



# STANDARD WASTEWATER CONNECTIONS

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# DOCUMENT INFORMATION

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3	Greg Heaney (External Consultant)	Section 4: 'Non-Standard Sewer Service' removed and content integrated with other sections. Section 6: Renamed to 'Making a Sewer Connection' and content simplified and consolidated. Section 7: Trade Waste section removed with reference to separate Trade Waste Standard. Section 8: Renamed and updated with current administrative procedures. Section 10: Appendices removed, references to standard drawings updated and embedded in main text	Executive Manager Customer Services	13/10/23
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# 1. Purpose

This Standard provides the minimum sewer 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. Hunter Water's sewer networks are shown in Figure 1 below.

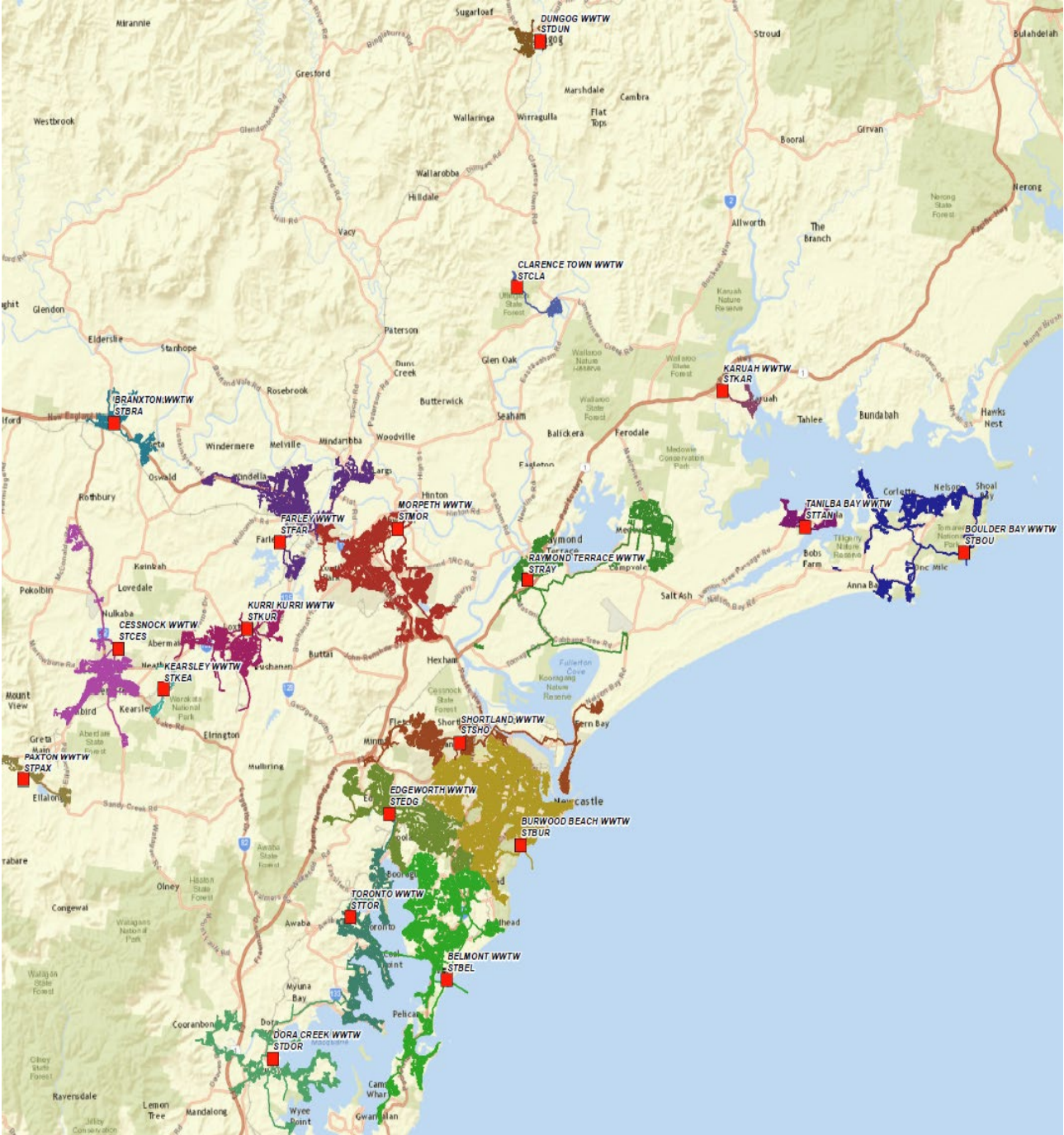


Figure 1: Hunter Water Area of Operations: Drinking Water Supply





## 2. Scope

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 Operating Licence.

This Standard sets out the general requirements to be followed for the work of plumbing and drainage connected to Hunter Water's sewerage infrastructure. Other relevant regulations are as follows:

- Hunter Water Act 1991
- Hunter Water Operating Licence 2022-2027
- Hunter Water Regulations 2015
- Hunter Water Customer Contract 2022-2027
- The Plumbing Code of Australia
- Australian Standard – Plumbing and Drainage – AS/NZS 3500

## 3. Types of Sewer Connection

Each land parcel shall have an individual connection point to Hunter Water's sewerage infrastructure. No private sanitary drainage pipeline or sewer rising main 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 (existing and proposed) shall have an independent connection to Hunter Water's sewerage infrastructure.

The sewerage of any residential, community title, commercial or industrial development shall be separate and distinct from that of any other development. The only fittings to discharge into such service shall be those of the designated building and its fixtures to which the service is connected.

Customers must clear blockages in their private wastewater systems, identify and repair any defects that may occur, and maintain a clear and safe access to their point of connection to Hunter Water's sewerage system.

