

## Policy 11: Land Development Guidelines

### Section 7

#### 7.0 Development Works Within Private Property

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## 7.1 Introduction

This section provides 'deemed to comply' criteria and Council's minimum standards for all development works associated with carrying out of Building, Plumbing and Drainage works within private property.

Other than for Plumbing and Drainage works, all works submitted for approval must be certified by an appropriate person (ie. Consulting Engineer, Building Hydraulic Consultant) that all reasonable skill, care and diligence have been exercised in the design of the works in accordance with:

- relevant Development Approvals;
- Land Development Guidelines, Standard Drawings and Specifications;
- relevant Australian Standards, Code of Practice;
- **Queensland Development Code;**
- **Water Act 2000;**
- **Water Regulation 2002;**
- **Building Code of Australia.**

## 7.2 Stormwater Drainage

### 7.2.1 Works Pursuant to Australian/ New Zealand Standard 3500

All design shall be in accordance with the **Building Code of Australia**, unless otherwise approved by Council. This standard specifies acceptable solutions for materials and products, design and installation of roof drainage systems, surface drainage systems and subsoil drainage systems to the point(s) of connection to the external stormwater drainage network (Council approved disposal system).

In accordance with **Section 1.8** of **AS/NZS3500**, Council nominates for residential stormwater drainage systems that:

- all stormwater flows shall be directed towards or connected to the Council nominated Legal point of discharge (refer **Section 3.5.5 – Downstream Drainage Requirements**); and
- stormwater flows shall not be directed to or connected to the Sanitary drainage system; and
- swimming pool filter and spa filter backwash waste discharges shall be directed to or connected to the Sanitary drainage system; and
- retaining walls drainage/ seepage systems shall connect to an approved disposal point that shall be either the Legal point of discharge or an on-site dispersion/ absorption trench.

### 7.2.2 Works Not Pursuant to Australian/ New Zealand Standard 3500

All works including, but not limited to:

- Council maintained services; and/or
- External catchments feeding to the proposed site; and/or
- Legal point of discharge (refer **Section 7.2.3**).

Shall be designed, constructed and certified by a Consulting Engineer pursuant to these Guidelines (refer to **Section 3, Engineering Infrastructure – Design Requirements**) and in accordance with Council approvals.

**Note:** **Council requires an application for carrying out operational works.**

Easements are required over all Council maintained services within Private property (as per Council's standard registered document for stormwater drainage). At the time of completion for the works being formerly approved by Council, these works are required to have a maintenance period in accordance with the procedures described in **Sections 9** and **10** of these Guidelines.

**Note:** **The Regulatory Body must receive a submission (prior to issuing a decision notice) indicating that works will be carried out under AS/NZS3500 or BCA by a Consulting Engineer. The Regulatory Body must notify Council of the decision notice within five (5) working days. Council will carry out an audit role.**

## 7.2.3 Legal Point of Discharge

At the time of the development approval Council will determine the downstream drainage requirement for drainage works not pursuant to **AS/NZS3500**. Refer to **Section 3.5.5 – Downstream Drainage Requirements** of these Guidelines and to **QUDM Section 3.02 – Legal Point of Discharge**.

**Note:** *Council requires written approval to be obtained for any connection to Council infrastructure and also written approval be obtained from downstream property owners only if adversely impacted authorising any engineering works on their property.*

## 7.3 Water Services and Sanitary Drainage

An application shall be made to Council for all Plumbing and Drainage works.

For water supply plumbing works, an application shall be made to Council (Plumbing and Drainage Services) for a compliance permit for any regulated water supply plumbing work within the property. Without limiting the requirements of the **Plumbing and Drainage Act 2002** with which the works must comply, the application shall:

- Be accompanied by a hydraulic design for all water services within the property; and
- Comply with **Section 7.3.2** herein.

**Note:** *Water supply plumbing works shall not be carried out until a compliance permit under the Plumbing and Drainage Act 2002 has been issued by Council for the works.*

For sewerage works, an application shall be made to Council (Plumbing and Drainage Services) for a compliance permit for any regulated sewerage works within the property. Without limiting the requirements of the **Plumbing and Drainage Act 2002** with which the works must comply, the application shall:

- be accompanied by a hydraulic design for all sewerage works within the property; and
- comply with Council's;
  - i) Trade Waste Policy; and
  - ii) Trade Waste Pre-treatment Policy and Guidelines; and
- comply with Council's **Waste Management Policy Relating to Refuse Requirements for Proposed and Existing Building Developments Within the City of Gold Coast**.

**Note:** *Sewerage works shall not be carried out until a compliance permit under the Plumbing and Drainage Act 2002 has been issued by Council for the works and that any Plumbing and Drainage approval is not an approval to discharge trade waste to Council's wastewater system. The generator of trade wastes shall complete an Application for Approval to Discharge Trade Waste to Council's Wastewater System prior to discharging any trade waste.*

### 7.3.1 Registered Service Provider Connections

#### 7.3.1.1 General

Water supply and sewage services for both residents and visitors of the City are basic health and safety facilities that permit the occupancy and use of dwellings, premises and premises groups in an ongoing and continuously available format.

Water and sewerage services are not provided by the reticulation network to all areas of the City of Gold Coast. The **Our Living City – Gold Coast Planning Scheme** limits the provision of services, by the reticulation networks, to only some of the Domains and some of the Precincts in Local Area Plans and Structure Plans within the Planning Scheme.

The estimated timing of servicing of various parts of the City has been scheduled recognising the planned growth of the City.

With the introduction of alternative water and sewage technologies and Government strategies identifying these alternative options, there is growing pressures on Council to allow outcomes where some or all of these services are sourced and managed totally within the property reducing or negating any connection to Council's reticulation network.

Council's requirements for carrying out of Building, Plumbing and Drainage works within private property regarding water services, fire services and sanitary drainage services for dwellings, premises and premises groups are detailed within this section.

