

# STANDARD

## WATER SERVICES CONNECTIONS

JULY 2016

HUNTER WATER



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## DOCUMENT INFORMATION

### Version History

Version	Author	Sections Changed	Approved By	Date Approved
1.0	G Heaney	New	Chief Customer Services Officer	31/01/16

### Summary of Changes in this Version

Section Title	Section No.	Change Summary

### Document Control

Document Owner	Group Manager Technical Services
Approvals	Chief Customer Service Officer
Related Documents	Services Connection Guidelines
Associated Regulations / Standards	Independent Pricing Authority Regulatory Tribunal (IPART) NSW State Government and Coalition of Australia Governments (COAG) Plumbing Code of Australia Hunter Water Corporation Customer Contract 2011

## 1 PURPOSE

This Standard provides the minimum water connection requirements for properties located within Hunter Water's area of operations. All existing connections and new applications for connection will be required to meet the requirements of this standard.

Connection to services is subject to any condition Hunter Water may lawfully determine to ensure the safe, reliable and financially viable supply of services to properties in the area of operations in accordance with the license.

## 2 SCOPE

This section sets out the general requirements to be followed for the work of plumbing and drainage connected to Hunter Water's network infrastructure.

*Under Clause 10.4.2 of the Operating Licence connection to services is subject to any condition Hunter Water may lawfully determine to ensure the safe, reliable and financially viable supply of services to properties in the area of operations in accordance with the license.*

Property water service installation and design parameters are not defined or regulated under the Plumbing and Drainage Act and Regulations. Therefore the installation and maintenance of property water services need to be regulated by Hunter Water.

Hunter Water specifies the installation and maintenance responsibilities regarding property water service installation in Hunter Water Regulation 2010, Hunter Water's Customer Contract and this Standard.

## 3 WATER

Each land parcel shall have an individual property service connection to Hunter Water's water supply infrastructure.

No water supply pipeline shall be extended to another lot or land parcel without the prior written approval of Hunter Water.

In cases where a property is to be subdivided, and where existing buildings are to remain, each designated land parcel shall have an independent connection to Hunter Water's water infrastructure.

A site containment backflow device, compliant with Hunter Water's Backflow Prevention Standard and Australian Standards AS/NZS3500.1 Plumbing and Drainage, shall be installed on the property water service, downstream of the water meter. Hunter Water's Backflow Prevention Standard takes precedence over AS/NZS3500.1.

### 3.1 Connection to the Water Supply (Property Service – Main to Meter)

Hunter Water approves two types of supply connections to its water infrastructure:

- Privately Owned (Property Owner)
- Pre-laid (Hunter Water Owned)

**Note:**

1. Common or joint private water supply services have historically been approved however are no longer recognised by Hunter Water as a compliant water supply connection / configuration.
2. Hunter Water accepts no responsibility or gives any guarantee or assurance for the currency, accuracy or comprehensibility of any information, plans or diagrams provided for water connection.

### 3.2 Privately Owned Property Services

Privately owned property water services are connected to Hunter Water's water main infrastructure by:

- Main tap/s at the water main (generally for water services sized 20mm to 50/65mm)
- Tee and stop valve, located immediately adjacent the water main (generally for water services sized larger than 50mm)

#### 3.2.1 Installation

- Privately owned property water service connections are applicable to residential, commercial, industrial, redevelopment and vacant land.
- A "Water Connection" application and appropriate fee/s must be submitted to Hunter Water prior to water connection works for a privately owned property water service.
- The installation of a privately owned property water service must satisfy the requirements listed in:
  - AS/NZS3500.1 Plumbing and Drainage Section 2.2
  - Hunter Water's Customer Contract
  - Hunter Water's Services Connection Standard

For typical water meter and privately owned property service connection arrangements refer to the Annexure – Standard Water Meter Connection Schematic Diagram – Types 1 to 5 Diagrams and Types 3A to 6 (TSS-001 and TSS-002).

#### 3.2.2 Connection to the Water Main, Property Water Service and Water Meter Sizing for Dual Occupancies and Granny Flats

Developments (new and reconfigured) which fall between a single residential dwelling and a development requiring the submission of a Hydraulic Design Assessment (eg. Dual occupancy, granny flat etc), shall have the property water service (including water main configuration and water meter), designed, sized and certified by a qualified person (hydraulic consultant, licenced plumber) using AS/NZS3500.1 Plumbing and Drainage.

Certification shall utilise the "minimum head pressure available" and AS/NZS3500.1 "Sizing Method for Supply Piping for Dwellings". Certification shall confirm that the water supply piping system is sufficient to satisfy the "probable simultaneous demand" of the total proposed development.

Formal certification shall be submitted to Hunter Water and the property owner/s.

Hunter Water will **NOT** be held responsible for any low water pressure or low water flow from current or future property owners / tenants in such developments.

#### 3.2.3 Maintenance Requirements of Private Property Services

The replacement of, or any maintenance to, a privately owned property service shall comply with the requirements of this Standard.



Any replacement pipe work shall be installed in the equivalent internal diameter as the existing property service (as a minimum).

***Soft solder is not an approved jointing method on new property water service installation or property water service repairs.***

After the installation and maintenance liabilities of the licenced plumber have expired, the following privately owned property water service maintenance responsibilities shall take effect.

Note: It is the responsibility of the Property Owner to obtain a dated Certificate of Compliance from the licenced plumber to determine the liability period for the works.

- When a domestic property water service is bifurcated off a fire service, Hunter Water does not maintain the bifurcated property service.
- Hunter Water does not maintain designated fire hydrant or sprinkler services.

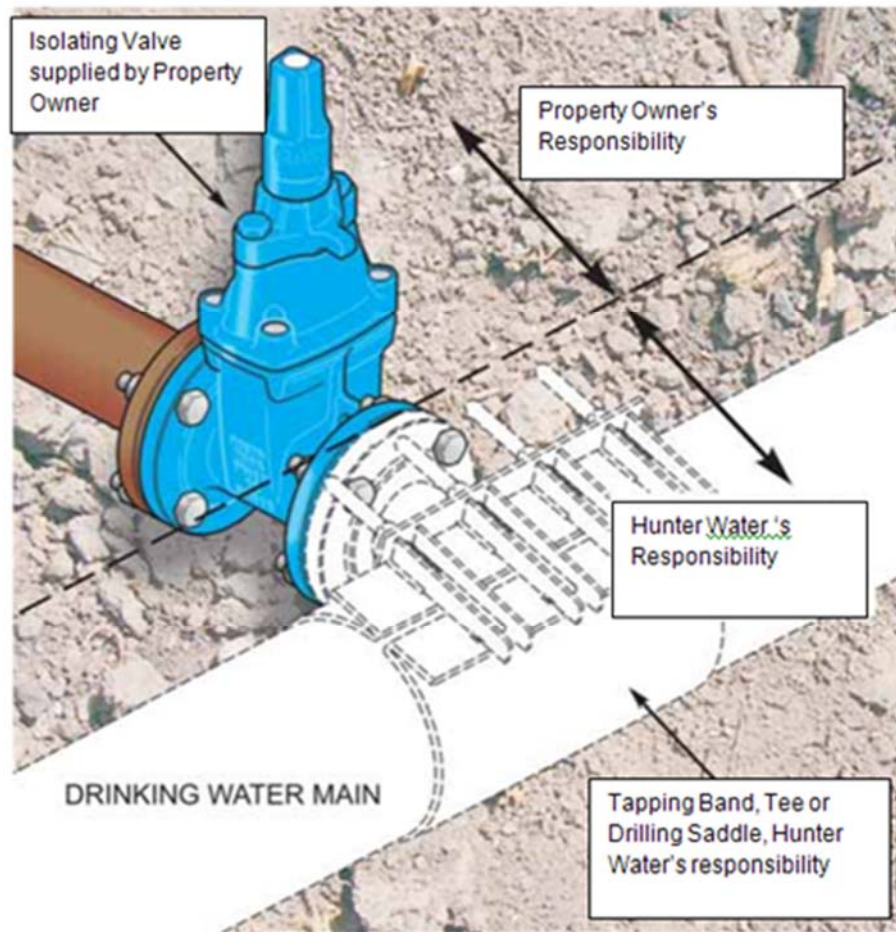
**Hunter Water does not own privately owned property water services, but will maintain private property water services where the service is sized up to and including 40mm as detailed in Hunter Water's Customer Contract.**

Exceptions to this include:

- Wilful or negligent damage
- Water services connected to privately owned water main, eg. Community Title
- Common or shared private water services
- Illegal water services
- Water services installed contrary to regulations
- Non Standard Water Services
- Water services which require reconfiguration, replacement, resizing, repair or removal as part of the redevelopment of a property

**Note: All other privately owned property water services are owned and must be maintained by the property owner.**

- The main tap or the isolating service valve at a tee and valve connection is the responsibility of the property owner to maintain and replace. Hunter Water will provide a shutdown of the water main to assist the owner/s agent to initiate repairs, replacement or removal. The owner shall pay fees as directed by Hunter Water to provide the required shutdown of the water main to carry out the required rectification works.
- Hunter Water may carry out the repair, replacement or disconnection of the main tap or isolating service valve and charge the customer as detailed in Hunter Water's Customer Contract.



**Figure 1 – Drinking water main and isolating service valve**

### 3.3 Pre-laid Water Service

A pre-laid water service is installed by the **developer** on **residential subdivisions** at the time the water main is installed. A pre-laid water service is installed from the water main to inside the property boundary (within 1 metre). The pre-laid water service may be connected to more than one property and in this case is called a “joint pre-laid water service”. A pre-laid water service is owned and maintained by Hunter Water.