### 3.1. Methods of Property Connection

In Hunter Water's area of operations, sewerage servicing may be provided by any of the following:

1. Gravity sewer connection
2. Vacuum sewer connection
3. Sewerage pumping system connection

The type of sewerage system infrastructure that is in place is generally influenced by topography, land zoning and local environmental factors (such as depth to groundwater). Applications to connect to any sewerage system are assessed by Hunter Water before approval to connect is granted. Hunter Water will not approve any wastewater connection if:

- There is no sewer service available in your area.
- The available sewer main is not a 'connectable' main.
- Your connection will damage our assets.
- This discharge wastewater is of a prohibited type.
- The existing system has reached maximum capacity.



### 3.1.1. Standard vs Non-Standard Sewer Connection

Sewer connections are classified as either Standard or Non-Standard, as follow:

#### Standard Connection

When the sewer point of connection is located inside the property boundary.

#### Non-Standard Connection

When the sewer point of connection is located outside the property boundary and a rising main transverses private property or council road/roadside reserve. In such cases the property owner is required to sign a contract agreement acknowledging and accepting the terms and conditions under which the sewer connection is permitted. This includes the following requirements:

- The owner shall be entirely responsible for the provision and maintenance of any pipe or fitting extending beyond the sewer point of connection to the property and shall seek and obtain all necessary consents in writing for the location and placement of such pipe or fitting from the relevant authority or person(s).
- The owner shall discharge only domestic sewage into Hunter Water's sewer unless otherwise authorised by Hunter Water in writing.
- Hunter Water shall not be liable in respect to any loss or damage that the owner may suffer as a result of or arising from any Non-Standard connection to Hunter Water's sewer mains.
- If a sewer main becomes available that gives the property a direct "standard" sewer connection point, the owner shall be required to connect to the alternative service.
- All terms and conditions listed in the Non-Standard Sewer Service Agreement and technical specifications are.
- The property owner(s) is responsible for all maintenance costs of a Non-Standard Sewer Service.
- The property owner shall advise the proposed purchaser of the terms of this agreement and the requirement for the proposed purchaser to enter into a new agreement if connection to Hunter Water's sewer system is to continue.
- Hunter Water requires an application for the disconnection of a Non-Standard Sewer Service. This application will generate an inspection to confirm compliant disconnection from Hunter Water's sewerage system.
- Should the Non-Standard Sewer Service disconnection be a part of a joint Non-Standard Sewer Service, it is a requirement that all other joint service parties be formally notified by the disconnecting party so that ongoing maintenance responsibilities of the Non-Standard Sewer Service can be confirmed.

## 3.2. Gravitational System

Gravity sewer connection is the most common and simplest type of connection. Hunter Water aims to provide an individual gravity sewer connection point to each separate lot. Hunter Water adopts the Water Services Association of Australia (WSAA) design manual for the construction of gravitational sewers. This manual nominates the minimum depth of the sewer point of connection as normally installed at a depth that allows the most efficient drainage of the lot.

Before planning and construction of any structure, Hunter Water should be consulted to verify the depths of the sewerage system connection point to ensure the proposed development can be serviced.

### 3.2.1. Gravitational System Configurations

See the following standard drawings on the ***Drawings and Diagrams*** web page of the Hunter Water website:

- TSS-003 Sewer Connection Detail.



- TSS-004 Sewer Disconnection Detail.
- TSS-005 Sewer Connection Non-Boundary Trap (Residential); and
- TSS-006 Sewer Connection Boundary Trap (Residential)

**a. Sewer main located within the property being serviced**

The sewer point of connection is the arm of the junction located in Hunter Water's sewer main. The junction arm is sealed at the time of construction. Hunter Water owns the junction and adjacent sewer main. The customer is responsible for providing, connecting and maintaining the property's sanitary drainage system to Hunter Water's junction in accordance with the Plumbing Code of Australia & AS/NZS3500.2 Plumbing and Drainage.

**b. Sewer main located outside the property being serviced**

The sewer point of connection is located at the end of a branch/sideline from the sewer main terminating within the customers' property. Hunter Water may specify a "Y-junction" at the end of the sideline to which the property connection is to be made to the branch arm of the junction. This is to allow future maintenance or possible extension from the straight-line section of the junction.

Hunter Water owns the branch/sideline and Y-junction. The customer is responsible for providing, connection and maintaining the property's sanitary drainage system connection to Hunter Water's sewer main in accordance with the Plumbing Code of Australia & AS/NZS3500.2 Plumbing and Drainage.

**c. Common Sanitary Drainage**

A system of sanitary drainage pipe work that was an approved method of connecting a sewerage service to multiple dwellings in the early 1900s. The properties at the time had a common title or common family ownership. Alternatively, ownership was common to a particular employer who provided housing and employment packages.

While it is acceptable to own a property with an existing common sanitary drainage system, Hunter Water recommends, that at the time of resale, upgrading or replacement of plumbing works, enquiries should be made to Hunter Water regarding the possibility of providing individual sewer points of connection (direct sewer connection) for each individual property.

If it is possible for Hunter Water to provide an individual sewer point of connection, each property owner must engage a licensed plumber/drainier to divert, reconfigure, install and connect their property's sanitary drainage system to Hunter Water's sewer connection point. All sanitary drainage pipework must be located within the boundaries of said property.

The re-use of common sanitary drainage does **NOT** comply with current Plumbing Regulations.

Hunter Water **DO NOT** own or maintain combined or joint private sanitary drainage systems.

When drainage works are to be carried out on a common sanitary drain within the confines of an individual lot, all sanitary drainage works are to comply with the Plumbing Code of Australia and AS/NZS3500.2 Plumbing and Drainage. The works are deemed on-site drainage and all inspections for new and alternation works are under the regulatory requirements of Building Commission NSW. This includes the common main sanitary drainage line.

### 3.3. Vacuum System

See standard drawing *SCP-317* on the ***Drawings and Diagrams*** web page of the Hunter Water website.

Hunter Water operates vacuum sewerage systems located in the following areas:

- Dora Creek – Lake Macquarie City Council
- Sandgate – City of Newcastle Council

The vacuum sewage collection chamber may be located within, or external to, the property boundary. The connected sanitary drainage installation is to meet the requirements of the Plumbing Code of Australia and AS/NZS3500.2 Plumbing and Drainage.