## 7.3.1.2 Water Supply

All allotments, dwellings, premises and premises groups with available Traditional Potable water reticulation at the time of building provision shall be connected to this water reticulation system.

All allotments, dwellings, premises and premises groups with available Dual Reticulation systems, at the time of building provision, shall connect to both the Potable and Class A+ recycled water reticulation systems.

Dual Reticulation areas are defined on **Overlay Map OM25 – Future Water Innovations** of the Planning Scheme with a detailed and current **Overlay Map OM25** provided at **Section 4.2.1** of the 2008 Land Development Guidelines.

Appropriate Potable water and Class A+ recycled water flows, as defined within **AS/NZS3500**, shall be supplied from the reticulation connection to the end use fixtures nominated within **Section 7.3.2** except for those fixtures identified for connection to Rainwater Tanks within **Section 7.3.2.4** or those fixtures identified in specific water supply or access conditions that have been set in the Development Permit or Infrastructure Agreement for the development.

The Department of Local Governments **Queensland Development Code Part MP4.1 – Sustainable Buildings** defines the installation and use of certain water saving fixtures for buildings.

## 7.3.1.3 Sewage Services

All allotments, dwellings, premises and premises groups shall be connected to Council's sewerage system so as to carry away all appropriate flows from fixtures and end use points as detailed within **Section 7.3**.

Council may permit the installation and use of some alternative systems.

Trade waste conditions may be imposed as a part of the approval of the alternative system.

Prohibited substances from the property, as defined within the **Water Act**, shall not be allowed to enter the sewer.

## 7.3.2 Works Pursuant to the Plumbing and Drainage Act 2002

### 7.3.2.1 General

Designs and installations shall be in accordance with the **Plumbing and Drainage Act**, the **Standard Plumbing and Drainage Regulations** and the **AS/NZS3500** and in accordance with the requirements of **Section 7.3**.

Alternative water supply main or sanitary drainage design and installation solutions for Community Title Scheme developments with Class 1 buildings may be conditioned by Council, refer **Section 7.3.3**.

The **AS/NZS3500** (hereafter referred to as the **Standard**) applies to the design, installation methods and material types permitted. These installation requirements shall apply to Licensed plumbing and drainage works for new installations, alterations, additions and or repairs to existing installations within the City.

Together with the **Standard**, these Guidelines set out:

- the requirements for the installation of Domestic and Fire water services from Council's Traditional Potable water main and meter or Dual Reticulation water mains and meters or from a Rainwater tank to the points of discharge; and
- the requirements for the design and installation of sanitary plumbing and sanitary drainage from the fixtures to the point(s) of connection to the external network (Council sewerage reticulation system), common effluent system or on-site disposal system (as appropriate).

The installation of Pressure control as detailed within **Section 3.3** of the **Standard** applies..

Where a pressure control device is to be installed, it shall be in a permanently accessible location as detailed within **Section 5.5** of the **Standard**.

The **Queensland Development Codes** now require the installation of Rainwater Tanks as a means of achieving specific Water Savings targets. Rainwater tank installation requirements are detailed at **Section 7.3.2.4**.

The **Queensland Plumbing and Wastewater Code at Part 4, Performance Criteria P1** requires that meterable premises water meters or Sub-Meters are to be installed to nominated Classes of Buildings. Building Classes are defined within the **Building Code of Australia**.

For those Classes of Building defined by the **Code** and built after January 2008, Sub-Meters will be owned by Council. For installation requirements for Sub-Meters, refer to the Sub-Meter Policy and **Section 7.3.2.5** herein.

Sub-meters installed prior to January 2008 shall remain in their existing format of ownership.

It is an offence to tamper with or interfere with Council's services and infrastructure.

### 7.3.2.2 Traditional Potable Water Service

#### a) Class 1 Buildings

Council's standard water service and meter for Class 1 buildings is a 20mm ID service and meter that can provide a nominal 0.48 L/s which is the defined flow rate for a Single dwelling within the **Standard** at **Section 3.2.3.1** via **Table 3.2**.

Where a standard water service that includes the meter installation has been installed as a part of the land development works, the water service plumbing shall directly connect to the pipe/ fitting on the property side of the meter box.

Where a water service and meter installation has not been installed as a part of the development works (eg. properties developed prior to these guidelines), the property owner shall apply for Council to install the necessary service and water meter for old areas of the city or water meter only for ready tap areas of the city at the cost of the property owner or applicant. The water service plumbing shall directly connect to the pipe/ fitting on the property side of the meter once the meter box and meter are installed.

Property owners may apply for Council to install a larger service and/or meter at the cost of the property owner. Applicants shall be aware that under the current Level 6 Water Restrictions, households will be limited to using less than 140L/ person per day with this restriction possibly becoming permanent and more stringent, please refer to '<http://www.qwc.qld.gov.au/HomePage>' for current status of restrictions.

#### b) Class 2 to 10 Buildings

##### i) General

The property owner shall apply for Council to install the necessary service and/or Master Meter connection at the cost of the property owner.

For services of DN100 and larger, the applicants water service application to Council shall include a completed Operational Works Application for the service pipe that shall include a Plan and Section view of the necessary service with these plans showing all other services and utility conflicts.

The design of domestic and fire services shall include storage tanks when required with these storage tanks to be in accordance with **Sections 454** and **455** of the **Water Act 2000** and to the installation requirements of the **Standard**, as appropriate for either Domestic and/or Fire systems.

Council no longer provides Water Supply Flow and Pressure Tests **directly** from the main for the design of on lot water supplies. For each development, a Council modelling exercise shall be applied for.

The outputs of this modelling exercise will provide determination of the systems capacity to provide within the main at a hydrant the appropriate minimum fire flow Desired Standard of Service (refer **Section 4.2.3** of the Land Development Guidelines) to be used for internal fire system design.

**Note:** *This modelling exercise will also determine the availability or not of network capacity at 10L/ sec at 250kPa and 20L/ sec at 280kPa within the main at a hydrant where these flow rates can be maintained for 95% of the time for a specified period of time.*

Flow and Pressure testing carried out directly from the main for design purposes shall not be carried out by Private parties as these tests will not provide an accurate representation of Council's water supply network over the range of supply statuses.

