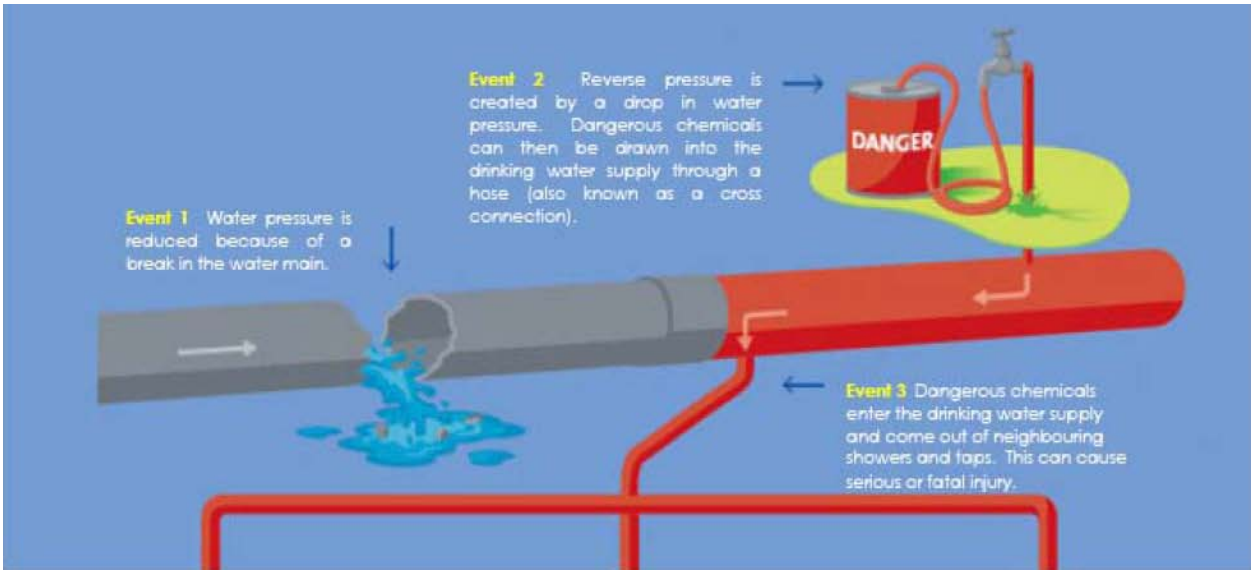

Figure 1 – How backflow can occur.

Policy

For all properties within Tweed Shire Council, potable water supply must comply with the requirements of this policy. All properties with a water connection shall have installed appropriate backflow prevention at the boundary for containment protection purposes. In addition, some properties will require individual or zone protection at the water connection to an individual apparatus.

The Policy will be implemented immediately on all new installations and progressively on existing services in accordance with the degree of risk identified.

There are different backflow prevention devices which can be installed depending on the hazard rating of the property concerned. Australian Standard AS 3500 defines three degrees of hazard associated with cross-connection and backflow, namely:

- High Hazard
- Medium Hazard
- Low Hazard

Properties with high and medium hazard ratings must install devices that are testable and must be inspected, tested and maintained at intervals not exceeding 12 months to ensure continued reliable operation.

Properties with low hazard ratings are required to install a non-testable device (as a minimum) that is usually built into the water meter assembly.

It should be noted that if the hazard rating of a particular installation varies due to multiple processes within the property, the highest hazard rating is to be applied in the selection of an appropriate backflow prevention device.

Council Responsibilities

Council has the ultimate responsibility and accountability for the implementation and management of control measures necessary to protect the quality and integrity of water supply systems under its control. Therefore Council has an obligation to ensure the appropriate installation, testing, maintenance and certification of backflow prevention devices. Council also has a responsibility to ensure that property owners and plumbers are made aware of the requirements for backflow prevention devices and their relevant responsibilities.

