Metering requirements and sizing guide

November 2017
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Part 1

1  Introduction

1.1  Meter policy

This document contains Barwon Water’s policy for the connection to, and management of, all meter installation requirements to Barwon Water’s assets and applies to drinking water and non-drinking water services and trade waste connections.

This policy applies all areas under the control of Barwon Water and this policy is supported by:

- National Measurement Act 1960 (Cth)
- National Measurement Regulations 1999 (Cth)
- The Water Act 1989
- The National Measurement Act 1960
- Utility Meters (Metrological Controls) Act 2002
- The Water (Estimation, Supply and Sewage) Regulations 2014
- The Water (Trade Waste) Regulations 2014
- Plumbing Regulation 1998
- Trade Measurement Act Victoria 1995
- National Measurement Institute (NMI R-49)
- National Framework for Urban Water Metering
- Barwon Water’s Backflow Prevention Policy
- Trade Waste Policy
- Barwon Water’s Land Development Manual
- Barwon Water Billing Pricing Schedule
- AS 2845 Water supply – Backflow Prevention devices
- AS/NZS 3500 National Plumbing and Drainage
- AS/NZS 3565 Meter for Water Supply
- National Association of Testing Authorities (NATA) Rules
- WSAA Metering Codes of Practice.

1.2  Changes to this policy document

Barwon Water may change or replace any part of this Metering Policy at any time. The latest version of this Metering Policy can be obtained from Barwon Water by downloading a copy from our website www.barwonwater.vic.gov.au.

Any changes to this Metering Policy will operate prospectively and not retrospectively.

1.3  Who to contact

If you have any questions or comments about aspects of Barwon Water’s Metering Policy, please ring 1300 656 007, email info@barwonwater.vic.gov.au or, or visit our website: www.barwonwater.vic.gov.au.
2 Meter Policy objectives

The objectives of Barwon Water’s Metering Policy are:

(a) To protect the environment and promote water conservation
(b) To protect the health and safety of members of the public and the Barwon Water’s employees.
(c) To provide fair equity for the Barwon Water’s Customers
(d) To encourage best practice
(e) To ensure consistent approach to metering solutions
(f) To encourage compliance with the Barwon Water’s Metering Policy, the By-Laws and the Water Act 1989.

2.1 Legal and regulatory framework

2.1.1 Water Act 1989

Barwon Region Water Corporation is a statutory authority with water supply and sewerage responsibilities conferred on it by the Act, including by Parts 7 - General Powers, 8 - Water Supply and 14 - Enforcement of the Act.

Section 160 of the Act empowers the Authority to make by-laws in respect the management, protection and use of all lands, waterways and works under it, management and control, including penalties and enforcement procedures for non-compliances.

2.1.2 Non-compliance

A Person who fails to comply with or do anything required to be done under the Act, Regulation or By-Law, is guilty of an offence and risks prosecution by the Authority.
3 Metering – general

3.1 Meter Standards

Materials, techniques, workmanship and finish throughout shall comply with the provisions and requirements of the National Measurement Act as administered by the National Measurement Institute (NMI) specifications and codes, in conjunction with Australian Standards AS 3565 and WSAA codes. Where no Australian Standard exists, materials, techniques, workmanship and finish throughout shall comply with the provisions and requirements of:

(a) The British Standards Institution specifications and codes;
(b) Relevant local, Victorian and Commonwealth Government regulations;
(c) Respective controlling authorities; and
(d) To the entire satisfaction of Barwon Water.

3.2 Meter acquisitions

“All meters & products supplied to Barwon Water conform to the NMI R49-1, Australian Standard AS/NZS 3565 and AS/NZS 3855, including the “Standards Mark” and compliant with the requirements of the National Measurement Act.

Barwon Water requires a meter manufacturer’s warranty and that is a continuing warranty which survive termination or expiry of the supply agreement, save that the warranty referred continue for a period of seven years from the date of installation of the applicable meter or for a cumulative registered volume of water of an agreed amount, whichever is the longer period.

Meter supply contractors will be requested to warrant this within the “Manufacturer’s Warranty” documentation using the following:

Without limiting any other warranty by statute law-

If a defect (fair wear and tear excepted) appears in the goods within a warranty period the Supplier shall promptly remedy such defect by either repairing or replacing the defective goods without cost to Barwon Water.

Any meter supplied or approved by Barwon Water is owned by Barwon Water once it has been installed, all meters must be:

- Installed by a licensed plumber or Barwon Water’s agents; and
- Replaced by Barwon Water at no extra cost to the customer, except where:
  - the meter is stolen; or
  - the meter is damaged; or
  - the meter assembly does not meet current Australian Standards AS/NZS 3500
  - if the meter is not readily accessible; for reading, replacement or maintenance purposes.

Then the occupier or owner shall pay Barwon Water the cost if its replacement, repair or proper installation.

- Replaced or maintained by Barwon Water at no extra cost to the customer, except where:
  - the meter installation is non-compliant, or
  - the meter is in a hazardous environment;

Then the occupier or owner shall pay the cost if its maintenance, replacement, or installation.

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1 Reference: National Measurement Institute (NMI R-49) and AS 3565
2 Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services
3.3 Water meter ownership

Barwon Water retains ownership of all meters and will operate them in accordance with the Water Act 1989\(^3\) for the purpose of measuring volume usage as described in section 142 as follows:

(1) An Authority may—
   (a) Provide or install, and maintain, a meter on any land to measure the amount of water delivered to the land by the Authority in the exercise of its water supply or delivery functions; and
   (b) Position the meter on the land, as it considers appropriate.

(1A) Without limiting subsection (1), an Authority may provide or install, and maintain, a separate meter for—
   (a) each occupancy on any land; and
   (b) if water is delivered for more than one type of service, a separate meter to measure the amount of water delivered for each service.

(1B) In determining what constitutes a separate occupancy, the Authority must use the relevant principles set out in the Valuation of Land Act 1960.

(2) If an Authority believes that a meter on any land connected to its system is functioning inaccurately, the Authority may compute the quantity of water delivered to the land in the exercise of its water supply or delivery functions during a specific period—
   (a) By having regard to the quantity of water delivered to the land in any previous or subsequent period or periods, or the quantity of water delivered to any similar property during the period concerned; or
   (b) In any other way that is prescribed.

(3) A meter provided or installed by an Authority remains the property of that Authority.

3.3.1 Custody of Meters – (Damaged/missing meters)\(^4\)

1. Any licensed plumber to whom Barwon Water supplies a meter for installation upon a particular property, shall be responsible for the safe custody thereof and if the meter is damaged while in the licensed plumber’s custody or is lost or installed on the wrong property, the licensed plumber responsible shall pay to Barwon Water the cost of its repair, replacement or retrieval and proper installation.

2. The occupier or owner of any property upon which any meter of Barwon Water is installed shall be responsible for the safe custody of the meter and if it is stolen, damaged or is not readily accessible for reading replacement or maintenance purposes the occupier or owner shall pay to Barwon Water the cost of its replacement, repair or proper installation.

3. On the termination of any metered water service the licensed plumber responsible for the work shall forthwith return the meter to Barwon Water, and shall be responsible for the safe custody of the meter and if the meter is lost or damaged while in the licensed plumber’s custody the licensed plumber shall pay to Barwon Water the cost of its retrieval replacement or repair.

4. A police report is required for any reported stolen meters.

3.3.2 Notice to Install Meters

Barwon Water may by notice in writing specify any of the following and the date by which any such work shall be completed:

1. Direct any person to whom water is supplied for any purpose to install a meter in accordance with the requirements of the Regulations;
2. Order the transfer of any meter from one location to another within any property;

\(^3\) Reference: Water Act 1989 No 80 Section 142
\(^4\) Reference: Water (Estimation, Supply and Sewerage) Regulations 2014
3. Order the return to Barwon Water of any meter supplied by Barwon Water.

3.3.3 Removal of Meters
No person shall remove a meter or alter its position unless the person has first obtained written permission in writing from the Authorised Officer to do so.

3.3.4 Return of Meters
Where an existing water service is no longer required the water service must be cut and sealed at the main ferrule and the water meter must be returned to Barwon Region Water Corporation within 5 working days.

3.4 Disconnection of water services
Barwon water requires that a formal application to disconnect from its water assets be filed along with the application fee. The plumber will be required to disconnect the water service by means of cutting off the service pipe at the main ferrule and sealing the ferrule with a brass plug. Alternatively the service may be converted to what is termed a dry tapping arrangement (See 3.4.1 and 3.4.2)

3.4.1 Disconnection of a Water Service Pre 1990 - 20/25 mm
Plumbers can disconnect 20/25mm services constructed pre 1990 by means of cutting off the service pipe at the main ferrule and sealing the ferrule with a brass plug. Alternatively the service may be converted to what is termed a dry tapping arrangement, provided that all the following conditions are met:
- The meter is removed and returned to Barwon Water
- If the ferrule is in a road way or nature strip, the old service must be replaced, with a new service which complies with Australian Standards approved material and with Barwon Water’s requirements.
- That any riser pipes, and front taps are removed.
- That the ball valve is plugged/capped and buried within the property; and
- That a tracing tape is attached to the ball valve leading up to the natural surface
- If using Polyethylene (PE) a trace wire must place along the entire length of pipe from the main ferrule.
- That accurate offset measurement are taken referring to the location of the ball valve in relation to the boundary lines and submitted to Barwon Water. (See diagrams 1 & 2)
- All works will be at the property owner’s cost.

3.4.2 Disconnection of a Water Service Post 1990 – up to 50 mm
For services up to 50mm in size and constructed after 1990, at the property owner’s cost a plumber can be disconnect the pipe at the reticulation water main and seal the ferrule with brass plug, or. Alternatively the service may be converted to a “Dry Tapping” arrangement provided all the following conditions are met:
- That the service is reduced to 20mm
- That the service is either 20mm copper, (or 25mm PE)
- That the service is no older than 1990
- That the meter is removed and returned to Barwon Water.
- That any riser pipes, and front taps are removed.
- That the ball valve is plugged/capped and buried within the property; and
- That a tracing tape is attached to the ball valve leading up to the natural surface
- If using Polyethylene (PE) a trace wire must place along the entire length of pipe from the main ferrule.
- That accurate offset measurement are taken referring to the location of the ball valve in relation to the boundary lines and submitted to Barwon Water. (See diagrams 1 & 2)
- All works will be at the property owner’s cost.
Diagram 1

BARWON WATER - 20mm DRY TAPPING METER SET UP REQUIREMENTS

THIS SECTION INSTALLED AS DRY TAPPING

MIN 150mm MAX 2.0M

TITLE BOUNDARY

LOCATION TAPE CONNECTED TO DRY TAPPING BALL VALVE

COPPER TRACE WIRE ON POLYETHYLENE OR NON CONDUCTIVE SERVICES

TIE MEASUREMENTS TAKEN FOR FUTURE REFERENCE

Diagram 2

BARWON WATER - 20mm DRY TAPPING METER SET UP REQUIREMENTS

LOT No. OR STREET No.

DRY TAPPING TIE

4.5M 10.5M

KERB MARKED WITH A "W" STREET NAME

WATER MAIN TAPPING
3.4.3 Disconnection of Large Tappings (Tee-Removal)

Where a property has a service connection larger than 50mm, which is no longer required, it must be removed. Removal of a large tapping, which is called a “Tee-Removal”, is only to be undertaken by Barwon Water or its’ nominated agents. All works associated with the “Tee-Removal” will be at the property owner’s cost.

The removal of the water or fire service from the first sluice valve to the property is the property owner’s responsibility.

Note: The service cannot be capped off because the valve and the tee must be removed and the integrity of the water main restored. Arranging a tee-removal is the same procedure as booking a Tee-Insertion.

Diagram 3
4 Meter - installation

4.1 General metering requirements

Barwon Water may require that all connected properties or occupancy that have one installation number or more, e.g. residential properties, unit developments, multi-story buildings including dwellings above shops and commercial buildings, to be individually metered\(^5\).

A water service tapping shall not be placed under a drive way.

Any development that has an existing dry tapping servicing the property and where the design of the development impacts the tapping or meter location, Barwon Water shall require the tapping to be relocated to avoid the main ferrule and being located under a drive way and meter subject to damage.

All works will be at the property owner’s cost.

Fees will apply in line with Barwon Water Billing Pricing Schedule.

4.2 Excavation for water tapping

Excavation Dimensions for Water Tappings and Meter Installations

Holes must be dug by 8:00am on the day of the tapping; and for public safety appropriate safety barricading is required and must be in place. Individual tapping times for each day will not be provided by Barwon Water.

Failure to provide an excavation as specified including the correct meter and service pipe installation, will result in a tapping cancellation. The plumber will be required rectify the problem and to re-book the tapping for the next available tapping day, (see diagram 4 & 5).

A re-booking fee will apply in line with Barwon Water Billing Pricing Schedule.

Meter Installations for 20mm and 25mm must be set up as shown in diagram 5.

Diagram 4

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\(^5\) Reference: Water Act 1989 No 80 Section 142
4.2.1 Polyethylene Water Services

Barwon Water requires that where polyethylene (PE) or any non-conductive material is used for the water service between Barwon Water’s reticulation water main and the water meter assembly, whether it be for a new tapping or a service replacement, a copper tracing wire must be installed on the outside of the pipe for the full length of the service.

The trace wire must be continuous, with one end of the wire connected to the copper inlet riser at the meter assembly, and the other end to the main ferrule or the brass bend at the ferrule at the water main. This is to assist with the future location of the water service.

If a tapping has been booked by a plumber; and Barwon Water’s tapping crew find that a trace wire has not been provided in accordance to Barwon Water’s specification, the tapping will be cancelled, until the trace wire requirement is complied with and a rebooking fee will apply. All tappings shall have 100mm PVC tube fitted as a riser over main tap ferrule; the riser shall come to within 300mm of the surface, a loose fitting cap shall be placed on the top to prevent dirt from entering PVC riser. This allows for service key access to the main ferrule tap (see diagram 5 & 6).

Diagram 5

### BARWON WATER - 20mm & 25mm WET & DRY TAPPING METER SET UP REQUIREMENTS for DRINKING WATER

<table>
<thead>
<tr>
<th>APPROXIMATE METER GAP SPACING BETWEEN INLET AND OUTLET FOR TAPPING CREW TO FIT METER, COUPLINGS AND DIRTBOX WHERE REQUIRED</th>
<th>20mm</th>
<th>Minimum Gap</th>
<th>Maximum Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>METER WITHOUT DIRTBOX</td>
<td>230mm</td>
<td>250mm</td>
<td></td>
</tr>
<tr>
<td>METER WITH DIRTBOX</td>
<td>320mm</td>
<td>350mm</td>
<td></td>
</tr>
<tr>
<td>25mm</td>
<td>Minimum Gap</td>
<td>Maximum Gap</td>
<td></td>
</tr>
<tr>
<td>METER WITHOUT DIRTBOX</td>
<td>250mm</td>
<td>300mm</td>
<td></td>
</tr>
<tr>
<td>METER WITH DIRTBOX</td>
<td>350mm</td>
<td>400mm</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: PLASTIC SPACERS OR BRIDGING PIECES ARE NOT PERMITTED FOR USE IN PLACE OF WATER METERS UNLESS AUTHORISED BY BARWON WATER CONNECTING TO A DRY TAPPING WITHOUT FIRST BOOKING IN A METER INSTALLATION WILL RESULT IN A CONTRAVENTION NOTICE AND A POSSIBLE PROSECUTION UNDER THE WATER ACT

4.3 Meter location

Unless otherwise approved in writing, Barwon Water requires meters to be within the property and accessible, positioned within 2 metres of the property boundary, being directly opposite to the connection and at right angles to the reticulation water main (in line with the tapping).  