Domestic and Fire system designs shall be assessed by Council on the minimum Water Supply Parameters referenced in **Section 4.2.3** of the Land Development Guidelines and the 95<sup>th</sup> percentile values where provided.

## ii) Water Supply Parameters for Design Purposes

Water supply for design purposes shall be based on Council's Standards of Service, refer to **Section 4.2.3** of the Land Development Guidelines.

Advice may be requested from Council as to the design flow rate applied and available at different areas of the network.

## iii) Domestic System Design and Installation

The Domestic system shall be designed on the minimum Standard of Service for a Residential Multi-Family 'property type' nominated within **Section 4.2.3** and **Table 4.2 – A** of the Land Development Guidelines.

Domestic service flow rates for other supply Cases and Building Classes shall be based on the Development Approval Conditions with regard to the nominated Water Supply Case Scenarios, please refer to **Section 4.2.3** of the Land Development Guidelines for other Demand Categories and Case Scenarios.

**Developments shall be limited to only take from the Council main a domestic service flow rate supplying a Simultaneous Demand Flow or Duty Flow of 3.5 litres per second per hectare of the lot area** where the population density exceeds 160EP per Hectare of the lot area excluding road and reserve areas unless specific and contrary water supply or access conditions have been set in the Development Permit or Infrastructure Agreement for the development.

Where a development requires greater than the permitted domestic service flow of 3.5 litres per second per hectare of the lot area, then the owner shall in accordance with the **Water Act 2000 at Section 454**, install storage tanks and pumps and limit draw off from Council's infrastructure to 3.5 litres per second per hectare of the lot area.

Storage tank installations shall comply with the requirements of **Section 8** of the **Standard**.

Any water required to be stored for domestic purposes shall be calculated on the basis of 200 litres storage per equivalent population as defined above within this section.

Prior to a final plumbing clearance, storage tanks shall be cleaned and chlorinated and disinfected in accordance with **Appendix H** of the **Standard**.

Pump installations shall comply with the requirements of **Section 11** of the **Standard**.

Pumps shall only be connected directly to the Council water supply where there is more than 220kPa at the property boundary at the duty flow of the pumps subject to the requirements of this **Clause** regarding domestic service flow of 3.5 litres per second per hectare of the lot area being the maximum draw off flow.

Backflow prevention shall be provided to prevent the domestic pumps discharging to the Council main.

## iv) Fire System Design and Installation

Applications which involve fire systems installed within the building or building site shall be accompanied by the following:

- calculations based on Council's modelling data at the nominated flow;
- line calculation from water source to most disadvantaged outlet showing head losses through pipework and fittings;
- losses or gains through elevation;
- calculation showing minimum pressure at Council main plus pump duty (if required) minus losses imposed through the system to achieve the required residual pressure at the most disadvantaged outlet at duty flow.

Council's connection between the water main and the property boundary may combine the fire service(s) and the domestic service in accordance with Council's Water Meter installation standards. Where separate domestic and fire system connections are required the application shall define these within the application, refer **Section 7.3.2.2. b) i)** for OPW design information to be included.

Council's Flow and Pressure Test shall define the systems ability to provide fire fighting water at a minimum residual pressure of 12m during Maximum Hour Maximum Day background demand at a flow rate of 15 Litres per second for Residential lots for a duration of 2 Hours and a flow rate of 30 Litres per second per Development for Industrial and Commercial lots for a duration of 4 Hours. Where provided within the modelling data from Council, the flow and pressure parameters that are available at least 95% of the time may be determined by the designer as being available within the above minimums.

These flow rates and pressures are based on the minimum operating reservoir level and number of fires and land use and population estimates referred to in **Section 4.2.3** of the 2008 Land Development Guidelines.

Where the development requires fire services with a combined flow of greater than 30 litres per second, the owner shall, in accordance with **Section 454** of the **Water Act 2000**, install storage tanks and pumps and limit draw off from Council's infrastructure to either 15 Litres per second for Residential lots or for Industrial and Commercial lots 30 litres per second for the combined fire system demands unless specific and contra-advise regarding water supply or access conditions have been set in the Development Permit or Infrastructure Agreement for the development.

The draw off limit may be carried out through the use of an Orifice Plate or other approved devices that are installed at the connection to the storage tank.

Where fire hose reels, fire hydrants or automatic fire sprinkler systems are required by the **Building Code of Australia**, they shall be installed to comply with **AS2441**, **AS2419.1** and **AS2118**, as appropriate and to the requirements of this section of the Land Development Guidelines.

Fire hose reels shall provide a flow rate no less than that required by **Section 6** of **AS2441**.

Fire hydrants shall provide a flow rate no less than that required by **Section 2.3** of **AS2419.1**.

Fire sprinkler systems shall provide a flow rate no less than that required by **Section 4** of **AS2118.1**.

Storage shall be provided:

- for fire flows greater than those nominated above (15 or 30 L/s subject to property type); or
- where inadequate flow and/or inadequate pressure is available within the water main at the property boundary.

Storage required by this section of the Land Development Guidelines or by the Development's specific design needs shall comply with **AS2419.1** and **AS2441** and **AS2118**, as appropriate.

Separate domestic and separate fire service Pumps shall comply with **Section 11** of the **Standard** and **Section E** of the **Building Code of Australia** and **AS2941**.

A single tank combining domestic and fire system water is not permitted in accordance with the **Standard**.

Any link between two (2) separate fire system tanks shall be designed for the minimum flow rates specified in **AS2419.1**.

Pumps shall comply with **AS2419.1** and **AS2441** and **AS2118**, as appropriate.

Pumps shall only be connected directly to the Council water supply where there is at least 120kPa within the water main at the property boundary at the duty flow of the pumps subject to the other nominated requirements of this clause.

