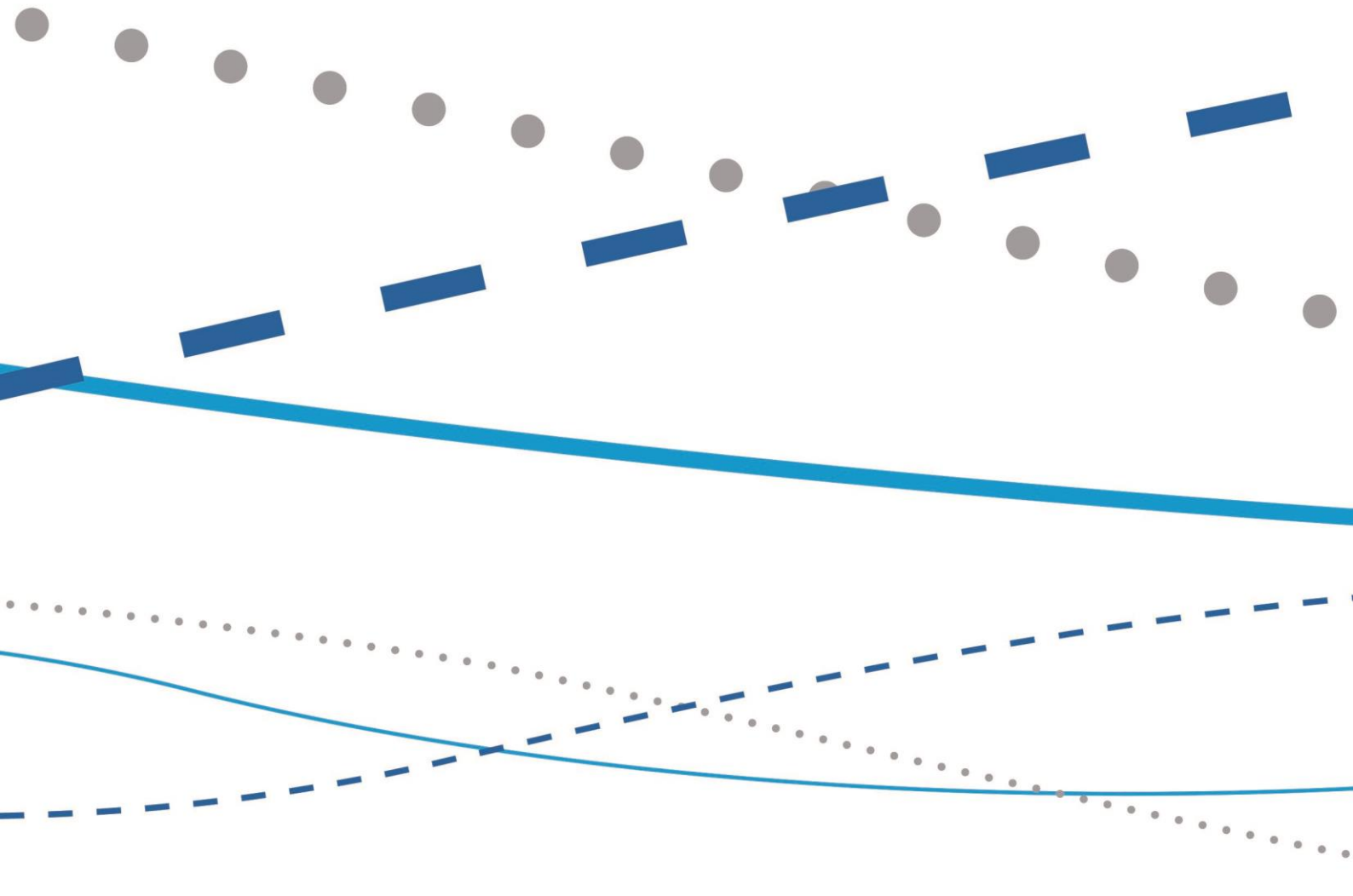
SUB-METERING POLICY

Supporting Technical Guidelines



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1. Introduction

The Supporting Technical Guidelines have been developed to help ensure that *Whitsunday Regional Council* decisions in respect to sub-metering are consistent and in line with the intent of the Sub-Metering Policy. The technical guidelines may be amended from time to time. They are intended as a guide only and will not take precedence over any decision made by *WRC* in connection with a particular development

2. Meters

2.1 Master Meter

A *master meter* shall be provided to measure the volume of water supply supplied to a *development* over a given period of time. The *master meter* will be supplied and installed by *WRC* at the *developer's* expense.