Unless otherwise approved in writing, Barwon Water requires meters for domestic dwellings, commercial developments and shops to be positioned within the property boundary, not inside the building. External recessed areas within the shop front or rear are acceptable provided that the meter and service is not imbedded in concrete or in driveways, and is accessible and clear of obstructions to enable unfettered access for reading, testing, inspection, maintenance and exchange at all times.

The meter assembly shall be located and protected to avoid damage and vandalism. Meters and pipe work are not to be imbedded in or under brick fences or pillars (purpose designed recessed areas in fences that allow reading, testing, inspection, maintenance and exchange are acceptable).

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6 Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services
NB: NO WATER METER IS TO BE LOCATED NEAR OR IN AN ELECTRICAL CABINET OR ELECTRICAL CONTROL ROOM

4.4 INSTALLATION  20/25 mm

Only licensed plumbers or persons authorised by Barwon Water in the course of their duty shall carry out any work for the installation of any meter.

The costs of installing a meter will be the responsibility of the property owner. Costs for installing new meters in existing properties will be the responsibility of the party who requested the installation.

Barwon Water’s general requirements for the location, installation and protection of water meters is in accordance with AS/NZS 3500 and this policy

Plumbers who fail to install meters in accordance to Barwon Water’s requirements will be required to rectify the non-compliance at their own expense.

4.4.1 Meter Assembly Set Up

Meters are to be assembled as required by AS/NZS 3500

In addition to AS/NZS 3500, Barwon Water requires all 20/25 mm meters to be set at a minimum height of 150 mm above the ground in a horizontal position. Areas requiring “y” type inline strainers, must be installed a minimum of 150 mm above the ground for servicing.

Where a Reduced Pressure Zone Device (RPZD) is installed as part of the meter assembly, the minimum height above the natural ground for the RPZD relief valve shall be 300 mm

4.4.2 Frost Protection

Water meters and meter assemblies located in frost sensitive areas shall be protected against damage caused by the freezing of water. Plumbers installing meters in these areas must ensure that they have installed the meter in accordance to the AS/NZS 3500 section 13 Frost Protection

First instance of a meter damaged due to frost - a letter will be sent reminding the owner that a plumber should have installed the meter in accordance to the AS/NZS 3500 section 13 Frost Protection; and rectify the meter installation. The instance shall be noted in Barwon Waters Billing System.

Re-occurrence of a meter damaged due to frost – the cost for the damage to the meter will be passed on to the owner, again reminding them that it is a requirement under the AS/NZS 3500 section 13 Frost Protection that a plumber should have installed the meter in accordance to the standard and rectify the meter installation.

4.4.3 Meter pits

If a water meter is placed in a meter pit for any reason, the pit and the maintenance of the pit is, and will remain the responsibility of the property owner whether it is within the property boundary or not. The meter, meter fittings and stop valves within the pit must be installed to allow easy access for maintenance, if maintenance cannot be performed due to the nature of the pit or meter installation the owner will be directed in writing to remedy the problem.

Meter pits must be installed to comply with AS/NZS 3500, and if installed in public areas are to be of a type (non-plastic) or approved type by Barwon Water. A radio read remote type meter may also be required.

Meter pits imbedded in concrete shall comply with the following

- Be self-draining,
- Crushed rock around and under the pit,
- Break out concrete collar to avoid damage to surrounding concrete.

NO Fittings, including but not limited to: - bends, elbows, stop taps, check valves or meters shall be encased in concrete.

\[7 \text{ Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services}\]

\[8 \text{ Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services}\]
Conduit containing the water service may also be required to extend from the pit to clear any concrete obstruction (see diagram 6).

Diagram 6 - Meter Pit Installation

4.4.4 Concrete Clearance

If a meter or meter installation is found imbedded in concrete, the owner or occupier will be asked to remove the concrete from around the meter installation. Should the owner or occupier wish to install concrete "mower strip" around the water meter, then the concrete should only surround (not encase) the vertical risers of the meter assembly where they enter the ground.

Placing plastic or UPVC sleeves around the vertical rises before the concrete is poured will enable the meter to be exchanged without the need to remove the concrete.

The horizontal pipes and the body of the meter must be left clear of concrete at all times. (Do NOT bury the meter in the concrete - see diagram 7a & 7b).

The tapping connection point MUST NOT be placed under a driveway. Tappings will need to be relocated at owners or developers expense

- A dimensioned 'as Constructed' Water Plan must also be supplied.
**Diagram 7A - Drinking Water**

**BARWON WATER DRINKING WATER 20mm & 25mm METER INSTALLATION - NOT TO BE USED FOR NON-DRINKING WATER**

- The owner has the responsibility to maintain this section of the service pipe if the service is less than 20mm Dia.
- Double check on the preferred position.
- ALL METER ASSEMBLIES MUST BE SET UP IN A HORIZONTAL CONFIGURATION.
- Vertical installations will NOT be accepted.
- All concrete slab work required where service pipe is installed through paved surfaces. This is so that the meter can be replaced.
- Minimum gap between inlet and outlet for tapping crew to fit meter, couplings, and dirtbox where required:
  - 20mm Meter without dirtbox: 230mm
  - 20mm Meter with dirtbox: 320mm
  - 25mm Meter without dirtbox: 250mm
  - 25mm Meter with dirtbox: 350mm
- Connecting to a dry tapping without first booking in a meter installation will result in a contravention notice and possible prosecution as set out in Barwon Water’s Water Supply and Sewerage Plumbing by-law.

**Diagram 7Bb - Non-drinking Water**

**BARWON WATER - 20mm & 25mm NON-DRINKING WATER METER INSTALLATION - NOT TO BE USED FOR DRINKING WATER**

- The owner has the responsibility to maintain this section of the service pipe if the service is greater than 25mm Dia.
- Special tap with removable handle, with 5/8”BSP thread for connection to pipe work above ground parallel separation from drinking water services not less than 100mm below ground parallel separation from drinking water services not less than 100mm below ground parallel separation from drinking water services. Refer to AS/NZS 3500.

**4.4.5 Meter Re-location**

If a property owner has a need to offset the meter within the property boundary the offset will be limited to one (1) metre.
On application and only in the case of an extreme exceptional circumstance, an absolute maximum offset of two (2) metres may be permitted. *(E.g. long tapping across a major road, or an obstruction preventing tapping).* In addition the following is required:

- A Fitzroy box with an isolation valve must be provided of the point of offset.
- Barwon Water will require a notification form to be filled out with a detailed drawing including dimensions of the alteration.
- Offsets greater than two (2) metres will require the service pipe to be relocated and clear of obstructions. This will include an application to cut and seal off the existing tapping; and a second application for a new tapping. This new tapping must be directly opposite the connection and at right angles to the reticulation water main and in line with the meter re-location. Fees will apply.  
- A water service tapping shall not be placed under a drive way.
- Any development that has an existing dry tapping servicing the property, and, where the design of the development impacts the tapping or meter location, Barwon Water shall require where ever possible the tapping to be relocated to avoid the main ferrule and being located under a drive way and meter subject to damage. Cost of relocation is the responsibility of the owner or developer. Fees will apply.  

4.5  **AMI/AMR remote/radio read meter installation**

*(To be read in conjunction with sections 6, 6.1 & 6.5) Sub Meter Installation*

A remote reading device is attached to a water meter (a conventional size meter is shown in diagram 8) to electronically record the volume of water flowing through the meter. The reading is then transmitted by radio wave when activated by the meter reader. The benefit of remote meters is that Barwon Water reads the meter from outside the property, thereby ensuring security and privacy for customers.

An approved Barwon Water remote (radio read) meter reading system must be fitted to all new installations that have restricted access or are not accessible for reading purposes. This includes, but not limited to water meters located behind fences, in locked-up positions, unit developments and in multi-storey buildings including dwellings above shops.

Existing inaccessible meter installations, or meter installations that become inaccessible for meter reading purposes due to changes in property security, dogs, fencing, redevelopment or for the safety of the meter readers, must also be upgraded to a (radio read) remote read meter. *(Barwon Water will provide the meters).* Fees will apply.  

The cost of the remote meter and installation will be at the property owner’s expense, unless there are extenuating circumstances, or the property owner is in financial necessitous circumstances.

A licensed plumber following Barwon Water’s installation guideline shall carry out any plumbing alterations to accommodate the meter set up. Barwon Water will supply, install, and commission the remote read meter.

To ensure correct operation of the Remote meter the installation shall be as follows:

- 150mm minimum distance between the centre of the pipe and the nearest wall.
- 250mm minimum distance between the centres of the pipe of each meter assembly.
- All Sub Meters must be fitted horizontally
- NO meter shall be installed in any ceiling spaces or floor cavities inside buildings
- NO water meter is to be located near or in an electrical cabinet or electrical control room

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9  *Reference: Barwon Water Billing Pricing Schedule*
10  *Reference: Barwon Water Billing Pricing Schedule*
11  *Reference: Barwon Water Billing Pricing Schedule*
4.6 Meters for special needs customers

Barwon Water uses a BLUE METER 12 to identify a special needs customer – with medical conditions this can include dialysis and haemodialysis kidney machines that are used within the property. The meter installation must have BLUE SECURITY CLAMPS fitted, and under no circumstances shall the meter be changed or the supply disrupted until the customer has been consulted and permission granted.

Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services
5 Unit development meter installation

5.1 Unit development meter installation

5.1.1 Minimum Sizing of Service Pipe Suppling Water to Multiple Buildings

Pipe sizing shall be determined by using the “flow rates and loading unit table”, and “probable instantaneous demand table” set out in AS/NZ 3500 13 Section 3 - Sizing of Water Services.

Note: Pipe size calculations, and based on a DN copper service, and shall not be not less* than the table set out below. And does not included the hydraulic limitations of the water meter.

Note: * subject to the approval of Barwon Water

Where available pressure in Barwon Water’s reticulation water main is less than 300 kPa, or the length of the service pipe from the reticulation water main to the furthestmost dwelling supplied is greater than 60m, the sizes stated in the table may not ensure adequate flow rates.

<table>
<thead>
<tr>
<th>Domestic Buildings supplied</th>
<th>Commercial Buildings supplied</th>
<th>Service pipe size (DN Copper)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2*</td>
<td>1 - 2*</td>
<td>20mm*</td>
</tr>
<tr>
<td>2 - 5</td>
<td>2 - 6</td>
<td>25mm</td>
</tr>
<tr>
<td>6 -10</td>
<td>6 - 14</td>
<td>32mm</td>
</tr>
<tr>
<td>11 - 20</td>
<td>15 - 25</td>
<td>40mm</td>
</tr>
<tr>
<td>Over 20</td>
<td>Over 25</td>
<td>As approved</td>
</tr>
</tbody>
</table>

5.1.2 Water Supply to Six Units or Less

(1) The applicant (developer, owner or representative) shall submit an application for metering at the same time that hydraulic plans are lodged for the development.

(2) The application shall include schematic drawings detailing the internal water service design within the development clearly marking the proposed location and size of each meter and the area or unit or dwelling served.

(3) The unit number must be permanently tagged on the service pipe next to the location of the water meter to indicate the recipient of the water supply.

(4) Plumbers who fail to install meter assembly arrangements in accordance to Barwon Water’s requirements will be required to rectify the non-compliance at their own expense. (Refer to diagram diagrams 9 - 24). A dual check valve is to be installed to all meter installations.

(5) Barwon Water’s meter installer will allocate meters to each unit in accordance with the tagging on the service pipe.

(6) Once installed; water meters are NOT to be removed without written permission from Barwon Water.

(7) Plumbers will ensure that the tapping and meter assembly arrangements are carried out to Barwon Water’s requirements, and that water services to each area or unit or dwelling served match that shown on the pipe work and plans.

(8) Water supplying the development can be from one or more tappings or using a manifold system.

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13 Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services
5.2 Typical Meter Placement Guidelines for 2 - 6 Units Developments

This guideline applies to both drinking water and non-drinking meter installations (Refer to diagrams 9 - 24)

(1) Service pipes between meters and units may be installed in a common trench, but shall be connected according to guidelines shown

(2) Units on irregular shaped blocks shall be serviced in a similar way

(3) Any existing meter that has been retained must also be marked and must service the original installation or front unit (lot 1)

(4) Reticulation water main extension may be required in some sub-divisions

(5) Meters shall not obstruct driveways

(6) If the common driveway is too narrow to safely install meters, then
   a) meters servicing the properties shall be placed so that all owners have unfettered access to their individual meters, or,
   b) a separate common ground area at the entrance and next to the driveway must be provided within development
   c) a meter servicing a separate dwelling/unit shall not be locked or placed within another owner’s allotment
   d) service pipes should not cross title boundaries

(7) Battle-Axe blocks Provisions for the placement of water meter shall be at the entrance of the driveway or common ground near the front boundary or common ground (also refer to (6)
5.2.1 Acceptable solutions for 2 - 6 Units Drinking Water only

Diagram 9 – 2 Units - Two Street Frontage

Diagram 10 - 2 Units- Left & Right Hand Driveway Configuration - Single Street Frontage
Diagram 11 – 3 Units - Single Street Frontage

Diagram 12 – 3 Units - Left & Right Hand Driveway Configuration - Single Street Frontage
Diagram 13 - 4 Units - Single Street Frontage – Two Tappings

Diagram 14 - 6 Units - Single Street Frontage – Single Tapping
Diagram 15 - 6 Units - Single Street Frontage – Two Tappings

Diagram 16 - 2 Tenancies - Single Street Frontage – Two Tappings. (Battle Axe Block)
5.2.2 Acceptable solutions for 2 - 6 Units Dual pipe – Drinking & Non-Drinking Water

All purple, Non-drinking water meters pipe work shall be installed in accordance with AS/NZS 3500 and in accordance with Barwon waters Non Drinking Water policy.

Non-drinking water meters shall be installed a minimum of 300mm to the left of the drinking water meter, when looking into the property from the street boundary.

Diagram 17- 2 Units – Two Street Frontage

Diagram 18- 2 Units – Left & Right Hand Driveway Configuration – Single Frontage
Diagram 19 – 3 Units – Single Street Frontage

Diagram 20 – 3 Unit - Left & Right Hand Driveway Configuration – Single Street Frontage
Diagram 21 – 4 Unit – Single Street Frontage – Two Tappings

Diagram 22 – 6 Unit – Single Street Frontage – Single Tapping
Diagram 23 – 6 Unit – Single Street Frontage – Two Tappings

Diagram 24 - 2 Tenancies - Single Street Frontage – Two Tappings. (Battle Axe Block)
6 Sub-meter installation

6.1 Sub-meter purpose
Sub-metering is a term used to refer to individual water meters generally fitted to measure an individual customer’s water usage. These meters are located downstream and are in addition to the main (master) meter located at the property boundary which is used to measure bulk supply into the property.