Backflow prevention shall be provided to prevent the pumps discharging to the Council main or to the internal domestic system or where unapproved materials are used.

Electric motors and compression-ignition engines that power pumps shall comply with the requirements of **AS2941**. Council recommends that electric powered pumps be used wherever possible to minimise water losses from system pumps set tests.

Pressure maintenance pumps shall generate the pressure required at a maximum flow rate of 1.0 litre per second.

Fire hydrants and fire hose reels shall be sealed in accordance with the **Water Act 2000**, **Section 432**. The seal may only be broken for fire fighting, fire system testing and fire system maintenance purposes. Penalties exist for inappropriate or illegal use of the fire system.

Dedicated Test points shall discharge into the fire water storage tank or to a separate storage tank that supplies an irrigation system where possible or to the legal point of discharge. Please refer to Council's Plumbing Branch for general irrigation system installation guidance. This storage and irrigation system will be a separate system to that required by the **Queensland Development Code**.

Terminology used within this section has been drawn from the **Building Code of Australia**, **Water Act 2000**, **AS2419.1**, **AS2441** and **AS/NZS3500**.

## 7.3.2.3 Dual Reticulation Water Services

### a) General

#### i) Water Utilisation

The use of Class A+ recycled water in domestic and commercial/industrial situations shall include:

- toilet pans and urinals;
- external residential irrigation activities (grassed, landscaped areas);
- external residential maintenance activities (eg. car/ boat washing, hosing down spills, house cleaning);
- fire fighting systems such as Mains, Hose Reels and Hydrants;
- approved process water uses.

Non-residential uses, such as large area irrigation, horticultural use and process water use, will require an Expression of Interest to be lodged with and approved by Gold Coast Water prior to progressing to the development of an Agreement for Supply of Recycled Water with Gold Coast Water together with the Customer's Recycled Water Management Plan for the proposed uses.

#### **Ablution devices and bidets shall not be connected to the recycled system.**

At least two (2) external recycled water (Class A+) hose taps serviced by the recycled water service shall be connected to the property, with one located at the front of the dwelling and one located at the rear of the dwelling. One of these external hose taps shall be positioned over the Overflow Relief Gully (ORG) if the gully is not charged by a waste fixture.

With the provision of regulatory controls and the agreement of Queensland Fire and Rescue Services, fire flows in Dual Reticulation areas provided from late 2008 shall only be available within the Class A+ system in DN100 and larger mains. Availability of fire flows in Dual Reticulation systems provided before this time shall be determined through discussions with Gold Coast Water officers.

On lot fire systems for properties in Dual Reticulation areas that only have the Fire Flows available within the Class A+ water supply system shall connect the fire system to the Class A+ Recycled water supply.

For Dual Reticulation systems, the use of Potable water in domestic situations shall include:

- cold supply to kitchen and dishwashing;
- cold supply to bath, basin, shower and bidet;
- cold supply to laundry tub;
- cold supply to hot water;
- cold supply to supplement rainwater tank supply to fixtures.

One (1) external hose tap may be provided that is connected directly to the Potable water service. To minimise the number of external taps, this external hose tap, supplied with Potable water, may be deleted where an external tap is installed that is supplied from the rainwater tank.

The **Queensland Development Codes** now require the installation of Rainwater Tanks as a means of achieving specific Water Savings targets. Rainwater tank installation requirements are detailed at **Section 7.3.2.4**.

#### ii) Cross Connection Control

Where a property is served by a recycled water supply, the following conditions shall apply:

- An authorised dual check valve backflow prevention device sized to suit the water services shall be fitted at the meter location on the drinking water supply. Council staff will undertake this as a standard part of meter installations. The plumber is to ensure that there is the two correct meters connected to the property prior to Council inspections;
- There shall be no interconnection of any drinking and recycled water service;
- The Recycled supply shall not be made live at the meter by Council until Inspection 3, refer **Section 7.3.2.3 a) iv)**;
- All external tap outlets shall be fitted with a hose connection vacuum breaker.

### iii) Dual Water Service Installations

Recycled water service pipes installed below ground must be a minimum of 300mm away from any drinking water service pipe.

Recycled water service pipes installed above ground must be a minimum of 100mm away from any drinking service pipe.

All buried pipes must have identification tape attached directly to the recycled water pipe running longitudinally and fastened to the pipe at a maximum of 3 metre intervals.

The coloured identification tape must be at least 75mm wide or 25mm for small diameter pipes and state, '**Recycled or Reclaimed – Water – Do Not Drink**' continually along its length in accordance with **AS/NZS3500.1** at **Section 9**.

Recycled water service hose taps shall be provided with:

- removable tap handle, (anti-vandal proof type);
- hose tap inlet to be a 5/8" standard inlet thread;
- hose taps outlet to be either DN15 or DN20 nominal size;
- a hose connection vacuum breaker;
- hose taps, spindles and handles shall be coloured Purple;
- warning notices, Metallic Safety signs are to be securely fixed above all recycled water outlets, in accordance with **AS1319** and shall state, '**WARNING NOT FOR DRINKING**'.

Drinking water service hose taps are traditional taps and where installed shall be provided with:

- either DN15 or DN20 nominal size;
- a hose tap backflow prevention device.

Recycled water service cistern cocks shall be provided with appropriate marking and colouring that shall consist of either a purple coloured cock or a suitably sized warning notice or a purple tag.

Approved products as certified by **SAA – MP52 1997** shall only be installed. These products shall clearly show standards marking compliance, watermark compliance or type test mark compliance.

All pipes on the recycled water service shall be fully coloured Purple and only authorised Purple coloured pipes and materials that are clearly labelled are to be used in the recycled water service installation. Pipe fittings used on these pipe systems may be other colours.

PE water service pipes used on the Potable system shall be black with blue stripes.

Pipe sizing, flow rates, pipe material and installation formats are to comply with **AS/NZS3500.1.2**.

Construction of supply pipe to the first two (2) fixture (outlets) should be DN nominal size 20mm. DN 15mm branches shall not exceed 3 metres in any length and may supply only one (1) fixture outlet.