The intention is that the *master meter* will register all flows within the *development*. The *master meter* is considered to be a *body corporate meter* for the purpose of billing. The volume of water used by the *body corporate* will be determined by subtracting the sum of the usage registered by the *submeters*. The *body corporate* may choose to install additional *sub-meters* throughout the site, but these will not be used by *WRC* for billing purposes and remain the property of the *body corporate*.

Refer to *WRC* standard engineering drawings as a guide for reference to the configuration of the *master meter* assembly relative to type of *development* proposed.

Water supply use registered on a bypass *meter* connected to a fire services will be billed to the *body corporate.*

For developments constructed post 1January 2008 pipes or any fittings between the *master meter* and the *submeter* assembly and beyond the *sub-meter* assembly shall remain the property of the building owner for maintenance and replacement.

For developments constructed pre 1 January 2008 the pipes or any fittings and any *AMR* system after the *master meter* and including the *submeter* assembly and beyond shall remain the property of the building owner for maintenance and replacement

2.2 Sub-meter

All *submeters* shall be pattern approved by the National Measurement Institute (NMI).

All *submeters* shall be selected from *Whitsunday Regional Council* list of approved meters (see Appendix 4)

The size of all *sub-meters* in a *complex* shall be determined by hydraulic analysis. Generally, 20 millimetre *sub-meters* shall be used, larger sizes will require the approval of the *WRC*.

All *submeters* shall have unique serial number stamped on them. The *submeters* and the Meter Interface Units (MIUs) (installed as part of the AMR system, if required) must be permanently identified with the unit number that they serve (as displayed on the door) and a serial number if issued by *WRC* for the purpose of identifying them on the billing system.

2.2.1 Installation of Sub-meter

The applicant / developer shall be responsible for the installation of *submeters* and the supply of all equipment and materials. Equipment, materials and installation shall be to the standard *WRC* specifications.

Submeters installed on *new developments* will be installed under the Plumbing Compliance Permit issued for the development. All design drawings will be assessed by Councils Plumbing Inspectors for compliance with relevant acts and codes, Councils Policy and these guidelines

Submeters installed on *existing developments* must be approved by Council prior to installation. An application to install the submeters is required. (See Submeter Application form)

Only *QBCC* licensed plumbers (*responsible person)* are permitted to install *submeters*. All work shall be carried out in compliance with all relevant Acts, Regulations and By-Laws and *WRC* Standard Specifications and shall include the:

- Workplace, Health and Safety Act – Queensland; and
- AS30000 – SAA Wiring Rules.

All the *submeters* shall be fitted with an anti-tampering device (e.g. seal).

All *submeters* shall be installed in an *accessible common area* and are installed in accordance with the '*Supporting Technical Guidelines'*, Plumbing Code of Australia, AS/NZS 3500.1 and the approved hydraulic plans.

All *submeters* shall be installed in accordance with the conditions imposed by their pattern approval certificate.

Submeters are not permitted to be installed below ground

2.2.2 Submeter assembly

All *sub-meters* shall have as a minimum, an integral dual check valve. Should a higher risk be identified downstream of the *submeter*, then a *backflow prevention device* suitable for that risk should be installed.

Each *submeter* must have *complying valve* on both sides for shutting of the water supply, and an adjustable meter coupling on one side of the *submeter* and a standard meter coupling on the other side for the safe removal of the *submeter*. The ball valve on the upstream side of the *submeter* must be able to be fixed in variable positions with a stainless-steel tie.

If the *submeter* is to be installed in any orientation other than horizontal, a *meter* that can be used in vertical or angular alignment shall be chosen. The overall length of the assembly is to be no more than 500mm.

2.2.3 Sub-meter cabinets

Submeters may be installed in cabinets. Whatever form the enclosure takes, the *submeters* shall be *accessible* and the dial face of the submeters located such that it can be easily read by one unassisted person without the need for ladders or other access provisions. *WRC* has the power to refuse the approval if the location and enclosure is considered unsuitable. *Submeter* enclosures shall conform to the following:

- There is a minimum 100mm gap, perpendicular to the direction of the pipes, between submeters.
- There is a minimum 100mm gap between the outermost valves and the edges of the cabinet.
- If the cabinet also houses fire hose reels, the fire rating required shall not be compromised and the cabinet must be compartmentalised.
- The *submeters* are easily accessible and readable from floor level of *common property*, unassisted by a ladder or other equipment. Maximum height for the higher of either the centreline of sub-meters or the top of the *submetering* assembly = 1.6m.
- There is no need for a person performing normal maintenance duties to enter into the cupboard i.e. the cabinet must not be classifiable as a confined space for entry purposes. Where *submeters* are located in a utility room, adequate ventilation must be provided.
- A minimum of 2 square metres is available in front of the cupboard as free working space.
- Adequate lighting is available during daylight hours.
- There is sufficient room for the cabinet door(s) to swing open completely and provision for them to be held open.