A “Water Connection” application and appropriate fee/s shall be submitted to Hunter Water for water connection works to a pre-laid property service.

**Note:**

1. Commercial, industrial and rural subdivisions may not have pre-laid water services installed at the time of development due to the unknown water service demand and location of proposed development structures.
2. Pre-laid water services are **NOT** approved to be installed unless Hunter Water has a Developer Services Contract in place and the ownership of the pre-laid water service/s transferred to Hunter Water.

For typical pre-laid water serviced configuration refer to Water Meter Connection Arrangement Type 1 Diagram in the Annexure.

### 3.3.1 Maintenance Responsibilities of the Pre-Laid Property Service by Property Owner

If the pre-laid water service requires relocation due to an owner's requirement to install retaining walls, fencing, garden beds, driveways or the raising of existing ground levels, the property owner shall engage the services of a licenced plumber to carry out the works at the property owner's expense.

Should the pre-laid water service location require the installation of a new individual water service, the existing pre-laid water service for the impacted property shall be:

- For a single service disconnected at the water main
- For a joint service disconnected at the common tee

Appropriate application/s and relevant fee/s shall be submitted to Hunter Water prior to works commencing.

### 3.3.2 Maintenance of the Pre-laid Property Service by Hunter Water

Hunter Water is responsible for maintenance from the water main connection, up to and including the outlet union of the water meter.

Exceptions to this include:

- Wilful or negligent damage
- Water services which require reconfiguration, replacement, resizing or repair as part of the redevelopment of a property

## 3.4 Common Installation Requirements for Privately Owned and Pre-laid Property Services

### 3.4.1 Flared Compression Joint Requirement

**Privately Owned Service:** Brass fittings shall NOT be silver brazed or soft soldered between the water main and the outlet union of the water meter, for sizes 20mm, 32mm, 40mm and 50mm diameter. The connection to the water main shall be made by a compression flare union, positioned to allow easy disconnection between the flared pipe fitting and main tap connection.

**Pre-laid Service:** Installed as per Water Services Association of Australia (WSAA) requirements.

### 3.4.2 Requirement to install a Pressure Limiting Valve

Hunter Water recommends that property water services (pre-laid and privately owned) incorporate a 500 kPa pressure limiting valve to satisfy the maximum pressure requirement nominated in AS/NZS3500.1 Plumbing and Drainage.

*"Provision shall be made to ensure that the maximum static pressure at any outlet, other than a fire service outlet, within a building does not exceed 500 kPa".*

Hunter Water will not be held accountable for elevated internal water pressure.

### 3.4.3 Approved Materials (See Annexure 12)

All products and materials used in property water service installations shall comply with the relevant Australian Standards.

- Use only equipment and materials listed on the Hunter Water Authorised Products and Materials List available on the Hunter Water website in accordance with this Standard, AS5200.000 and AS/NZS3500.
- Only new products and materials shall be used

### 3.4.4 Electrical Isolation

Where a 20mm/25mm water main drilling is installed, the “drilling band” must be of an approved type and compatible with the water main material to ensure electrical isolation. Drilling bands for metallic water mains (ductile and cast iron) must have a nylon insert or equivalent to ensure electrical isolation.

Where a tee and valve connection to Hunter Water’s water main is installed, the flanged joint between the valve and the service pipe shall be electrically isolated by inserting a rubber gasket between the flanged ends (“copper mate electrical isolation flange”) and providing insulating washers and sleeves of plastic material (“delrin top hat washers”) around the flange bolts and nuts to provide necessary electrical isolation.

### 3.4.5 Tuberculation

All connections (drilling or tee and valve) to Hunter Water’s Cast Iron (CICL) and Ductile Iron (DIDL) water mains must incorporate a **tuberculation bush**. The tuberculation bush is to be fitted to the water main penetration.

## 3.5 Common or Joint Privately Owned Water Supply Pipelines

### 3.5.1 Background

Common or joint privately owned water supply pipelines were an approved method of connecting water supply to multiple dwellings in the early 1900’s. The properties at times had a common title or common family ownership. Alternatively, ownership was common to a particulate employer who provided housing and employment packages. These water services are now considered Non-Standard (see Section 3.6) and are NOT an approved current water service connection. While it is acceptable to own a property with common or joint water supply system, reconfiguration to an individual direct water connection to Hunter Water’s water main is recommended at the time of resale, upgrading of a dwelling, building or replacement of plumbing works. Hunter Water maybe contacted to assess the possibility of individual properties having their own direct connection to Hunter Water’s water main.

Hunter Water **DO NOT** own or maintain common or joint privately owned water pipelines.

## 3.6 Non-Standard Privately Owned Water Service (Temporary)

### 3.6.1 Definition

A private water service which is installed by the owner’s agent at the owner’s cost where:

- A property does NOT have frontage to Hunter Water’s reticulated water main

- The reticulated water main is not required to be extended to service the property due to the properties remote location

A Non-Standard Water Service is deemed remote from Hunter Water’s infrastructure and thus the development’s water connections is not governed by Hunter Water’s Customer Contract. A special agreement (Non-Standard Water Service Agreement) shall be entered into with Hunter Water, which will outline the specifics of the connection requirements. This includes:

- A Non-Standard Water Service shall not have another registered lot or parcel of land connected to that designated service
- The water meter assembly shall be located within private land immediately adjacent to the water main connection and protected from damage. The owner of the designated land where the water meter assembly is to be located shall provide Hunter Water with a letter of approval for its location
- The Non-Standard Water Service pipeline may transverse local council footpaths and roadways. The responsible persons controlling that land will be required to provide written approval to Hunter Water for the location of the pipeline
- Prior to the purchase of a property which is serviced by a Non-Standard Water Service, it is recommended that potential purchasers seek legal advice confirming that current approval/s for the location of the water meter and pipeline outside the property boundaries are recognised by relevant parties
- If a property is sold, the Non-Standard Water Service Agreement with Hunter Water ceases, and the “new” property owner is required to enter into a new agreement

Hunter Water considers that any water service to a property that does not have a direct frontage to a Hunter Water main to be known as a “Non-Standard Water Service”. This applies to all such water services irrespective if there is a non-standard water service agreement in place.

Hunter Water specifies the installation and maintenance responsibilities regarding Non-Standard Water Service installation in Hunter Water’s Regulation 2010, Hunter Water’s Customer Contract and specific agreement (Section 37 Hunter Water Act).

*Note: Non-Standard Water Services are temporary and may be disconnected by Hunter Water at its discretion. Non-Standard Water Services must be removed from service where a reticulated water supply main is installed in the future which allows frontage to the property. In these cases, the property water service shall be connected to the new water main at a location which provides frontage to the property, and will consider a “standard water service”. All costs for the disconnection and reconnection are to be borne by the property owner.*

### **3.6.2 Non-Standard Water Service metering**

All approved Non-Standard Water Services must be metered by a Hunter Water meter. The water meter must be installed at an approved location, as close as practicable to the connection to the reticulated water main, in a position that prevents damage and provides safe access for reading and maintenance. A lockable cage fitted over the water meter assembly may be required to prevent tampering.

### **3.6.3 Servicing**

Non-Standard Water Services will only be permitted in cases where Hunter Water determines that a property is too remote from the existing reticulated water

infrastructure. This will be assessed having regard to potential future development and the distance from existing infrastructure.

An application for a Non-standard water service must be from a single legal entity. A designed plan of the proposed non-standard water service is required to be submitted to Hunter Water for approval prior to commencement of works.

Details are to be provided to Hunter Water regarding Council, other authorities and interested parties approval in relation to the following:

- The property service and water service shall comply to Hunter Water Services Connection Standard and AS/NZS3500.1 Plumbing and Drainage
- Written permission to have the water meter assembly on private property
- Written permission for the private water pipeline to transverse roadside reserves and public lands
- Location and depth of the proposed service
- Relevant environmental impact statement and cultural assessment has been carried out (if required)
- Pipe material and fittings must be of an approved type
- Pipe material and fittings from water main to water meter shall be Polyethylene PN16 or Copper Type B minimum (refer to Annexure 12)
- Polyethylene piping to be installed in an approved conduit for road crossings (refer to Annexure 12)
- Approved surface marker plates are to be installed at 300m maximum intervals, and at changes of direction, along the length of the Non-Standard Water Service. All valves are to be fitted with risers, valve covers and concrete surrounds at surface level

The responsible person or authorised owners agent is required to contact Hunter Water to arrange for the work to be verified prior to final backfilling of trenches. A 1500 kPa minimum pressure test is to be carried out on the property service (main to meter) in the presence of a Hunter Water representative.

The alignment of the “as-constructed” water service is to be surveyed on completion with a formal plan and details forwarded to Hunter Water.

The owner must agree to indemnify Hunter Water against all claims for loss, damage, injury or whatsoever which may arise out of the installation, operation or use of the water service.

Non-Standard Water Services are not intended to be provided for firefighting purposes.

Civil matters may arise from disputes regarding ownership, maintenance and water leaks on Non-Standard Water Services – especially “joint” non-standard water services. All civil matters pertaining to ownership, maintenance responsibilities and water leaks are to be resolved by the related parties.

Hunter Water shall charge for all water usage registered by the water meter attached to a designated Non-Standard Water Connection as detailed in the Non-Standard Water Service agreement.

Non-standard water services do not qualify for concealed water leak consideration / concession.