Only Hunter Water employees (or persons authorised by Hunter Water) are allowed access to the vacuum sewage collection chamber.

It is required that all improper function or damage to the vacuum sewage collection chamber is reported to Hunter Water immediately on 1300 657 657.

**Chamber located external of the property**

The sewer point of connection is located at the end of a branch/sideline from the vacuum collection chamber.

**Chamber located within the property**

The sewer point of connection is a connection 'slub' at the side of the vacuum collection chamber.

### 3.4. Sewerage Pumping Station

The four types of sewerage pumping systems operating in Hunter Water's area are as follows:

- Hunter Water Pressure Sewerage System (HW PSS) – SCP-311
- Private Pressure Sewerage System (PPSS) – TSS-002
- Common Effluent Pumping System (CEP) – TSS-001
- Individual Sewerage Pumping System (ISPS) – TSS-002

The above standard drawings can be found on the ***Drawings and Diagrams*** web page of the Hunter Water website. All sewerage pumping systems discharging to Hunter Water's sewerage system are required to have Hunter Water's approval prior to the commencement of works. Hunter Water requires designs of all sewerage pumping systems to be submitted for review and approval (minimum Hydraulic Assessment – Technical Review).

The applicant/property owner must satisfy the requirements nominated in the review approval correspondence and any other requirements that Hunter Water convey in writing. Hunter Water in managing the sewerage system has strict requirements regarding system type, pumping pressure and pumping flow rate. Sewerage pumping systems that have been installed incorrectly or without the specific approval of Hunter Water shall be replaced/reconfigured to satisfy Hunter Water's requirements at the property owner's expense.

Hunter Water specifies the responsibilities regarding sewerage pumping system installation and maintenance in Hunter Water Regulation 2015, Hunter Water Customer Contract and Hunter Water Service Connection Standards.

Hunter Water supports design practices that do not incorporate internal sewage pumping stations when gravity sewerage options are available.

Note: The sewerage pumping station design parameters shall minimise the septicity level in the sewerage holding well and relevant internal rising main. Septicity levels shall be compliant to Hunter Water's requirements.

The sewerage pumping system shall be installed in accordance with:

- AS/NZS3500.2 Plumbing and Drainage
- Hunter Water Requirements
- Local Council Requirements
- Building Code of Australia (BCA)
- Plumbing Code of Australia (PCA)

Where a private sewerage holding well is to be installed, the owner or owners' agent shall make application with the relevant Local Council to have the sewerage well approved and authorised. This is a requirement from the NSW Health Department.







When a private sewage pump station is installed, the installer shall supply relevant maintenance manuals and specifications of the system to the property owner for future reference to support ongoing operational compliance.

Hunter Water recommends that the owners of a private sewerage pumping system engage an accredited service provider to monitor the ongoing performance and maintenance requirements of such systems.

### 3.4.1. General Design and Inspection Requirements of Sewerage Pumping Station

Hunter Water's design and inspection requirements for a sewerage pumping system include:

- Pump well configured with sloping bases (30° slope) towards pump pit.
- Pump well control panel to incorporate audible and visible high-level alarm.
- Grinder / macerator pump – flow rates and pressure rating.
- Pump run configuration to prevent septicity.
- Rising main location approval from relevant property owner(s) and/or Local Council (if applicable)
- Rising main material
- Rising main depth and appropriate backfill, marker tape and trace wire.
- Ensure rising main connection to Hunter Water's sewerage system is compliant to Hunter Water's requirements.
- Hunter Water requires that only Hunter Water Accredited Designers shall be permitted to design pressure sewer systems for Hunter Water's wastewater networks.

### 3.4.2. Hunter Water Pressure Sewerage Systems (HWPSS)

See standard drawing SCP-311 on the ***Drawings and Diagrams*** web page of the Hunter Water website.

This system incorporates a sewerage holding well and grinder/macerator pump that discharges wastewater at a designated flow rate to Hunter Water's sewer point of connection.

#### Owner's Responsibility

To provide a designated, protected electrical power circuit at a suitable location and ongoing power usage costs, and to maintain a compliant sanitary drainage system.

#### Hunter Water's Responsibility

Own and maintain the sewage well (up to the first incoming pipework joint to the well), pumping unit, pump control panel and pressure main up to and including the boundary kit for residential customers only.

### 3.4.3. Private Sewerage System (PPSS)

See standard drawing TSS-002 on the ***Drawings and Diagrams*** web page of the Hunter Water website.

The Private Pressure Sewerage System (PPSS) incorporates a sewerage holding well and grinder/macerator pump that discharges wastewater at a designated flow rate to Hunter Water's sewer point of connection.

The design parameters of the PPSS system are exactly the same as HWPSS except for ownership and maintenance responsibilities.

Hunter Water only maintains from the test tee in the boundary kit to the sewerage rising main. This may be via a common or individual rising main to a Hunter Water receiving manhole. Benefits include smaller wells and minimal odour complaints.

#### Owner's Responsibility

- Sewerage well, grinder/macerator pump, maintenance, and maintain the internal rising main up to but not including the boundary kit.



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- Providing the maintenance for electrical control panel, electrical power supply and ongoing power usage costs.
- To maintain a compliant sanitary drainage system. The owners engaged licenced plumber/drainers shall:
  - Ensure the selected pump is protected from overheating by thermal overload control
  - Ensure the pressure and flow rate meet Hunter Water's requirements

### Hunter Water Responsibilities

- Hunter Water pressure main, property branch line up to and including the property boundary kit/valve located immediately inside the property boundary.

### **3.4.4. Common Effluent Pump System (CEP)**

See standard drawing TSS-001 on the ***Drawings and Diagrams*** web page of the Hunter Water website.

A Common Effluent Pump System (CEP) incorporates a septic tank and holding well. Solids are retained in the septic tank and Hunter Water receives the pumped effluent wastewater from the holding well.

This system is normally configured with a connection point provided to each property from a common Hunter Water pressure main.

