

11.4 Policy (Review) - Water Metering

POLICY NAME: DRAFT REVIEW
WATER METERING

POLICY REF: W02

MEETING ADOPTED: 25 January 2007
Resolution No. 250107/023

POLICY HISTORY:



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1. OBJECTIVE

The purpose of this policy is to develop a standard water meter assembly policy. The policy defines Council, Owners and Plumbing Contractors responsibilities for installations, maintenance and disconnections of water meters.

2. BACKGROUND

Council does not have a water metering policy which outlines the requirements for water meter installations, backflow prevention devices (device to prevent the reverse flow of water from a potentially polluted source into a potable water supply), fire services or rural connections. Due to this lack of policy direction there has been a wide range of different water meter assemblies installed over the years. Some of these installations do not comply with current standards. **The assemblies may have complied with standards at the time but without a current policy these dated assemblies could be viewed as acceptable leading to confusion and unnecessary debate over the preferred requirements ?? Rod has queried.**

3. DEFINITIONS

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 (BSC)	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.
OSSMS	Onsite Sewage Management System
GTS	Grey water Treatment System.
Water Meter	A device connected inline to a premises water supply usually at the front of the property to measure the amount of water used for billing purposes.

Back Flow

Prevention Device A device used to protect a water supply by preventing contaminated water from either *back siphoning* or being *back pressured* from a premise back into the water main.

Greenfield

Developments A term used in construction and development to reference land that has never been used (e.g. green or new), where there is no need to demolish or rebuild any existing structures.

WH&S Workers Health & Safety

Urban Rainwater

Tanks Rainwater tanks located in a city, town, village, estate or other area supplied with a Council reticulated drinking water supply. These areas may or may not be sewerage.

Topping up Term used to describe the physical method of re-filling or topping up a rainwater tank with another water source

Valve A device used to turn off or on, or regulate up or down, or open and close the flow of water in a pipe.

Reclaimed

Water Wastewater that has been restored to a state that will allow it to be beneficially reused. This water is not for human or animal consumption or general contact.

Unpressurised

Mains Water mains that are being newly constructed and installed by developers/contractors and which have not been pressurised and/or handed over to Council.

Pressurised

Mains Water mains which have been handed over to Council and/or are pressurised or under Council control

4. SCOPE OF POLICY

This policy applies to

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

5. 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

6. POLICY

All water and reclaimed water services must comply with this policy of water metering and will be controlled by Council's *Water & Sewer Section, Civil Services Group*.

An application for Water Service under this policy does not negate the need for the applicant/developer/property owner to submit to Council and have approved a Section 68 Application for the proposed works prior to works being undertaken.

7. RESPONSIBILITY

- Ballina Shire Council exercises it's water supply functions under Division 2 Part 3 Chapter 6 of the *Local Government Act 1993*:
- Ballina Shire Council (BSC) is responsible for the pricing and installation of water meter assemblies for the provision of potable water and reclaimed water. BSC is responsible for the water service from the water main to the

outlet of the meter and/or the backflow prevention device and isolation valve as required.

- BSC is responsible for the pricing and installation of water service assemblies for the purpose of fire protection. This includes the water service from the water main to the backflow prevention device and or by-pass detector meter assembly up to and including the downstream isolation valve as required
- For developments on unpressurised mains the developer is responsible for house connections to the reticulated main. As per Council's standard drawing design *SP066* which is available from Council on request. The service connection is to be terminated inside the property boundary with a service isolation valve inside a termination box. When the main becomes live and a water meter is required the builder/owner shall make an application for water service to Council. Council will complete the installation by providing a riser and water meter.
- For development sites fronting pressurised mains the developer will make an application to council for a house connection. As per standard drawing design *SP066* which is available from Council on request Council will terminate the service inside the property boundary with a service isolation valve inside a termination box. When a water meter is required the builder/owner shall make an application for water service to Council. Council will complete the installation by providing a riser and water meter.
- Ongoing service and maintenance of backflow prevention devices are the responsibility of the property owner as per the *NSW Code of Practice (COP), Plumbing and Drainage*, 3rd edition 2006
- Customer services officers are responsible for receiving the Application for water services, charging the standard rate for new **20mm** services in new development areas, or forwarding the Blue part of the *application for water service* triplicate book to the *Water Quality & Trade Waste Officer* for costing.
- Costing will be provided to the applicant in the form of an estimate only. Quotes can not be provided to the applicant. Estimates are subject to change and are current for 60 days only.
- *The Water Quality & Trade Waste Officer* is responsible for:
 - Providing accurate prices for the installation **estimate** of new services and disconnections of disused services to the applicant.
 - Entering details of the application into Council records.
 - Forwarding relevant paperwork and the completed *water service application* to the Team Leader for Water and Sewage for installation.
 - Providing site information to field staff including: site and main locations and standard installation diagrams and other utility diagrams.