- The cabinet shall have a minimum 100mm bund at the opening if it is located inside a building.
- The cabinets shall be sufficiently waterproof and drained to prevent seepage into the surrounding building structure in the event of a leak.
- The cabinet does not need to be locked, but must be fastened with a latch where a double padlock can be fitted in the future if required.
- Cabinets shall completely house the *submeters* including the ball valves and *submeters*.
- The cabinets shall be hinged to enable opening by hand. The base of the cabinet shall be a minimum of 500mm and a maximum 1.2 m above floor level and the top of the cabinet should be a maximum of 2.0m above floor level. The cabinet shall have a minimum depth of 150 mm and a minimum length of 700 mm.

If the cabinet also houses gas or electricity meters, the fire and safety rating shall not be compromised.

All *submeter* cabinets, whether housing single or multiple *submeters*, must be identified on the outside with the words "*Water Submeter*" or "*Water Submeters*" respectively, in readable and permanent print.

3. Automatic Meter Reading (AMR)

Where *submeters* cannot be installed in an *accessible* part of the property due to hydraulic constraints and limitations e.g. high-rise developments, AMR technology will be required. *Accessible* Location is defined in Section 8 (*definitions*) as being at ground level, outside the building where access to the *submeter readings* is unrestricted at all times, including free from building security, being obscured by vehicle movements, free from overgrown vegetation and all other forms of obstructions and hazards.

A qualified technician approved by the *AMR* provider must install each component of the *AMR* system

This section also applies to *AMR* systems installed voluntarily on *accessible submeters*.

The presence of an *AMR* system does not alleviate the need for the *submeters* to be within *common property*. *Meter* locations must still conform to options as detailed.

Where an *AMR* system is installed, all *sub-meters* must be readable through the *AMR* system, including the *master meter* at the boundary and any additional *master meters* for additional *Body Corporates*.

If the *developer* wishes or is required to use an *AMR* system, the *developer* shall forward a request in writing to the *WRC* seeking permission to use the particular system. If approved, the *developer* shall only use the system specified by *WRC*. The *AMR* system shall incorporate preferably one data reading panel which shall be located in an *accessible* location.

When an *AMR* system is used all *sub-meters* and the *master meter* must be linked to enable the meter reading data to be sent to the water meter data reading panel in an *accessible* location.

The Meter Reading Panel (MRP) shall be weatherproof if located externally to buildings and be provided with a 240-volt power supply for the use of *WRC* together with a conduit and draw wire back to the Telecommunications supply pit. The MRP shall have a display screen between 1.0m and 1.5m above the ground from where all *submeter* readings can be obtained. For example, either a scrolling system that allows the user to scroll up and down between apartments, or a numeric keypad for entering the apartment number and obtaining the relevant *submeter* reading.

The control system shall consist of a single master unit or a master/slave set up. All cables shall be clearly identified with the unit number to which the *meter* is connected. Cabinets shall incorporate a Main Switch for isolation of all power sources in the installation for safe de-energized servicing. The text description shall

be identical to that shown on the schematic diagrams. The Main Switch or Main Isolator shall be clearly identifiable.

4. Horizontal Developments (New and existing)

Horizontal developments include free standing units or attached units supplied through one *submeter* for each unit and where the *meter* is usually located at or near the front property boundary of the unit.

In horizontal *developments submeters* shall be installed in an *accessible* area in the *common area*, in *common property* or in a *public area*. If located in a public area it must be installed within 3 m of the property boundary and preferably within the footpath to facilitate direct reading, testing and replacement.

Automatic Meter Reading facilities shall be provided as per Section 3.

5. Vertical Developments (New and existing)

Vertical developments include *developments* of more than one storey and *developments* where units are supplied through *meters* located inside the development in a *common area* such as stairwell landings or beside elevator shafts.

For *vertical developments* there are two modes of installation possible as follows.

- **buildings up to and including three-storey's** - where the hydraulic analysis of the plumbing shows an acceptable level of pressure loss, *sub-meters* shall be installed in a weather-resistant cabinet located at an *accessible* side of the building or in a cabinet in a *common area* (stairwell landing, beside the elevator shaft etc.) on the ground floor (refer Appendix 1).
- **high rises of more than three storey's,** - *sub-meters* can be installed in *common areas* such as stairwell landings or beside the elevator shaft (refer Appendix 1) on each floor. For each floor the respective *sub-meters* shall be grouped in a hinged cabinet. Alternatively, more than one cabinet can be used for each floor.