### 3.7 Private Domestic and Fire Hydrant / Fire Sprinkler Services

Private Domestic & Fire Hydrant/Fire Sprinkler Services are individually assessed by Hunter Water with requirements to be listed in a Hydraulic Assessment application. Below are some scenarios and requirement examples:

- A common pipeline from the water main to within 1 metre of the property boundary facing the water main. At this point, the pipeline continues to supply the properties designated fire service, and the drinking water service is bifurcated off the common pipeline (fire supply & drinking water supply are separated). Metering and site containment backflow prevention for the drinking water service, along with "low flow" metering and site containment backflow prevention for the fire service are installed at this location. (refer to Annexure – Type 4 Water Connection)
- Hunter Water may require the introduction of bypass metering systems to register low flows. There shall be a minimum 20 kPa pressure difference between the large diameter – main flow and the smaller diameter bypass pipework (AS/NZS2845)
- Where a "critical customer" installs fire and domestic systems, Hunter Water recommended the introduction of dual site containment backflow devices in parallel to ensure continuity of supply during backflow testing and maintenance
- To be designed and installed in compliance with the Building Code of Australia Volume 1 and related Standards, and Hunter Water's Water Services Connection Standard

*Note: Hunter Water acknowledges "combined internal domestic and fire services" have been previously installed within Hunter Water's area of operations; however this water connection configuration is not a current approved design. These systems should be separated during property redevelopment on amendments.*

*Any design outside of the allowed water connection configurations, will require an individual application to be submitted to Hunter Water for specific approval.*

### 3.8 Drilling (Tapping) in Water Mains

There are 2 options for drilling connections to Hunter Water's water main.

- Drilling by Hunter Water (unrestricted water main size)
- Drilling by an accredited driller (80mm to 200mm water main size)

#### 3.8.1 Drillings by Hunter Water

Hunter Water operatives carry out this service and there are no restrictions relating to water main size or location in Hunter Water's area of operations. Specific fees apply to the drilling of water mains, which are based on the number of drillings and size of the drilling saddle / water main. Only a Hunter Water representative or Hunter Water accredited person may perform an under pressure water main drilling.

#### 3.8.2 Accredited Driller / Tapper

The accredited licensed plumber is authorised to drill Hunter Water's mains sized from **80mm to 200mm**. The driller is required to notify Hunter Water of the date and time of works. Hunter Water audits the work practices of accredited persons on a regular basis. For water main drilling excavation requirements see the Annexure.

Not all water mains are capable of having a property service connection. Where more than one water main is available for connection, the selection of the water main to be used is at the discretion of Hunter Water.

### **3.8.3 Application and Requirements**

- A “Water Connection” application shall be submitted to Hunter Water with applicable fees paid prior to any works being carried out. This application shall include a “Meter Affixture” application and related fee. Both applications shall nominate a date of service connection and meter affixture
- Hunter Water will affix 20mm / 25mm / 32mm / and 40mm water meter, after the property water service has been installed by the owner’s engaged licenced plumber. It is necessary for the owners engaged licenced plumber to install an approved metallic meter pipe spacer to enable the supply of water until the water meter affixture has been carried out. Refer to Annexure for meter spacer details
- Should the metallic meter pipe spacer be non-compliant with Hunter Water requirements and Hunter Water are unable to affix the water meter, the property owner/ licenced plumber will be required to rectify the pipe spacer, and submit an additional Meter Affixture Application and related fee
- 50mm water meters and larger can be collected from a location nominated by Hunter Water. Alternatively the water meter may be delivered for a fee, to the property site or to a predetermined location providing it is located within Hunter Water’s area of operations. The licenced plumber shall be on-site to formally receive the water meter in this case. Hunter Water may require a Section 50 Certificate to be issued prior to approval being given for connection to the water supply

### **3.8.4 Approved Materials and Fittings for Property Services (See Annexure 16)**

Use only equipment and materials listed on the Hunter Water Authorised Products and Materials List available on the Hunter Water website in accordance with this standard AS5200.000.

### **3.8.5 Drilling Excavations**

For drillings carried out by Hunter Water and Accredited Drillers, the licenced plumber shall:

- confirm the drilling time by contacting Hunter Water giving two working days’ notice prior to water main drilling
- prior to commencement of any works, obtain the location of all services from Dial Before You Dig (DBYD) by telephoning 1100
- expose the water main with adequate clearance, and free of all ground water when the driller arrives. Allow half an hour each side of the drilling time for any unexpected time delays or changes. The minimum excavation size is 1m x 1m with water main centred. A clearance of 150mm is required below the water main
- Connection to the water main must be at right angles to the intended position of the water meter
- be onsite at the time of the drilling, and take all precautions necessary for the safety of the excavation, including traffic management and the protection of pedestrians – work health and safety and road opening permits
- ensure there are no water main collars / spigots or other drillings within 600mm of the proposed drilling location (unless authorised by Hunter Water)



*Note: Failure to comply with all of the above requirements may result in cancellation of the drilling for that day by Hunter Water, making it necessary for the plumber to re-book and pay a "Non-Compliant" drilling fee.*

*Loose polyethylene sleeving (green sleeve) is used to protect ductile iron water mains against corrosion. The sleeving is essential to prolong the life of the reticulation system and care should be taken when exposing the main to protect this sleeving from damage. Sleeving shall be refitted to the water main upon completion of works.*

### 3.9 Water Main connections – sizes for Tapings / Drillings (Guide Only)

Connection to the Water Main				
Property Service Size	Connection Type	No. of Drilling	Nominal Size of Drillings	Size of Water Meter (to be confirmed by Hunter Water – Guide Only)
20mm property service with total length not to exceed 18m (1 Residential Property)	Drilling	1	20	20
25mm property service with total length not to exceed 18m (Residential Property)	Drilling	1	20	20 This connection type would normally be used for battle-axe properties with extensive internal pipelines up to 100 metres
25mm property service as referenced in AS/NZ3500 Section 3	Drilling	1	25	25
32mm property service as referenced in AS/NZ3500 Section 3	Drilling	1	25	25/32
40mm property service as referenced in AS/NZ3500 Section 3	Drilling	1	25	32/40
50mm property service as referenced in AS/NZ3500 Section 3	Drilling	2	25	40/50
65mm property service as referenced in AS/NZ3500 Section 3	Drilling	2	25	50/65

**Note: All property services with a connection size greater than or equal to 65mm, require a tee and valve connection or by an approved direct tapping method as detailed in HWC Construction Manual**

### 3.10 Installation of Tee and Service Stop Valves

The installation of a Tee and Service Stop Valve to Hunter Water's infrastructure requires an application for tee and valve installation and fee from the owner's agent to be submitted to Hunter Water.

Methods of connection may impact on existing customers and are assessed individually. The owner's agent is informed of the requirements, which will include the nominated connection method.

Common connection methods include:

1. **Conventional Method shut down:** Water main connection location isolated using water main stop valves. Excavation, traffic control and insertion of tee and service stop valve at approved location by accredited plumbing contractor.
  2. **Direct Tapping (Hot Tap):** Accredited Hunter Water contractor to be engaged for pressurised main tapping (80mm and above). Excavation at approved location and traffic control by accredited plumbing contractor.
  3. **Pressurised Isolation Method (Hydra Stop/Aqua Stop):** Accredited Hunter Water contractor to be engaged to isolate the water main connection location using specific under pressure stop valves. Excavation at approved location/s, and traffic control by an accredited plumbing contractor.
- This process may require the installation of a temporary bypass water supply
  - Should the works affect "critical customers" in the water zone to be interrupted, it may be a requirement for the responsible persons to initiate with Hunter Water an alternative water supply e.g. Accredited water tanker and potable water supply pump

*Note: Connection method may incorporate one or a combination of the above methods. Hunter Water may be engaged to carry out works as described in methods 1 and 3 above. This option may require payment of applicable fees.*

In Hunter Water's area of operation the following requirements shall apply to the supply and installation of service stop valves:

- Only "clockwise closing" service valves shall be used on all water supply installations on drinking water and designated fire hydrant and sprinkler services
- Hunter Water do not recognise the installation of "¼ turn quick action" butterfly valves on any property service water meter frame or back flow prevention site containment assembly
- Stop valves on water meter assemblies from 20mm to 50mm shall be an approved ball valve type

### **3.10.1 Protection of Hunter Water Assets**

In the process of completing the works, the authorised person is responsible to ensure that all necessary protection of Hunter Water's infrastructure is implemented as a priority. Hunter Water reserves the right to seek compensation for damage to its infrastructure.

### **3.10.2 Disused Services**

Where the property water service becomes disused or redundant, it shall be disconnected at the water main as required by Hunter Water by a licenced plumber at the property owner's expense. The redundant water meter/s shall be returned to Hunter Water making the Water Disconnection Application. A metallic spacer can be installed in place of the water meter to enable water supply – maximum 48 hours.

### **Small property service**

Where the property water service with a 20/25mm drilling to the water main is no longer required, it shall be capped off at the main tap (water main) with an approved cap and/or approved fittings. An application for service disconnection shall be made to Hunter Water prior to works being carried out.

### **Large property service**

For tee and service stop valve connections (65/80mm or larger) the service stop valve shall be removed to Hunter Water requirements. An individual assessment will be conducted by Hunter Water to determine if the water main connection tee is to be removed or a blank sealing flange of approved material affixed to the tee fitting branch. An application for tee and valve removal and fee shall be made to Hunter Water prior to works being carried out.

### **Re-use of existing property services**

Existing water main drilling/s and existing property service pipe may be retained where:

- Existing pressures and flows are found to be adequate to service the proposed development (to be substantiated in writing by a hydraulic consultant or suitably qualified person)
- The existing water service is in an approved location, constructed of an approved material (fit for purpose). **NOTE: (Galvanised wrought iron pipe work shall not be re-used)**
- The tapping is sized appropriately for the new development in accordance with Table 3.9 or AS/NZ3500.1 Plumbing and Drainage

Hunter Water may require a pressure test to be carried out to verify soundness of the installation.