- The field services staff crew are responsible for:
 - Installing and disconnecting of all water service assemblies at the water main up to and including the meter assembly in a professional and timely manner upon receipt of the correct documentation from the water meter officer.
 - Emergency work such as; main breaks water service breaks and other urgent work may take priority over a new water connection.
 - The licensed plumbing contractor is responsible for providing connection from the private property side of the water service to the meter assembly.
 - The licensed plumbing contractor is responsible for providing permanent structural support to all water meter assemblies when connecting the private property side of the water service.
 - The applicant is responsible for clearly marking the desired position of the water meter assembly on the application form within the space provided, or with a site plan along with measurements and details required.
 - Council's connection to the main will then be installed perpendicular to the meter assembly location. Council recognises that certain situations may not allow this.

8. CONDITIONS

5.1. Where Hydraulic Designs are required

The following will require hydraulic design provided by a suitably competent and qualified person, (COP 2.2.8), which will need to be accompanied by a design/compliance certificate by a suitably qualified person to the satisfaction of Council's *Water & Wastewater Strategic Engineer*:

- Any fire service assembly, including Fire Hose Reels, and/or
- Unit demand of 3 units and greater, and/or
- 32mm assemblies or greater

Water Service Applications submitted without the necessary design details as outlined above will not be assessed or priced by Council.

A *Section 68* Application under the provisions of the *Local Government Act* must be submitted to and approved by the appropriate section of Council prior to the issue of a Construction Certificate and/or work being undertaken.

Such application must be accompanied by suitable hydraulic plans and associated detail of drinking water services, fire services, and any reclaimed water services.

5.2. Applications and Tendering

- Prices will not be provided by Council to plumbers or contractors for the tendering process.
- The owner of the property or the plumber commissioned for the job (the applicant) only may make a request for water services and an estimate may then be provided.
- Applications are to be completed in full and accompanied by the appropriate installation design. Applications with inadequate detail will not be assessed or priced by Council.
- Properties with a body corporation or multiple owners must have the written permission of the owner's corporation, or the property's entire owner's which must accompany the submitted application.
- Applicant's wishing to convert a single metered multi unit or duplex property to individual meters must show that a NSW licensed plumber has undertaken satisfactory investigation onto the altering of the private owned component of the properties water service, and that these alterations are able to be carried out.

5.3. Location of Water Meters

- Generally the meter(s) will be installed a maximum of 500mm from the front and side boundaries typically at 90° to the road/front boundary. Further fees may apply if an alternative location is required.
- Meters must be readily accessible for reading, maintenance or removal and be clear of obstacles.
- If a new meter is installed that later requires relocating this shall be at the expense of the applicant
- All meters with remote metering devices shall be installed so they are easily located, accessible for reading, and able to be maintained or replaced and clear of obstacles.
- Remote metering devices shall not be installed in locations that adversely impact on the ability of the device to transmit adequate signal strength back to Council's receiver.
- Plans must be submitted to Council with the locations of all remote meters identified.

5.4. Backflow Protection

- All backflow prevention devices to comply with AS 2845.1
- All backflow prevention shall comply with Ballina Shire Council's *Backflow Prevention Policy 2012*.

- All services are to have a minimum of a dual check device.
- The type of backflow for individual, zone and containment protection is as per AS/NZ 3500 appendix F table F1-F3.
- Registered break tanks, air gaps, pressure-type vacuum-breakers, reduced-pressure-zone devices and double check valves require a test frequency not exceeding twelve months (AS 2845.3), **and are the responsibility of the property owner.**
- **Testing of any Backflow Prevention device shall comply with Council's Backflow Prevention Policy 2012, and will be at the property owner's expense.**

5.5. Fire Services

- Fire services are required for buildings based on floor area, building levels as per the Building Code of Australia.
- An application for a fire pressure certificate from Councils *Water and Wastewater Strategic Engineer* is required.
- After receiving the pressure certificate, hydraulic details prepared by a qualified hydraulic consultant are to be submitted to Council with a compliance/design certificate for Council assessment.
- Above ground isolation valves shall be a full flow outside screw and yoke wheel, resilient seated gate valve or approved butterfly valve closed by rotating the handle clockwise.
- Below ground isolating valves shall be resilient seated key operated sluice valves.
- The plumbing contractor is responsible for labelling and securing all fire services as per Australian Standards