Irrigation systems shall comply with **AS/NZS3500 Section 7** with regard to backflow prevention requirements.

Non-residential use installations shall generally comply with the concepts provided above with specific requirements for materials, signage and usage controls to be defined by the **Agreement for Supply of Recycled Water and the Recycled Water Management Plan**.

To ensure the protection of the Potable water supply, all non-residential uses shall be included within the application to Council for a compliance permit under the **Plumbing and Drainage Act 2002**.

## iv) Dual Water Service Commissioning and Tests

The plumbing contractor prior to commissioning should undertake the following Class 1 building testing procedures for the recycled and potable water service systems. There shall be no cross connections between the potable and recycled supplies. To ensure that there are no cross connections, Council's plumbing inspectors shall retest the installations:

1. Turn off the potable water supply to the property at the potable water dual check valve water meter (recycled water meter is coloured purple). The recycled water supply to remain on.
2. Turn on all sink, bidet and shower taps (both hot and cold) one by one. All taps should run dry after a short period of time.
3. After taps have run dry, flush all toilets. The toilets should refill as normal provided they are connected to the recycled water supply.
4. Turn on all outside taps. The external drinking water tap should run dry. Taps that continue to run are connected to the recycled water supply and should be clearly identified via appropriate warning signs.
5. To check appliances within the home such as dishwashers and washing machines turn off the recycled water supply and turn the potable supply back on. Run the recycled water supply dry via the outside taps or by toilet flushing.
6. Turn on internal appliances. If the appliances do not fill, they are connected to the incorrect supply.
7. Turn recycled water supply back on at the lilac coloured meter, Turn on the tap connected to the recycled water supply that is located furthest away from the meter.
8. Turn the tap back on slowly so that all air will be purged from the pipeline while it is being recharged.

Should any part of this test indicate a possible cross connection, the problem shall be identified and repaired by a licensed plumbing contractor before undertaking the above testing process again.

For installations in Community Title Scheme or Commercial or high density Residential developments, the above system test shall be applied to the water supplies from the Council connection point up to the individual unit or premises off takes and repeated separately for each and every individual unit or premises

In addition to the above cross connection test, there shall be a minimum of three (3) water services installation inspections (including the final) carried out by Council inspectors, when both supplies are connected to the property and prior to final approval being issued. The required inspections are listed below.

Hydrostatic testing and commissioning of dual water services shall be conducted in accordance with **AS/NZS3500 1.2 Section 13**.

<p><b>Inspection 1</b></p> <p><b>Dual Water Service: Meter to House Installations</b></p>	<p>Council shall inspect both potable and recycled pipes from the meter to the house (or sub-meter, as appropriate) to ensure the correct pipes have been installed and connected to the correct meters and fixtures. Pipe bedding and trench backfilling shall be carried out in accordance with <b>AS/NZS3500.1.2 – Water Supply Acceptable Solutions</b>. As constructed information is to be completed by the inspector at this stage.</p>
<p><b>Inspection 2</b></p> <p><b>Rough-In Inspection: Household Dual Water Services Installations</b></p>	<p>Council shall inspect both potable and recycled water services (or common supply pipes) both internally to the house and externally within the property. The purpose is to ensure services have been installed in accordance with these Guidelines and in accordance with <b>AS/NZS3500.1.2</b>. This inspection is to be done prior to cladding and/or cover up and/or backfilling of pipe work.</p>
<p><b>Inspection 3</b></p> <p><b>Final Cross Connection Testing Inspection</b></p>	<p>It is at this cross connection test that the recycled supply shall be made live by the Plumbing Inspector removing the recycled water supply water meter ball valve lock. Council shall carry out an inspection at each property to ensure there are no cross connections. Testing shall be carried out in accordance with the procedures set out above in this section.</p>
<p><b>Final Plumbing Approval</b></p>	<p>Council shall not issue a Final Plumbing Certificate until all three (3) inspections listed above have been completed to the satisfaction of the Council inspector, and that all outstanding conditions have been completed.</p>

v) **Dual Water Service Installation Audits Post Construction**

Officers from Council's Plumbing and Drainage Services section or other Authorised Officers will conduct audit inspections of the dual water services and the House Sanitary Drainage connections.

Audit inspections of the recycled water system will be carried out to ensure compliance with Council's regulatory requirements.

b) **Class 1 Buildings**

Council's standard Potable and Recycled water service and meter for Class 1 buildings is a 20mm ID service and meter that can provide a nominal 0.48 L/s which is the defined flow rate for a Single dwelling within the **Standard** at **Section 3.2.3.1** via **Table 3.2**.

Where a standard water service that includes the meter installation has been installed as a part of the land development works, the water service dual reticulation plumbing shall directly connect to the correct pipe/ fittings on the property side of the meter box.

Where a water service and meter installation has not been installed as a part of the development works (eg. properties developed prior to these guidelines) the property owner shall apply for Council to install the necessary service and meter for old areas of the city or water meter only for ready tap areas of the city at the cost of the property owner or applicant. The water service plumbing shall directly connect to the appropriate pipe/ fitting on the property side of the meter box once it is installed.

The Recycled supply at the meter ball valve shall not be made live by Council until Inspection 3, refer **Section 7.3.2.3 a) iv)**.

Property owners may apply for Council to install a larger service and/or meter at the cost of the property owner. Applicants shall be aware that under the current Level 6 Water Restrictions, households will be limited to using less than 140L/ person per day of Potable water with this restriction possibly becoming permanent and more stringent, please refer to '<http://www.qwc.qld.gov.au/HomePage>' for current status of restrictions.

c) **Class 2 to 10 Buildings**

i) **General**

The property owner shall apply for Council to install the necessary Dual reticulation service and/or Master Meter connections at the cost of the property owner.

For services of DN100 and larger, the applicants water service application to Council shall include a completed Operational Works Application for the service pipe that shall include a Plan and Section view of the necessary service with these plans showing all other services and utility conflicts.