*Note: Should a new water meter be required to be installed, the cost shall be directed to the property owner.*

### **3.11 Retention of Existing Work**

Systems not presently connected to Hunter Water's water infrastructure may be connected only if the work consists of approved materials and with Hunter Water's permission. This includes:

Complying with:

- Hunter Water's Water Services Connection Standard
- Building Code of Australia
- Plumbing Code of Australia
- AS/NZ3500.1 Plumbing and Drainage
- The licensee shall obtain Hunter Water's written approval before connecting any pre-existing system
- Hunter Water may require a pressure test to be carried out to verify soundness of the installation

## 4 WATER METERING

Properties that are connected to Hunter Water's drinking and recycled water systems are required to be fitted with a water meter. The meter is used to measure the quantity of drinking water and where relevant, the recycled water supplied for billing purposes.

The water meter technology will be appropriate to the type of development, its intended purpose and required flow rates. Hunter Water will endeavour to provide the most cost effective water meter, however some water services, fire service (industrial / commercial developments) will require a different water meter arrangement, which will not impede water flow or introduce pressure losses. These specific water metering arrangements may be at a higher cost to the property owner.

Individual (sub) metering may be approved for strata title and community title developments subject to terms and conditions outlined in Hunter Water's Individual (sub) Metering of Community and Strata Title Development requirements (refer Hunter Water's website).

*Note: All water meters used for the purpose of billing must be supplied by Hunter Water. All water meters shall be installed horizontally and in the upright position.*

### 4.1 Ownership and responsibilities for meters

The property owner is responsible for maintaining all pipe work from the outlet side of the main water meter, including any sub or check meter assemblies. All Hunter Water approved and supplied meters remain the property and responsibility of Hunter Water at all times.

Once fitted the water meter remains the property of Hunter Water and is maintained and replaced periodically at no cost to the owner unless the meter has been damaged or stolen. The property owner is responsible to ensure that Hunter Water has unrestricted access to the meter at all times for reading and maintenance purposes.

This does not include private water meters not purchased or approved by Hunter Water.

### 4.2 Application for water connection process

Prior to connecting a property to water, the owner or their agent (i.e. plumber, builder etc.) is required to make an application for connection with Hunter Water. Water meters are supplied and/or installed by Hunter Water upon payment of regulated application fee/s.

### 4.3 Relevant standards and reference documents

Hunter Water policies and systems reflect support of the National Framework for Urban Water Metering and associated Codes of Practice. All work carried out with relation to connections and metering is to comply with the following legislative, regulatory instruments, standards and requirements:

- National Measurement Act 1960
- Water Act 1912 (NSW)
- National Measurement Regulation 1999
- National Trade Measurement Regulation 2009
- AS3565.1 Technical Requirements
- AS3565.4 Meters for Water Supply
- AS/NZ3500 – Plumbing and Drainage

- Plumbing Code of Australia and NSW Amendments (PCA)
- Building Code of Australia (BCA)
- Hunter Water Act 1991
- Hunter Water's Operating Licence
- Hunter Water Customer Contract

#### 4.4 Water meter and property service sizing

All water meters are to comply with simultaneous demand for the development. For large residential and all non-residential developments, the size of the service pipe to the property is to be determined by the property owner's authorised agent, a qualified water consultant or industry expert, and a design submitted to Hunter Water for review and subsequent approval – Hydraulic Assessment.

The reference document is AS/NZS3500; Plumbing and Drainage and the manufacturer's specification for water metering.

#### 4.5 Water meter assembly design requirements

General design requirements for all water meter assemblies:

- 20mm and 25mm water meters servicing properties identified as low hazard are provided with an integral dual check valve
- 20mm and 25mm water meters servicing properties identified as medium or high hazard require a separate testable backflow prevention device relative to the identified hazard
- Shall be constructed using approved metallic pipe work fixtures, valves, unions and flanges
- Where the water meter is more than one size smaller than the inlet and outlet pipe work of the water meter assembly, surge pipes will be required. Information regarding the surge pipes will be nominated in the Hydraulic Approval letter
- Water meter assemblies 20mm to 50mm shall be designed and constructed as per Type 1, 1A, 2, 3 or 3A in the Water Drawing Diagram TWS-001 and TWS-002.
- The property water services (20mm to 50mm) shall be connected to the main tap and metered tap by compression flared fittings
- The metallic pipe inlet and outlet connection shall have a minimum of 1 metre of pipe for the base of the approved materials such as Poly Ethylene (PE). There are allowances to this requirement for services sized 80mm and larger
- Water meter assemblies shall be completed on the day of the connection to the Hunter Water supply infrastructure
- The completed water meter assembly shall include the required meter spacer for services 20mm to 40mm (including associated site testable backflow prevention device for 32 and 40mm services)
- Meters sized 50mm and greater shall be fitted by the property owners licenced plumber and will also require a Hunter Water dirt box to be fitted to the assembly
- Approved combined fire/domestic water services require an approved main domestic water meter (so as not to restrict flow) to be installed with a smaller approved by-pass meter for registering low flows. Special approval is required for this configuration (upgrade of existing systems only)
- Designated standalone fire services require no meter on the main flow but require an approved by-pass check meter to detect leaks or improper use

*Note: Meter assembly specifications – refer to the Water Drawing Diagram TSW-001 and TWS-002*

Combination meters are preferred to be used in developments where there is fluctuation between both very high and very low rates of flow for accurate measurement of consumption for billing. For example multi-occupancy developments, schools, etc. The need for this type of meter is assessed on a case by case basis.

Magflow (Electromagnetic Flow) meters may be preferred on some large industrial developments that have very high flow requirements and specific data requirements. These are assessed on a case-by-case basis and may require specific design requirements which are at the customer's expense.

## **4.6 Water meter positioning**

### **4.6.1 Positioning of main water meters (including master meters)**

The following are Hunter Water's requirements for typical meter types and sizes (also refer to drawing diagrams TWS-003 through to TWS-008):

- The water meter assembly must be within 1 metre inside the property boundary facing the water main
- The water meter assembly must be fitted at right angles to the water main, in line with the tapping or connection point
- The water meter assembly must be fully supported and have ground clearance:
- Between 150mm – 250mm for the standard metering configurations (low and medium hazard backflow rating)
- For metering configurations which require a Reduced Pressure Zone backflow prevention device, a minimum of 300mm from the finished ground level to the backflow prevention device relief vent
- The water meter assembly pipe risers must not be encased in concrete
- Water meters must be readily accessible for reading, maintenance and replacement
- Recycled water meters are to be positioned adjacent and parallel to the drinking water meter assembly. There shall be a 300mm clearance minimum between the drinking water and recycled water meter assemblies. Refer to Figure 9.1 AS/NZ3500.1 – Plumbing and Drainage

*Note: Any variations in positioning of water meter assemblies must have prior approval of Hunter Water. No water meter assemblies are to be located within a pit (below ground).*

### **4.6.2 Sub meter positioning**

Only strata or community title properties that meet Hunter Water's Individual (sub) Metering of Community and Strata Title development requirements are eligible for a sub meter for individual billing purposes. Sub metering applications may only be assessed and approved for the entire development (i.e. not individual units).

Hunter Water recommends that all individual parcels of land that can be deemed multiple-occupancy be provided with an individual water meter assembly (as referenced in Residential Tenancies Regulation 2010 and AS/NZ23500: Plumbing and Drainage). This individual water meter assembly may be utilised for future installation of a Hunter Water meter or a private water meter.

Hunter Water may approve the supply of individual sub-meters for developed strata and community title properties subject to the following general metering requirements.

- Sub meters shall have clear signage fixed adjacent to the meter identifying the lots/units serviced by the sub meter
- Meters and meter assemblies are located above ground and fully accessible at all times for meter reading and maintenance purposes
- Meter assemblies are not to be installed behind any fences or enclosed areas or confined spaces

Where a sub meter assembly has been installed but does not meet Hunter Water's requirements for sub metering, Hunter Water will not install sub meters. In this scenario the ownership will be considered to be private and the property owner(s) responsible for the private water service. The property owner(s) may install private water meters on the water service but the private water meters will not be read or billed by Hunter Water.

Refer to Hunter Water's Individual (sub) Metering of Community and Strata Title Development requirements on Hunter Water's website. This includes fact sheets, guidelines for developers, application forms, fees and copies of agreements for specific information.

#### **4.6.3 Altering or offsetting the location of the property water service and meter assembly**

Altering or offsetting the location of the property water service and meter assembly is **not permitted in new developments**.

In some instances the water service location may be offset to allow for logical additions or changes to existing site conditions – such as driveways, paving or fencing etc. where it would be impractical not to do so (e.g. it creates a hazard or obstruction and the meter cannot be accessed). All costs associated with the offsetting of existing water meters shall be borne by the owner/applicant.

The relocation of the assembly is permitted by either offsetting of the service pipe, or capping off the existing main tap and re-drilling the water main and installing a new property service in accordance with the following standards:

- The water meter assembly may be offset a maximum of 1 metre without the use of directional markers
- A maximum offset of 3 metres is permitted with the use of directional markers
- The water meter assemblies must be located within 1 metre of the title boundary
- The existing water meter can be re-installed on the new meter assembly provided it is in working order
- Relocation work is to be carried out by the property owner's licenced plumber (licenced by Fair Trading) and the scope of work is to comply with Hunter Water Service Connection Standard requirements – See the Standard Water Drawing Diagrams.

These standards apply equally for drillings located on the same side (short) of the road reserve and those located on the opposite side (long) of the road reserve.