5.5.1. Where Inline Meters are not **permitted**

- Where the metering of water used for fire protection is required in line meters shall not be installed. The preferred method is a metered bypass across a double check detector assembly (COP 6.5). This includes Fire hydrants installed in accordance with AS 2419.1, Booster pumps (AS 2419.1) sprinkler services (AS 2118.1), window or wall drencher systems.
- Window or wall drencher systems must be separate and distinct from all other services (AS 2118.1 cl 4.4.1). Large/complex installations will require metering across a double check detector assembly.

5.5.2. Where Inline Meters are **permitted**

- Hose Reels shall be connected to a metered service (COP 2.2.2), which can be inline metered. The minimum size service for a single hose reel is 25mm.
- A 32mm service is normally provided to allow for pressure and flow fluctuations. Where fire hose reels are connected there shall be no line strainer provided prior to the water meter (AS 3500 cl 4.6.1).
- Where practical it is preferred that all fire hose reels come off the domestic service to reduce tapings to the main and standardise installations.

5.6. Urban Rainwater Tanks

It is extremely important for the health and well being of all Ballina Shire Council residents and visitors to ensure that Councils reticulated drinking water supply is protected from contamination from outside sources. One of the greatest risks of contamination of the drinking water supply is from cross connections with rainwater tanks.

Whilst the majority of rainwater tanks are well cared for it only takes one poorly managed or maintained rainwater tank to infect the drinking water supply which could cause sickness or even possibly death.

Where rainwater tank installations have been designed and installed so as to allow a top up connection with the drinking water supply the following is required:

- a) Zone Protection – zone protection shall also be provided by installation of an authorised backflow prevention device, suitable for the degree of hazard and sized to suit the water service. The backflow prevention device shall be fitted immediately upstream on the drinking water service at the point of connection.

Where a hot water service is fed by a rainwater supply, or any alternative water supply (e.g. bore or dam water), and a temperature control device is installed and connected to the mains drinking water supply then, a backflow prevention device shall be fitted upstream on the drinking water service at the point of connection.

- b) Containment protection – where a rainwater tank is to be connected (either directly or via an air gap), with the on-site drinking water supply, the mains supply shall be protected by installation of an authorised backflow prevention device, suitable for the degree of hazard and sized to suit the water service, fitted immediately downstream of the water meter or integral with the water meter.
- c) Council may permit a non-testable backflow prevention device to be used as zone protection for above ground rainwater tanks and a water meter with an integral dual check valve for containment if the drinking water service is DN 20 - DN 25.
- d) Council shall permit a non-testable (Vented Dual Check Valve (VDCV)) backflow prevention device to be used for containment protection and a no-

testable device for zone protection for any fully or partially buried rainwater tank(s) installation.

- e) Council reserves the right to require greater backflow prevention or to disallow cross – connection if rainwater tanks are not installed or operated in strict compliance with Council requirements.
- f) Where any sides of the rainwater tank are buried, or have soil or other such material in contact with the walls of the tank, the tank shall be treated as a fully buried tank for backflow prevention requirements.
- g) For a tank to be above ground it must be clear of any embankment, fill or the like.
- h) All water supply systems for rainwater tanks shall be installed as per the *NSW code of Practice Plumbing & Drainage, 3rd Edition 2006*.
- i) Any top up mechanism shall incorporate a device to limit the flow rate to 4.0 litres per minute.
- j) The connection to the rainwater tank shall be by a visible air gap external to the tank, or an approved auto change over device.
- k) Manual changes over devices are strictly not permitted.
- l) Any topping up from a non-drinking water supply (if permitted) shall be clearly marked/labelled and visible.
- m) All permitted outlet points supplied by the rainwater tank shall be clearly marked/labelled as “Rainwater”

5.6.1 Above ground rainwater tanks are to have as a minimum a Dual Check Valve (DCV) as zone and containment protection as required under the *NSW Code of Practice: Plumbing & Drainage, 3rd Edition 2006*.

5.6.2 Fully or partially buried rainwater tanks are to have as a minimum a Testable Double Check Valve (TDCV) or a Vented Check Valve (VCV) as zone and containment protection, as required under the *NSW Code of Practice: Plumbing & Drainage, 3rd Edition 2006*.