**Note:** New Common Effluent Pump Systems shall NOT be installed in areas outside of Hunter Water designated Common Effluent Rising Main areas.

Hunter Water acknowledges that there are existing CEP systems that discharge individually to Hunter Water's sewerage system via a sewer access chamber. These systems are considered "non-standard". Owner's responsibility and Hunter Water's responsibility for these systems are similar to Individual Sewerage Pumping Systems (ISPS).

### Owner's Responsibility

- Septic tank and holding well, effluent pump, maintenance and internal rising main up to but not including the boundary kit/valve.
- Providing the maintenance for electrical control panel, electrical power supply and ongoing power usage costs. Your engaged licenced plumber/drainers shall:
  - Install a pressure relief bypass valve on the rising main pipeline to help alleviate pump failure if for any reasons your system is unable to discharge effluent.
  - Ensure the selected pump is protected from overheating by thermal overload control.
  - Prior to installation and commissioning of the pressure relief bypass valve determine the operating pressure of the sewer rising main. This determined sewer rising main operating pressure should be utilised when setting the initial relief valve pressure.
  - Ensure pressure and flow rates satisfy Hunter Water's requirements.

### Hunter Water's Responsibility

- Hunter Water pressure main and property branch line up and including the boundary valve kit.

### **3.4.5. Individual Sewerage Pump Systems (ISPS)**

See standard drawing TSS-002 on the ***Drawings and Diagrams*** web page of the Hunter Water website.

These systems are installed when the topography of the customer's land or building design does not allow for a gravity sewer connection. The system comprises of 1 or 2 grinder/macerator pumps and a sewerage holding well that pumps via a private rising main into Hunter Water's gravitational sewer point of connection.

When the sewer point of connection is located inside your property boundary, this connection is a "standard" sewer connection under the Customer Contract.



When the sewer point of connection is located outside the property boundary and a rising main transverses private property or council road/roadside reserve, this connection will be considered “non-standard”. For Non-standard Sewer Services the property owner is required to sign a contract agreement acknowledging and accepting the terms and conditions under which the sewer connection is permitted.

The property owner is responsible for the operation of their individual sewage pumping system to ensure that the wastewater discharge to Hunter Water’s sewage system is compliant with Hunter Water’s discharge quality levels (odour, septicity and corrosion levels).

Should the sewage pumping system discharge contravene Hunter Water’s discharge quality levels, the property owner shall repair/rectify/reconfigure the system so that it complies.

Where a private sewage holding well is to be installed, the owner or owner’s agent shall make application with the relevant Local Council to have the sewerage well approved and authorised. This is a requirement from the NSW Health Department and under the Local Government Act.

#### Owner’s Responsibilities

- Approval from Local Council.
- Hydraulic Assessment Application to be submitted to Hunter Water.
- Enter into a Non-Standard Sewer Agreement with Hunter Water.
- Sewerage wells, grinder pumps, maintenance and internal rising main up to but not including the receiving connection point.
- Providing the maintenance for electrical control panel, electrical power supply and ongoing power usage costs.

#### Hunter Water’s Responsibilities

- The sewerage main and the deemed services connection point.
- Hunter Water shall provide requirements for the approved and compatible pump types and specific flow rate discharges into Hunter Water’s infrastructure. Hunter Water will specify septicity levels and other specific requirements on application.
- Hunter Water is required to carry out a site inspection to verify the pumps are as specified and the system complies with Hunter Water’s requirements.

### 3.5. Boundary Kits

Pressure sewerage systems traditionally did not have a requirement to install boundary kits (diagnosis points). However, as of 1 July 2012 it became mandatory to install a boundary kit, due to continued maintenance requirements for systems by Hunter Water and the owner’s service provider. The boundary kit must be located inside the property boundary at approximately 1m from the designated boundary line.

Should a fault occur, access and maintenance to the boundary kit is required by Hunter Water’s maintenance personnel and your licenced plumber in order to diagnose if the problem is an internal fault or a Hunter Water sewerage system fault.

#### 3.5.1. Components of a Boundary Kit

See standard drawing SCP-310 on the **Drawings and Diagrams** web page of the Hunter Water website.

All components, fittings and valves shall be a minimum of 40mm and of a material approved by Hunter Water. This includes:

- Downstream isolating valve.
- Union (downstream) for removal/replacement of components.
- A plugged test tee (vertical) and capped test valve.
- An approved non-return valve.



- Upstream isolating valve.
- Union (upstream) for removal/replacement of components.
- An approved pit and riser to allow access and maintenance to the components.

For **Privately-owned Pressure Sewerage System (PPSS)**, the boundary kit shall be installed by Hunter Water at the time of the pressure mains construction. Hunter Water will maintain up to the property side isolating valve of the boundary kit (for residential customer only). The owner is responsible for preventing damage to the boundary kit and associated pipework (e.g. by preventing vehicular access).

### 3.6. Septicity and Flushing Responsibility

Private sewerage pump systems often contribute to odour complaints from adjoining customers or from customer where the non-standard sewage system connects into Hunter Water's sewerage system.

The property owner is responsible for the satisfactory operation of the private sewerage pumping system. The private sewerage pumping system shall comply with the requirements of Local Government.

Legislation requires that an owner of a property shall not create unreasonable emission of odours from any land parcel. The emission shall not interfere with health, welfare, convenience or comfort of any person.

If Hunter Water determines an excessive odour is being emitted from an individual property, a rectification notice will be issued.

Rectification works may include but not be limited to:

- Adjust the pump activation mechanism to minimise retention time and to ensure that no contents are stored for more than a four-hour period.
- Benching the base of the wet well to reduce retention capacity and sludge build-up.
- Inclusion of time clocks and/or electronic level probe to activate the sewerage pumping system to specific times per day.
- Inclusion of "hours run meter(s)" to monitor pump operation.
- Install an appropriate flushing system.