Automatic Meter Reading facilities shall be provided as per Section

6. Hot Water Systems

Submetering for hot water systems may be provided if required. Listed below are the different configurations possible. The Water Service Provider billing approach is outlined for each configuration.

- **Individual hot water systems inside the units** - In each unit the hot water system is supplied through the cold water *submeter* (refer Appendix 2). In this case the hot water consumption is a proportion of the cold water consumption which will be billed to the respective unit.
- **Individual hot water submeters for each unit / tenancy**
  In each unit the hot water system is supplied through the hot water *submeter* (refer Appendix 2). In this case the hot water consumption will be billed to the respective unit.

- **Communal Hot Water System** - Communal hot water systems can be considered as *common property* water consumption and shall be fitted accordingly with an upstream cold water *submeter* (refer Appendix 2). For this alternative the *WRC* will bill the *management* of the *complex* for the total hot water consumption by the *complex*.

Alternatively, the *management* of the *complex* may install *submeters* to measure hot water consumption for each unit and bill the occupants accordingly. The *management* of the *complex* will be responsible for reading the *submeters* and billing the respective occupants.

It is noted that the *WRC* does not take ownership of the hot water *meters* and is therefore not responsible for their accuracy, maintenance and replacement.

7. Asset Handover

Once a Plumbing Compliance Certificate has been issued by Council, the ownership of the *sub-meter* assemblies' transfer to *WRC.* The ownership and the maintenance of the isolation valves and any *AMR* system remains the responsibility of the *complex management*.

7.1 Warranty

The developer will continue to be responsible for rectifying any defective product or workmanship for a period of 12 months from the date of occupancy of the unit or development. At the end of the 12 month period and inspection may be carried out, where all responsibility will be transferred to *WRC*, along with any associated documentation and/or warranties.

8. Definitions

"AMR" means automatic meter reading.

"accessible" for water meter reading, maintenance and replacement purposes, means accessible within reasonable time (between 8 am-5 pm), at ground level, outside the building where access to the submeters is unrestricted at all times, including free from building security, being obscured by vehicle movements, free from overgrown vegetation and all other forms of obstructions and hazards, with the sub-meters being located in a non-locked enclosure requiring a non-key access (PIN code).

"backflow prevention device" a device to prevent the reverse flow of water from a potentially polluted source into a potable water supply system.

"body corporate" a corporation or body of persons or even an individual, with a legal existence distinct from the individual person(s) making up the corporate entity. The purpose of the body corporate is to manage common property.

"boundary" means the area between the property external walls and pathways, streets or fence.

"common area" in a complex is an area of common property.

"common property" in a complex is freehold land forming part of the complex land, but not forming part of a lot/unit included in the complex.

"common property water consumption" water used in common properties within a complex for irrigation, cleaning, recreation fixtures, etc. The common property water consumption for each meter read cycle will be decided by deducting the sum of consumption registered by sub-meters from the consumption registered by the master meter.

"communal hot water system" a common system used to supply hot water to flats, apartments, houses or units in complexes.

"community titles schemes" (CTSs) a community titles scheme is a single community management statement recorded by the registrar identifying land and the scheme land.

"connectivity audit" a verification process in which each sub-meter is matched with its respective unit. The aim of this audit is to ensure that each unit in a given complex is supplied through one sub-meter only and to make sure that the respective sub-meter is marked clearly with the number/description of that unit.

"council" Whitsunday Regional Council

"complex" includes Community Titles Schemes (CTSs) and multi sole occupancy unit of class 2, 4, 5, 6, 7 or 8 building and each storey of a class 5.

"contribution schedule" an agreement between the occupants of a complex and the management of that complex. This schedule states the method of distributing water bill for common property water consumption among occupants/owners.

"complying valve" a device incorporated as part of a water meter which a Water Service Provider can use to securely restrict the flow of water, either partially or fully, to the *meterable premises*.
This is installed upstream of the master meter and either side of the sub-meter.

"DCV" stands for Dual Check Valve, a device used to prevent back flow and thus cross contamination of potable water network.

"developer" a corporation or body of persons or even an individual, who builds a development in which the houses/units form part of a complex and can be sold to individual owners.

"existing developments" any development where a Compliance Permit was issued prior to 1st January 2008

"horizontal developments" include free standing units or attached units supplied through one water meter for each unit and where the meter is usually located at the boundary of the unit.

"management" management of complex which can be a body corporate of a community title scheme or a representative body of a multi sole occupancy unit

"master meter" a meter upstream of sub-meters and used to register the bulk consumption of the complex.