5.6.3 Council does permit the interconnection of rainwater tanks with the potable or non-potable water supplies. The New South Wales department of health does not recommend consumption from rainwater tanks where a potable water supply is provided.

5.6.4 Rainwater tanks installed in areas with a reticulated reclaimed water supply (e.g. Cumbalum Heights etc), are not permitted to have any type of top up device for the rainwater tank. This must be strictly complied with and all top up devices from any water supply be it drinking water or reclaimed shall not be permitted.

5.6.5 Interconnection from a rainwater tank to any other water supply or plumbing fixture is not permitted in areas with a reticulated reclaimed water supply (e.g. Cumbalum Heights etc).

5.7. Rural Connections

- Rural areas are defined, in this case, as areas where no standard urban reticulation systems are present.
- Trunk mains are not standard urban reticulation systems. The reasons Council do not allow connections to trunk mains are as follows. Council can shut down trunk mains for periodic maintenance without prior notification to customers. Trunk mains are generally between two reservoirs hence the need for additional protection of the potable water supply. Pressure fluctuations are not regulated to the same extent as urban reticulation systems.
- A written submission is required for Council's consideration for a rural connection detailing any special considerations. *It is at the sole discretion of the Council on a case by case basis as to whether a rural connection will be granted or not.*

5.8. If Council Approves a Rural Connection

The following conditions apply: -

- All rural connections must have backflow protection to Council's satisfaction.
- *Any property with its own Onsite Sewage Management System (OSSMS) or Greywater Treatment System (GTS), or a Grey Water Diversion Device (GDD) must comply with BSC's Backflow Prevention Policy 2012, and have as a minimum a testable backflow prevention device installed at the water meter assembly at the owner's expense.*
- 20mm connections only are permitted as the water supply is for domestic purposes.
- Council makes no guarantee as to the quality and quantity of supply
- A storage tank and pressure pump system to distribute the water supply to the dwelling is required. The owner's water supply line from the meter must only discharge into this storage tank. The discharge can be via a visible air gap or in the case of an internal discharge point, with a registered air gap as per AS 2845 and AS 3500. There will be no connections in between the water meter and the storage tank.
- The tank shall be cleaned and disinfected at no greater than 2-year intervals. (COP 2.3.4).
- No headwork's charges will be levied, as this connection is not a guaranteed service to Council's service level standards for potable water supply

- Where an extension of the main is required a meter will be installed just prior to the endpoint of the main. The owner is responsible for the running of appropriate pipe from this point and is responsible for its maintenance.
- Where the pipe is to be run along the council road reserve a proposed pipe layout is required showing depth of pipe (minimum 600mm) and route for council's consideration. **It is the applicant's responsibility to check to ensure other services will not be disrupted or damaged and that the public and any workers health and safety are not put at risk.**
- If a private contractor is engaged council will need a copy of their public liability insurance, Workers compensation policy and OH&S policy. If the applicant is performing the works on there own. Public liability insurance only will be necessary.
- A traffic control plan is to be provided.
- Consult with councils risk management officer before applicant is advised to proceed.

5.9. Reclaimed Water Installations

Reclaimed water connections will service **toilet flushing, external usage, and/or other as determined by Council**, and **must** comply with the following:

- Where reclaimed water installations are provided Ballina Shire Council will install both the potable and re-claimed water meter for the same fee as a single potable connection.
- Only a 20mm reclaimed water service will be provided for domestic purposes.
- **Rainwater tanks installed in areas with a reticulated reclaimed water supply (e.g. Cumbalum Heights etc), are not permitted to have any type of top up device for the rainwater tank. This must be strictly complied with and all top up devices from any water supply be it drinking water or reclaimed water shall not be permitted.**
- **Interconnection from a rainwater tank to any other water supply or plumbing fixture is not permitted in areas with a reticulated reclaimed water supply (e.g. Cumbalum Heights etc).**
- **Interconnection from any reclaimed water supply, water service, fixture, or storage tank to any other water supply or plumbing fixture is not permitted in areas with a reticulated drinking water supply, (e.g. Cumbalum Heights, etc).**
- **Commercial/industrial requirements will be sized to suit demand upon application and the associated hydraulic designs. All costs of the installation will be provided as an estimate for the commercial/industrial property owner.**

- The potable water meter will be installed with the appropriate backflow prevention device as per council requirements. This meter will be located closest to the side property boundary.
- All external tap outlets on the potable supply shall be fitted with hose connection vacuum breakers and appropriate signage.
- All external tap outlets on the reclaimed supply shall be as per AS 3500, NSW COP 2006 and Ballina Shire Council guidelines.
- The lilac coloured reclaimed water meter will be installed beside the potable water meter with at least 100mm separation between the two meters.
- All plumbers contracted to do works where reclaimed services are available can be provided with a *Plumbers Information Pack*.
- Where the numbers of meters at the boundary become impractical see *remote metering* below.