The design of domestic and fire services shall include storage tanks when required with these storage tanks to be in accordance with **Sections 454** and **455** of the **Water Act 2000** and to the installation requirements of the **Standard**, as appropriate for either Domestic and/or Fire systems.

Council no longer provides Water Supply Flow and Pressure Tests directly from the main for the design of on lot water supplies. For each development, a Council modelling exercise shall be applied for.

The outputs of this modelling exercise will provide determination of the systems capacity to provide within the main at a hydrant the appropriate minimum fire flow Desired Standard of Service (refer **Section 4.2.3** of the Land Development Guidelines) to be used for internal fire system design.

Please note that this modelling exercise will also determine the availability or not of network capacity at 10L/ sec at 250kPa and 20L/ sec at 280kPa within the main at a hydrant where these flow rates can be maintained for 95 % of the time for a specified period of time.

Flow and Pressure testing carried out directly from the main for design purposes shall not be carried out by Private parties, as these tests will not provide an accurate representation of Council's water supply network over the range of supply statuses.

Domestic and Fire system designs shall be assessed by Council on the minimum Water Supply Parameters referenced in **Section 4.2.3** of the Land Development Guidelines and the 95<sup>th</sup> percentile values where provided.

## ii) Water Supply Parameters for Design Purposes

Water supply for design purposes shall be based on Council's Standards of Service, refer to **Section 4** of the Land Development Guidelines.

Advice may be requested from Council as to the design flow rate applied and available at different areas of the network.

## iii) Domestic System Design and Installation

The Domestic system shall be designed on the minimum Standard of Service for a Residential Multi-Family 'property type' nominated within **Section 4.2.3** and **Table 4.2 – A** and **Table 4.2 – B** of the Land Development Guidelines.

Domestic service flow rates for other supply Cases and Building Classes shall be based on the Development Approval Conditions with regard to the nominated Water Supply Case Scenarios, please refer to **Section 4.2.3** of the Land Development Guidelines for other Demand Categories and Case Scenarios.

**Developments shall be limited to only take from the Council main a domestic service flow rate supplying a Simultaneous Demand Flow or Duty Flow of 3.5 litres per second per hectare of the lot area** where the population density exceeds 160EP per Hectare of the lot area excluding road and reserve areas unless specific and contrary water supply or access conditions have been set in the Development Permit or Infrastructure Agreement for the development.

Where a development requires greater than the permitted domestic service flow of 3.5 litres per second per hectare of the lot area, then the owner shall in accordance with the **Water Act 2000** at **Section 454**, install storage tanks and pumps and limit draw off from Council's infrastructure to 3.5 litres per second per hectare of the lot area.

Storage tank installations shall comply with the requirements of **Section 8** of the **Standard**.

Any water required to be stored for domestic purposes shall be calculated on the basis of 200 litres storage per equivalent population for Potable supplies and 50 litres storage per equivalent population for Recycled water supplies as defined in **Section 7.3.2.3 c) iii)**.

Prior to a final plumbing clearance, storage tanks shall be cleaned and chlorinated and disinfected in accordance with **Appendix H** of the **Standard**.

Pump installations shall comply with the requirements of **Section 11** of the **Standard**.

Pumps shall only be connected directly to the Council water supply where there is more than 220kPa at the property boundary at the duty flow of the pumps subject to the requirements of this **Clause** regarding domestic service flow of 3.5 litres per second per hectare of the lot area being the maximum draw off flow.

Backflow prevention shall be provided to prevent the domestic pumps discharging to the Council main.

## iv) Fire System Design and Installation

Applications which involve fire systems installed within the building or building site, shall be accompanied by the following:

- calculations based on Council's modelling data at the nominated flow;
- line calculation from water source to most disadvantaged outlet showing head losses through pipework and fittings;
- losses or gains through elevation;
- calculation showing minimum pressure at Council main plus pump duty (if required) minus losses imposed through system to achieve required residual pressure at most disadvantaged outlet at duty flow.

Council's connection between the water main and the property boundary may combine the fire service(s) and the domestic service in accordance with Council's Water Meter Installation Standards. Where separate domestic and fire system connections are required the application shall define these within the application, refer **Section 7.3.2.2 b) i)** for OPW design information to be included.

Council Flow and Pressure Tests shall define the systems ability to provide fire fighting water at a minimum residual pressure of 12m during Maximum Hour Maximum Day background demand at a flow rate of 15 Litres per second for Residential lots for a duration of 2 Hours and a flow rate of 30 Litres per Development per second for Industrial and Commercial lots for a duration of 4 Hours. Where provided within the modelling data from Council, the flow and pressure parameters that are available at least 95% of the time may be determined by the designer as being available within the above minimums.

These flow rates and pressures are based on the minimum operating reservoir level and number of fires and land use and population estimates referred to in **Section 4.2.3** of the 2008 Land Development Guidelines.

Where the development requires fire services with a combined flow of greater than 30 litres per second, the owner shall, in accordance with **Section 454** of the **Water Act 2000**, install storage tanks and pumps and limit draw off from Council's infrastructure to either 15 Litres per second for Residential lots or for Industrial and Commercial lots 30 litres per second for the combined fire system demands unless specific and contra-advise regarding water supply or access conditions have been set in the Development Permit or Infrastructure Agreement for the development.

The draw off limit may be carried out through the use of an Orifice Plate or other approved devices that are installed at the connection to the storage tank.

Where fire hose reels, fire hydrants or automatic fire sprinkler systems are required by the **Building Code of Australia**, they shall be installed to comply with **AS2441**, **AS2419.1** and **AS2118**, as appropriate and to the requirements of this section of the Land Development Guidelines. All fire system pipes and all hose reel and hydrant outlet points must be identified as containing and providing recycled water.

Fire hose reels shall provide a flow rate no less than that required by **Section 6** of **AS2441**.

Fire hydrants shall provide a flow rate no less than that required by **Section 2.3** of **AS2419.1**.