Sub-metering allows for separate billing to customers on a “User Pays” basis and avoids customers subsidising other consumers located in the same development. The combined consumption recorded on all of the sub-meters in the development is deducted from the master meter consumption. Where relevant any residual consumption on the master meter for common area usage shall be billed to the relevant legal body e.g. Owners Corporation, Community Association and Management of Commercial Developments, or share between property owners etc. for bill payment.

6.2 Application and approval of sub-metering
For relevant types of developments as outlined in Section 6, all applications are subject to the following requirements:

1. Meet the requirements of WSAA Sub-Metering Code of Practice, and Barwon Water specifications.
2. The applicant (developer, owner or representative) shall submit an application for sub-metering at the same time that hydraulic plans are lodged for new developments.
3. The application shall include schematic drawings detailing the internal water service design within the development clearly marking the proposed location of each sub meter.
4. The applicant shall submit a completed checklist confirming that the design conforms to this policy and any additional design specifications required by Barwon Water.
5. Approval of the application will be subject to Barwon Water assessment of the application and compliance with this policy.
6. The applicant shall be required to modify the design at their own cost and resubmit their application should the original application not be compliant with this policy.
7. For existing developments the applicant is required to submit schematic drawings of the existing water service design and mark the planned service alterations and proposed locations of each sub-meter in accordance with this policy.
8. Sub-meters will not be installed until the application has been approved by the Barwon Water.
9. Location of sub-meters must take into account, but not limited to - physical access, meter design configuration & limitations, OH&S.

6.3 Types of development

6.3.1 New developments
The Sub-Metering Policy shall be applied to the following types of development where approved to:

1. Dual Residential – two dwellings on one parcel of land.
2. Multi-Dwelling Residential –
   a) Multiple dwellings on a single parcel of land
   b) Community Titled schemes – generally horizontal developments with separate title for each unit/lot
3. Strata Title schemes – Body Corporate or Owners Corporation – may be single or multiple story developments.
4. Mixed Developments – parcels of land or developments that have their title boundary dwellings/occupancies used for both residential and non-residential purposes.
5. Lifestyle/Gated Community developments alternate arrangements may apply (see 6.5.9).

Reference: WSAA Codes of Practice
For all the above developments, a sub-meter will be required for each individual occupancy on the drinking water supply.
Where applicable a sub-meter will also be required for each individual occupancy on the recycled water supply.
Where a new stage of development is to be completed, the developer is to submit a new application with drawings outlining the proposed location of the additional sub-meter(s).

6.3.2 Development of Existing Sites or Staged Developments
This focuses on the approval and installation of new developments, the other circumstances that will trigger the requirements of this policy include:

(1) Staged developments – the developer may choose to stage a development usually for funding and/or property market reasons. This may involve releasing and constructing the development in multiple stages. Each stage shall require plans to be submitted for approval based on the original design and additional requirements to ensure that the entire development remains compliant.

(2) Subdivisions within an existing development with sub-meters – e.g. a Torrens Title subdivision of a Community Title lot. The subdivided lot(s) will require individual sub-meters. Plans shall be required to be submitted for approval based on the original design and new development to ensure that the entire development remains compliant.

(3) Existing Developments requiring sub-meters – will be required to submit an application and plans in accordance with this policy. All costs associated with the redesign and retrofit of the water service and sub-metering requirements is borne by the owners of the development.

6.4 Internal water service design plan – schematic drawings
A full set of hydraulic and schematic drawings must be submitted to the Barwon Water for assessment as part of the application process. The drawings shall:

(1) Include a plan showing the design and layout of the water service within the development and location of the master and sub-meters for each proposed occupancy.

(2) For each schematic drawing for the development, include a table of:
   a) Each unit number / lot occupancy
   b) The location of the sub-meters for each occupancy
   c) The location of the master meter(s)

(3) Where the water service provider is required to approve a sub-meter to be installed on common property (e.g. pool area, common gardens etc.), the plan shall:
   a) Show the proposed location of the sub-meter on the plan.
   b) Ensure all communal water fixtures in the common area are metered.

The developer shall not proceed with construction of the internal water service until the hydraulic assessment has been completed and the schematic drawings of sub-meter locations and any other design requirements have been approved by Barwon Water.

6.5 Location of sub-meters
This section specifies the general requirements for the installation, location and protection of sub-meters and applies to both new developments and existing developments.
Barwon Water requires that the master meter be positioned within two metres of the property boundary, being directly opposite to the connection and at right angles to the reticulation water main (in line with the tapping).

6.5.1 Location of sub-meters – general requirements
Sub-meters used for billing purposes shall:
(This includes remote read sub-meters - see 4.5)
(1) Be located within the developed property boundary.

(2) Provide access to enable reading, testing, inspection, maintenance and exchange without impediment and kept clear of obstructions at all times.

(3) Waters meters shall be placed in a serviceable area in a position protected from vehicle traffic and vandalism. Or in secured areas of main buildings, e.g. in utility room(s) or meter cabinets located within common access areas on each level.

(4) Meters installed in utility room(s) or meter cabinets will require an additional stop tap installed adjacent to the meter outlet and the installation of a drip tray will be required as part of the installation to prevent water damage during meter exchanged.

(5) Meter assemblies 20mm & 25mm shall be set up in accordance Metering Installation Diagram 8 & 9 and shall be installed in a horizontal position

(6) Meters assemblies shall be installed above ground and must not be higher than 1.5 metres from the finished floor level.

(7) Provide for adequate hazard protection using backflow prevention to protect the water supply in accordance with the AS/NZS3500.

(8) Not be encased in concrete to ensure the service pipes and meter can be maintained.

(9) Where sub-meter assemblies DN 32 or larger are installed:
   a) Must be supported independently of piping supporting the meter in a horizontal position.
   b) Must be fitted with a test ferrule immediately downstream of the water meter and the downstream outlet valve.\(^{15}\) (and are require independent of any test points on RPZ’s or testable backflow devices)

NB: Meters must NOT be installed inside apartments, shops, in the ceiling space or floor cavities.

The plumber must ensure that the position of the meter(s) is accessible and clear of obstructions to enable reading, testing, inspection and exchange. The meter assembly shall be located and protected to avoid damage, and must be in an area that meets Barwon Water approval.

**6.5.2 Multi-Unit Development Meter Installation**

All new multi-unit developments that have more than six units must have a main (master) meter at the property boundary and individual sub-meter installed for each separate installation with in the development. Any water meter including the pipes and fittings must not be imbedded in concrete formwork, or concrete walls. Meters must not be installed inside apartments, shops or in the ceiling space, or in cabinets containing fire hose reels.

The plumber must ensure that the position of the meter(s) is accessible and clear of obstructions to enable reading, testing, inspection and exchange. The meter assembly shall be located and protected to avoid damage, and must be in an area that meets Barwon Water approval.

**6.5.3 Multi-Storey Buildings Meter Installation**

All new multi storey building developments must have must have a main (master) meter at the property boundary and a, Barwon Water approved remote meter reading systems installed. Meters must be installed inside the property boundary in secured areas of main buildings, e.g. in utility areas or meter cabinets (NOT in cabinets containing fire hose reels) located within common access areas on each level (NOT in floor pits or within walls within shops or commercial premises). In addition meters installed in commercial buildings must at all times be provided with clear safe access around the water meter for maintenance purposes. The water meter including the pipes and fittings must not be embedded in concrete formwork or concrete walls.

An additional stop tap must be installed adjacent to the meter outlet and the installation of a drip tray may be required to prevent water damage during meter exchanged.

NB: NO meter shall be installed in any ceiling spaces inside building.

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\(^{15}\) Reference: Building Act -Plumbing Regulation1998 No. 148
6.5.4 Commercial Buildings Meter Installation

All new multi tenanted or commercial building developments must have a main (master) meter at the property boundary and a, Barwon Water approved remote meter reading systems installed. Meters must be installed inside the property boundary in secured areas of main buildings, e.g. in utility areas or meter cabinets (NOT in cabinets containing fire hose reels) located within common access areas on each level (NOT in floor pits or within walls within shops or commercial premises). In addition meters installed in commercial buildings must at all times be provided with clear safe access around the water meter for maintenance purposes. The water meter including the pipes and fittings must not be embedded in concrete formwork or concrete walls.

An additional stop tap must be installed adjacent to the meter outlet and the installation of a drip tray shall be required to prevent water damage during meter exchanged.

NB: NO meter shall be installed in any ceiling spaces inside building.

Sub-Meters if approved may be placed outside on the top of the roof of commercial buildings, provided that all meters are accessible via designated roof access walkways with safety railings, and must be within 500mm of the safety railing, and have ease of access from ground level (not portable ladders) incorporated in the design.

If located outside of a building, meters must be placed in a serviceable area in a position protected from vehicle traffic and vandalism.

If the meter is located inside a building a drip tray shall be required, and a stop valve shall be installed in an accessible position outside the building. 16

New developments of six tenants or less; individual meters, not sub-meters must be installed (see section 5)

Diagram 25 - Sub-Meter Set Up

Diagram showing the installation of sub-meters with details on how to set up and maintain the system.

<table>
<thead>
<tr>
<th>Meter Size</th>
<th>Temporary Meter spacer length</th>
</tr>
</thead>
<tbody>
<tr>
<td>20mm</td>
<td>240mm</td>
</tr>
<tr>
<td>25mm</td>
<td>270mm</td>
</tr>
</tbody>
</table>

16 Reference: Building Act - Plumbing regulation 1998 No. 148
6.5.5 Sub-Meter Location Design Options

To meet the physical access requirements of 6.2, Barwon Water may require more detailed design specifications. These specifications may vary depending on site specific issues of the relevant development (e.g. security access, high rise, gated communities etc.). Sections Error! Reference source not found. and 6.5.3 are design options which can be used to overcome some of these issues to ensure that the general requirements at Section 6.5.1 can be met.

All installations 32mm and greater must be fitted with a test ferrule immediately downstream of the water meter and the outlet valve 17 and the meter assembly correctly supported in line with AS/NZS 3500.

6.5.6 Secured Sites using Standard Metering Technology (Mechanical Meters)

This option would suit a secured development with restricted access (e.g. high rise/vertical developments, gated community etc.) which uses mechanical meters (see diagram 26).

To ensure unfettered access by Barwon Water, this option shall:

(1) Provide a secured location (purpose designed utility room/compound) for all meters with walk up ground floor access from the street.

(2) Ensure that the secured meter room would be in a separate common area outside of the secured occupancies.

(3) Allow meters to be manually read by meter readers with direct walk up access to the meter compound from the street.

17 Reference: Plumbing Regulation 1998 No. 148 part 31D ref. 12.8
(4) Not allow the room/compound to be accessible by persons other than the building manager, building maintenance staff and water service provider representatives.

Ensure that all meter installations comply with Section 6.

6.5.7 Secured Sites with AMR/AMI Technology

This option is for secured development with restricted access (e.g. high rise/vertical developments, gated community etc.) that uses AMR/AMI technology which solves the metering access problems and provides meter reading efficiency.

This option may feature the following:

(1) In high rise or vertical complexes the sub meters may be located in a purpose designed meter utility room or water meter cabinet(s) (not in cabinets with fire hose reels) which are located in a common area on each floor.

(2) In a gated community or secured horizontal development the sub meters may be located on common property within the development.

(3) Alternatively, for either type of development the sub meters may be located in a water meter utility room that is accessible through the common property.

(4) To enable unfettered access for meter reading, meter exchange or maintenance, AMI/AMR technology would be deployed in accordance with Section 4.5.

6.5.8 Development Release

Barwon Water requires all conformances to be met, and a separate dimensioned ‘As Constructed Sewerage Plan’ & ‘As Constructed detailed Water Plan’, which must include the location of all meters and what they service. These plans must be supplied prior to release of any development.

6.5.9 Gated Community or Life Style Community Development Meter Installation

Barwon Water may require all new Lifestyle/Gated Community developments to have special water and wastewater metering systems installed prior to connection to Barwon Water’s infrastructure.

The development of private infrastructure where a single pipe scheme or a combined “Fire/Domestic” water service is requested it will have to be approved by Barwon water.

This may include a request for private sub-meters. The private sub-metering and the maintenance there of will not form part of Barwon Water’s area of responsibility.

Any “Lifestyle or Gated Community” development that uses combined “Fire/Domestic” infrastructure and uses private sub meters will be subject to the plumbing solution (see diagram 33a)

Private sub-meters must “pattern approved” and meet National Measurement Act 18 and National Measurement Regulation, as administered by the National Measurement Institute (NMI) specifications and codes, in conjunction with Australian Standards AS 3565 and AS/NZS 3500 and WSAA codes.

18 Reference: National Measurement Institute (NMI R-49)
7 Re-development of retrofit metering

This section must be read in conjunction with sections 4, 5, & 6

7.1 Existing units/re-development or subdivision

Where an existing property or unit development is re-developed or subdivided and/or an application is made for individually metering, the plumbing must be altered to ensure that the meter locations comply with this policy. In addition to this if any pipe alterations are made, then the plumbing work must comply with Plumbing Regulations 1998 No. 148 31C. ‘Performance requirements for the design and construction of cold water services’ and backflow prevention.

Plumbing work carried out for the installation of, or alterations, additions or repairs to any part of the cold-water service of any property (this includes a house renovation/ re-development), must comply with this policy and with AS/NZS 3500. This will include upgrading or the replacement of any galvanised property service pipes from Barwon Water’s reticulation water main to the meter assembly.

Barwon Water requires all conformances to be met, and a separate dimensioned ‘As Constructed detailed Water Plan, which must include the location of all meters and what they service be provided. These plans must be supplied prior to release of any development.

7.2 Retro fitting individual or sub-metering on existing unit developments

In line with section 4.1 of this policy Barwon Water requires that all connected properties that have more than one installation number, e.g. residential properties, unit developments, multi-story buildings including dwellings above shops and commercial buildings, be individually metered, Barwon Water will require an application for any additional meter or sub-meter.

(1) Owner(s) of existing units within an owners’ corporation who operate under the shared service arrangement; who later request to have individual meter(s) or (sub-meter) fitted to their unit(s), must firstly apply in writing to their owner’s corporation for approval. If the request is approved by the owners corporation, then,

a) Barwon Water may require the owners’ corporation to consider the possibility of requesting all unit owners within the development to be individually metered or sub-metered at that time.

(2) Owner(s) of existing units who operate under the shared service arrangement; who later choose to have individual meter(s) or (sub-meter) fitted to their unit(s),

a) Barwon Water may require all or remaining unit owners within the development to also install individual meters or sub-meters at that time.

(3) Owners of large existing multi-unit properties who decide to redevelop and separately title each unit should note that metering or sub-metering all units may not always be possible due to the nature of internal plumbing in these cases,

a) Barwon water will not install sub-meters and the owners corporation will be responsible for the water account and the unit owner(s) will be responsible for any fixed charges, or

b) In the case of retrofit sub-metering, common area garden taps shall be removed and capped off unless separately metered. If common area garden taps are retained the owners corporation will be responsible for the water account.

7.3 Private extensions

Private water extensions are constructed privately at the cost of the property owner.