"meterable premises" means:

(a) all class 1 buildings; and
(b) each lot within a community title scheme, including the common property, in a water service provider's area; and
(c) the sole occupancy unit of a class 2, 4, 5, 6, 7 or 8 building in a water service provider's area; and
(d) each storey of a class 5 building in a water service provider's area where the building consists of more than one storey and sole occupancy units are not identified at the time of the building's plumbing compliance assessment.

"MPE" stands for Maximum Permissible Error which a meter is allowed to operate within.

"new development" any development for which a Compliance Permit was issued after 1 January 2008.

"occupant/owner" an occupant or owner of a house, unit, flat or an apartment within a complex.

"pattern approval" a certificate issued by the National Measurement Institute. This certificate states that a meter of certain make and model has passed a set of tests and met a set of requirements in order to be used by a service provider for trade purposes.

"positive displacement meter" a meter used to measure the volumetric flow of rate by dividing fluid into separate and equal volumes that can be counted over time. Rotating piston and Nutating disc are examples of positive displacement meters used for flow measurement in the water industry.
These meters can be orientated in any direction without compromising their accuracy.

"QBCC" the Queensland Building & Construction Commission are responsible for the licensing of Plumber & Drainers and contractors in Queensland.

"sole occupancy unit" a room or other part of the building for occupation by one or a joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier. This could be a dwelling, a room or a suite of associated rooms in a building classified under the Building Code of Australia as a class 2, 4, 5, 6, 7 or 8 building. A sole occupancy unit also includes any part of the building that is a common area or common property.

"sub-meter" a term used to describe individual water meters within multi-unit complexes. The term also differentiates from 'master meter' that measures the supply of water to a complex as a whole.

"sub-metering" the installation of individual water meters to measure water consumption to individual houses, units, flats or apartments that form part of a complex.

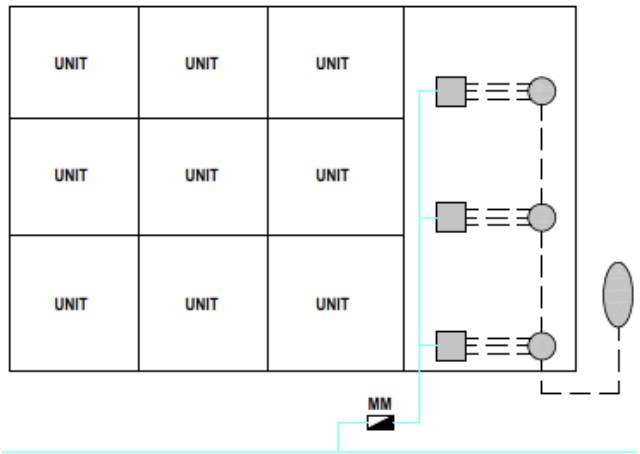
"unit" a sole occupancy part of a class 2, 4, 5, 6, 7, 8 building

"vertical developments" include developments of more than one storey and developments where units are supplied through meters located inside the development in a common area such as stairwell landings or beside elevator shafts.

"water meter" means a device, including equipment related to the device, for measuring the volume of water supplied to premises. An example of equipment related to the device is a pulse meter or an automatic meter reader and associated technology or similar devices.

"Water Service Provider" means the *Whitsunday Regional Council* and is the provider of water to the complex from external sources via a pressurized network of pipes.

APPENDIX 1: – Sub-Meter Diagrams



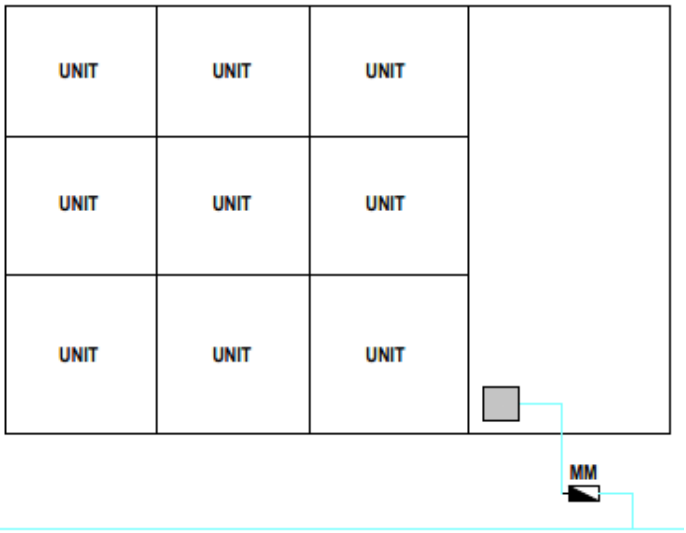
READOUT PANEL AT GROUND FLOOR IN COMMON AREA