Fire sprinkler systems shall provide a flow rate no less than that required by **Section 4** of **AS2118.1**.

Storage shall be provided:

- for fire flows greater than those nominated above (15 or 30 L/s subject to property type); or
- where inadequate flow and/or inadequate pressure is available within the water main at the property boundary.

Storage required by this section of the Land Development Guidelines or by the Developments specific design needs shall comply with **AS2419.1** and **AS2441** and **AS2118**, as appropriate.

Separate domestic and separate fire service Pumps shall comply with **Section 11** of the **Standard** and **Section E** of the **Building Code of Australia** and **AS2941**.

A single tank combining domestic and fire system water is not permitted in accordance with the **Standard**.

Any link between two (2) separate fire system tanks shall be designed for the minimum flow rates specified in **AS2419.1**

Pumps shall comply with **AS2419.1** and **AS2441** and **AS2118**, as appropriate.

Pumps shall only be connected directly to the Council water supply where there is at least 120kPa within the water main at the property boundary at the duty flow of the pumps subject to the other nominated requirements of this clause.

Backflow prevention shall be provided to prevent the pumps discharging to the Council main or to the internal domestic system or where unapproved materials are used.

Electric motors and compression-ignition engines that power pumps shall comply with the requirements of **AS2941**. Council recommends that electric powered pumps be used wherever possible to minimise water losses from system pumps set tests.

Pressure maintenance pumps shall generate the pressure required at a maximum flow rate of 1.0 litre per second.

Fire hydrants and fire hose reels shall be sealed in accordance with the **Water Act 2000**, **Section 432**. The seal may only be broken for fire fighting, fire system testing and fire system maintenance purposes. Penalties exist for inappropriate or illegal use of fire systems.

Dedicated Test points shall discharge into the fire water storage tank or to a separate storage tank that supplies an irrigation system where possible or to the legal point of discharge. Please refer to Council's Plumbing Branch for general irrigation system installation guidance. This storage and irrigation system will be a separate system to that required by the **Queensland Development Code**.

Terminology used within this section has been drawn from the **Building Code of Australia**, **Water Act 2000**, **AS2419.1**, **AS2441** and **AS/NZS3500**.

## 7.3.2.4 Rainwater Tanks

### a) General

The Department of Local Governments **Queensland Development Code Part MP4.2 – Water Saving Targets** and **MP4.3 – Alternative Water Sources – Commercial Buildings** define the installation and water use requirements for Rainwater tanks for applicable building Classes.

Containment protection of the reticulated water supply in accordance with **Section 4** of the **Standard** is provided by the Council's Dual Check water meter.

Any additional Backflow prevention measures shall be in accordance with the **Standard**.

A Potable water backup supply shall be provided for all rainwater tanks. This supply may be either a trickle top-up system or a diversion Valve system.

Where higher levels of contaminants are available to the roof area as discussed by **Performance Criteria P3** of the Development Code, a metal gutter guard system such as blue mountain mesh or equal may be used instead of the screened downpipe rainheads nominated at **Acceptable Solution A3 a)** of the Development Code. Plastic gutter guard systems shall not be used due to their potential short service life and water quality impacts.

To assist builders and designers in maximising the use of the defined roof area while minimising the visual impacts of aerial downpipe connections to the tank, flooded drainage may be installed only where the first flush device is connected to the stormwater system and the first flush device is accessible for cleaning and maintenance via an accessible pit with an access cover or lid.

Concrete base slabs for Slim Line tanks shall be either integral with the house slab or doweled into the dwellings slab.

Guidance on rainwater tank locations and setback can be obtained from your Building Certifier or from the **Queensland Development Code**.

Guidance on the installation format, materials and maintenance of rainwater tanks is available from the Department of Infrastructure and Planning web page at '<http://www.dip.qld.gov.au/guidelines/queensland-development-code.html>'.

In accordance with **Acceptable Solution A1 d)** of the **Queensland Development Code Part MP4.2 – Water Saving Targets**, Class 1 buildings shall comply with the following requirements for Traditional Potable water supply areas and Dual Reticulation water supply areas.

### b) Traditional Potable Water Supply Areas

For Traditional Potable water supply areas of the City, in accordance with **Acceptable Solution A1 d)**, Council defines that a Class 1 building only complies with the nominated water saving targets by:

- the installation of a rainwater tank of 5,000 litres for detached Class 1 buildings;
- the installation of a rainwater tank of 3,000 litres for attached Class 1 buildings;
- the connection to the tank of a roof area of 100m<sup>2</sup> or one half of the roof area whichever is the lesser;
- the installed tank is connected to toilet cisterns, washing machine cold supply and a minimum of one external tap;
- the remainder of the plumbing fixtures are supplied with potable water.

### c) Dual Reticulation Water Supply Areas

Dual Reticulation areas are defined on **Overlay Map OM25 – Future Water Innovations** of the Planning Scheme with the current **Overlay Map OM25** provided at **Section 4.2.1** of the amended Land Development Guidelines.

For Dual Reticulation water supply areas of the City, in accordance with **Acceptable Solution A1 d)**, Council defines that a Class 1 building only complies with the nominated water saving targets by:

- the installation of a rainwater tank of 5,000 litres for detached Class 1 buildings;
- the installation of a rainwater tank of 3,000 litres for attached Class 1 buildings;
- the connection to the tank of a roof area of 100m<sup>2</sup> for detached Class 1 buildings;
- the connection to the tank of a roof area of 50m<sup>2</sup> for each individual attached Class 1 buildings;
- the installed tank is connected to washing machine cold supply and a minimum of one external tap;
- the remained of the plumbing fixtures are supplied with either potable water or recycled water as detailed within **Section 7.3**.

## d) Commercial Buildings

The Department of Local Governments **Queensland Development Draft Code Part MP4.3 – Alternative Water Sources – Commercial Buildings** can be used to provide advice and guidance on the installation and water use requirements for Rainwater tanks for Class 3 to 10 buildings as defined by the **Code**.