If more than one property is to be connected via the private extension then agreement between parties connected to the private extension will be required. A conditional supply agreement must be entered into with Barwon Water before the construction of the private extension is commenced.

a) Barwon Water requires all private extensions to have a ‘Master Meter’ and a backflow prevention device installed at the tapping point. (Refer AS/NZS 3500, to determine hazard rating and 8.2.3 of this policy).

b) A flow limiting valve may be specified as a condition of connection.

19 Reference: Building Act - Plumbing regulation 1998 No. 148
c) A flow limiting valve may be specified for differing properties on the private extension to ensure balanced supply for each connected property.

d) The meter must be located in a position that prevents damage and provides ease of reading and maintenance if required.

e) A fully dimensioned, ‘As Constructed’ Water Plan must be supplied to Barwon Water.
8 Commercial and industrial metering

8.1 Excavation

8.1.1 Excavation Dimensions for Water Tappings and Meter Installations

In addition to the basic dimensions of excavating see diagram 4. Length = 2000mm x width = 1500mm, a 1500mm clearance on the valve side of the reticulation water main is required for tapping equipment. A 150mm minimum clearance is required behind pipe, 150mm minimum clearance under pipe, see diagram 4. In most cases today tappings over 50mm are undertaken under pressure, by utilising a stainless steel band which is placed around the water main, an isolating sluice valve is bolted to it and the main drilled under pressure.

Diagram 27 – Wet Tapping “T” Insertion

8.1.2 “T” Insertion - complete with divide valves and fire plugs

Large tappings may require, a “T” Insertion.

Diagram 28 – “T” Insertion with Divide Valves
8.2 Meter installation sizes 32 mm and above

Meter installations for 32mm and above must be set up as shown in, Section 8.3 ‘Meter Setup Solutions - Typical Arrangements’

Only licensed plumbers or persons authorised by Barwon Water in the course of their duty shall carry out any work for the installation of any meter.

The costs of installing a meter will be the responsibility of the property owner. Costs for installing new meters in existing properties will be the responsibility of the party who requested the installation.

Barwon Water’s general requirements for the location, installation and protection of water meters is in accordance with AS/NZS 3500 and this policy.

Plumbers who fail to install meters in accordance to Barwon Water’s requirements will be required to rectify the non-compliance at their own expense.

8.2.1 Meter Assembly Set Up

(1) Meters are to be assembled as required by AS/NZS 3500. Barwon water also requires that,

(2) All 32mm meters and greater to be set at a minimum height of 300mm above the ground in a horizontal position.

(3) Where a Reduced Pressure Zone Device (RPZD) is installed as part of the meter assembly the minimum height above the natural ground for the RPZD relief valve shall be 300mm

(4) No water meter or fire meter, shall be placed in a location that creates an OH&S issue for either the public or Barwon Water personnel, limits access, or is a “Confined Space”.

(5) The design of the meter location must allow ample clearance surrounding the meter for the correct installation of the meter assembly, including backflow, test ferrule and where required upstream and downstream flow straighteners as specified for helix type meters.

(6) Meters are to be clear of obstructions to enable reading, testing, inspection, maintenance and exchange at all times

(7) All installations 32mm and greater must be fitted with a separate test ferrule immediately downstream of the water meter and the outlet valve\(^{20}\) and the meter assembly correctly supported in line with AS/NZS 3500. This test ferrule is in addition to any test points on testable backflow prevention device

(8) No water meter or fire service leak detector check valve with by-pass meter shall be placed in a location that creates an OH&S issue, limits access or is a “Confined Space”.

(9) If any water meter is placed in a meter pit for any reason, (request must be approved by Barwon Water), the pit and the maintenance of the pit is, and will remain the responsibility of the property owner whether it is within the property boundary or not; and must also meet requirements as set out in section 4.4.3 Meter Pits,

(10) If meters or valves are located in a pit, they must be installed to allow easy access for maintenance, if maintenance cannot be performed due to the nature of the pit the owner will be directed in writing to remedy the problem.

(11) Where an Electronic Mag-flow meter is installed, a secure 240v electricity supply access point must be provided.

\(^{20}\) Reference: Plumbing Regulation 1998 No. 148 part 3ID ref. 12.8

(Non-residential customers consuming more than 5ML pa are required to enter into "Permanent Water Conservation Plan". Properties identified using more than 5ML pa may be required to have data logging equipment installed as part of the monitoring process).
8.2.2 Valves

(1) Resilient seated flanged gate valves are required meter assemblies 80mm DN and over; and,

(2) If Dura type butterfly valves are used, then they must be either flanged or lugged type and MUST have a geared spindle.

NB: Quick shut off valves, sandwich valves or wafer butterfly valves are not acceptable.

8.2.3 Backflow

To protect the water supply system and the public from any potential backflow incidents Barwon Water requires all new connections and existing medium and high hazard rated properties to install a backflow prevention device at the water meter assembly.

(1) The containment device/s shall be appropriate to the development type as specified in AS/NZS 3500.1 (Section.4 Cross-Connection Control and Backflow Prevention, testable and non-testable) and must be of a rating which is equal to or greater than that required to protect the zone and or individual hazard.

(2) It is the responsibility of the property owner to ensure that all hazards are identified and provide individual zone containment devices.

(3) All existing high and medium risk commercial and industrial customers must fit a backflow prevention device at their meter assembly at the property boundary this is to minimise any potential contamination of the water supply due to a backflow incident.

(4) All costs associated with the installation and ongoing maintenance of a backflow prevention device is the responsibility of the owner.

(5) For all new connections to Barwon Water’s water supply, property re-developments, new/or additional plumbing works, new installation and/or replacement of any industrial meters will require a backflow device to be fitted and maintained. Existing commercial and industrial properties, that are classified as high hazards will be contacted advising them of the backflow responsibilities.

(6) Maintenance of the backflow device will be in-line with The Water (Trade Waste) Regulations 2014

(7) Barwon water requires a “Certificate of Currency” – for a testable Backflow Prevention Device at the time of installation and commissioning

(8) The owner or occupier and each subsequent owner or occupier who shall enter into an agreement with Barwon Water must comply with AS 2845.3 Backflow Prevention Devices – Field-testing and Maintenance.

(9) Failure to comply within 20 days of a Notice to supply a “Certificate of Currency” for the annual inspection a “Notice of Contravention” (see section 151 of The Water Act 1989 and section 12 Water (Estimation, Supply and Sewerage) Regulation 2014) will be served. Failure to comply may result in Barwon Water appointing an ‘Endorsed Licensed Plumber’ to test the backflow device; and recover its reasonable costs from each owner on whom the notice was served.

8.2.4 Backflow Requirements on Existing Properties when Meter Upgrades and Replacements Become Due

If it is found that the meter installation does NOT meet the current AS/NZS 3500 21 National Plumbing and Drainage part 1.2 Water supply – Acceptable solutions; and AS 2845 22 Water supply – Backflow Prevention Devices, a request in writing will be made to direct any person to whom water is supplied for any purpose to upgrade the installation on their property to meet the current regulations.

The costs of upgrading the installation will be the responsibility of the property owner. Barwon Water will provide the new water meter at no charge, for the purposes of upgrading and testing only.

Damaged meters will be charged to the owner in line with the schedule of charges set out in Barwon Water Billing Pricing Schedule.

21 Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services
22 Reference: AS 2845 Water supply – Backflow Prevention devices
In line with Barwon Water’s “Backflow Prevention Policy” 23, any property identified as having a high or medium hazard rating, must install a Backflow prevention device appropriate to the hazard rating.

A licensed plumber will be required to undertake all work in accordance with current regulations, and the hazard rating determined on the property. When a meter is released to the authorised plumber, it is the responsibility of the plumber for the safe custody of the meter(s). If the meter is damaged, lost or installed incorrectly the plumber to bear all costs. 24

All water meters will be:

- NMI approved
- Owned by Barwon Water;
- Supplied (meter only) by Barwon Water at no extra cost to the customer (this does not include replacement of customer’s infrastructure and ancillary equipment at the meter assembly)
- Installed by a licence plumber or Barwon Water or a Barwon Water contractor; and
- Privately owned and installed meters will NOT be approved, maintained or accepted by Barwon Water.

Water meters are owned and maintained by Barwon Water but can be installed by a licensed plumber or Barwon Water contractor (this does not include replacement of customer’s infrastructure and ancillary equipment at the meter assembly).

8.2.5 Meter Upgrades and Replacements

In the case when a meter is required to be replaced for any reason. The meter will be supplied by Barwon Water.

Where possible Barwon Water will install the meter except where the plumbing requires alteration, or, in a hazardous environment, or, a confined space.

All Trade Waste meter installations will be assumed to be a Hazardous Environment, a registered plumber shall be engaged to upgraded or replace a Flow Meter Trade Waste (FMTW)

The costs of installing a new meter will be the responsibility of the property owner. This includes any Flow Meter Trade Waste installation or any installation that requires upgrading to meet current AS/NZS 3500, or WSA code

The occupier or owner of a property upon notification by Barwon Water is responsible to arrange a licenced plumber to install the meter and meter assembly. The cost will be the responsibility of the property owner.

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23 Reference: Backflow Prevention Policy
24 Reference: Water (Estimation, Supply and Sewerage) Regulations 2014
8.3 Meter set-up solutions – typical arrangements

Diagram 29a - 32mm, 40mm & 50mm PD Meter Assembly with Non-Testable Device

Barwon water requires a "Certificate of Currency" – for testable Backflow Prevention Device at the time of installation and commissioning.
Diagram 30a - 40mm to 150mm Single Jet Meter Assembly with Non-Testable Device

Back flow devices must be installed to meet AS/NZS 3500. Upstream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last upstream disturbance (e.g., dirtbox and meter.) This is to meet the meter manufacturer's installation requirements.

NOTE:
Back flow devices must be installed to meet AS/NZS 3500.
Upstream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last upstream disturbance (e.g., dirtbox and meter.)
Downstream (DS) Flow Straightener length or (length of pipe = Dia x 3) – (Test ferrule to be installed on DS flow straightener)
This is to meet the meter manufacturer's installation requirements.

Diagram 30b - 40mm to 150mm Single Jet Meter Assembly with Testable Device

Barwon Water requires a "Certificate of Currency" – for testable Backflow Prevention Device at the time of installation and commissioning.
Upstream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last upstream disturbance (e.g., dirtbox and meter.)
Downstream (DS) Flow Straightener length or (length of pipe = Dia x 3) – (Test ferrule to be installed on DS flow straightener)
This is to meet the meter manufacturer's installation requirements.
Diagram 31a - 50mm to 150mm Helix Meter Assembly with Non-Testable Device

Back flow devices must be installed to meet AS/NZS 3500. Upstream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last upstream disturbance (eg. Dirtbox and meter). This is to meet the meter manufactures' installation requirements.

NOTE:
- Back flow devices must be installed to meet AS/NZS 3500.
- Upstream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last upstream disturbance (eg. Dirtbox and meter).
- Downstream (DS) Flow Straightener length or (length of pipe = Dia x 3) – (Test ferrule to be installed on DS flow straightener).
- This is to meet the meter manufactures' installation requirements.

Diagram 31b - 50mm to 150mm Helix Meter Assembly with Testable Device

Back flow devices must be installed to meet AS/NZS 3500. Upstream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last upstream disturbance (eg. Dirtbox and meter).

NOTE:
- Back flow devices must be installed to meet AS/NZS 3500.
- Upstream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last upstream disturbance (eg. Dirtbox and meter).
- Downstream (DS) Flow Straightener length or (length of pipe = Dia x 3) – (Test ferrule to be installed on DS flow straightener).
- This is to meet the meter manufactures' installation requirements.
Diagram 32a - 100mm to 200mm MagFlow Meter Assembly with Non-Testable Device

Back flow devices must be installed to meet AS/NZS 3500. Up stream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last up stream disturbance (eg. Valve and meter.) This is to meet the meter manufactures’ installation requirements.

NOTE: Back flow device Low Hazard rating to be determined on application.

Secure 240v power supply must be provided.

Barwon Water requires a “Certificate of Currency” – for testable Backflow Prevention Device at the time of installation and commissioning.

Diagram 32b - 100mm to 200mm MagFlow Meter Assembly with Testable Device

Back flow devices must be installed to meet AS/NZS 3500. Up stream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last up stream disturbance (eg. Valve and meter.) This is to meet the meter manufactures’ installation requirements.

NOTE: NO DIRT BOX REQUIRED ON MAG FLOW METERS

Secure 240v power supply must be provided.

Barwon Water requires a “Certificate of Currency” – for testable Backflow Prevention Device at the time of installation and commissioning.
Diagram 33a – Combined Fire Domestic Metering Solution with Metered Bypass and pressure Limiting Valve (No Booster)

Life style village Combined Fire Domestic Solution without booster - With Testable Backflow Prevention Device and Pressure Limiting Valve (PLV to be set 20-30kPA less than available pressure

100mm MagFlow Meter & 40mm by-pass meter, (by-pass meter can be MagFlow meter)
150mm MagFlow Meter & 50mm by-pass meter, (by-pass meter can be MagFlow meter)

Normal Valve Positions and Alternate Valve Position

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<tr>
<td>Mag Meter</td>
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<td>Mag Meter</td>
<td>Mag Meter</td>
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<tr>
<td>RPZ Testable Back Flow</td>
<td>RPZ Testable Back Flow</td>
</tr>
<tr>
<td>By Pass Meter</td>
<td>By Pass Meter</td>
</tr>
</tbody>
</table>
Diagram 33b – Combined Fire Domestic Metering Solution with Metered Bypass and pressure Limiting Valve (with Booster)

Life style village Combined Fire Domestic Solution without booster - With Testable Backflow Prevention Device (NOT RPZ) and Pressure Limiting Valve (PLV to be set 20-30kPA less than available pressure (If RPZ fitted an additional single check shall be required immediately after both the RPZ’s to prevent relief valve on RPZ form operating during boosting operations.

100mm MagFlow Meter & 40mm by-pass meter, (by-pass meter can be MagFlow meter)
150mm MagFlow Meter & 50mm by-pass meter, (by-pass meter can be MagFlow meter)

Normal Valve Positions and Alternate Valve Position
Diagram 33c – Combined Fire Domestic Metering Solution with Metered Bypass No pressure Limiting Valve (No Booster)

Diagram:

Life style village Combined Fire Domestic Solution without booster - With Testable Backflow prevention
100-150mm MagFlow Meter & 50mm by-pass meter, (by-pass meter can be MagFlow meter)
Normal Valve Positions - 150mm must be lock open with FS003 Key on all Valves

Diagram:

Life style village Combined Fire Domestic Solution without booster - With Testable Backflow prevention
100-150mm MagFlow Meter & 50mm by-pass meter, (by-pass meter can be MagFlow meter)
Alternate Valve Positions 150mm must be lock open with FS003 Key on all Valves
Diagram 33d – Combined Fire Domestic Metering Solution with Metered Bypass No pressure Limiting Valve (with Booster)

Life style village Combined Fire Domestic Solution with booster - With Testable Backflow prevention
100-150mm MagFlow Meter & 50mm by-pass meter, (by-pass meter can be MagFlow meter)
Valves Normal Position 150mm must be lock open with FS003 Key on all Valves

Life style village Combined Fire Domestic Solution without booster - With Testable Backflow prevention
100-150mm MagFlow Meter & 50mm by-pass meter, (by-pass meter can be MagFlow meter)
Normal Valve Positions - 150mm must be lock open with FS003 Key on all Valves
WATER GENERAL AND FIRE SERVICE TYPICAL ARRANGEMENTS

Note 1  For 20mm - 25mm services, a right-angled ball valve is required at the meter inlet.