### 3.7. Retention of Existing Works

Systems not currently connected to Hunter Water sewer main, may be connected only if the work consists of approved materials and permission is gained from Hunter Water. The licensee shall obtain Hunter Water requirements before connecting any pre-existing system to a Hunter Water sewer main. Hunter Water shall require a test to be carried out to verify soundness of the installation. Inspection of existing work shall be conducted by Building Commission NSW. instances, for example major Trade Waste customers, Hunter Water may require a sewage flow meter to be installed to accurately measure the volume of sewage discharge that enters Hunter Water's infrastructure.



## 4. Sewerage Flow Meters

### 4.1. General

In some instances, for example major Trade Waste customers, Hunter Water may require a sewage flow meter to be installed to accurately measure the volume of sewage discharge that enters Hunter Water's infrastructure.

The sewerage flow meter shall be of a type stipulated in a "Letter of Requirements" from Hunter Water and will be procured, installed and maintained by the customer. Contact the Plumbing and Trade Waste team [plumbing@hunterwater.com.au](mailto:plumbing@hunterwater.com.au) for further information.

### 4.2. Gravitational Sewerage System Flow Meters

Gravitational sewerage system flow meters shall be installed at either the point of connection to Hunter Water's sewerage infrastructure or as otherwise directed by Hunter Water.

The property owner is responsible for providing a "fit for purpose" access chamber and a permanent 240 Volt power source to service the sewer meter. The provision of the sewer access chamber and power supply shall be installed to the designed requirements as stipulated by Hunter Water.

### 4.3. Pressure Sewerage System Flow Meters

The pressure sewerage flow meter shall be installed above ground unless otherwise approved by Hunter Water. The flow meter shall be installed within the property boundaries and as close as practicable to Hunter Water's Sewerage connection point unless otherwise directed by Hunter Water.

The meters digital display and control panel – including any power/data requirements – shall be installed adjacent to the properties water meter/s or as otherwise directed by Hunter Water.

The property owner is responsible for providing "fit for purpose" access chamber (if a flow meter is to be installed below ground) and a permanent 240 Volt power source to service the sewage meter. The provision of access chamber and power supply shall be installed to the design requirements as stipulated by Hunter Water.

Flow meters installed above ground shall be protected from mechanical damage and vandalism; the owner is responsible to provide protective barriers to the requirements of Hunter Water.

**Note:** Sewage flow meters have an electrical control panel. The panel shall be located in a position as directed by Hunter Water.

### 4.4. Signage Requirements

Hunter Water's Signage on the sewage flow meter arrangements is required at the following locations:

1. Sewage flow meter location – markers to identify inlet/outlet
2. Sewage flow meter display location
3. Source of sewage discharge via the flow meter

Provide a block plan, A3 minimum size fixed adjacent the meter display. The plan shall be water and fade resistant and show structures that drain to and are discharged from the sewage well.

### 4.5. Access and Maintenance Requirements

The property owner shall provide unlimited access for Hunter Water to routinely read the flow meter for billing purposes. The sewage flow meter owner is responsible for ongoing meter maintenance and meter calibration. Access and maintenance requirements are referenced in the Hunter Water Act and the Customer Contract.

If a flow meter becomes un-operational, Hunter Water may average the wastewater discharge from previous metering data (as detailed in the Customer Contract 2022-27) to determine a sewer charge.



## 4.6. Accuracy and integrity of Flow Meter

Flow meters shall be of a type approved and certified “fit for purpose” by Hunter Water prior to installation. The flow meter shall be tested and certified by an accredited technician after installation and prior to discharging to Hunter Water’s wastewater system. Certification of sewage flow meter shall be submitted to Hunter Water on commissioning and annually thereafter.

The sewage flow meters shall comply with the requirements of the Australian Measurement Act (water meters) for operation and accuracy.

## 5. Making A Sewer Connection

Hunter Water’s ownership and maintenance responsibility is restricted to the sewer main and the joint immediately attached to Hunter Water asset (sewer point of connection). All upstream pipework and fittings above the point of connection are the responsibility of the property owner.

Hunter Water is not liable and accepts no responsibility or gives any guarantee or assurance for the currency, accuracy or comprehensibility of any information, plans or diagrams provided for sewer connection.

See standard drawing TSS-003 on the **Drawings and Diagrams** web page of the Hunter Water website.

Proposed developments that have basements or “cut and fill” type construction included in the scope of works shall seek verification and approval from Hunter Water prior to commencement of any works.

### 5.1. Location of Point of Sewer Connection

#### Gravity Sewerage Systems

The property service connection is the recorded inlet point to the Hunter Water sewer main, owned by Hunter Water, that services the property. Where the sewer main is located within the property to be connected, this is usually the junction arm on the sewer main. Where the sewer main is NOT located within the property to be connected, this is usually the end of the branch line (sideline).

#### Sewerage Pumping Systems

The property service connection is the boundary kit/valve.

#### Vacuum Sewer Systems

The property service connection is the inlet point to the main that feeds into the vacuum pot (similar to the gravity sewerage system).

### 5.2. Gravity Sewer

The property owner’s engaged licensed plumber/drainier is responsible for locating the point of connection to the sewer. This involves:

- Obtaining a plan from Hunter Water showing the approximate depth and location of the sewer point of connection.
- Excavating to the nominated location of the sewer point of connection – “staged” hand excavation and “probing” is required to prevent damage to sewer point of connection.
- Where the sewer point of connection is unable to be located, the Licensee shall excavate at least one metre on either side and/or one metre below the indicated position. the location of the sewer point of connection in most circumstances is provided at the lowest point of the land parcel to adequately drain the proposed development/construction.

**If the point of connection cannot be located, the Licensee must contact Hunter Water immediately for further details.**

Historically the location of the sewer point of connection in most circumstances is provided at the lowest point of the land parcel to adequately drain the proposed development/construction.



Hunter Water continues to follow sewer design guidelines where the sewer point of connection location is at a maximum depth of 1.8 metres. However, in some land parcels, the typography of the property requires the sewer point of connection to be at a greater depth.