SUB-METER CABINET IN COMMON AREA

SLAVE UNIT

MM MASTER METER INSIDE PROPERTY BOUNDARY

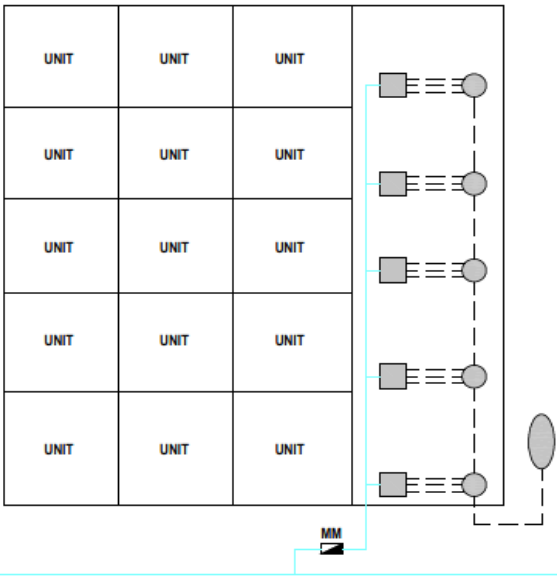
Typical sub-meter configuration for medium rise building up to 3 storeys (AMR)



MM MASTER METER INSIDE PROPERTY BOUNDARY

SUB-METER CABINET IN COMMON AREA

Typical sub-meter configuration for medium rise building up to 3 storeys



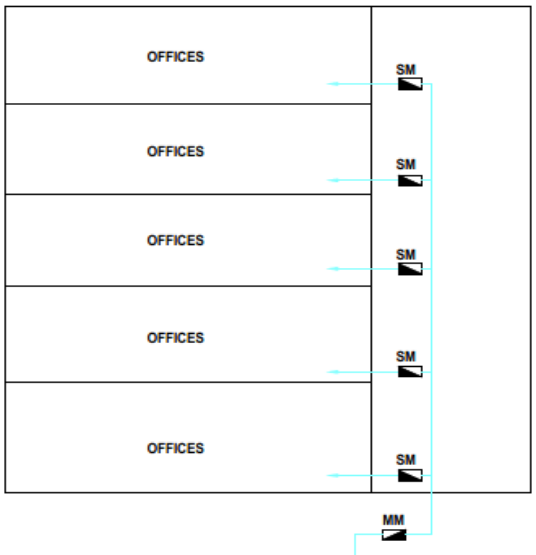
READOUT PANEL AT GROUND FLOOR IN COMMON AREA

SUB-METER CABINET IN COMMON AREA

SLAVE UNIT

MM MASTER METER INSIDE PROPERTY BOUNDARY

Typical sub-meter configuration for high rise building above 3 storeys (AMR)

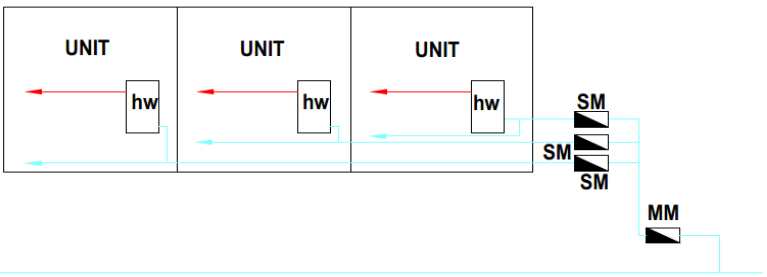


SM SUB METER ON EACH FLOOR IN COMMON AREA

MM MASTER METER INSIDE PROPERTY BOUNDARY

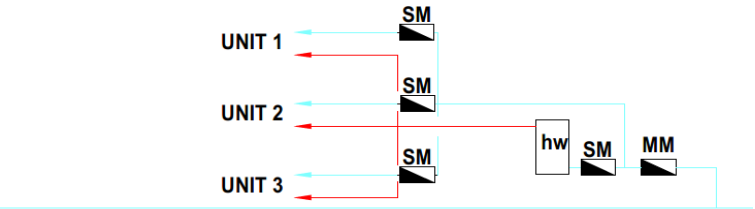
Typical sub-meter configuration for office buildings

APPENDIX 2: – Sub-Meter Diagrams (hot water)