Note 2  For 32mm + Services, Gate Valve at the meter inlet, a test ferrule and a gate valve downstream of the test ferrule, a Dirt-Box is required for all services

Note 3  For “Low Hazard” rating, containment protection is required. Non- the outlet side of the meter Testable Backflow Prevention Device must be fitted on the outlet side of the meter

Note 4  For “Medium & High Hazard” ratings, Containment protection is mandatory.

Note 5  Arrangement of valves to suite as per - General Service size and applicable “Hazard Rating”.

Note 6  The threaded outlet of any testing ferrule must be “Capped or Plugged”.

Note 7  Double Check Valves may need to be fitted as Zone Protection on Fire Service Hose Appendix E reels. Refer AS/NZS3500

Note 8  The fitting of a Single Check Valve or appropriate Backflow Prevention Device on the metered bypass of a Check Valve is required.

Note 9  Where testable Backflow Prevention Devices are required, the isolating valve shown immediately upstream of the line strainer and immediately downstream of the device, must have resilient seated valves

LEGEND

- Valve
- Dirt Box
- Meter
- Test Ferrule
- Line Strainer
- Backflow Prevention Device
- Single Detector Check
- Detector Check Valve

GENERAL SERVICE - LOW HAZARD (Residential/Industrial) - TYPICAL ARRANGEMENT

(a) 20mm – 25mm  (b) 32mm – 50mm  (c) 50mm + Service where Flow Straightener is specified

NOTES 1 & 3 Apply  NOTES 2, 3 & 6
(c) Metered combined Fire & General Service Consent Required from Relevant Specific Fire Authority

(d) Trident Fire/ Sprinkler/Fire Hydrant/General Service

(e) Residential & Domestic Fire Sprinkler Service

(f) Booster Connection around MagFlow Meter
INTERCONNECTED FIRE AND GENERAL SERVICE - TYPICAL ARRANGEMENT

(a) Single Water Main Fed from both Directions

(b) Different Water Mains with trident connection

METERS APPLICABLE TO SUIT SERVICE TYPE, SIZE & HAZARD RATING RULES ARE REQUIRED ON ALL INTERCONNECTIONS

FIRE AND GENERAL SERVICE - TYPICAL ARRANGEMENT

32mm – 50mm Fire Hose Reel & General Service with up to six individual meters mounted horizontally

Typical 100mm – 250mm General Water Service with Metered Fire, General Service & Fire Sprinkler Service

A Booster System may also be incorporated

NOTES 2, 3, 4, 5, 6 & 7 Apply

PREFERED OPTION by BARWON WATER
COMBINED FIRE AND DOMESTIC SERVICE WITH METERED BY-PASS FOR LIFESTYLE VILLAGES - TYPICAL ARRANGEMENT

Typical 100mm – 150mm General Water Service with Metered Fire-
Domestic with Metered By-Pass for lifestyle villages Service &
General Service Including Private Fire Plugs

With NO Booster or Booster downstream of Meter Assembly

240V AC power must be provided for MagFlow meter

NOTE
Flow Straightener 5 X dia. upstream & 3 X dia. down Stream must be fitted to all mag flow meters
10 Metering in special cases

10.1 Metering of fire services

The Water Act 1989 provides that an Authority must provide water without charge from fireplugs for the purpose of fighting fires and cleaning sewers and drains. There is no requirement for an Authority to make sure that water pressure is adequate for firefighting.

No person shall without approval of Barwon Water, use any water from any private fire service for any purpose other than to fight a fire. No person shall extend any branch from any private fire service or use any fire service to serve more than one property.

The property owner is responsible for maintaining private fire services up to the valve at the water main. Barwon Water’s requires the following for private fire service installations. Where no person shall without written approval of the Water Barwon Water-
- Use any water from any private fire service for any purpose other than to extinguish a fire; test a fire service by servicing agent or OH&S staff training
- Extend any branch from any private fire service.
- Use any fire service to serve more than one property.

Fire Services are strictly restricted in use and:
- Are to be separately metered and every hose reel sealed.
- NO person shall break the seal except for authorised use. In the event that a seal is accidentally broken the occupier must notify Barwon Water within two working days.
- Fire servicing agents must reseal hose reels after testing

Barwon Water may waive the requirements to keep the hose reel sealed if it is satisfied that water will not be misused.

10.1.1 Fire service Regulations

The Building Code of Australia sets down a number of requirements for fire services for buildings. In particular for hose reels the following is stated -

Where connected to a metered supply-
(a) Maintain the required flow rate and at the most hydraulically disadvantaged hose reel.
(b) Have a meter and a street supply to the allotment with a nominal diameter of not less than 25mm.
(c) Have any system valve which can isolate flow in the hose reel water supply main-
   i. Secured in the OPEN position by a padlock or metal strap; and
   ii. Labelled............ “Fire services valve – close only to service fire hose reels”.
(d) Where supplied by a fire hose reel main greater than 25mm nominal bore and connected to a fire hydrant main, have a valve in accordance with (c) fitted to the connection main.

Note: Australian Standards require that hose reels are tested every 6 months and other services every 12 months.

10.1.2 Use /Misuse of Metered/Un-metered Fire Services

Experience has shown the main area of potential for loss of water through fire services is the misuse of hose reels. Random audits indicate that misuse does exist in Barwon Water’s district particularly with premises with wash down areas, car parks, etc. (breach of permanent water saving plan & penalties apply). The potential for misuse of water from hydrants is considerably less and sprinkler services pose no risk.

The Essential Services Commission (ESC) expects that water business will ensure that every effort is made to reduce unaccounted water loss.

Where unlawful/misuse of a metered/un-metered fire service is detected the occupier will be in breach of the Water Act 1989 (penalties apply) and may be required to rearrange the fire and domestic plumbing

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Reference: Metering of Fire Services - 15th October 1997 Board report
10.1.3 Exempt Fire Service Use
No person shall break the seal except:

- In the case of a fire;
- The fire service is tested by a relevant servicing agency to ensure that it is in proper working order, in which case the agency shall replace the seal or,
- Documented staff safety training needs, again after each event the service should be resealed.

This is the only time, other than in the event of a fire, when water can be used through the service. Fire services are provided for the sole purposes of firefighting and OH&S. After testing new seals must be placed, or in the event of a fire, if the seal is broken the occupier must notify Barwon Water within two working days.

10.1.4 Fire Seals
Fire Services and Hose Reel Fire Services must be metered.

Barwon Water may waive the requirement to keep the hose reel sealed if it is satisfied that water will not be misused. Barwon Water personnel, who are responsible for sealing Fire Hose Reels to reduce unaccounted water loss adhere to a process involving: auditing of a fire hose reel seal, placing warning labels on the service and issuing a follow up letter to an occupier who is found to have an unsealed fire service(s).

Sealing of fire hose taps

(1) Private fire services must be metered and sealed.

(2) Existing private fire services without meters must have every fire-hose tap sealed in an approved manner and kept sealed unless otherwise approved in writing by Barwon Water.

(3) Except in the case of fire or by written consent of Barwon Water no person shall wilfully break the seal affixed to any fire-hose tap.

(4) In the event of any such seal being broken the occupier of the property shall, within two working days thereafter, give Barwon Water notice in writing of such breakage.

(5) Notwithstanding sub-clause (1) Barwon Water may, by approval given in writing, waive the requirement to keep any hose-tap sealed provided that Barwon Water is satisfied that no water drawn from there will be used for purposes other than for fire-fighting, documented fire-fighting practice or for testing and proving the fire-service installation.

(6) Barwon Water may at any time revoke any approval given under sub-clause (5) and may require that meters shall be fitted at the owner’s expense to measure all the water supplied.

(7) Servicing agents may break the fire seal to test fire service for compliance. On completion of testing the servicing agents must reseal the fire service.

10.1.5 New Developments with Fire Services
All new fire service installations shall be metered the type of meter for the fire service will be assessed with each application and be dependent on the type, size and nature of the business. The main options of metering are:

- Hose reels to be supplied off a metered fire/hydrant service, or.
- Separately metered hose reel service.
- Individual hose reels are NOT to be connected to the metered domestic supply
- Detector check valve with a 40mm a metered by-pass and lockable valves (FS-003 key) installed on the fire service.
- Magnetic flow meters - shall be to be used for combined hydrant fire and sprinkler services
- New Fire sprinkler service will require metering using a MagFlow Meter
- Located in an area approved by Barwon Water
**NB:** No water meter or fire service detector check valve with by-pass meter shall be placed in a location that creates an OH&S issue, limits access or is a “Confined Space”.

**NB:** No permanent booster pump shall be connected directly to any incoming water service. Booster pumps can only be connected downstream of onsite storage tanks.

### 10.1.6 Existing Fire Service Installations

Existing fire sprinkler services connected to an alarm may not be required to be metered, if the fire service is up graded, it will require metering.

Barwon Water has undertaken a program of sealing hose reels and placing a notice in its vicinity advising that the hose reel should only be used for firefighting. A notice will also be provided to each occupier advising that the hose reel should remain sealed at all times and be resealed immediately after each service, preferably by the Contractor testing the appliance.

An audit program of random site visits is undertaken to inspect and reseal fire services. Fees will apply, for resealing of fire services when in breach of section 10.1.4 ‘Fire Seal” clause 3 & 4.

Further occurrences of the breaking of hose reel seals would be treated seriously and the occupier would be required to pay the cost installing a water meter on the fire service. If co-operation was not obtained regarding the meter installation, the matter will be pursued as an offence under the provisions of the *Water Act 1989*.

**Diagram 34a**

![Diagram showing DETECTOR CHECK VALVE WITH 40mm BY-PASS METER](image)

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26 Reference: Barwon Water Billing Pricing Schedule
10.2 Standpipes

Overhead standpipes are owned by the relevant local councils; and it is their responsibility to maintain, service, and operate them within Water Restriction By-Laws.

Water taken via a council owned standpipe must only be used in accordance Water Restriction By-Laws. *(Penalties Apply)*

Barwon Water is only involved in the reading of the meter and raising the account, which is paid by relevant local councils.

The size, location and tap heights shall be in accordance with AS/NZS 3500.1 27

- Standpipes shall not be smaller than DN 15, and shall be connected downstream of the lower outlet bend of the water meter assembly.
- All standpipes connected to the water service shall be securely supported by fixing to walls of buildings or other rigid supports. Standpipe taps shall be at a height of not less than 450 mm above the ground surface or the top of a disconnector gully as applicable.

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27 Reference AS/NZS 3500.1 National Plumbing and Drainage part 1 Water Services – Section 5.8 – Standpipes.
11 Trade waste

A Flow Meter Trade Waste (FMTW) shall be installed at new trade premises that discharge trade waste in excess of 10 kilolitres per day. The MagFlow meter shall be provided by Barwon Water (fees apply) and a data logger will also be required as part of the connection approval. The location of the meter installation shall be approved by Barwon Water.

a) A Trade Waste Agreement is required for each meter.

b) Replacement of trade water meters will be the same as section 8.2.5 Meter Up-Grades & Replacements.

11.1 Responsibility

Due to the environment in which the trade waste meter is installed, the responsibility of developing a regular maintenance schedule and the physical maintenance of the trade waste meter is that of the discharge licensee. Responsibility to monitor compliance and ensuring that the maintenance has been performed is that of the Barwon Water.

In line with the WSAA Code of Practice, if the trade waste flow meter is owned by a water utility, a maintenance schedule shall be in accordance to the Table in 11.3 Inspection & Cleaning and is based on the medium being passed though the meter provided to the discharge licensee.

11.2 Maintenance

This Section specifies the general requirements for the maintenance and the frequency of maintenance of the trade waste flow meters including the meter installation, ancillary components, valves, pipe work.

The maintenance shall include inspections, the cleaning of both internal fittings, the testing of the trade waste flow meter both electronically and where possible a flow test, reporting the findings and corrective actions taken.

If the trade waste flow meter has been off-line for any reason, a detailed corrective actions report needs be documented; this shall include date/time of the occurrence and date/time when the trade waste meter is back on line.

11.3 Inspection and cleaning

Trade waste flow meters once installed require regular maintenance and cleaning dependant of the medium being measured. Maintenance reports must be available on request.

Inspections and cleaning shall include but not limited to:-

- Documented maintenance schedule.
- Inspection and testing the condition of bridging straps used to prevent electrocution due to stray electrical current or earth leakage.
- Inspection and testing of upstream & downstream isolating sluice / knife valves.
- Condition reports of fittings/fastenings and supports associated with trade waste flow meter assembly.
- CTV camera reports for internal pipe inspection.
- Cleaning of internal surfaces with jetting machine, and any
- Telemetry connections.

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28 Reference: WSA 15 Trade Waste Metering Code of Practice
29 Reference: WSA 15 Trade Waste Metering Code of Practice
30 Reference: WSA 15 Trade Waste Metering Code of Practice
31 Reference: WSA 15 Trade Waste Metering Code of Practice
### Trade Waste Meter & Pipe Inspection/Maintenance Schedule

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<td>Condition reports of fittings/fastenings</td>
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<td>Condition reports of supports</td>
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<tr>
<td>Pit Condition</td>
<td>12 months</td>
<td>12 months</td>
<td>12 months</td>
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If located in a pit or confined space, maintenance of the pit or confined space shall be included in maintenance schedule.

Confined space entry procedures shall strictly be adhered to.

11.4 Replacement Schedule 32

Meters do not have a predetermined life, provided that the trade waste flow meter operates within the accuracy requirements as set out by the regulations then it can stay in service.

11.5 Electronic Calibration 33

The responsibility of calibration the trade waste flow meter is the responsibility of Barwon Water.

Calibrations shall be to be carried out annually by the manufacturer (or accredited agent thereof).

11.6 Trade Waste Flow Meter Compliance Failure 34

When a trade waste flow meter fails compliance testing or when a trade waste flow meter is no longer serviceable then Barwon Water may require the trade waste flow meter to be replaced.

Barwon Water has the responsibility to inform the trade waste discharge licensee of the corrective actions required to have a new trade waste flow meter back on line.

The new trade waste meter installation shall in all respects comply with the relevant regulations and standards as well as any other conditions set out by this policy and Barwon Water.