In cases, where the depth of the sewer point of connection for new works is determined to be deeper than 1.8 metres, Hunter Water should be contacted for further directions.

### 5.3. Pumped Sewerage System

#### 5.3.1. Private Pressure System (PPSS) and Common Effluent Pumping System (CEP)

Hunter Water shall be contacted to confirm the properties sewer connection point and type of pump system. The property owners are to engage a licenced plumber/drainer who is responsible for locating the point of connection to sewer. The customer's connection point is typically just inside the property boundary and, depending on the system design, will generally consist of a small box housing the control valve(s).

When the connection point is outside the property boundary, an application to Hunter Water requesting approval for connection is required prior to the commencement of any works. If successful, Hunter Water's approval will nominate the approved connection point location and specific requirements. A Hydraulic Technical Assessment is required to be submitted to Hunter Water to determine specific requirements for the installation.

A connection outside the property boundary is considered Non-Standard, and as such shall require a formal agreement as described in Section 3 of this Standard.

### 5.4. Sewer Inspection Shafts at the Point of Connection

Hunter Water requires that sewer inspection shafts/boundary traps be installed and located to the following requirements:

- The Building Code of Australia
- The Plumbing Code of Australia inclusive with NSW Amendments
- Australian Standard AS/NZS3500.2 Plumbing and Drainage

See the following standard drawings for further details:

- TSS-005 Typical Non-Boundary Trap (Deep Connection) Inspection Shaft Connection for Single Residential Dwelling.
- TSS-005 Typical Non-Boundary Trap (Shallow Connection) Inspection Shaft Connection for Single Residential Dwelling.
- SCP-317 Inspection Shaft Connection to Vacuum System.
- TSS-006 Typical Boundary Trap Connections for Single Residential Dwelling.

**Note:** The Licensee shall check the 'soffit' measurement in respect to the requirement to install a reflux valve (see Section 5.6).

### 5.5. Boundary Trap Connections

Hunter Water has specific requirements for connection to sewer which may require the installation of a boundary trap connection.

Hunter Water shall be consulted for all of the following scenarios:

- Connections to sewerage mains that are greater than or equal to 300mm.
- Properties connected to a sewer main directly affected by a pumping or rising main, shall incorporate a boundary trap and a minimum of 100mm in-duct vent.
- Historical boundary trap areas.
- Where it is a Trade Waste requirement to discharge to sewer via a boundary trap.

- Where a Hydraulic Assessment review has directed the installation of a boundary trap.

**Note:** When replacing a shaft in a boundary trap area the sewer shaft must consist of an approved boundary trap and induct vent. The inspection opening immediately downstream of the boundary trap is recommended to be extended to finished surface level and terminated with an air-tight removable lid for maintenance purposes.

## 5.6. Sanitary Drainage System Overflow Relief Gully

In accordance with the requirements of the Building Code of Australia, Plumbing Code of Australia and AS/NZS3500.2 Plumbing and Drainage, Hunter Water require that one specified sewer Overflow Relief Gully (ORG) is installed on each individual designated lot and deposited plan land parcel.

The overflow relief gully shall:

- Be strategically placed to provide a minimum of 150mm difference in height between all internal fixtures (floor wastes), and the spill level of the overflow relief gully.
- Incorporate an unobstructed loose grating which allows free relief.
- NOT allow the ingress of surface/stormwater. Sewage overflow gullies installed on new development shall be specifically designed so as to prevent surface/stormwater ingress.

## 5.7. Soffit Requirements

The 'soffit' is the highest point of the internal surface of a pipe. See Figure 2 below. There must be a minimum height of 1200mm between the soffit of the sewer main and the spill level of the ORG.

The height of 1200mm may be reduced to 900mm where the number of properties connected upstream of the subject property does not exceed, or has the potential to exceed 10, or equivalent fixture unit loading, e.g. 30 fixture units per property. The number of upstream properties can be obtained by contacting Hunter Water on 1300 657 657.

Where minimum soffit requirements cannot be achieved, fixtures shall be connected to sewer by means of a reflux valve installed in accordance with The Plumbing Code of Australia and AS/NZS3500.2.

Prior to the installation of the reflux valve, Hunter Water must be notified of the installation and property details by contacting Hunter Water on 1300 657 657.

Only fixtures or whole properties that cannot drain by means of gravity sanitary drainage shall be pumped via a private well and grinder pump system. A Hydraulic Technical Assessment shall be submitted to Hunter Water for review in these cases. The installation shall be installed to AS/NZS3500.2 in conjunction with Hunter Water's hydraulic review letter and technical specifications.