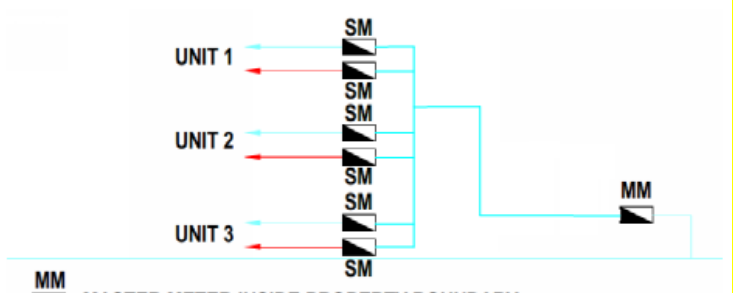
MM MASTER METER INSIDE PROPERTY BOUNDARY
SM SUB METER GROUPED IN COMMON AREA

Typical individual hot water system



MM MASTER METER INSIDE PROPERTY BOUNDARY
SM SUB METER ON EACH FLOOR IN COMMON AREA
hw COMMUNAL HOT WATER UNIT

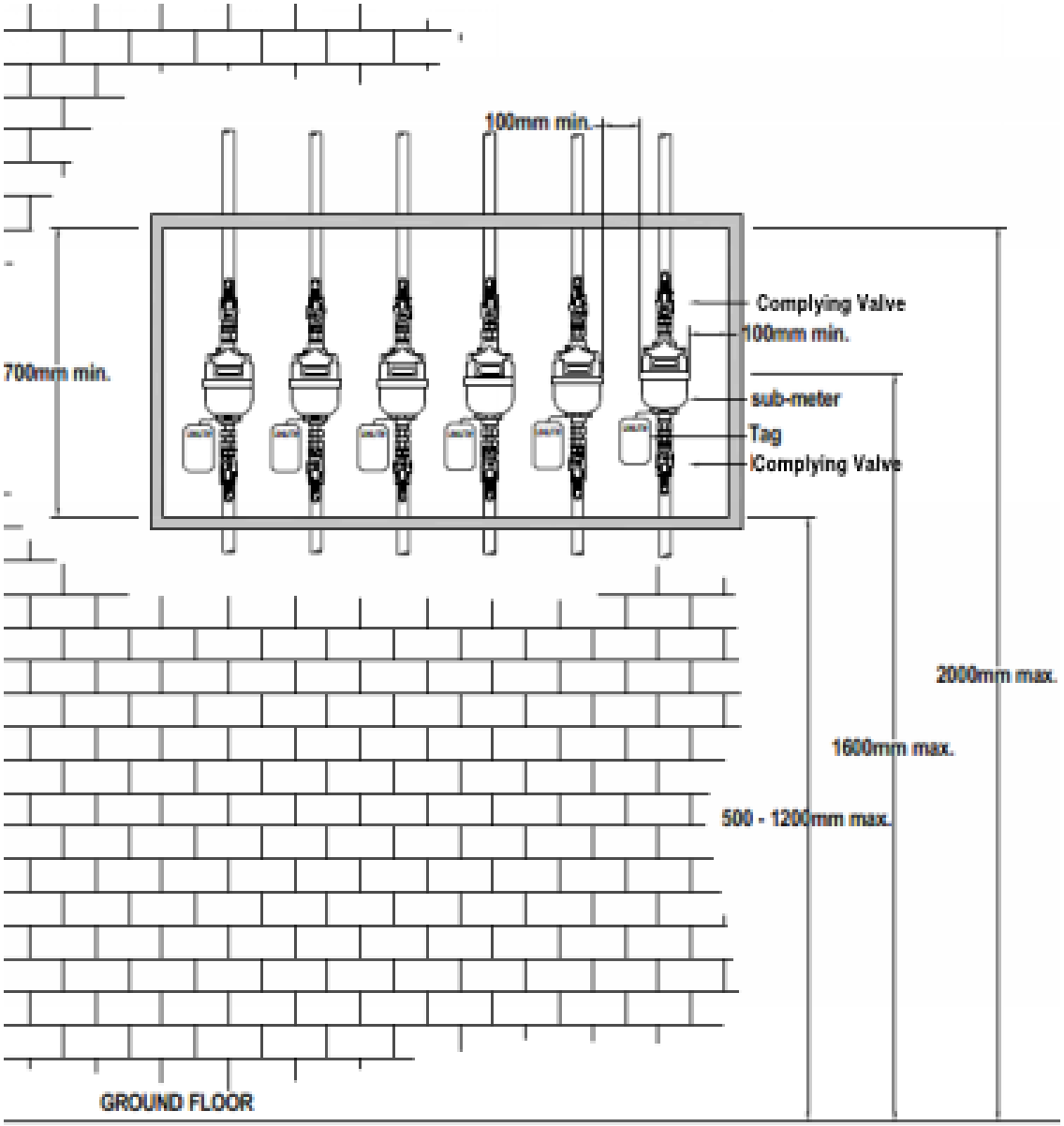
Typical communall hot water system (one meter)