11.7 Flow Meter Trade Waste Installation Requirements

Meter installation design can vary greatly. As trade waste entering the sewer system may be gravity fed, a key requirement for a MagMeter installation is that the meter is in a full pipe configuration at all times. Configuration may include above ground installations

If the meter is in a pit, the design must include sump for sump pump with sump pump or above ground extraction pipe

Upstream & downstream valves for servicing and testing

Upstream injection connection and downstream test connection - for flushing and testing in situ

All items accessible from outside the confined space see typical solution - see diagram 35

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32 Reference: WSA 15 Trade Waste Metering Code of Practice
33 Reference: WSA 15 Trade Waste Metering Code of Practice
34 Reference: WSA 15 Trade Waste Metering Code of Practice
Up stream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last up stream disturbance (eg. Valve and Meter.) This is to meet the meter manufactures’ installation requirements

NOTE:

- Secure 240v power supply must be provided

MagFlow meter with Integral display (shown) Also available as remote display available (with 10m remote cable)

BARWON WATER MAGFLOW METER ASSEMBLY FOR ABOVE GROUND TRADE WASTE INSTALLATIONS

Meter size
- 20mm
- 25mm
- 40mm
- 100mm
- 150mm

Test ferrule size
- 20mm
- 32 mm to 80mm
- 40mm
- 100mm
- 150mm

NOTE:

- Up stream (US) Flow Straightener or (length of pipe = Dia x 5) to be fitted between last up stream disturbance (eg. Valve and Meter.)
- Down stream (DS) Flow Straightener length or (length of pipe = Dia x 3) – (Test ferrule to be installed on DS flow straightener)
- This is to meet the meter manufactures’ installation requirements
12 Main to meter replacement and repairs

12.1 Main to Meter - General

In accordance with Barwon Water’s “Main to Meter” Policy detailed in the Customer Charter and subject to water law, Barwon Water will implement policy and programs to maintain water services and system performance in accordance with approved service standards. Including processes to minimise water loss that impact the environment and community:

Clause 9.3 of the Customer Charter - Delivery quality (flow rates) requires Barwon Water to ensure that a customer’s water supply is at least equal to the minimum flow rates set out in the table below, except to the extent that:

(a) a property owner’s infrastructure falls short of the required condition;
(b) a service is provided via a private extension;
(c) there is a drought or an emergency beyond Barwon Water’s control including sabotage, fire, flood, power shortage, extreme rain event, and industrial action;
(d) there is a water shortage due to peak summer demand;
(e) there is an unplanned or planned interruption;
(f) there is a reduction to the non-drinking water supplied due to shortage or in accordance with our regulations around use

Barwon Water will provide a water supply to meet the customers’ reasonable needs, with minimum flow rates through a service pipe that conforms to AS/NZS 3500 and measured at the outlet side of the water meter as shown in the table below. No minimum flow rates apply to 15mm service pipes or poor quality galvanised or damaged service pipes.

| Property water service pipe diameter (mm) | 20 | 25 | 32 | 40 | 50 |
| Minimum flow rate (litres per minute)    | 20 | 35 | 60 | 90 | 160 |

12.1.1 Barwon Water’s maintenance obligations (Water main to meter)

Subject to water law Water (Estimation, Supply and Sewerage) Regulations 2014 and the Water Act 1989 Barwon Water will implement programs to maintain its systems in accordance with its approved service standards.

In addition to this general system obligation Barwon Water will maintain systems to minimise water loss that impact the environment and community:

Barwon Water will maintain property service pipes and, where necessary, replace leaking galvanised iron property service pipes (including commercial and industrial connections), Barwon Water will maintain the water service pipe from our water reticulation main up to:

a) the first water meter installed after the water main; or
b) the property boundary if the first water meter is more than two metres inside the property boundary or there is no accessible stop valve; or
c) The first accessible stop valve where the first water meter or part of the water service pipe is within or beneath the walls of a structure built on the serviced property or where there is no water meter.

An ‘accessible stop valve’ means a stop valve that is placed above ground or is placed below ground within a stop valve cover approved by Barwon Water

Stop Taps and Valves

Barwon Water may replace a stop tap or valve on the inlet side of the meter or the first stop tap or valve inside the property boundary. The stop tap washer will be replaced or a top section, in the case of a seized top section, (this is classified as fair wear and tear).
12.1.2 In Addition to this General System Obligation

Barwon Water in line with its environmental and community obligation will undertake emergency repair work of fire or fire domestic services to minimize water loss, the property owner(s) or owners corporation will be responsible to pay costs to Barwon Water for any works undertaken.

Barwon Water will issue a maintenance order made under Section 151 of the Water Act 1989 where an emergency or temporary repair has been performed and the service requires replacing.

All costs incurred by Barwon Water for repairing or replacing a fire or fire/domestic or any service; order made under Section 151 of the Water Act 1989, the property owner(s) or owners corporation will be responsible to pay costs.

12.1.3 Property Owner’s maintenance obligations

Subject to Water Law the property owner(s) or Owners Corporation is responsible for:

(a) Costs associated with meter relocation, any accidental or deliberate damage to a water service pipe, stop tap and/or valves (except for fair wear and tear) and meter installations – note: broken handles, bent or damaged spindles etc., are not considered to be fair wear and tear, and the cost of repair/replacement may be passed on to the customer;

(b) Any stop valves that form part of a sub-meter assembly;

(c) All costs associated with maintaining or replacing a fire service pipe up to the valve at the water main;

(d) Maintenance or replacement of a backflow prevention device and pressure-limiting valve installed at the outlet of the meter;

(e) Private extensions or trunk services or water service pipes from private extensions;

(f) For maintaining all plumbing within the property boundary, from the taps and appliances to the meter assembly (meter outlet) or the property boundary where no meter is fitted;

(g) The installation, maintenance, repair and replacement of any meter pit, pit lid or meter cage;

(h) Any accidental or deliberate damage to property service pipes, stop taps, and meter installations;

(i) For the service pipe(s) between master meter and any sub-meter(s);

(j) Stop valves that form part of a sub-meter assembly;

(k) Any meter pit, and its maintenance;

(l) Any meter pit or cage, which is in a public area but services a property as part of a main to meter property service;

(m) To the maintenance or required replacement of any shared water service under a joint arrangement between all connected property owners including owners corporation;

(n) Any existing galvanised services which are required to be upgraded under plumbing regulation if or when a property is redeveloped or renovated;

(o) The service from the property boundary if the first water meter is more than two metres inside the property boundary or there is no accessible stop valve;

(p) The service from the first accessible stop valve where the first water meter or part of the water service pipe is within or beneath the walls of a structure built on the serviced property or where there is no water meter.

12.2 Assisted Replacement of Galvanised property service pipes

In the case of a single residential property serviced by a galvanised property service pipe DN25mm or less, Barwon Water will respond by making an assessment on whether their property water service pipe requires renewal. If the water pipe requires renewal Barwon Water will then arrange for a Barwon Water appointed plumbing contractor to undertake the works.

Note: If a property owner wishes to replace a service pipe for any reason other than as defined under the obligatory rules, then the owner will be required to pay 100% of the replacement costs.
12.3 Asset Ownership - Main to Meter - 20 & 25 mm

Historically a property owner has been the owner of the water service asset connection from the main ferrule on the reticulation water main to the property including the stop tap at the meter assembly and from the outlet side of the meter to the house and all fixtures. As stated in 12.1.1 under “main to meter” obligations, Barwon Water is responsible for the maintenance of all water services regardless of size. In the case of a leaking galvanised iron water service where potable water is delivered to the property, the service pipe must be replaced to meet current Australian Standards.

Barwon Water retains ownership and is also responsible for the replacement and maintenance of the water meter (meter only) as required by legislation for meter fleet management (Section 142 (1a) Water Act 1989).

Prior to the introduction of the Developer Works Process on July 1, 2000 (where “dry tappings” are provided for individual properties within the costs associated with the water service provided to the property) or where the property owner has paid for a “wet tapping” to the property (i.e. not “dry tappings”), the ownership of the water service asset remains with the property owner. 35

Therefore after July 1, 2000, all individual property water services 25mm or less in size provided with service pipe connections under the Developer Works Process are retained as Barwon Water assets, and after July 1, 2000, all new water services 25mm or less provided by the property owner; or service pipes replaced by Barwon Water under the ‘main to meter’ obligation will be vested to Barwon Water and registered on the water infrastructure database as such.

Essential Services Commission – “Customer Service Code for Metropolitan Retail and Regional Water Businesses” - The code regulates water businesses from 1 July 2005, limits the service pipes to DN25mm

2014 Subject to water law Water (Estimation, Supply and Sewerage) Regulations 2014 and the Water Act 1989 increased the DN size for water utilities with some limitations on the utility obligation.

In addition to this general system obligation Barwon Water will maintain systems to minimise water loss that impact the environment and community.

Any Fire service or Fire/domestic service servicing an individual property will remain the property owner’s asset to maintain

35 Reference: Service prior to July 1 2000 remain with owners
Part 2

13 Meter testing

13.1 Testing of water meters

The owner or occupier of any land may request a test to the accuracy and reliability of any meter owned by Barwon Water installed on their land.

The meter will be tested in accordance with the National Trade Measurement Regulation 2009 Cth.

13.2 Testing requirements

All meters shall be tested in a National Association of Testing Authorities (NATA) Water Meter Testing Laboratory in accordance with NATA “Rules” and procedural requirements. Provisions are set out within the Water Act 1989 and the Water (Estimation, Supply and Sewerage) Regulation 2014 for when a meters’ accuracy comes into question by a customer.

On application to have a meter tested the customer shall be offered the opportunity to witness the meter test in the NATA Meter Testing Laboratory.

13.1 Testing reports

Test Reports shall include a Metrological Performance Certificate and Mechanical Inspection report.

13.2 Test equipment

All testing apparatus and reference measures shall be traceable and comply with the National Measurement Act 1960 in accordance with Trade Measurement Act Victoria 1995, Number 59, and Regulation 80.

13.3 Testing as a result of a high consumption enquiry

Barwon Water may at any time, and must within 10 working days of a requested meter test, remove the meter to be tested and replace it with a new meter.

A copy of the test report will be provided to the customer within 5 days of the meter having completed the meter test and mechanical examination.

Barwon Water will conduct the meter test and calculate any measurement error

- In the methods approved the National measurement Institute (NMI).

If the meter being tested, is found to be exceeding the upper parameter of the Maximum Permissible Error (MPE) compared to the actual water quantity measured into the certified test measure), a reduction shall be made in the quantity of water to be charged for in accordance with a method which is representative of customers’ consumption patterns.

If during the inspection of the internal workings the meter is found to be mechanically faulty, it will be considered as inaccurate a reduction shall be made in the quantity of water to be charged for in accordance with the Water Act 1989, this policy and Barwon Water’s Billing Pricing Schedule. Barwon Water will then:

- Refund any charge paid by the customer for the tests; and
- Refund or credit any amount overcharged.

If the meter is shown to be accurate, the cost of the test will be borne by the customer and the fee will be charged in accordance with the relevant tariff fees for meter testing.

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36 Reference: Barwon Water Billing Pricing Schedule

13.4 Water meter testing policy

(a) Testing of meters (Barwon Water Connected Customers)

(1) The owner or occupier of any property connected to Barwon Water’s infrastructure may at any time, make written application to Barwon Water to test the accuracy of any meter installed upon such property, provided that at the time of making the application they agree to pay Barwon Water the prescribed meter test fee (see ‘Barwon Water Tariff Schedule’ as issued by the Essential Services Commission Victoria Testing Water Meters).

(2) Barwon Water on receipt of such application shall cause the meter to be tested in accordance with accuracy limits prescribed in NMI R- 49.1 “Water Meters Intended for Metering of Cold Potable Water” Part 1: Metrological and Technical Requirements Clause 3.2.8 The maximum permissible error of a water meter while in service shall be twice the maximum permissible errors given in 3.2.1 and 3.2.2 according to the accuracy of the class;

(3) The water meter shall be tested in a NATA accredited Meter Testing Laboratory

(4) Barwon Water can test any meter and may waive any prescribed fee.

(b) Meters exceeding the upper parameter of the maximum permissible error (MPE)

(1) If the meter being tested, is found to be exceeding the upper parameter of the Maximum Permissible Error (MPE) for an in service meter as set out in NMI R- 49.1 “Water Meters Intended for Metering of Cold Potable Water” Part 1: Metrological and Technical Requirements Clause 3.2.8 The maximum permissible error of a water meter while in service shall be twice the maximum permissible errors given in 3.2.1 and 3.2.2 according to the accuracy of the class; compared to the actual water quantity measured into the certified test measure, a reduction shall be made in the quantity of water to be charged for, and the meter test fee refunded.

(c) Meters equal to or less than the upper parameter of the maximum permissible error (MPE)

(1) If the meter being tested, is found to be registering equal to or less than the Maximum Permissible Error (MPE) for an in service meter as set out in NMI R- 49.1 “Water Meters Intended for Metering of Cold Potable Water” Part 1: Metrological and Technical Requirements Clause 3.2.8 The maximum permissible error of a water meter while in service shall be twice the maximum permissible errors given in 3.2.1 and 3.2.2 according to the accuracy of the class; compared to actual water quantity measured into the certified test measure then, for the purpose of this clause the meter shall be deemed to be registering correctly, and Barwon Water shall in pursuant of sub clause 13.5.1 charge the applicable meter fee (see ‘Barwon Water Tariff Schedule’ as issued by the Essential Services Commission Victoria Testing Water Meters), Barwon Water may also recalculate the quantity of water to be charged for

(2) A new meter will be fitted to replace any meter removed for testing.

(3) After the meter is tested it will be held in store for three (3) months then disposed.

13.5 Test fees for Barwon Water owned meters

13.5.1 Fees for Meter Test 20mm & 25mm meters

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removed from property for NATA testing - 20mm &amp; 25mm (per test)</td>
<td>See ‘Barwon Water Tariff Schedule’ as issued by the Essential Services Commission Victoria</td>
</tr>
<tr>
<td>Removed from property for NATA testing - 32mm in size or larger (per test)</td>
<td>See ‘Barwon Water Tariff Schedule’ as issued by the Essential Services Commission Victoria</td>
</tr>
</tbody>
</table>
13.5.2 Fees for Meters Tests 32mm and larger
Fees reflect the total cost for the removal/replacement of the meter from the field including testing cost.

<table>
<thead>
<tr>
<th>SIZE</th>
<th>FEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>32mm</td>
<td>At cost</td>
</tr>
<tr>
<td>40mm</td>
<td>At cost</td>
</tr>
<tr>
<td>50mm</td>
<td>At cost</td>
</tr>
<tr>
<td>80mm</td>
<td>At cost</td>
</tr>
<tr>
<td>100mm</td>
<td>At cost</td>
</tr>
<tr>
<td>150mm</td>
<td>At cost</td>
</tr>
</tbody>
</table>

13.5.3 Testing Standards:

a) Domestic Testing
Metrological Performance Tests, 20mm DN and 25mm DN: shall be in line with the requirements set down in NMI R- 49.1 "Water Meters Intended for Metering of Cold Potable Water" Part 1: Metrological and Technical Requirements Clause 3.2.8 The maximum permissible error of a water meter while in service shall be twice the maximum permissible errors given in 3.2.1 and 3.2.2 according to the accuracy of the class.

b) Commercial/Industrial Testing
Metrological Performance Tests 32mm DN to 100mm DN: shall be in line with the requirements set down in the NMI R- 49.1 "Water Meters Intended for Metering of Cold Potable Water" Part 1: Metrological and Technical Requirements Clause 3.2.8 The maximum permissible error of a water meter while in service shall be twice the maximum permissible errors given in 3.2.1 and 3.2.2 according to the accuracy of the class.

13.5.4 In-Service Compliance Testing
Water Companies as part of their ongoing meter fleet management to ensure that their meter fleet meets ongoing compliance.