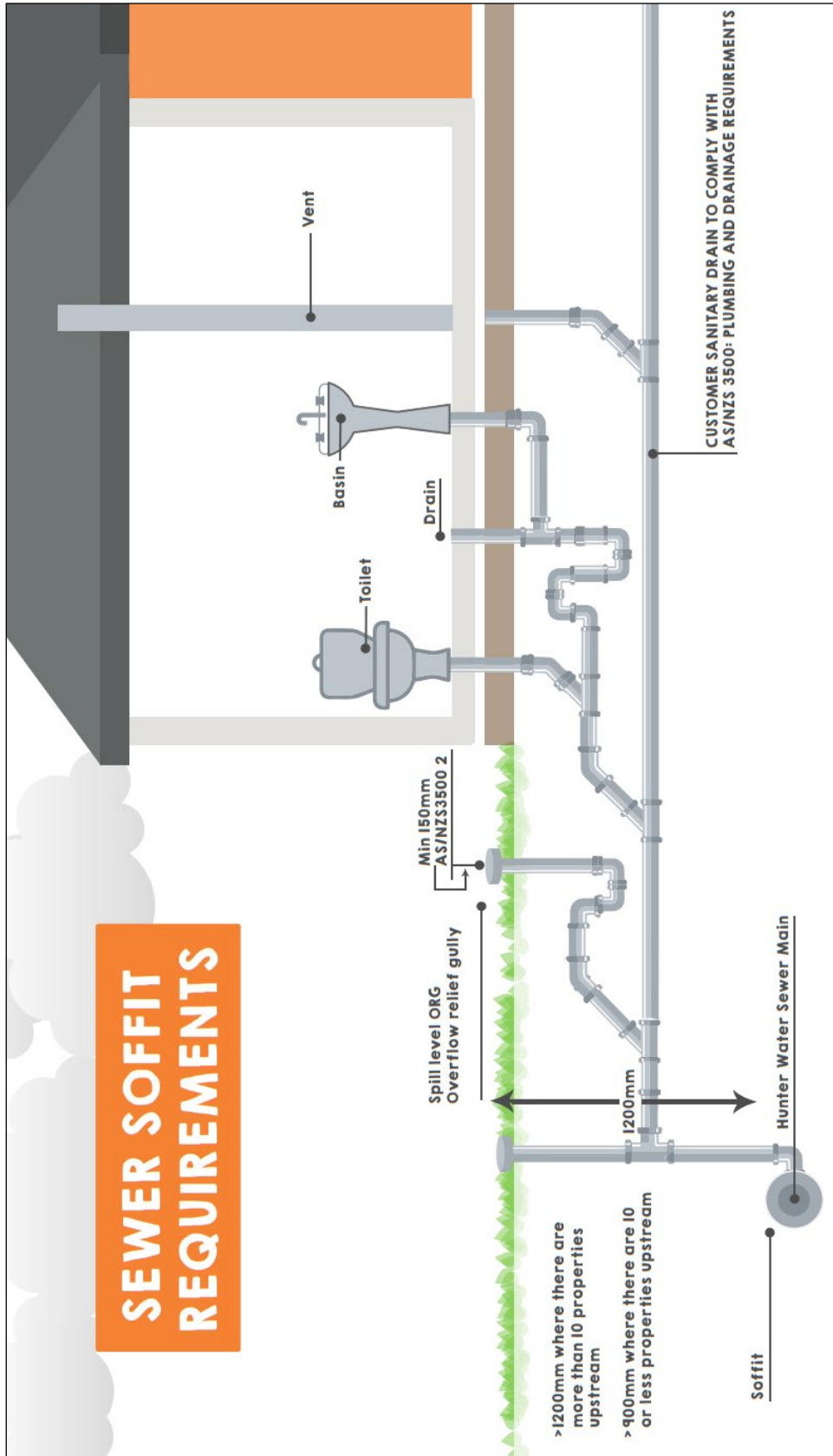


Figure 2: Hunter Water Sewer Soffit Requirements



## 5.8. Sanitary Drainage Reflux Valves

Sewer reflux valves are installed to prevent potential internal sewage overflow to properties that have plumbing fixtures installed that may be influenced by sewerage overflow – through sanitary drainage design or the topography on the lot. It is the property owner's responsibility to engage a licenced plumber to install and maintain a sewer reflux valve as per manufacturer's specification.

In Hunter Water's area of operations the connection to gravity mains 300mm and greater is prohibited unless a reflux valve is installed directly at the point of connection.

The reflux valve shall be configured to prevent "floating" of the "flap valve assembly" in surcharge conditions (reflux valve extension handle shall be terminated 2-3mm under the access lid or as per manufacturer's specifications).

The installation of a reflux valve is generically due to the drainage requirements as detailed in AS/NZS3500.2 Plumbing and Drainage (overflow relief gully compliance) not being met.

Hunter Water shall not be responsible for sewage overflow in properties as a result of failure of the reflux valve (i.e. failure to operate).

Sanitary drainage reflux valves shall be approved and installed to the requirements of the Plumbing Code of Australia with NSW Amendments and AS/NZS3500.2 Plumbing and Drainage.

Hunter Water requires all new underground trade waste pre-treatment facilities that discharge wastewater to Hunter Water sewerage system, to install a sanitary drainage reflux valve to the outlet of the pre-treatment facility. This is to prevent sewage overflow entering the facility.

Hunter Water recommends reflux valves have signage clearly identifying the valve and advising of maintenance required.

## 5.9. Swimming Pool Backwash Discharge

In Hunter Water's area of operation residential swimming pool backwash waste shall only be connected to Hunter Water's sewerage infrastructure by a designated sanitary drainage fixture trap and air gap method of connection. The discharge pipe (sized – maximum 50mm) shall not discharge at a flow rate greater than one litre per second. The discharge of swimming pool backwash water shall not be carried out during rain periods.

A licenced person shall carry out all work in relation to a residential swimming pool backwash wastewater connection to the sanitary drainage system. The standard connection practice is by means of extending the backwash delivery pipe to an existing overflow gully or to a specifically installed new overflow gully. See Standard Drawing TSS-007 on the **Drawings and Diagrams** web page of the Hunter Water website. The overflow relief gully grating must not be obstructed from allowing free overflow by the positioning of the swimming pool backwash discharge pipe.

Direct connection to the sewerage system or the sanitary drainage system of the property is prohibited. Residential swimming pool backwash discharge to sewer is prohibited in "vacuum sewer system areas" & all "pressure sewer system areas".

Commercial, industrial and recreational properties must apply individually for swimming pool backwash connections to Hunter Water's sewerage system. Contact the Plumbing and Trade Waste team [plumbing@hunterwater.com.au](mailto:plumbing@hunterwater.com.au).



## 5.10. Disconnection from Sewer

Where a property's sewer service has become redundant, or is not to be redeveloped and becomes disused, it shall be disconnected as required by Hunter Water at the property owner's expense.

Disused sewer services are to be sealed off at the point of connection using approved materials in the accordance with AS/NZS3500.2 Plumbing and Drainage and Hunter Water requirements below.

Criteria for the sewer point of connection have changed over time. Existing points of connection may be at depths greater than current accepted depths. Under these circumstances it remains the property owner's responsibility to seal off the disused sewer service at the point of connection irrespective of the depth.

Sealing a sewer service at the inspection shaft is not allowed.

Hunter Water requires a mandatory disconnection inspection with appropriate fees paid.