Where the **relocation of any recycled water meter assembly** is required, it is to be carried out by an accredited licenced plumber or Hunter Water operative. Both assemblies (drinking water and recycled water) will be relocated at the owner's expense. The assemblies shall remain 300mm minimum apart with the drinking water meter assembly located closest to the property side boundary. The new property service shall be inspected by Hunter Water (mandatory requirement).

#### 4.7 Installation of water meters

Only Hunter Water or an authorised licensed plumber can affix water meters to a property. No other persons shall install, remove or tamper with a water meter without prior approval by Hunter Water.

Water meters sized from 20mm up to 40mm are affixed by Hunter Water. Water meters that are sized 50mm or larger are supplied by Hunter Water with the plumber able to obtain the meter by delivery to site or pickup from Hunter Water's nominated stores location. The "Water Connection" application is required to advise the date the meter assembly will be ready for meter affixture and nominate the pickup or delivery option and pay the relevant fees at the time of application.

*Note: Should the meter assembly not be ready for affixture of the meter at the date nominated, a further fee will be applied to re-schedule the work.*

*If the water service installation is found to be non-compliant, the owner/agent is responsible to rectify the installation at their own expense. A further fee will be applied to re-schedule the work. Failure to comply with these requirements may result in Hunter Water disconnecting the water service from the water main at the owner's expense.*

#### 4.8 Metering of multiple occupancy property developments

The following describes the metering requirements for multiple occupancy development:

- **Strata Title Developments** - multiple occupancies, usually units or apartments, with individual title. A main water meter is required to service the entire development for both drinking water and recycled water. Under conditions of the Individual (sub) Metering of Community and Strata Title Development requirements, individual sub meters may be approved by Hunter Water to enable meter reading and billing for each strata unit
- **Stratum Development** – usually two, but can be more, strata title subdivisions within the one development. Often one is commercial and the other is residential (e.g. Ground floor shops with residential units above). Each strata title must have its own individual main meter system. Hunter Water requires a single connection to the water main with a manifold assembly for servicing and metering each individual strata title within the development
- **Community Title Development** – is a horizontal subdivision of land into lots and common areas. Hunter Water currently has two types of servicing for Community Title Developments which is determined by the developer
- Each lot has individual service connection – where water and sewer mains are designed and comply with Hunter Water's design requirements to service the entire development. In this instance each lot will have a direct frontage and will be required to have an individual meter for billing purposes once connected.
- One connection to entire development – only one connection and main meter will service the entire development with one account billed to the Community Association. Individual (sub) metering may be approved subject to the Individual (sub) Metering of Community and Strata Title Development requirements (refer to Hunter Water website for more information).



## 4.9 Related metering issues

### 4.9.1 Inaccessible Meters

- The property owner is responsible to ensure that Hunter Water has unrestricted access to the meter at all times for the purpose of reading and maintenance.
- If the meter is unable to be accessed for the purpose of reading, Hunter Water will request that the meter be made accessible and that the customer provides a self-read for the purpose of billing. If the customer fails to provide the requested self-read, an estimate of the customer's usage will be used for billing of the meter.
- If the meter is unable to be accessed for the purpose of reading on two or more consecutive occasions, Hunter Water is entitled to relocate the meter to an accessible position at the property owner's expense.
- This action will only be taken if no engagement is received from the property owner regarding the establishment of an alternative meter reading arrangement.
- If the meter is unable to be accessed for the purpose of maintenance or exchange, Hunter Water will contact the owner to discuss suitable access arrangements.

### 4.9.2 Damaged, missing or stolen meters

- The property owner is responsible to ensure that the water meter is protected from damage or theft
- If the water meter is damaged, stolen or missing, it will be replaced by Hunter Water at the owners' / applicants expense
- A regulated fee for the supply and installation of the replacement water meter and any other associated works will be charged
- Where the water meter assembly is found to be missing or damaged, Hunter Water will provide the owner/applicant 14 days' notice to rectify the assembly. The owner must engage a licenced plumber. Should the owner/applicant not have re-installed the water meter assembly within 14 days, Hunter Water will carry out the necessary works and the associated costs will be forwarded to the owner/applicant
- The owner/owners agent is required to notify Hunter Water as soon as any damage or theft of the water meter has occurred

### 4.9.3 Protection of water meters

Hunter Water may require the property to install additional protection for water meters due to safety, theft and other issues. This may require the installation of a water meter cage or an approved protective surround. The design is to be approved prior to installation.

In such cases the cages/surrounds must conform to the following requirements:

- Must have a gate, which can be safely and easily opened by one person. If lockable, a standard industry key or a 003 key must be able to open the lock
- Provide adequate space around the water meter (within the cage) for maintenance and/or replacement of the water meter
- The property owner is responsible for the maintenance and safekeeping of the structure
- Cages and structures such as fenced enclosures on a property may require the property owners to gain appropriate council approval prior to the installation of the alterations
- Safety bollards may be applicable in some cases

#### **4.9.4 Removal of water meters**

- No person shall remove a water meter or alter its position unless that person has first obtained permission from Hunter Water to do so. Water meters removed are not to be reused as per the National Measurement Regulations
- If a building is being demolished and an application has not been lodged for a redevelopment of the property, it is a requirement that the property service be disconnected at the water main and the water meter returned. An application and associated fees are to be paid which allows the meter removal record to be processed and the properties billing details to be adjusted
- All work performed on water services must be carried out by a licensed plumber

#### **4.9.5 Return of water meters**

- If an existing development is to be demolished the existing water service is to be disconnected at the water main and the water meter is to be returned to Hunter Water
- An application is to be made for the water service disconnection. Any new water service connection for the property will require a connection application and meter affixture application to allow a new meter to be installed
- The disconnection application is necessary to confirm the disconnection and to ensure that the metering and billing of water charges is amended

If the water service is to be re-used the work must be completed by a licensed plumber and comply with Hunter Water Services Connection Standard. The water meter can be re-used for the upgraded service if required.

#### **4.9.6 Downsizing water meter**

All service and metering devices are designed and installed to comply with the demand of the property water supply. Hunter Water records reflect all existing and historical connection sizes that are connected by these criteria.

The owner shall be required to engage a suitable qualified licensed plumber or water supply consultant to evaluate the current water supply demand and verify that any designated firefighting system will not be detrimentally impacted from the proposed water meter downsizing. The responsible person shall also carry out an investigation of the required water supply demand of the development to the requirements of AS/NZS3500.1 Plumbing and Drainage, related Fire Hydrant / Fire Sprinkler / Fire Hose Reel Australian Standards, the Building Code of Australia and Hunter Water Services Connection Standard.

The accredited person will be required to provide a written response in the following attached format:

- The letter must clearly certify the fire flows, and if any pressure/flow requirements for the development are compliant with the downsizing of the water meter; and
- The accredited person will be required to clearly identify to Hunter Water the required drinking water flow demands and specify the size of the required meter; and
- A Technical Inspection Review fee is payable on submission of the application to Hunter Water. Hunter Water may require a mandatory audit inspection for the completed works

If approval is granted to downsize the water meter, Hunter Water will require:

- An application for water disconnection and reconnection including the relevant application fee;
- The return of the existing meter to Hunter Water at the time of water disconnection application; and
- Payment of a meter affixture fee for installation of the new meter

#### 4.10 Portable metered standpipes

Standpipes are portable hydrants designed to be connected to a fire hydrant in a water main to gain access to bulk water. All standpipes used in Hunter Water's area of operation must be metered and hired from us. Standpipes are typically used by domestic water carters or road works water carters, landscaping, pool filling, etc.

All standpipes used in Hunter Water's operating area must have an approved backflow prevention device fitted. Where the standpipe is used to fill a storage tank (mobile or fixed) an air gap must exist on the fill point or outlet connection. The air gap must be inspected by Hunter Water before the standpipe will be approved for issue.

Standpipes are only issued subject to Hunter Water approval of an application for a licence to extract water. Refer to Hunter Water's website [www.hunterwater.com.au](http://www.hunterwater.com.au) for application and hire conditions.

***Un-metered standpipes or unapproved standpipes (e.g. from other areas) must not be used in Hunter Water's area of operations.***

#### 4.11 Metering of non-standard (temporary) water services

All new or altered Non-Standard Water Services must be metered by Hunter Water. The meter is to be located at a point as close as practicable to the connection at the reticulation water main (which may be some distance from the property). The water meter must be located within private property in a position that prevents damage and provides ease of reading and maintenance. In some instances an approved lockable cage or structure may be required to be fitted over the water meter assembly to prevent tampering.

The general metering and service requirements for a Non-Standard Water Service include:

- A Non-Standard Water Service shall not have another registered lot or parcel of land connected to that designated service without the approval of Hunter Water
- Hunter Water does not provide sub metering for joint non-standard water supply connections.
- The water meter assembly shall be located in private land and protected from damage, the owner of the designated land shall provide Hunter Water with a letter of approval for its location
- The Non-Standard Water Service pipeline may traverse local council footpaths or roadways. The responsible persons controlling that land will be required to provide written approval to Hunter Water for the location of the pipeline. The owner is required to obtain an easement for the water service if it is to traverse privately titled land prior to approval.

*Note: Non-Standard Water Services are considered temporary and may be disconnected by Hunter Water at its discretion. The Non-Standard Water Service*

*must be removed from service where a reticulated water supply main is installed in the future. All costs are to be borne by the property owners.*

*Civil matters may arise from disputes regarding ownership, maintenance and water leaks on Non-Standard Water Services – especially relating to historically approved “joint Non-Standard Water Services”. All civil matters pertaining to ownership, maintenance responsibilities and water leaks are to be resolved by the related parties.*

## **5 NON POTABLE WATER**

### **5.1 Reticulated Recycled Water**

The responsibilities of customers and of Hunter Water regarding general aspects of the recycled water service and quality are covered in a separate document which can be accessed on Hunter Water’s website at [www.hunterwater.com.au](http://www.hunterwater.com.au) or alternatively by contacting Hunter Water on 1300 657 657.