Four (4) Flow-rates – Shall include a Metrological Performance Certificate (PDF format) for each meter and summary report includes the weighted for each meter (Excel format)

Six (6) Flow-rates – Shall include a Metrological Performance Certificate (PDF format) for each meter and summary report (Excel format). The six (6) Flow-rates summary report includes the weighted for each meter, in addition will include a (4) Flow-rate weighted result
14  Meter compliance program

14.1  Meter compliance

Barwon Water’s only purchase meters that compliant with National Measurement Act 1960 as set out by the National Measurement Institute (NMI) these meters are comply with NMI R49-1 and AS 3565. The Utility Meters (Metrological Control) Act 2002 requires that water utilities ensure that their meter fleet perform within legislated accuracy limits.

Populations of water meters shall be replaced when they no longer maintain the required accuracy limits. It is not economical to test every meter within a population. Therefore statistical sampling techniques are used to measure performance.

Barwon Water uses Australian Standard 3565.4 “Meter for Water Supply Part 4: In-service Compliance Testing” and “WSAA In-service Compliance Testing Code Practice” as its performance based analysis of the water meter fleet. The standard and code specifies the requirements for timely sampling, testing and assessments of in service meter populations.

The in-service test criterion has been established to ensure that meter accuracy is maintained throughout the economic life of the meter which recognises the low flow accuracy deterioration of meters in service. It should be noted that meters as they age generally lose accuracy and under register actual volume passed through the meter.

Meters are tested at designated flow rates based on water usage studies and represent the flow rates that water is used by consumers within a typical household. The standard provides for weighting to be applied to each meter tested, this final result is used in the determination of the meter population’s performance.

14.1.1  Meter Replacement Program (MRP) 20 to 25 mm

Barwon Water’s MRP is designed to ensure that all meters are operating within acceptable limits.

A water meter no longer has a predetermined life expectancy due to the fact that water quality is continually improving, as is the infrastructure providing water to the meters. A guide to the approximate life expectancy is shown below

The approximate life expectancy of a 20mm water meter is:
  - 15 years or 3600 KL for 20mm.

For 25mm water meters Barwon Water uses
  - 10 years or 8500 KL for 25mm.

14.1.2  Meter Replacement Program (MRP) 32 to 40 mm

Barwon Water’s MRP is designed to ensure that all meters are operating within acceptable limits.

A larger meters operate over varying operating conditions and although a water meter no longer has a predetermined life expectancy. A guide to the approximate life expectancy is shown below

For 32mm water meters Barwon Water uses
  - 10 years or 15,000 KL

For 40mm water meters Barwon Water uses
  - 10 years or 20,000 KL

A meter population identified as failing compliance testing earlier than the life expectancy will be scheduled for replacement through a planned replacement program.

Owners or occupiers of properties identified as requiring replacement will be sent a notification of intended meter replacement seven (7) clear working days in advance.
14.1.3 Replacement Program

Where a meter is to be replaced under a scheduled meter replacement program the following cards are to be left at the customer’s property:

- The following cards are left at the customer’s property when a meter has ceased to operate or cannot be read due to condensation and therefore requires replacement

- **Yellow Card** – ‘Important notice – Water Meter Replacement’. Advises customer that after 7 days the meter will be replaced and water will be disrupted for approximately 5 to 10 minutes. (*Victorian Acts and Regulations – Water Act 1989 No. 80 Requirement*)

If the owner/occupier is not present, or the property is vacant the time of meter replacement a notification in the form of a card is left at customer’s house. (See: - “White Card - Important Notice Water Meter Replacement).

- **White Card** – ‘Important Notice, Water Meter Replacement’. The customer is notified that the meter on their property has been replaced with a new meter; the removed reading of the old meter will also be noted on the card.

- If meter has condensation and a reading could not be obtained at property, customer is advised reading may be obtained back at workshop if possible.

14.1.4 Inability to Complete Meter Works

- **Red Card** – ‘Important notice – Water Meter Replacement’ Advises customer of the inability to complete works due to but not limited to e.g. Waters pipes encased in concrete, rusty galvanised pipework, meter obstruction, dogs and access problems

If Barwon Water or its contractors unable to perform meter works on a customer’s property, a card will be left at the property requesting that the customer make arrangements rectify the problem and advise Barwon Water on completion.
15 Meter replacements

15.1 General meter replacement

General replacement of meters may occur as a result of dials seizing, condensation, or damage due to vandalism etc. At least seven (7) working days notification of work must be given to the occupier, except in case of a customer request or in an emergency. (See: “Yellow Card - Important Notice Water Meter Replacement).

15.1.1 General Replacement

- The following cards are left at the customer’s property when a meter has ceased to operate or cannot be read due to condensation and therefore requires replacement

- **Yellow Card** – ‘Important notice – Water Meter Replacement’. Advises customer that after 7 days the meter will be replaced and water will be disrupted for approximately 5 to 10 minutes. *(Victorian Acts and Regulations – Water Act 1989 No. 80 Requirement)*

If the owner/occupier is not present, or the property is vacant the time of meter replacement a notification in the form of a card is left at customer’s house. (See: - “White Card - Important Notice Water Meter Replacement).

- **White Card** – ‘Important Notice, Water Meter Replacement’. The customer is notified that the meter on their property has been replaced with a new meter; the removed reading of the old meter will also be noted on the card.

- **Blue Card** – ‘Important Notice, Water Meter Replacement’. The customer is notified the reason that the meter on their property has been replaced.

- If meter has condensation and a reading could not be obtained at property, customer is advised reading may be obtained back at workshop if possible.

15.1.2 Inability to Complete Meter Works

- **Red Card** – ‘Important notice – Water Meter Replacement’ Advises customer of the inability to complete works due to but not limited to e.g. Waters pipes encased in concrete, rusty galvanised pipework, meter obstruction, dogs and access problems

If Barwon Water or its contractors unable to perform meter works on a customer’s property, a card will be left at the property requesting that the customer make arrangements rectify the problem and advise Barwon Water on completion.
Part 3

16  Meter reading

16.1  Meter reading

Barwon Water read meters on a Quarterly basis with some customers more frequently.

It should be noted Barwon Water endeavours to ensure that all customers do have at least one meter reading every 12 months. In the event that a customer’s water meter is unable to be read, Barwon Water will estimate the reading based on the customer’s usage history at that property (if available), using any method specified under the Water Act 1989.

16.1.1 Estimation of Water Consumption

If it appears to Barwon Water that:

(1) any meter is inaccurate, or
(2) a meter is removed from a service pipe for any reason, or
(3) a meter is inaccessible or for other reasonable cause not of Barwon Water’s making, cannot be read,

then Barwon Water may in respect of the relevant period compute the quantity of water used by having regard to the quantity of water delivered to the land in any previous or subsequent period or periods or the quantity of water delivered to any similar property during the period concerned.

16.2  Power to enter land

An officer of Barwon Region Water Corporation or an authorised person may enter any land for the purpose of reading meters in accordance with Sections 133, 134 and 142 of the Water Act 1989 which states as follows.

Section 133  POWER TO ENTER LAND

(1) An officer of an Authority or an authorised person may, subject to sub-section (4), enter any land for the purpose of –

(a) Reading a meter installed under section 142 or any corresponding previous enactment; or
(b) Inspecting and measuring any septic tank system; or
(c) Inspecting any works, or making any test, to find out whether this Act, the regulations and the by-laws of Barwon Water are being complied with; or
(d) Carrying out any other function under this Act.

(2) An officer of an Authority or an authorised person may, subject to sub-section (4) and after the Authority has given two (2) days notification in writing to the occupier, enter any land and carry out on that land any works that the Authority is empowered to carry out.

(3) An Authority need not give the notice required by sub-section (2) –

(a) If the occupier consents to the entry and the carrying out of the works; or
(b) In an emergency.

(4) An officer or authorised person must not, despite sub-sections (1) and (2), enter land that is used primarily for residential purposes except between 7.30am and 6pm unless -

(a) The Authority has reasonable grounds for believing that this Act, the regulations or the Authority’s by-laws are not being complied with by the occupier; or
(b) The occupier consents.

Section 134 OBLIGATIONS IN RELATION TO ENTRY OF LAND 39

(1) In exercising the powers given by section 133, an officer or authorised person must-

(a) Cause as little harm and inconvenience as possible; and
(b) Not stay on the land for any longer than is reasonably necessary; and
(c) Remove from the land on completing the works all plant, machinery, equipment, goods or temporary buildings brought onto the land by the officer or authorised person, other than anything that the owner or occupier of the land agrees may be left there; and
(d) Leave the land as nearly as possible in the condition in which he or she found it; and
(e) Co-operate as much as possible with the owner and occupier of the land.

(2) An Authority is not liable for nuisance or any other injury done, in exercising the powers given by section 133, to the land or residence of the person whose land is entered under that section.

Section 142 Water meters 40

(1) An Authority may –

(a) Provide or install, and maintain, a meter on any land to measure the amount of water supplied by the Authority to any land; and
(b) Position the meter on the land as it considers appropriate.

(2) If an Authority believes that a meter on any land connected to its system is functioning inaccurately, the Authority may compute the quantity of water supplied to the land during a specific period –

(a) By having regard to the quantity of water delivered to the land in any previous or subsequent period or periods, or the quantity of water delivered to any similar property during the period concerned; or
(b) In any other way that is prescribed.

(3) A meter provided or installed by an Authority remains the property of that Authority.

16.3 Reading cycle

Meters at residential and smaller business customer properties are read every three months, known as a quarterly schedule by Barwon Water personnel or authorised meter reading contractors. Large volume customers have meters read on a monthly basis.

Meter reading personnel carry identification at all times, which is available to present to owner/occupier if requested. If the meter is not accessible a ‘self-read’ card is left at the property. Repeat instances of non-accessible meters resulting in ‘no reads’ will result in the owner being notified by mail informing them they are required to meet clause 4.3 of this document. Otherwise they will be requested to pay for and have installed a “Remote Read Meter”.

16.4 Meter reading accuracy

Barwon Water’s target meter read accuracy targets are as follows:

- A <1 in 3000 error rate for quarterly meter readings
- A zero error rate for monthly meter readings
- A zero error rate for all special meter readings (e.g. property transfer, special requests etc.).

16.5 Types of cards

16.5.1 No Reading or Difficult to get Reading

If the meter reader cannot be read due to restricted access to the meter they are required to leave a card for the customer;

- **Pink** – Important notice. This notice advises the customer that Barwon Water was unable to read the meter due to restricted access, locked gate, dog, or buried or obstructed and is difficult to obtain reading. The customer is asked to remedy the problem to enable easier access for future readings.

Quarterly Meter Readings, Monthly Readings and Special Meter Readings must have a percentage “No Read Rate” not greater than one percent (1%).

16.5.2 No Access to Read Meter

If Barwon Water or its contractors are unable to gain access to read the meter on a customer’s property, a card will be left at the property requesting that the customer read the meter then advise Barwon Water or its contractors of the reading by using the self-read card supplied by Barwon Water at the time of the attempted meter reading. **This card is not to be used as a permanent arrangement; letters will be sent to repeat offender.** If there is no response from the customer, an estimated reading will be calculated.

Where Barwon Water or its contractors are unable to obtain a meter reading due to the meter being either buried, obstructed, missing or located in a locked area within the property, a letter regarding accessibility will be sent to the customer.

Customer Billing Services will send a letter advising customer of their estimated account is based on estimated water usage and advising that alterations or adjustments will not be made to the account until an actual reading is obtained by an authorised Barwon Water officer. The earliest date for adjustment would be the next scheduled cycle reading. If the customer provides access to the meter in the following quarter, then the estimated charges will be corrected on the account for that next cycle.

Where there has been no response to the letter sent with the account, a second letter, together with maintenance order will be sent by Registered Mail. The customer action the maintenance order at their own cost within 14 days. Failure to comply with the maintenance order Barwon Water will arrange to carry out the work and charge all reasonable costs on to the customer.

16.6 Special meter readings (SMR)

When a tenant, or owner, is either moving from, or selling a property request a “Special Meter Reading (SMR)”, the meter shall be read and reading returned to Customer Billing Services within 2 working days.

Disputed consumption readings

The Metering Operations Section investigates readings and performs site investigations with owners to ascertain the cause of the high consumption.

16.7 Disputed readings

If Barwon Water or its contractor incorrectly read the meter resulting in the high meter reading the Metering Co-ordinator will complete of a query form and forward to Customer Billing Services Co-ordinator who will take appropriate action and amend the customer’s account.

For disputed readings Customer Billing Services shall raise a “Meter Query & Investigation Form” (CA 58) and shall be forwarded to Metering Operations Section who investigate readings and performs site investigations with owners or tenants to ascertain the cause of the high consumption.

If a “high reading” is recorded by Barwon Water, the Metering Co-ordinator is to complete a query form and return it to Customer Billing Services for appropriate action. If the customer requires a meter to be tested then this is to be under taken with Clause 13.3.

For Laboratory Testing – the meter is removed from property and taken back to South Geelong for testing. The customer can watch meter testing process.

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41 Reference: Barwon Water Billing Pricing Schedule
After testing is completed, the Metering Operations Co-ordinator shall record test result in service desk. Customer Billing Services follow the actions in relation to results. See section 13 - in this policy

16.8 Contractor requirements

The meter-reading contractor is contracted for a contracted period, including a review of performance three months after commencement. Barwon water conducts regular audits on the Contractor’s performance to ensure that Meter Reading Services are performed satisfactorily. Performance standards are set out within the contract and failing to perform within the performance criteria will attract penalties. (See section 16.4- Meter Reading Accuracy in this policy)

16.8.1 Identification

The Meter Reading contractor:

- Must wear a uniform approved by Barwon Water.
- Visibly display an identification badge or card approved and signed by Barwon Water bearing the meter reader’s photograph and when entering premises for the purpose of reading meters.

Barwon Water shall provide the identification badge or card.

16.8.2 Deductions

Barwon Water may make the following deductions from any sum due to the Contractor for the following failures:

- Quarterly meter reading error tolerances exceeded.
- Monthly and special meter reading error tolerances are exceeded.
- Failure to account for and secure keys.
- Exceeding “No Read” % tolerance.
- All estimated or fictitious readings
- Meter readings subsequently found to be in error.
- Failure to provide Contractor’s employees report.
Appendix A

Reference: AS/NZS 3500 National Plumbing and Drainage part 1 Water Services - (also see section 4.4.1of this policy)

AS/NZS 3500 - Section 13 Installation of water meters

13.1 SCOPE OF SECTION – This Section specifies the general requirements for the location, installation and protection of water meters.

13.2 LOCATION OF WATER METERS – Water meters used for billing purposes shall be located as follows:

(a) Within the property
(b) Proximity to street alignment – as near as practicable to the street alignment.
(c) Proximity to isolating valve – positioned immediately downstream of the meter-isolating valve.
(d) Relationship to the reticulation water main – directly opposite the connection and at right angles to the water main.
(e) Within easements – at the front of the property. Where the property service is required to be offset within a private easement or right-of-way, an isolating valve shall be provided downstream of the offset.
(f) In other locations – as required by the relevant network utility operator - (Barwon Water requires copper trace wire on all non-metallic services)

13.3 INSTALLATION OF WATER METERS

13.3.1 General Water meters shall be installed –

(a) So as to be readily accessible for reading, maintenance or removal and be clear of obstacles;
(b) In a horizontal position unless designed to operate otherwise; and
(c) So that no branch pipe is closer than the lower outlet bend of the water meter assembly.