5.10. Remote Metering and Developments

- All Greenfield developments will be supplied with individual connections from the water main to each lot, including where road crossing are required.
- All Greenfield developments will be required to have remote read meter installations as practicable. Remote read technology signals Council when meters are tampered with improving water security and water loss.
- If it is impractical for separate metering at the boundary due to the number of meters required or the logistics of the installation remote read meters will be used. This includes all commercial, industrial and residential developments.
- Council will install a master meter at the boundary and provide remote read meters to the applicant for installation by a licensed plumber. The master meter will have no access charge levied but will be used to capture common use consumption or inappropriate fire hose usage. Standard consumption charges will apply.
- Each remote read meter would incur the appropriate water access charge.
- The plumber contracted to install remote read meters will call Council with 24 hours notice for a commissioning inspection upon completion of installations.
- Arrangements are to be made with Council as to how the meters can be collected for installation.
- All meters & remote metering devices must be **provided** by Council to the developer **at the expense of the applicant/developer**.

- All meters with remote metering devices shall be located so they are easily located, accessible for reading, and able to be maintained or replaced and clear of obstacles.
- Remote metering devices shall not be installed in locations that adversely impact on the ability of the device to transmit adequate signal strength back to Councils receivers.
- Plans must be submitted to Council with the locations of all remote meters clearly identified.

5.11. Disused Services

- Where a service or part of a service becomes disused it shall be disconnected by Council after an application for water services disconnection has been made and the appropriate fee received by Council. Fees for such will be determined by Council on application and will be at the expense of the applicant.

5.12. Damaged Water Meters

- Where field staffs are able to identify the cause of meter damage that can be attributed to a property owner, contractor or individual then a cost estimate will be prepared. An invoice for the costs incurred in completing the repairs will be raised and issued by the finance section to the identified party.

5.13. Water Service Compliance

- All water service installations downstream of the property service shall be installed in compliance with the Building of Australia, Australian Standards, NSW Code of Practice – Plumbing and Drainage 2006, and Ballina Shire Councils Guidelines as necessary.

5.14. Council Adoption of Private Water Meters

- Application can be made for private meters to be read and maintained by council on a case-by-case basis given the following conditions are met.
- Meters are at the boundary and are readily accessible for reading. If meters are not in a suitable location remote read meters can be installed at the applicants cost.
- Meters are in good condition, of suitable quality and have the appropriate level of backflow prevention. If not meters can be upgraded though council at the applicants cost.

9. Related Documentation

All installations as per: -

- Australian & New Zealand Standard AS/NZS 3500.1:2003
- AS/NZ 2419 – Fire Hydrant Installations
- AS/NZ 2118 – Automatic Fire Sprinkler Systems
- AS/NZ 2845 – Water Supply – Backflow Prevention Devices
- AS/NZ 2441 – Installation of Fire Reels
- NSW Code of Practice - Plumbing and Drainage 2006 3rd edition
- NSW Public Health Act 2010
- Environmental Planning and Assessment Act 1979 (NSW)
- Local Government Act 1993 (NSW)
- Local Government (General) Regulation 2005 (NSW)
- Protection of the Environment Operations Act 1997 (NSW)
- (Draft) NSW Public Health Regulation 2011
- NHMRC/NRMMC Australian Drinking Water Guidelines 2004

Ballina Shire Council (BSC) documents

- Ballina Shire Council – standard installation designs.
- BSC Urban Water Management Strategy
- Community Strategic Plan 2010-2025
- Enforcement Policy 2008
- Backflow Prevention Policy 2012

10. Specific safety requirements for all workers.

- Appropriate traffic control when working on or near the road
- Hard hat and high visibility vests on construction sites or as required by site rules.
- Site inductions where required.
- Workcover site safety ticket (green card)
- All other PPE as required
- Compliance with all BSC WH&S Requirements
- Compliance with all relevant WH&S Code of Practices