

Attachment A



QUEENSTOWN LAKES DISTRICT COUNCIL

WATER METER POLICY

VERSION 6

May 2017

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1. Application

This policy applies to all water meters installed as a requirement of the Queenstown Lakes District Council (QLDC) Land Development and Subdivision Code of Practice.

2. Purpose

The purpose of this policy is to establish a framework of principles to be applied to the management, use, functionality and specification of water meters.

3. Related Documents

This policy should be read in conjunction with the following documents:

1. Local Government Act
2. Utilities Access Act (and its supporting code of practice)
3. Privacy Act
4. QLDC Land Development and Subdivision Code of Practice (NZS 4404/2010 with QLDC amendments)
5. Water Supply Bylaw 2015

4. Definitions

A **water meter** is a device that continuously measures and tracks the amount of water a property, household or business uses.

5. Principles

The following principles apply with respect to this policy:

- a. All new or redeveloped residential and non-residential units, whether individually titled or not, must have individual water meters installed for each individually occupied unit or premises; unless the property is managed by a legal entity (i.e. body corporate) in which case a bulk meter at the boundary is acceptable.
- b. Water meter data is an important resource in informing the strategy, management and investment by QLDC, and setting the requirement for funding from the community.
- c. QLDC, rather than any individual or business, owns all data collected by a water meter.
- d. Processes for water meter data capture, validation, and processing should be automated wherever possible.
- e. Water meter data must not be used for an individual's own or for others' personal gain or profit.
- f. In situations other than e. (above), water meters must be located in the road reserve within the pedestrian area (i.e. berm or footpath) on QLDC's side of the point of supply (out of any vehicle paths) and must be readily accessible at all times for reading and maintenance.
- g. Where it is not practical to install all the meters within the road reserve (i.e. multiple dwellings of three levels or greater), QLDC may at its sole discretion, consent to remote water meters being installed within the property, where they are readily accessible for reading, maintenance or replacement.
- h. In addition to separate meters within the property, multi-unit developments must also have a single property meter located on QLDC's side of the point of supply.
- i. Water meters are generally to be located toward the front of the property near the left or right boundary.

- j. Applications for the use of water meters not already listed in 7. Water Meter Specifications must be made to QLDC, Attention: General Manager Infrastructure.

6. Responsibilities

The property owner is responsible for:

- a. Ensuring that QLDC's meter readers have access for regular readings.
- b. Reporting any damage to a water meter to QLDC for repair.
- c. Providing a registered plumber's As-Built plan showing the location and details of their water meter(s).
- d. Ensuring only registered plumbers (minimum Level 3 National certificate in water reticulation) are used to install a water meter on their property in accordance with QLDC standards and policies.

The General Manager Infrastructure is responsible for:

- a. The ongoing maintenance and supply of associated fixtures and fittings. Sole ownership of water meters is transferred to QLDC from the time of installation.
- b. Managing the QLDC process for capturing and storing water meter reading data.
- c. Ensuring the implementation of processes for maintaining the integrity, accuracy, precision, timeliness, consistency, standardisation and value of water meter data.

7. Water Meter Specifications

The following specifications apply:

- a. All water meters shall be manufactured to AS 3565.1 Meters for Cold Potable Water – Volumetric & Turbine meters.
- b. All residential meters must be certified as conforming to ISO 4064/BS 5728 Class C, or any other performance standard approved by QLDC.
- c. All new water meters shall be installed according to the manufacturer's specifications.
- d. All commercial meters must be certified as conforming to ISO 4064/BS 5728 Class B or C, or any other performance standard approved by QLDC.
- e. Meter tests shall be performed at an IANZ certified test facility to meet ISO 17025.
- f. Magnetic flow meters shall comply with the QLDC standard (see attached), and be calibrated post-installation & verified by an independent certifier (usually the manufacturer's local agent). QLDC prefers Endress Hauser Mag flows and ABB Aquamaster & Water master meters for Retail Networks.
- g. All meter components shall be disinfected during assembly.
- h. The installation of automatic meter reading (AMR) technology is required by QLDC, where the AMR enables the automatic collection of consumption, diagnostic, and status data from a water meter, transferring that data to a central QLDC approved database.
- i. A list of acceptable meter solutions is provided in **Appendix A** of this policy.

The following applies to all couplings:

- a. All buried couplings are to be wrapped with Denso Petrolatum system.
- b. Ductile iron fittings shall be manufactured to NZS/AS 2280 1995 "Ductile iron pipes & fittings" with fusion bonded epoxy coatings to NZS/AS 4158.

- c. Connections over 50mm shall use fabricated tees (MDPE or Ductile Iron).
- d. Victaulic couplings are suitable for above ground only pipe-work (commonly used by fire contractors) unless prior agreement with QLDC has been reached. EPDM seals shall comply with AS 1646.
- e. Acceptable types of couplings are:
 - Compression couplings – Pushfit, Pushlok, Plasson Series 1, and
 - Gibaults – Tyton, Viking Johnson, AVK Supa coupler series .