13.3.2 Inside buildings - When a water meter is installed inside a building and water damage may result from the removal of the meter; an additional stop tap shall be fitted adjacent to the meter outlet.

13.3.3 Below ground - Water meters installed below ground level shall be located in a chamber that has a cover which is capable of being removed by one person; and

(a) A base that enables drainage.

13.4 PROTECTION - Where liable to vehicular damage, water meters shall be protected.

13.5 SUPPORT – Meters DN 50 or larger shall be supported independently of piping

(Barwon Water requires support under meters 32mm DN or larger)

13.5 FROST PROTECTION – Water meters and meter assemblies located in frost-sensitive areas shall be protected against damage caused by freezing of water

13.5 ELECTRICAL SAFETY PRECAUTIONS - When uncoupling meter connections the precautions in Clause 5.2 shall be observed

CLAUSE 5.2
ELECTRICAL SAFETY PRECAUTIONS EARTHING - Before any existing metallic water service pipe, which forms part of an earth electrode for an electrical installation is cut or uncoupled, the following precautions shall be taken to reduce the risk of electrical shock.

(a) The main switch or switches on the premises shall be switched off and a tag reading ‘DANGER DO NOT SWITCH ON’ attached over the switch.

(b) A bridging conductor, fitted with suitable clamps and having a current rating of not less than 70 A, shall be connected across the intended gap.

(c) The pipe shall be cleaned to bare metal where the clamps are to be connected.

(d) The electrical bridge shall not be broken or removed until all work on the water service is completed and continuity of the metallic service pipe is restored.

(e) Where any existing metallic service pipe is to be replaced in part or in its entirety by plastics pipe or other non-metallic fittings or couplings, the work shall not commence until the earthing requirements have been checked by an electrical contractor and modified, if necessary.
Appendix B

Terms and Conditions for hiring and using a Barwon Water portable metered hydrant

Guidelines for applicants

Customers can apply to access Barwon Water’s drinking water supply via designated fire plugs. This access is provided via a portable metered hydrant supplied by Barwon Water.

These guidelines have been developed to ensure water from nominated sources is collected, transported and delivered safely. Customers wishing to hire a portable metered hydrant should read the terms and conditions of supply before completing an application form.

Barwon Water will review your application and send a notification letter to formally advise you if your permit has been approved. During water restrictions, all applications will be assessed in accordance with water restriction guidelines.

These terms and conditions apply only to water accessed via fire plugs in Barwon Water’s service region.

Conditions of hire

Meter hire and ownership

The hirer is any person, company or authority representative who signs an agreement to hire a portable metered hydrant from Barwon Water.

The portable metered hydrant remains the property of Barwon Water.

Supply of water

Barwon Water will supply a hirer with a portable metered hydrant and the necessary fittings provided:

- water is taken only from nominated locations as outlined in the supplied guides
- registered water carters display approved signage (if requested by Barwon Water) on their vehicles
- the hirer keeps a log of all hydrant usage and presents their logbook for audit purposes, if requested

Barwon Water will supply water to the hirer unless prevented by unusual circumstances such as drought or other unavoidable causes or incidents. Barwon Water reserves the right to nominate which fire plugs water may be accessed from with the understanding that Barwon Water cannot provide any guarantee of water pressure at these points.

Inspection

Barwon Water staff can enter the hirer’s property or work location to inspect, read, repair or remove the metered hydrant.

Barwon Water will maintain and repair the hydrant for ordinary wear and tear using authorised repairers.

Fee notification and changes

All fees related to metered hydrants will be provided at the time of initial hire. Fees are subject to change and any such change will be notified via an updated schedule available on the Barwon Water website.

Charge outline

Volume charges

Consumption will be billed on a quarterly basis, post return of the hydrant for reading & billing purposes.

Security deposit

The hirer is required to pay a fee (deposit) to Barwon Water when the portable metered hydrant is issued.

This deposit will be retained by Barwon Water for a period of 12 months. Providing the hirer complies with all terms and conditions, including having returned the hydrant for 4 successive quarterly servicing and meter reading purposes, the deposit will be refunded in full.

Should the hydrant not be returned within 10 business days of any quarterly reading period, as advised at the time of hire, the 12 month calculation period shall be recommenced from the date of actual return.
Permit Administration charge
A permit charge is required to be paid at the time of new hydrant issue and covers the next 12 month period. This charge is applied at each 12 month anniversary. All permit administration charges are paid in advance and remain applicable regardless of the return date during that period.
After the initial billing, a separate invoice will be issued to the hirer for this charge and it is required to be paid on or before the nominated date on the bill.

Acceptance fee
An acceptance fee is required to be paid at the time of new hydrant hire.

Non-compliance fee
Fees will apply in the circumstances that the hirer has not complied with the requirement to return the hydrant for quarterly servicing and meter reading purposes within 10 business days as advised at the time of hire or via separate correspondence.

Service fee
A service fee will be billed on a quarterly basis, post return of the hydrant for reading & billing purposes. This fee will be calculated at a prorated rate based on the number of days in the billing period.

Testing
A hirer can apply to have the accuracy of their portable metered hydrant tested at any time. The hirer will be required to pay a fee for the metered hydrant to be tested when the application is made.
The metered hydrant will be tested in accordance with procedures recommended by the metered hydrant’s manufacturer.
If testing finds the metered hydrant to be inaccurate, it will be repaired or replaced. The fee paid by the hirer will be refunded and an adjustment will be made to the account based on the quantity of water used.
If testing finds the metered hydrant to be reading accurately, the meter will be returned to the hirer and Barwon Water will retain the testing fee.

Damages and Replacement
The hirer is responsible for the charges associated with repair or replacement of a metered hydrant that is damaged or lost whilst in their custody, whether this damage has been done with or without their knowledge or involvement.
A replacement metered hydrant will not be issued until the cost for repairing or replacing a damaged hydrant is paid.

Interference with meters
In accordance with current Water Industry By-Laws and Regulations, it is an offence to interfere with any meter owned by Barwon Water and penalties may apply.

Changes to these conditions
Barwon Water reserves the right to change these conditions of hire at any time. Changes to the conditions of hire will be in line with management or operational purposes as required. Hirers will be provided with updated terms and conditions as they become available via the Barwon Water website.

This agreement is not transferable
The hirer cannot transfer this agreement to any other person, company or authority without the written consent of Barwon Water.

Directions for Using a Portable Metered Hydrant
The following are requirements for use of metered hydrants:
- hydrants may only be used within Barwon Water’s service area;
- hydrants should not be left unattended;
- hose protection ramps should be used on roadways or footpaths;
- hoses must be in good working order and free from leaks;
- removal of dirt and debris from the fire plug is required to ensure no grit or dirt enters the portable metered hydrant, as it could be damaged;
- the base of the metered hydrant is to be secured firmly on the fire plug;
- faulty fire plugs are to be reported to Barwon Water;
- any damage to hydrants or the surrounding area must be reported to Barwon Water immediately

**Non-compliance with directions of use:**

Non-compliance with the requirements for use of a portable metered hydrant will be dealt with in the following manner;

- 1st instance – The hirer will be advised by Barwon Water, either by phone or in writing, that they must cease any such practice
- 2nd instance – The hirer’s entitlement to utilize a metered hydrant will be removed and the hydrant will require immediate return to Barwon Water.

It will be incumbent upon the hirer to evidence all corrective actions taken to ensure no further discretions of the allocation requirements prior to Barwon Water giving consideration to an allocation of any future portable metered hydrants.

**Operation of metered hydrants**

The following steps are required to operate metered hydrants:

- the operating handle should to turned slowly to allow a small amount of water to be released and make sure the metered hydrant is sealing properly on the fire plug;
- if the metered hydrant is turned on or off too quickly, the water mains or service pipes could be damaged. The hirer will be responsible for any repair costs to damaged water mains if the damage was a result of misuse.
- do not turn the metered hydrant on fully as the fire plug can get jammed and the metered hydrant will be prevented from turning off.

**Backflow protection:**

- If a water carrying vehicle is collecting water via a metered hydrant, the vehicle must be fitted with an approved air gap or reduced pressure zone (RPZ) device to provide backflow protection. This will maintain a positive air gap between the outlet of the hose and the overflow level of the tank.

**Further information**

For more information, contact Barwon Water on 1300 656 007, email info@barwonwater.vic.gov.au or visit our website www.barwonwater.vic.gov.au

More information can be found in the Guidelines for Potable (Drinking) Water Transportation in Victoria at www.foodsafety.vic.gov.au
Appendix C

**Meter tampering – Wrongful taking of water**

In accordance with sections 145, 288, 289 & 290 of the *Water Act 1989*, it is an offence to interfere with an Authority’s assets. This includes the removal, or substitution of any water meter or metered hydrant or connecting to Barwon Water’s infrastructure without the written consent from Barwon Water. Penalties are provided in the *Water Act 1989*.

Barwon Water will investigate any reported breach, the meter shall be checked for any evidence of interference and any meter that appears to, or has been interfered with, will be replace and security clamps placed on meter couplings.

Barwon Water will prosecute any offenders who tamper with or interferes water meters or unlawfully takes water from Barwon water.
Barwon Water’s main to meter policy 2015

Introduction

Barwon Water does not assume ownership of any property service infrastructure.

Exception after July 1, 2000 all individual property water services 25mm or less in size provided with “dry tappings” under the Developer Works Process are retained as Barwon Water assets, including

After July 2009 recycled water property service pipes 25mm or less under the Developer Works Process are retained as Barwon Water assets, or

After July 1, 2000 where the property owner has paid for a “wet tapping” to the property (i.e. not “dry tappings”), the ownership of the water service may be vested to Barwon Water, and retained as Barwon Water assets, and,

After July 1, 2000, all water services replaced by Barwon Water under the ‘main to meter’ obligation will be vested to Barwon Water and registered on the water infrastructure database as such.

However, Barwon Water reserves the right to maintain control of any property service pipe from the main to the meter as part of its ongoing responsibility in maintaining an essential service.

Prior to July 1, 2000 the ownership of the water service asset remains with the property owner.

Essential Services Commission – “Customer Service Code for Metropolitan Retail and Regional Water Businesses” - The code regulates water businesses from 1 July 2005, limits the service pipes to DN25mm

2014 Subject to water law Water (Estimation, Supply and Sewerage) Regulations 2014 and the Water Act 1989 increased the DN size for water utilities with some limitations on the utility obligation.

Subject to water law Water (Estimation, Supply and Sewerage) Regulations 2014 and the Water Act 1989 Barwon Water will implement programs to maintain its systems in accordance with its approved service standards.

In addition to this general system obligation Barwon Water will maintain systems to minimise water loss that impact the environment and community:

Under the Customer Charter and the following policy applies.

Barwon Water will replace a property service pipes under the ‘main to meter’ obligation,

(a) The first water meter installed after the water main; or

(b) To the property boundary if the meter is located more than 2 metres inside the boundary (e.g. the service pipe has been extended from the front boundary and the meter located at the rear) or there is no accessible stop valve; or

(c) The first accessible stop valve where the first water meter or part of the water service is within or beneath the walls of a structure built on the serviced property or where there is no water meter

If Barwon Water replaces a property service pipe it will be vested to Barwon Water and registered on the water network database as such.

The property owner is responsible for:

(a) All parts of the water service that Barwon Water is not responsible for maintaining under items (a to c)

(b) All backflow prevention devices, pressure reducing valves, taps and appliances;

(c) All fire services including Commercial, Industrial, Owners Corporation;

(d) Private extensions or trunk services, up to the ferrule or service pipes from private extensions;

(e) The installation, maintenance, repair and replacement of any meter pit, pit lid or meter cage associated with a property;

In addition to (items a to e). The property owner is also responsible for:

(a) Any accidental or deliberate damage to property service pipes, stop taps, and meter installations;
(b) Any service upgrades if a property is redeveloped or subdivided by the owner or a developer;

(c) Maintaining all plumbing within the property boundary, downstream from the meter assembly outlet coupling, or from the first stop tap inside the property boundary where no meter is fitted, and,

(d) Maintaining all plumbing and fittings within the property boundary, downstream from the meter assembly, including all service pipes between master meter and sub meter(s)

(e) Where the meter is located more than 2 metres from the boundary (e.g. the service pipe has been extended from the front boundary and the meter located at the rear) or if there is no accessible stop valve the property owner is responsible from that boundary,

(f) Any meter assemblies 32mm and greater including all valves which don’t comply with current AS3500 and AS2845

(g) Where the meter is relocated and the offset more than 2 metres from the tapping alignment without approval (e.g. the service pipe has been extended either left or right from its original position), the property owner is responsible to maintain that section of offset; or if it is decided that the water service then needs realignment, the cost to rectify the matter is the responsibility of the property owner.

The property owner will also be responsible for any cost incurred by Barwon water:

(a) For maintaining or replacing a fire service or fire/domestic or and any service pipe on the property side of the water meter when failing to comply with a maintenance order made under Section 151 of the Water Act 1989; or;

(b) Where Barwon Water is required to replace a meter pit in a public area as part of a main to meter service replacement the pit will be of an approved type (see 4.4.3 of the Metering Policy), and the cost of the pit will be in addition to any main to meter replacement charges. The responsibility to maintain the pit will remain with the owner.

Barwon Water will not be responsible for private extensions, fire services and accidental or deliberate damage to property service pipes and fixtures. However, Barwon Water will provide direction on connections to its water mains.

Therefore the property owner is responsible for, and must meet any repair or replacement costs of the following:

(a) Private fire services; up to the valve at the water main;

(b) Private extensions or trunk services, up to the ferrule;

(c) Property service pipes from private extensions;

(d) Any accidental or deliberate damage to property service pipes, stop taps, and meter installations;

(e) Service pipes from master-meter to sub-meter including the stop tap.

Barwon Waters limited Obligation for combined Fire/Domestic

Under the ESC guidelines a combined Fire/Domestic water service is classified as a fire service; and therefore Barwon Water’s maintenance responsibility is limited to the domestic portion of the service only (from where the service connects to the fire service to the water meter).

Barwon Water in line with its environmental obligation may undertake emergency repair work of the fire service pipe to minimize water loss, Barwon Water will also issue a “Notice of Repair” on the property owner/occupier to replace the fire service within a prescribe time frame,

If the property owner/occupier fails to comply with a maintenance order made under Section 151 of the Water Act 1989. Barwon Water will engage plumber to replace the service. The property owner will be responsible to pay costs to Barwon Water for any replacement works under taken by it.

Assistance with Galvanised Water Service Pipe Replacements

As part of a “Quality Improvement” program Barwon Water will replace a galvanised domestic property service which is 25mm diameter or less. Barwon Water will respond to the initial customer request for assistance to replaces a galvanised iron water service to a property by making an assessment of whether the water service requires replacement. If the water service requires replacement, the customer will be required to lodge the first $500 excluding GST prior to commencement of the replacement works. Barwon Water will then call in a nominated plumbing contractor to undertake the works.
Excluded from the “Assistance Package” are any service upgrades where a property is being redeveloped or subdivided by the owner or a developer.