MM MASTER METER INSIDE PROPERTY BOUNDARY
SM SUB METER ON EACH FLOOR IN COMMON AREA

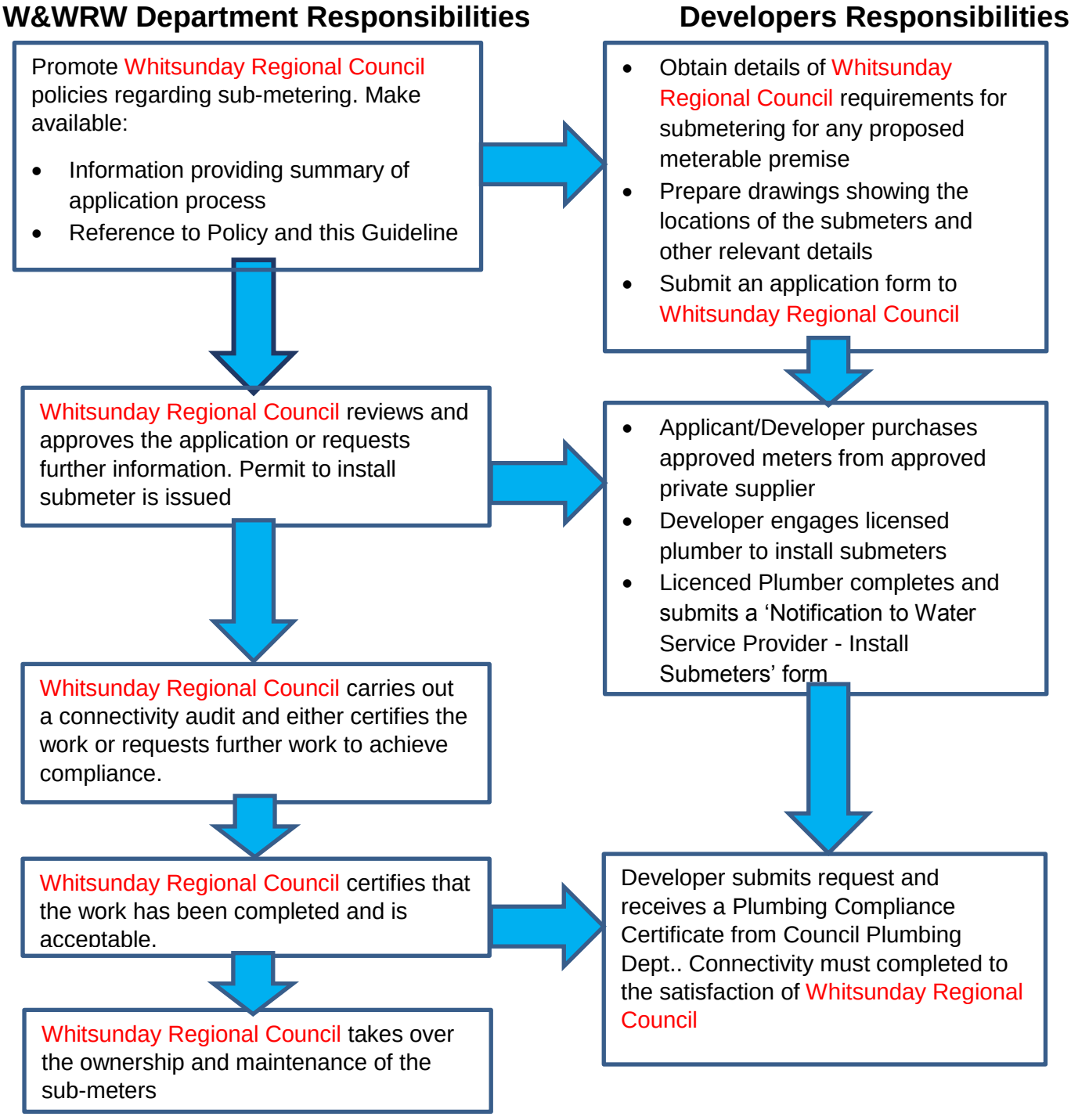
Typical sub-metering for hot water service

APPENDIX 3: – Typical sub-meter installation guide



TYPICAL SUB-METER ASSEMBLY IN CABINET DETAIL

APPENDIX 4: – Process Flow Chart



APPENDIX 5: – WRC Approved Sub-Meter List

Approved supplier list

Make	Model	Type	Size	Orientation	Check Valve
Elster	V100 20mm	Positive Displacement	20mm	Vertical/horizontal	DCV

APPENDIX 6: – WRC Approved AMR contact list

AMR – Hard wire

1. Enware Australia Pty Ltd

APPENDIX 7: – Sub-Meter Installation Drawing (Manifold and Single)