#### **5.1.1 Customer responsibilities**

The responsibilities of customers with regards to the reticulated recycled water systems are as follows:

- For all internal reticulated recycled water installations, namely any future system modifications, the property owner is to ensure that they use a licensed plumber. A NSW Fair Trading inspector must check any changes that are made to the plumbing system. On completion of the plumbing work, the owner is to request a Certificate of Compliance from the qualified licensed plumber.

#### **5.1.2 Cross Connection Control**

Site containment backflow prevention devices shall meet the requirements of Hunter Water’s Site Containment Backflow Prevention Standard and AS/NZS3500.1 Plumbing and Drainage.

#### **5.1.3 Process for residential recycled water service commissioning**

- Recycled residential property service requirements are as per WSAA Code
- Recycled residential internal water service is regulated by NSW Fair Trading

### **5.2 Rainwater**

#### **5.2.1 Location of rainwater tanks**

Rainwater tanks shall not be positioned over or adjacent to (within 1m) a Hunter Water sewer main (including manholes, branch lines and shafts) or water main without written consent from Hunter Water. The responsibility of checking the location of Hunter Water assets and of making any required “Build Over” application lies with the property owner. Rainwater tanks shall not be built within a Hunter Water easement without written consent from Hunter Water.

It is noted that the Hunter Water Act 1991 authorises Hunter Water to demand the removal of any interfering structure, which includes rainwater tanks from over, or near its assets at the structure owner’s expense, and to claim compensation for any damage caused by that structure.

It is also noted that the State Environment Planning Policy (SEPP) No.4 for Exempt Development does not include a rainwater tank built over or adjacent to a water main or a sewer main, unless it is installed in accordance with any requirements of the public authority that has responsibility for the main. If a rainwater tank is constructed over or adjacent to a water main or a sewer main without Hunter Water consent, then it would be deemed to be an unauthorised development as it would not have complied with the requirements of the SEPP.

Hunter Water require a minimum of one external hose tap located adjacent to the water meter (to enable confirmation of water meter operation and allow emergency water supply) on all properties that have an interconnection between Hunter Water's supply and an on-site rainwater tank.

### **5.2.2 Backflow prevention requirements – site containment**

A backflow prevention device is defined in AS/NZS3500: Plumbing and Drainage as a mechanical device which will prevent the reverse flow of water from a potentially polluted source into the drinking water supply system.

A site containment backflow prevention device is installed at, or immediately adjacent to, the water meter assembly. This is required to protect the integrity of the drinking water supply system.

The required site containment backflow prevention device is determined by identifying the hazard within the property.

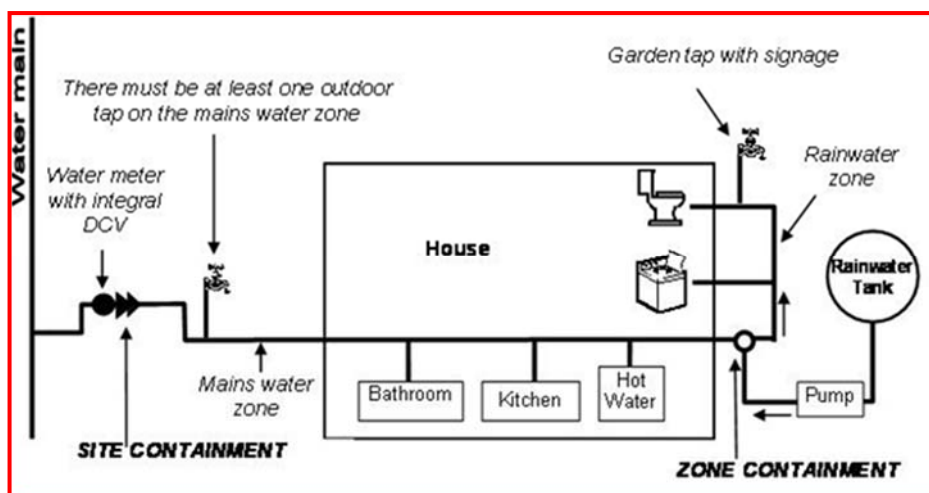
#### **Exceptions to the general rules**

Hunter Water reserves the right to increase the site containment hazard rating of any rainwater tank installation above the ratings typical for the type of installation. Hunter Water may take this action if any of the following occur:

- The water stored in the tank becomes polluted by decaying plant or animal material
- The tank develops a leak at or below ground surface
- Liquids other than mains water or rainwater are stored in the tank
- Chemicals are added to the tank such that they pose a health risk
- Roof, guttering or tank corrosion or weathering by-products pollute the water in the tank
- The roof and/or guttering system being used to collect rainwater becomes polluted

### **5.2.3 Required location of backflow prevention devices**

For cross connected low and medium hazard rainwater tanks, backflow prevention devices are required at the property boundary – integral of or in line with the water meter (site containment protection)



**Cross Connection Configuration for Rainwater Supply to select appliances – toilet, washing machine and outdoor tap**

#### 5.2.4 Required type of backflow prevention devices

The type of backflow protection required is dependent on the hazard rating associated with the rainwater tank installation. The following table shows the required type of backflow prevention devices for typical single residential development.

Hazard Rating of Rainwater Tank	Australian Standards approval site containment backflow prevention device
Low	<ul style="list-style-type: none"> <li>Water meter with integral dual check valve (20/25mm only) Single Residential</li> </ul>
Medium	<ul style="list-style-type: none"> <li>Single residential 20mm metered service – vented dual check valve</li> <li><u>Note: Vented dual check valve shall only be installed horizontal</u></li> <li><u>Single Residential 25mm metered service requires a testable double check valve.</u></li> </ul>
High	<ul style="list-style-type: none"> <li>Cross connection with drinking water supply. Requires a Reduced Pressure Zone Device testable. Single Residential</li> </ul>

*Note: Multi Unit Residential, Commercial and industrial development site containment backflow requirements are assessed on an individual basis via the Hydraulic Assessment process using Hunter Water’s Backflow Prevention Standard.*

#### 5.2.5 Registration, inspection and replacement of site containment backflow prevention devices

Where the site containment hazard rating requires a testable backflow prevention device, the test results shall be entered into the Hunter Water register. Hunter Water requires that certification of the devices operation be forwarded to Hunter Water on an annual basis. The certification shall be completed by a qualified backflow prevention contractor at the property owner’s expense.

### 5.3 Alternative water supply

There shall be no interconnection between Hunter Water's drinking water supply and any alternative water supply without Hunter Water's written authorisation.

Contact should be made with the NSW Health and Environmental Protection Authority (EPA) for their requirements determining the permitted use of non-drinking water.

Examples of alternative water supply include but are not limited to:

- Dam Water
- Sea Water
- Storm Water
- Recycled Water
- Bore Water
- Reclaimed Water

Successful interconnection approval will carry strict mandatory requirements to maintain the integrity of Hunter Water's drinking water through the installation of approved backflow protection devices as listed in Hunter Water's Site Containment Backflow Prevention Standard and AS/NZS3500.1.

## 6 FIRE SERVICE

### 6.1 Use of fire services

The supply of water from a fire service for any purpose other than firefighting or testing of firefighting equipment is not allowed, and shall only be permitted under special conditions imposed by Hunter Water.

### 6.2 Metering of fire service

Water metering of fire services will be assessed on the type, size and use of the development. Typically:

- **Hose Reel Services** must be metered and shall be supplied via a metered domestic water service to the property
- **Designated Fire Hydrant Services** must be fitted with an Australian Standard approved Double Check Detector Assembly (DCDA) and an appropriately sized by-pass water meter supplied by Hunter Water
- **Residential / Home Fire Sprinkler Services** designed under the AS2118.4 or AS2118.5, which utilise a low volume of water, requires the installation of an Australian Standard approved Double Check Detector Assembly (DCDA) or equivalent and an appropriately sized by-pass water meter supplied by Hunter Water

### 6.3 Fire hose reels

All fire hose reels shall be connected to a metered service, unless otherwise permitted by Hunter Water.

### 6.4 Designated fire hydrant / fire sprinkler service

This system incorporates a Double Check Detector Assembly (DCDA) with a 20mm to 25mm low flow bypass metering system. A 20KPA (minimum) pressure differential is

required between the larger size high flow piping system and the 20mm / 25mm low flow by-pass system. The DCDA shall be installed inside the property boundary as close as possible to the connection of the water main, and prior to any suction/booster assembly.

### 6.5 Storage tank fire system

In the case of a fire system supplied from a storage tank, the Licensee shall be responsible to Hunter Water for:

- Pipework from the water main to the jacking pump including the Backflow Prevention Device
- The storage tank
- The air gap and overflow (compliant to AS/NZS3500.1 Plumbing and Drainage requirements)

The storage tank shall be initially filled, and ongoing water level maintained, from a metered domestic water supply.

### 6.6 Sealing of fire services

Hunter Water may require sealing of:

- Hydrants
- Hose Reels
- Control valves that are installed in an unmetered fire service

### 6.7 Low flow bypass metering and accountability

The low flow bypass meter on a fire service is monitored by Hunter Water.

If excessive flows are detected, a site inspection of the developments is carried out by a Hunter Water representative.