The following applies to all Service Connections :

- a. Service connections shall be sized in accordance with NZS/AS 3500.1.2003 “Plumbing & Drainage Part 1 Water Services Clause 3.2.2.
- b. Standard sizes shall be 20mm, 25mm, 32mm, 50mm, 80mm; 100mm & 150mm. Service connections shall be made from steel, PE pipe or ductile iron pipe & fittings.
- c. Service connections may be constructed from MDPE, MLSP or ductile iron; Specifically LDPE (alkathene) and galvanised iron are not acceptable materials.
- d. MDPE lines shall be DN20 (min 16 bar PE80) to AS/NZS 4130 “Polyethylene pipes for pressure applications”.
- e. Polyethylene fittings shall comply AS/NZS 4129 - 2000 “Fittings for polyethylene pipes for pressure applications”.
- f. Service connections shall be laid with a minimum of 450mm cover immediately adjacent to the meter box inlet port.
- g. Where a service connection will pass under a proposed carriageway or driveway, a suitable and durable duct must be provided.
- h. Post installation testing of service connections shall be either:
 - 1. during pressure testing of new water mains, or
 - 2. under mains operating pressure for in-service water mains check for visual leaks and check for flow & pressure (minimum flow is 25 l/min and minimum pressure is 300kPa).

The following applies to all Tapping Bands:

- a. Approved ferrules and tapping bands shall be made of dezincification resistant bronze (LG2) to AS 2345 “Dezincification of copper alloys”.
- b. Stainless clamps may be used for under pressure tapping, if they comply with AS 4181 “Stainless steel clamps for waterworks purposes” – examples are Wang, Kawandah & AVK clamps (AISI 316 certified to NEN-EN-1509001).
- c. Electrofusion tappings shall comply with the international 39.5V system, manufactured to WIS-4-32-06 1989.
- d. Electrofusion welded tapping bands must also comply.

The following applies to all Gate, Peet & Ball valves:

- a. Sluice and Peet valves shall be resilient seated gate valves which comply with AS 2638.2 2006 “Sluice valves for waterworks purposes” shall be used, and AS 4158 “Thermal-bonded polymeric coatings on valves & fittings” shall be used.
- b. For connections under 50mm, copper alloy gate valves and non-return valves complying with AS 1628 shall be used.
- c. Valves 50mm and under may be BSP screw-fitted, over 50mm shall be flanged with BS.10 Table D bolt pattern.
- d. Butterfly valves are not permitted.

The following applies to all Non-return valves:

- a. All meters on domestic supplies must be fitted with a non-testable double non-return valve or dual check valve, as a minimum; Multi-storey or large developments will require a higher standard of backflow prevention.
- b. Fire connections require a testable double check valve assembly, as a minimum.
- c. Water connections to sewer pump stations, ejector stations & pressurised sewer systems require a RPZ device.
- d. Acceptable brands of dual check valves are RMC, Wilkins, Watts, and Ames.

The following applies for all manifolds for meter banks:

- a. Manifolds may be constructed from copper or stainless steel. Copper manifolds shall be braze welded and stainless shall be arc welded. Fabrication shall be by welders certified to AS/NZS 2980:2007 Qualification of welders for fusion welding of steels.

- b. The use of compression, electrofusion or glue jointed PVC couplings assembled to form manifolds is not an acceptable fabrication method.

The following applies for all Fire Connections:

- a. Fire connections will be designed by an appropriately qualified Fire Engineer.
- b. QLDC will approve all fire connections and determine if metering and backflow prevention is required (the default position is backflow devices are required on all connections, subject to a risk assessment, and metering is at QLDC's discretion).
- c. Metering of fire connections may be by bypass (check) meter, detector check backflow device or Magflow meter as determined by QLDC.
- d. For residential sprinkler systems and fire hose reels, a standard class C meter is acceptable.
- e. For commercial sprinkler connections a magnetic flowmeter or detector check backflow device is preferred.

The following applies for all Remote Water Meters:

- a. Remote water meters (or automatic meter readers) are to be installed, at the owners' expense.
- b. It is not acceptable for the customer to supply keys and/or codes to access water meters.
- c. Remote water meters must be installed in new developments of three levels or greater.
- d. At QLDC's request, additional equipment at owners' cost must be installed where the development is more than five levels high (including ground floor).
- e. When applicable, water meters must have a minimum 100mm distance between the edge of the pipe and any wall and a minimum 250mm distance between the centres of the pipes of each water meter assembly.
- f. Remote water meters must not be located inside the units/apartments, or within the ceiling, wall or floor cavities of common access areas.
- g. Remote meters will need to be installed when the meter is located behind a fence, gate (locked or unlocked) or within an area protected by a security system.