### 5.10.1. Sewer Point of Connection / Disconnection Requirements

See TSS-004 on the *Drawings and Diagrams* web page of the Hunter Water website.

Provide a 150mm PVC adapter and approved sealed screwed PVC cap on the private sanitary drainage line, upstream of Hunter Water's point of connection. This configuration allows potential future sewer connection possible with minimal impact to Hunter Water's sewer infrastructure.

The priority in this process is to maintain the integrity of Hunter Water's sewer point of connection and sewer main infrastructure.

Damage to Hunter Water's infrastructure shall be reported to Hunter Water as soon as possible and repairs will be at the responsible persons (licenced plumber/drainer) expense.

## 5.11. Internal Disused Sanitary Drainage

Internal disused sanitary drainage is to be disconnected to the requirements of AS/NZS3500.2 Plumbing and Drainage. Contact Building Commission NSW for inspection requirements.

## 5.12. Retention of Existing Work

You must NOT discharge stormwater or groundwater to Hunter Water's sewerage system, or connect pipes carrying stormwater or groundwater to Hunter Water's sewerage system.

## 6. Trade Waste

It is an offence under Section 31 of the Hunter Water Act 1991 to discharge any substance into a sewer or other works owned by Hunter Water without its prior written agreement.

All Non-residential customers with a connection to sewer are bound by the terms and conditions of Hunter Water's **Trade Waste and Tankering Standard** and any additional requirements stipulated in a Trade Wastewater Deed issued under the Hunter Water Act (1991) or/and as nominated in the Hydraulic Services Connection Requirements. The Standard is available on the Hunter Water website.

## 7. Administrative Processes

### 7.1. Identify Services Available to Your Property

If you are moving into an existing dwelling, your wastewater services will generally be connected and ready to use and you should not be required to complete the connection /disconnection process. If you are developing a new residence or business (including a granny flat or dual occupancy), you will need to apply connect to Hunter Water's services. Before you proceed with your development or apply to connect to Hunter Water's services you should enquire about what services are available to your property. Wastewater



services are not available to all properties; and properties may be connected by different types of wastewater services (gravity, vacuum or pressure sewer).

### **Sewer Location Diagram**

This diagram shows the connection point of the wastewater pipes to your property and is 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**

Dial Before You Dig will provide a plan of Hunter Water's services that are on or near your property for no fee by completing the enquiry on their website or by calling 1100. 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.

### **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.

## **7.2. Connecting to and Disconnecting from Hunter Water's Services**

Hunter Water requires an application to be submitted and relevant fees paid before you connect or disconnect from any of 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 or Hydraulics Assessment. Refer to the Land Development Manual on the Hunter Water website for further information.

Applications are submitted online via the Hunter Water website. Please refer to the **Connecting and Disconnecting** web page on the Hunter Water website for detailed information of the application process. The following details will be required on the application for connection:

- 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 completed).








After an application has been assessed and accepted by Hunter Water, the connection to services will be deemed authorised. The authorisation is subject to the conditions of this Standard, the Customer Contract and the Hunter Water Regulation 2015.

The following details will be required on the application for disconnection:

- 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 application and the property owner.
- The plumbers name, phone number and License details.
- The date of the sewer disconnection inspection (this indicates completion of the work).



The information below outlines Hunter Water's basic steps to connect or disconnect.

	Have Hunter Water check your building plans to make sure they don't impact Hunter Water's assets.	
	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.	
	Apply to the relevant consent authority for development approval if needed i.e. Council, Mine Subsidence, etc.	
	Pay your connection Fees and Water and Wastewater	→ For anything more than a stand-alone house you may be required to engage a hydraulic consultant and submit a hydraulic assessment.
	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).	
	A licensed plumber makes the connections.	
	Have your plumbing inspected:  Contact NSW Fair Trading for wastewater connections. Contact Hunter Water on 1300 675 000 for water connections.	



## 8. Definitions, Acronyms and Abbreviations

Term	Definition
<b>Accredited person/tester</b>	A licensed plumber who holds accreditation from a Registered Training Organisation (RTO) for backflow prevention device commissioning and certification.
<b>AS/NZS 3500:1</b>	Australian / New Zealand Standard 3500 for Plumbing and Drainage Part 1 – Water Supply.
<b>Corrosion</b>	Chemical damage to sewer network infrastructure due to excess hydrogen sulphide (H <sub>2</sub> S) and sulphuric acid (H <sub>2</sub> SO <sub>4</sub> ), typically due to insufficient flushing.
<b>Cross Connection</b>	Any connection or arrangements between the systems, connection to the water main or any fixture that may enable non-drinking water or other contamination to enter the system.
<b>Customer</b>	The property owner with Hunter Water Corporation area of operation that is connected to a water infrastructure.
<b>Defective Work</b>	Any sewer 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.
<b>Drinking Water supply</b>	The supply system into which Hunter Water Corporation delivers drinking water.
<b>Maintenance</b>	Includes repairs and replacement, and where relevant testing and inspections.
<b>Operating Licence</b>	Licence granted to Hunter Water under Section 12 of the Hunter Water Act 1991.
<b>Owner</b>	A person who holds ownership title of the property, as defined by the Hunter Water Act 1991.
<b>Property</b>	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 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.
<b>Recycled Water</b>	Highly treated wastewater that can be used in industrial processes, to irrigate agriculture, urban parks and landscapes, and in the home for flushing toilets, car washing and watering gardens. It is not used for drinking or personal use.
<b>Residential</b>	For the purposes of this Standard, residential is defined as suburban style lots sized <1500 square meters (excludes rural, commercial, industrial or mixed-use lots).
<b>Septicity</b>	Highly odorous and stagnant state of wastewater once bacteria have used up all free oxygen in the pipe network, typically due to insufficient flushing.

## 9. Associated Regulations and Standards

Document ID	Document Title
<b>Standard</b>	Water Services (Hunter Water)
<b>Standard</b>	Wastewater Services (Hunter Water)
<b>Standard</b>	Trade Wastewater and Tankering (Hunter Water)