These site inspections may reveal misuse, leakage, required fire system testing or may be the result of actual firefighting use.

The accounts of individual properties may be adjusted to reference the true amount of water supply used on the development.

The calculation for water used may be determined through estimation.

### 6.8 Hydrants on Private Property

Hunter Water **does not** allow the installation of in ground hydrants on private property.



## 7 PUMP SYSTEMS

Pump systems may be categorised as:

- System pumping
- System pressure boosting

*Note: This Services Connection Standard will nominate “system pumping” which will refer to both categories.*

### 7.1 Fire service pumps

The installation and design of fire service pumps shall not create pressure surges, water hammer or shock waves to Hunter Water’s water supply system. The operation and maintenance of fire service pumps shall not affect other customers.

If a fire service pump is activated for firefighting or testing, the operation of the system shall not reduce the available pressure in Hunter Water’s water mains below Hunter Water’s Operating Licence allowed pressures.

In certain instances, Hunter Water may require testing of fire service pumps to be conducted during designated times or on nominated days, due to the water supply system specific daily demands.

The installation and design of fire service pumps shall be submitted to Hunter Water for review and connection conditions shall be stipulated. The fire service pumping system shall be designed and certified for compliance by responsible accredited person/s. A copy of the Certificate of Compliance shall be submitted to Hunter Water within 7 days of system completion.

The installation and ongoing maintenance of fire service pumps shall only be carried out by person/s licensed under NSW Fair Trading.

#### 7.1.1 Fire service pumping approval

Fire system pumping may be allowed subject to the written approval of Hunter Water. A written request for the approval of fire system pumping must be lodged with Hunter Water, as part of the application for conditions of connection, and should include details of pump curves and pumps to be used.

*Note: The maximum pump flow should not result in the capacity of the street main reducing to below Hunter Water’s Operating Licence pressures. This must be confirmed and approved by Hunter Water as part of the application for conditions of connection process.*

Variable speed pumps are preferred; however consideration will be given for the use of direct drive pump sets. In some cases, consideration may also have to be given to installing a break pressure tank to provide added protection to Hunter Water’s water supply infrastructure assets.

## 7.2 Domestic service pumps

Due to the topography of specific developments, the introduction of pumping may be required. However, the operation and maintenance testing of such a system may detrimentally affect Hunter Water's supply system.

Proposed domestic or drinking water pumping system shall be submitted to Hunter Water for review and specific connection conditions will be provided.

In Hunter Water's area of operations, only approved variable speed drive pumps shall be installed on domestic systems.

The operation of pumping units shall not create pressure surges, water hammer or shock waves to Hunter Water's water supply systems. The ongoing operation and delivery of water supply from private pumping station shall not affect other customers.

The installation, design and ongoing maintenance of the pumping system shall not reduce the available flows in Hunter Water mains below the specified level in the Operating Licence.

The installation of a domestic service pump shall meet the requirements as listed in AS/NZS3500.1 Plumbing and Drainage.

### 7.2.1 Domestic service pumping approval

System pumping may be allowed subject to the written approval of Hunter Water. A written request for the approval of variable speed inline pumps must be lodged with Hunter Water, as part of the application for conditions of connection, and should include details of pump curves and pumps to be used.

*Note: The maximum pump flow should not result in the capacity of the street main reducing to below Hunter Water's Operating Licence pressures. This must be checked and approved by Hunter Water as part of the application for conditions of connection process.*

## 8 BACKFLOW

### 8.1 Introduction

Backflow prevention refers to the control of potentially harmful contaminants entering the Hunter Water's water supply from cross connections in a customer's premises or backflow of contaminants into the water supply system.

Hunter Water recognises the importance of maintaining the integrity of its water supply and therefore considers backflow prevention a priority.

### 8.2 Type of site containment backflow prevention device

The type of site containment backflow prevention device that is required on a property is dictated by the potential hazard that may arise from particular types of businesses or uses operating on that property ("risk activities"). The hazards and associated ratings are listed in Hunter Water's Site Containment Backflow Prevention Standard. Hunter Water reserves the right to increase the hazard rating requirement for the property upon individual review.

#### NOTE:

- Where hazards are unknown for a commercial, industrial or mixed development, the hazard rating of the site containment backflow prevention device will default to high
- Where multiple risk activities occur on-site, the site containment backflow prevention device will be based on the risk activity with the highest hazard rating
- Hunter Water recognises a Reduced Pressure Zone Device (RPZD), as a high hazard backflow prevention device
- Hunter Water recognises a Testable Double Check Valve (DCV) as a medium hazard backflow prevention
- Hunter Water only recognises mechanical devices for site containment

### 8.3 Responsibilities of Property Owners

#### Device Requirements

Property owners that have a high or medium rated property must install a testable backflow prevention containment device at the property boundary for site containment protection. The backflow prevention containment device must:

- Be appropriate for the property's hazard rating (as set out in the Backflow Prevention Standard)
- Comply with Hunter Water's Site Containment Backflow Prevention Standard. This includes, but is not limited to, installation, maintenance and annual testing as set out below.

Hunter Water's water meters sized 20mm and 25mm only, incorporate a low hazard integral backflow prevention device.

Property owners that have a low hazard rated property with a water meter sized 32mm or larger, must install a testable backflow prevention containment device at the property boundary for site containment protection and satisfy the requirements set out in this document.

#### Testing Requirements

Property owners must have the site containment backflow prevention device (for high or medium properties) tested annually as required in Hunter Water's Backflow Prevention Standard, AS/NZS2845.3 Water Supply – Backflow Prevention Devices and AS/NZS3500.1 Plumbing and Drainage.

A copy of the certified test report must be forwarded to Hunter Water within seven (7) days of installation and on a yearly basis thereafter.

### **Other Responsibilities**

The property owner is also responsible for:

- Ensuring zone and individual back flow prevention devices are maintained
- Preventing potential drinking water contamination conditions
- Safe water supply within their own property boundaries

For information on zone and individual backflow requirements, contact NSW Fair Trading.

### **8.4 Hunter Water's responsibility**

Hunter Water will maintain a register of installed testable site containment backflow prevention devices and annual test reports. Hunter Water will audit a sample of installations to ensure ongoing compliance with Hunter Water's Site Containment Backflow Prevention Standard. This does not affect the property owner's responsibilities as outlined in this document.

### **8.5 Approved installers / certifiers**

Property owners must ensure that the installation of a site containment backflow prevention device is carried out by a licensed plumber, and the commissioning or testing of a site containment backflow prevention device is carried out by a licensed plumber with backflow prevention accreditation issued by a registered training organisation that has been recognised by Hunter Water.

Prior to a backflow prevention device installation, it is recommended the available water pressure and the customer's pressure and flow requirements are confirmed.

### **8.6 Backflow device non-compliance**

Backflow prevention device non-compliance relates to both new and existing developments.

If Hunter Water issues a notice that a site containment backflow prevention device does not comply with Hunter Water's Backflow Prevention Standard (including AS/NZS3500.1 Plumbing and Drainage requirements), the property owner must repair, maintain, test, replace or install the site containment backflow prevention device (as specified in the notice) within the timeframe given.

If the property owner fails to comply with such notice, Hunter Water may disconnect a property from the water supply system (in accordance with the Customer Contract), until the property owner has complied with the notice.

### **8.7 Change in operations / process on site**

If the risk activity/ies at a property changes and the hazard rating is increased or decreased, the property owner must:

- Arrange for an accredited backflow prevention plumber to certify the change in hazard rating using Hunter Water's Site Containment Backflow Prevention Standard; and
- Provide a copy of that certification to Hunter Water

Hunter Water may conduct a site audit to verify the new hazard rating.

If the new hazard rating has increased, a site containment backflow prevention device that is appropriate for that increased hazard rating is required. Hunter Water may conduct a site audit to verify that the appropriate backflow prevention device is in use.

### **8.8 Recycled water schemes**

Where Hunter Water supplies a customer with recycled water, the customer shall install site containment backflow prevention device on the recycled water system equivalent to the site containment backflow prevention device required for the drinking water supply.

### **8.9 Hydrant standpipe backflow prevention**

All hydrant standpipes used in Hunter Water's area of operations shall be issued and registered by Hunter Water.

## 9 ADMINISTRATION

The administration as detailed in the Water Services Connections Standard describes the requirements of how to apply for connection or disconnection to the water supply infrastructure.

After an application has been reviewed and accepted by Hunter Water, the connecting to services will be deemed authorised. The authorisation is subject to the condition to the Services Connection Standard and the Customer Contract.








### 9.1 Connecting to Hunter Water's Services

If you are building a home, renovating, developing or subdividing land you will need to know how to connect to and/or disconnect from Hunter Water's services including drinking water and recycled water.

Your water services will generally be connected and ready to use if you are moving into an established house and you should not be required to complete the connection /disconnection process.

The information below outlines Hunter Water's basic steps to connect or disconnect. Prior to connecting or disconnecting you will need to submit an application and pay the relevant fees.