Council responsibilities are:

- To provide a mechanism for customers to apply for a water connection, provide evaluation of the hazard rating and install the appropriate containment device as part of the meter installation at the applicant's cost.
- To replace existing water meters in accordance with Council's meter replacement criteria. As part of the replacement the following will apply:
  - For properties with existing high / medium hazard devices, Council shall replace the water meter only.
  - For properties with existing low hazard testable devices, Council shall replace the water meter only.
  - For properties with low hazard non-testable devices that are separate to the meter, Council will replace the device as part of the meter replacement.
  - For properties with low hazard devices built into the meter, Council will replace these as part of the meter replacement.
- Retain records and ensure that minimum requirements for Testable Devices are carried out. These records include:
  - A register of all testable devices and results of all tests that are carried out.
  - Initial testing of privately owned containment devices that have been installed by Council.
  - Testing of all Council owned testable devices by a Qualified Person on installation and on an annual basis.
- To provide advise to customers of the date when the device must be tested and receive and record the test results.
- To monitor and test combined domestic / fire services that are 100mm or larger, annually as a minimum, at the cost shown in Council's Fees and Charges.

- To ensure that non-complying properties are brought into line with the requirements of this Council Policy, the Plumbing Code of Australia and the Australian Standard AS 3500: Part 1.
- To ensure the certification and accreditation of plumbers and the currency of such accreditation.
- To provide adequate rainwater tank installation policy to ensure clear guidelines for rain water tanks where town water supply is also connected.
- To maintain a register of rain water tanks.

Property Owner Responsibilities

Property owners are responsible for ensuring their property complies with this Policy and AS 3500.1.

The property owner shall be the legal owner of any backflow prevention device installed on the property side of Council's water meter.

The property owner responsibilities are:

- To make application to Council for all new or modifications to water connections.
- Ongoing maintenance and certification of testable backflow prevention devices. Upon advice from Council of the need to do so, the customer must submit certification of the satisfactory operation of the backflow devices to Council within 60 days of the issue of the advice.
- Ongoing maintenance and periodic replacement of non-testable backflow prevention devices located within the property to ensure that they continue to operate reliably.
- To ensure that qualified persons carrying out inspections / testing are made responsible for bringing non-compliant installations / devices to a compliance level.
- The cost of all backflow prevention devices and associated testing, inspection and ongoing maintenance other than for Low Hazard 20mm and 25mm meter installations.
- To allow access to the property by officers from the Council for the purposes of inspecting any backflow prevention devices.

Plumber Responsibilities

A licensed plumber with current backflow prevention accreditation has the responsibility of installing, commissioning, testing and maintaining devices, in accordance with AS 3500.1 and this Policy.

Appropriately qualified plumbers in conjunction with Council will determine the type of device to be installed, using the hazard rating process described in AS 3500.1 and shall install devices in accordance with the PCA and AS 3500.1.

In ground rainwater tanks can be exposed to hazardous chemicals such as those found in lawn grub sprays and therefore the hazard rating to be applied is Medium Hazard.

Connection to the potable water supply by means of auto switching devices or similar shall require a registered testable device.

Plumbers shall provide a Certificate of Compliance and a Backflow Prevention Device and Maintenance Report to Council for all testable backflow prevention device installations.

Fees and Charges

Council has set appropriate Fees and Charges in relation to backflow prevention. The fees are for:

- issuing of permits
- inspections of backflow prevention device installations
- re-inspection fees, if required
- annual registration and administration fees for backflow prevention devices
- other fees and charges as deemed appropriate.

Non-compliance

If the property owner fails to repair, maintain, replace or test a backflow prevention device as per AS3500 and the PCA, Council may utilise the provisions of the Local Government Act and Regulations to:

- have the defective work repaired;
- apply penalties; or
- restrict or disconnect the water connection.

Accountabilities and Responsibility

The position Manager Water will be accountable and is responsible for implementing this Policy.

Forms

Application for Water Service Connection / Disconnection

Related Legislation, Standards and Codes

Local Government Act 1993
NSW Local Government (General) Regulation 2005
Public Health Act 2010
The Plumbing and Drainage Act 2011
National Construction Code Series, 2012: Volume Three, Plumbing Code of Australia
Australia Standard AS/NZS 3500:2003
Australian Standard AS 2845.1:
Australian Drinking Water Guidelines 2011

Useful Links

Tweed Shire Council website

Division of Local Government

Version Control:

Version History		
Version #	**Summary of changes made**	**Date changes made**
1.1	*Original document*	*1/5/2002*
2.0	*Complete re-write of document based on Water Directorate guidelines and regulation changes.*	*5/9/2013*