8. Surface Box Specifications

The following applies to all Surface Boxes:

- a. The location of valves and water meter surface boxes must be located outside private property, unless QLDC approve in writing otherwise.
- b. The top of all surface boxes must be flush with the reinstated surface.
- c. Meter Boxes shall be installed that meet the site requirements and type of installation as noted in the table below:

Meter Size (mm – diam)	Berm	Footpath	Driveway	Commercial Driveway/Road
12-25mm	PE box/lid	PE box/lid	PE box/lid	Specific Design ^{1, 2}
26-40mm	PE box/lid	Steel box/lid	Steel box/lid	
41-80mm	Steel box/lid	Steel box/lid	Steel box/lid	
81mm +	Steel box/lid	Steel box/lid	Specific Design ^{1, 2}	

Notes:

1. PE Box/Lid (HDPE) boxes shall be inverted taper style and be black coloured. The lid shall have the word “WATER METER”, “WATER” or “METER” embossed on it. A metal locator bar is required in the lid which must also have a surface pattern to minimise slip hazards. Refer to drawing MW-30 HDPE meter box. Examples of acceptable products are Draper Enterprise DRA30/1 and Humes MD5000 and Acuflo Industries Midi/Jumbo boxes.

2. Galvanised steel boxes with hinged chequer plate lids are required in lightly trafficked and some pedestrian areas. Site considerations will determine the suitability of these boxes. Special attention to the skid resistance of the lid surface may be a consideration in the selection of these boxes, which may require additional coatings to avoid creation of a slip hazard.
3. The walls of a steel box will need to have penetrations drilled for the incoming and existing pipework. Where wooden boxes are used, the timber shall be H4 treated timber fixed with galvanised steel fittings.
4. The addition of a steel mesh floor on the box prevents the migration of silt into the meter box.
5. For boxes located in heavy traffic areas or “shared space” pavements, a specific design may be required. Examples of boxes that may be acceptable (subject to specific QLDC approval) are Sika, ACO, Gatic or Wundercover boxes and lids. These must meet a minimum Class B rating (80 KN test load), as per AS 3996 “Metal access covers, road grates & frames”.
6. Concrete chambers will require a specific design, unless the designer can provide details from a proprietary system (i.e. Humes, Hynds or Telcrete).

9. Policy Compliance

Breaches of this policy may result in QLDC removing and replacing any water meter, and charging a property owner for the costs associated with enforcing this policy.

10. Disclaimer

QLDC acknowledges that a property owner may wish to attach logging or remote telemetry to their own water meter to assess their consumption patterns or manage their water use; written approval by QLDC is required. Failure to obtain QLDC’s written approval will invalidate QLDC’s liability for the meter if it is altered or is unserviceable for any period of time.

QLDC reserves the right to manage connections to its assets and may require that privately owned equipment is removed at any time.

11. Appendix A – Accepted Meters for Water Supply

A-1. APPLICATION LIMITATIONS

Accepted materials on this list are limited to mechanical volumetric and turbine type meters only.

A-2. GENERAL REQUIREMENTS

- a) Comply with AS 3565.1 for volumetric and turbine meters.
- b) Residential meters shall be certified to ISO 4064 / BS 5728 Class C.
- c) Commercial meters shall be certified to ISO 4064/ / BS 5728 Class B.

A-3. QUALITY ASSURANCE

The following minimum information shall be supplied with water meters:

- a) All products shall be marked in accordance with the conformity assessment body's requirements.
- b) Meter tests shall be performed by an IANZ certified testing facility to meet ISO 17025.
- c) Installation specification.

A-4. ACCEPTABLE PRODUCTS

The following are acceptable products for mechanical water meters. Other meters may be added to this list from time to time, following application to, and approval from the General Manager Infrastructure.

Manufacturer/supplier	Product model/name	Specific limitation
Elster	PSM V100	15mm to 40mm
Sensus	620	15mm to 40mm
Kamstrup	MULTICAL® 21/ flowIQ® 210X	15mm to 40mm
ABB		Magnetic flowmeter – 100mm and over

Elster	Helix 4000 or C4000 / 4200	40mm to 200mm
Sensus	Meitwin; Meistream; WP	50 mm or over
Endress Hauser		Magnetic flowmeter – 100mm and over

The following are acceptable products for remote water meters. Other meters may be added to this list from time to time, following application to, and approval from the General Manager Infrastructure.

Manufacturer/supplier	Product model/name
Actaris	Everblu-Access Point (AC powered) Automatic Meter Reading
Actaris	Everblu-Collector (10yr battery) Automatic Meter Reading
Actaris	Actaris Everblu-Cyble (10yr battery) Automatic Meter Reading
Actaris	Actaris Everblu-Host Software Automatic Meter Reading
Diehl	Altair V4 Concentric Volumetric Meter Composite R160 glass register DN20 (15Yr Battery) & Radio module Izar Rci 868Mhz
Inovonics (Elster)	Host Software -Tapwatch 2 & 3 Automatic Meter Reading
Inovonics (Elster)	Tapwatch-Data Concentrator & Communicator (AC powered / PSTN connected) Automatic Meter Reading
Inovonics (Elster)	Tapwatch-Repeater (AC powered) Automatic Meter Reading
Inovonics (Elster)	Tapwatch-Wireless transmitter (battery powered) Automatic Meter Reading
Itron	Field Collector 200 (battery powered) Handhelds
Itron	Field Collector 300 (battery powered) Handhelds