**9.1.1 How do I apply to connect or disconnect from Hunter Water’s Services?**

 <p><b>Step 1</b></p>	<p>Have Hunter Water check your building plans to make sure they don’t impact Hunter Water’s assets.</p>		
 <p><b>Step 2</b></p>	<p>Apply for relevant Development Applications with Hunter Water if required. Please refer to the “Land Development Manual” on Hunter Water’s website for further details.</p>		
 <p><b>Step 3</b></p>	<p>Apply to the relevant consent authority for development approval if needed i.e. Council, Mine Subsidence, etc.</p>		
 <p><b>Step 4</b></p>	<p>Pay your connection Fees for Water and Wastewater</p>	<p>→</p>	<p>For anything more than a stand-alone house you may be required to engage a hydraulic consultant and submit a Hydraulic Assessment.</p>
 <p><b>Step 5</b></p>	<p>Apply to Hunter Water for connections and/or disconnections. This can only proceed once the relevant approvals have been granted (Applications and inspections to be submitted and booked a minimum of two working days prior to works).</p>		
 <p><b>Step 6</b></p>	<p>A licensed plumber makes the connections.</p>		
 <p><b>Step 7</b></p>	<p>Have your plumbing inspected: Call NSW Fair Trading for water connections and Hunter Water for wastewater connections.</p>		

**9.1.2 How do I find out what services are available to my property?**

Before you proceed with your development or apply to connect to Hunter Water services you should enquire about what services are available to your property. Water services are not available to all properties.

In Hunter Water’s area of operation you can find out what services are available for your property before you apply to connect or proceed with any development by:

Term	Definition
Sewer Location Diagram	This diagram shows the connection point of the wastewater pipes to your property. These are usually attached to your property sale contract provided by your conveyance or solicitor. A sewer location diagram can be purchased from Hunter Water.
Dial Before You Dig	You should check the location of Hunter Water's services if you are doing any development work on your property so our services are not damaged. Dial Before You Dig will provide a plan of Hunter Water's services that are on or near your property for no fee by calling 1100.
Service Location Diagram	This diagram shows where water and wastewater services are located in relation to a property's boundary. These diagrams can be purchased from Hunter Water.
Ask Hunter Water	Call Hunter Water's Contact Centre on 1300 657 657.

### 9.1.3 How do I connect or disconnect from Hunter Water's water services?

Hunter Water requires an application to be submitted and relevant fees paid before you connect or disconnect from Hunter Water's services. If you want to connect any development other than a stand-alone house you will need to have the relevant certificates, letters and approvals prior to submitting your connection / disconnection application. Approvals you may require include a Section 50 Certificate, Hydraulics Assessment or Tee & Valve connection / disconnection approval. Please refer to the "Land Development Manual" on Hunter Water's website for more details. All requirements need to be met before submitting connection applications.

To connect you will need to complete the Services Application Form by providing the following details:

- The address of the property to be connected including the LOT and DP Number.
- The name and address, phone number and email address of both the applicant and the property owner
- The plumbers name, phone number and License details
- The date of the inspection (this indicates the connection work is complete)
- The date the meter frame will be ready for a meter to be affixed (date to be no more than 2 weeks from submission of application)
- The date and preferred timeframe of the drilling – if required.
- Applications for connections and inspections submitted and booked a minimum of two working days prior to works.

*Note: Hunter Water requires the application for connection of water and wastewater services to be completed and submitted simultaneously (there is a twenty-two week period exemption from sewer discharge fees).*

To disconnect you will need to complete the Services Application Form by providing the following details:

- Remove and return the water meter if no longer required. Refer to "NOTE" below.
- The address of the property to be disconnected including LOT and DP Number
- The name and address, phone number and email address of both the applicant and the property owner
- The plumbers name, phone number and License details
- The date of the water disconnection inspection (this indicates completion of the work)
- Applications for disconnection and inspections submitted and booked a minimum of two working days prior to works.



- All connections (water) made prior to connection applications or performed without booking inspections will be deemed unauthorised. Plumbers and or property owners responsible for unauthorised connections may face fines as stated within the Hunter Water Act 1991 and the Hunter Water Regulation 2015.
- For the disconnection of Hunter Water owned pre-laid water services for redevelopment of land you will need to contact Hunter Water Technical Services section for direction.

*Note: In most circumstances for water disconnections the meter should be removed by a licensed plumber and returned to Hunter Water along with the application form and fee. However, if you are knocking down an existing house and rebuilding, you may be able to reuse the meter and the water service if it is compliant with the Plumbing Code of Australia and Hunter Water's connection and backflow requirements.*

## 10 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

Term	Definition
Air Gap	The unobstructed vertical distance through the free atmosphere between the lowest opening of a water service pipe and fixed outlet supplying water to a fixture or receptacle and the highest possible water level of such fixture or receptacle.
Backflow	The unintended flow of water from a potentially polluted source into the drinking water supply.
Backflow Prevention Device	A device to prevent the reverse flow of water from potential polluted source, into the drinking water supply system.
Backflow Prevention Device Testable	Any backflow prevention device that is provided with test taps for the purpose of testing its operations
COAG	NSW State Government and Coalition of Australia Governments
Corporation	Hunter Water Corporation
Cross Connection	Any connection or arrangements between the drinking water supply system connected to the water main or any fixture, which may under certain conditions enable non-drinking water or other substances to enter the drinking water supply system.
Defective and Unauthorised Work	Any water or recycled water service on the property that through construction or use of the service does not comply with current codes of practice, standards, legislation or regulations. Can also include leakage from the service.
Drinking Water	Water that is intended for human use and consumption and free of harmful chemicals and disease-causing organisms.
Electrolysis Corrosion	Corrosion produced by the contact of two dissimilar metals in the presence of an electrolyte.
Fire Hose Reel	A length of fire-fighting hose, which is connected to a valved water supply and is wound on a reel.
Fire Hydrant	A fitting installed in a water pipeline which provides a valved outlet (above ground) to permit a controlled supply of water to be taken from the pipeline for firefighting.
Fire Service	A service comprising water pipes, fire hydrants, fire hose reel fittings and may include water storage or pumping facilities which is installed solely for firefighting and extinguishing purpose in and around a building or property. Under certain conditions part of a fire sprinkler system may be included.
Fire Sprinkler Service	Piping designed to be kept charged with water under pressure and fitted with sprinklers that are automatically activated.
HWC	Hunter Water Corporation
IPART	Independent Pricing Authority Regulatory Tribunal
ISPS	Individual Sewerage Pumping System
Maintenance	Includes repairs and replacement, and where relevant testing and inspections.
Main Tap	A valve located where the property service connects to the water main to control the flow of water through the property service.
Meter Tap	A valve located upstream of and adjacent to the water meter to control the flow of water from the property service through the water meter.
Meter	Device used to measure the water use on the property.
Non-Standard Connection	Non-standard water connection applies where customers: <ul style="list-style-type: none"> <li>• Connect to a water main which does not have frontage to the property</li> <li>• Connect directly to a trunk water main.</li> </ul> (Non-standard connections require the property owner to enter into a separate written agreement with Hunter Water).
Operating Licence	Licence granted to Hunter Water under Section 12 of the Hunter Water Act 1991.
Owner	A person who holds ownership title to the property, as defined by the Hunter Water Act 1991.
Pressure-Limiting Valve	A valve that limits the outlet pressure to a set pressure.
Property	An individual, dwelling, or premises used for any purpose; or Land, whether built or not (excluding public land); or A lot in a strata plan that is registered under the

Term	Definition
	Strata Schemes (Freehold Development) Act 1973 or the Strata Schemes (Leaseholder Development) Act 1986 that is connected to, or for which a connection is available, to Hunter Water's water supply system or wastewater system.
Property Service	The pipes and fittings used or intended to be used for the supply of water to a property, from the water main up to and including the water meter assembly.
Recycled Water	Water that is derived from treated wastewater and is not suitable for drinking.
Standard Connection (Water)	A connection to Hunter Water's reticulated water main where: <ul style="list-style-type: none"> <li>The property has direct frontage to the water main; and</li> <li>The water main is a reticulation main.</li> </ul>
Tapping Band	An approved band clamped around the water main to enable a water connection to be made.
Tuberculation Bush	A plastic bush which is inserted into metallic water mains as part of the drilling process. This bush provides protection from degradation of the protective internal cement lining of the water main.
Water main	A conduit or pipeline vested in the water authority or controlled and maintained by a network utility operator and constructed to convey potable water supplied by that authority.
WSAA	Water Services Association of Australia

## 11 APPENDIX DOCUMENTS

See List below.

Annexure	Description
Annexure 1	Non Standard Water Service Drawing
Annexure 2	Offset Water Services Drawing
Annexure 3	TWS-001 Water Meter Connection Schematic Drawing – Types 1 to 5
Annexure 4	TWS-002 Water Meter Connection Schematic Drawing – Types 3A – 6
Annexure 5	TWS-003 Water Meter Connection Type 1 – Privately Owned Property Service (Low Hazard) 20 & 25mm Meter with Integral Dual Check Valve
Annexure 6	TWS-004 Water Meter Connection Type 2 – Privately Owned Property Service (Medium/High Hazard) – 20/40mm Meter Assembly
Annexure 7	TWS-005 Water Meter Connection Type 3 – Privately Owned Property Service 50-65mm Meter Assembly
Annexure 8	TWS-006 Water Meter Connection Type 4 – Tee and Valve Connection Designated By-Pass Metered Fire Hydrant/Sprinkler Service & Bifurcated Separated Domestic Water Meter (Helix or Magflow Meter)
Annexure 9	TWS-007 Water Meter Connection Type 5 – Tee and Valve Connection – Large Domestic Service Main Meter with Low Flow Bypass Metering – Magflow & Combination Meters Do Not Require By Pass Metering
Annexure 10	TWS-008 Water Meter Connection Type 6 – Tee and Valve Connection Designated Fire / Sprinkler Service
Annexure 11	TWS-009 Existing Offset Water Service
Annexure 12	TWS-010 Water Meter Connection Type 1A Privately Owned Property Service (Low Hazard) 32mm & 40mm Meter with Testable Double Check Valve
Annexure 13	TWS-011 Non-Standard Water Service
Annexure 14	TWS-012 Stratum Water Service
Annexure 15	Meter Table
Annexure 16	Property Service Materials Products