Where a rainwater system is installed in a Commercial building, the requirements of **Section 7.3.2** for water use and installation format shall be complied with. Rainwater tanks for commercial installations shall only be used to store and supply rainwater to the approved uses.

### 7.3.2.5 Meterable Premises Water Meters or Sub-Meters

The **Queensland Plumbing and Wastewater Code at Part 4, Performance Criteria P1** requires that meterable premises water meters or Sub-Meters are to be installed to nominated Classes of Buildings. Building Classes are defined within the **Building Code of Australia**.

Sub-meters installed prior to January 2008 shall remain in their existing format of ownership.

For all Classes of Building built after January 2008, Sub-Meters will be owned by Council. The water supply system from the Council Service or the Master Meter at the boundary of the property to the sub-meter shall be owned by the Community Title Scheme Body Corporate and the water supply from the sub-meter to the point of use will be owned either by the individual metered premises or by the Community Title Scheme Body Corporate, as appropriate.

For Class 1 Buildings, Sub-meters shall comply with the installation formats nominated in **Section 4** of these Guidelines and supported by **Standard Specification SS2 – Water Supply Mains and Associated Works** and its Standard Drawings.

For all other Classes of Buildings, the installation of Sub-meters shall be based on the Water Meter Standard Drawings shown on the GCCC web page that are based on the following performance requirements:

- accessibility within a common area due to regulatory restrictions on installation and access to 'residential places';
- accessibility for reading and maintenance repair or replacement;
- the provision of supporting plumbing components that are part of Council's meter installation, eg. ball valve(s), meter tails/ unions, Dual Check valves and disassembly coupling;
- suitable drainage for maintenance and management of pipework leakage water;
- consistency of installed formats to assist asset management and communication goals.

The design of Plumbing installations shall be set out so that Common facilities are sub-metered as individual sub-systems as follows:

- each Hot Water system that serves a floor or floors will be sub-metered;
- all recreation facilities on land that is Common property will be on a common sub-meter, eg. the pool and the Recreation room and the BBQ facility will be off the same sub-meter wherever possible;
- external taps shall be connected through a Common facilities sub-meter.

These sub-meters for common facilities are to be owned by Council.

Where Community Title Scheme developments propose to have security systems where the public is restricted from access to the development where sub-meters are installed and/or to buildings within the development where sub-meters are installed then an Automatic Meter Reading (AMR) system shall be installed to the requirements of Council.

It is to be noted for developments that provide no security system at the time of development and later change or renovate to a development format where security is to be provided, then these developments shall provide an AMR system as a part of the security upgrade.

The AMR system shall be installed by the Developer and following commissioning, the AMR system shall be handed over to the Council for ownership.

The type and format of Meters and AMR technologies shall comply with Council's standards and specifications.

Council's Sub-Metering Policy provides guidance and support to CTS Body Corporates and Individual Owners of a Residence within the CTS property on installation and Billing issues associated with sub-metering and is available upon request.

## 7.3.2.6 Alternative Water Supply Services

### a) Greywater Reuse

The installation of facilities to allow the reuse of greywater will be approved and controlled by Council.

All installations will be required to meet the criteria laid out in the **Plumbing and Drainage Act 2002**, **Plumbing and Drainage Regulation 2003**, **Queensland Plumbing and Wastewater Code**, **Queensland Recycled Water Guidelines** and the relevant Australian Standards.

### b) Desalination

The installation of private desalination plants on domestic properties will be required to meet the criteria identified in the **Environmental Protection Act 1994** to ensure the abstraction and discharge will not impact on the environment. The Environmental Protection Agency has authority to administer the act.

Further elements of the installation will be under the authority of the Council to approve and must meet the criteria laid out in the **Plumbing and Drainage Act 2002**, **Plumbing and Drainage Regulation 2003**, **Queensland Plumbing and Wastewater Code** and the **Integrated Planning Act**.

The plant must also be watermarked and an approved product and meet the relevant Australian Standards.

## 7.3.2.7 Sanitary Drainage Services

The sanitary drainage system is to be designed and installed to the **Standard Plumbing and Drainage Regulation** except for Private Pumping Stations, refer **Clause 7.3.3** herein and for the following.

Overflow Relief Gullies (ORG) shall be:

- elevated to a minimum of 75mm above the finished surface level of the surrounding landscaping, paved or concreted surface except where the gully riser is located in a path or a paved area where it shall be finished at a level so as to prevent the ponding and ingress of water;
- installed a minimum of 150mm below the lowest fixture (from the dwelling) connected to the drain; and
- fully accessible and located as follows (refer Council's **Standard Plumbing Drawings**).

### Option 1

- a) The position of the ORG shall be in accordance with the **Standard** at **Clause 4.6.6.4**.
- b) In this position a hose tap via the non-drinkable water (Class A + ) reticulation system shall charge the ORG.
- c) The ORG is not to be positioned in a location that is a low point within the property, refer to Council's **Standard Plumbing Drawings**.

### Option 2

- a) The position of the ORG shall be adjacent to the property structure (dwelling) and shall be charged by a waste fixture OR via a hose tap connected to the non-drinking water reticulation system.
- b) The gradients for paved, concrete, bitumen or finished landscaping surface levels in the vicinity of the ORG shall grade away from the ORG and building structure and shall be directed to the adjacent stormwater inlet grate, refer to Council's **Standard Plumbing Drawings**.

Council's Plumbing Inspectors shall carry out inspections of the completed sanitary drainage in conjunction with the Final Plumbing Inspection and Dual Water Services Audits detailed within **Section 7.3.2.3** of this Guideline.

## 7.3.3 Works Not Fully Pursuant to Australian/ New Zealand Standard 3500

All water and sewerage mains within Community Title Schemes (CTS) that serve multiple Class 1 dwellings together with any separate CTS common property land shall be designed and installed in accordance with the **Standard Plumbing and Drainage Regulation** with guidance on the design of larger size installations available within **Sections 4 and 5** of these Guidelines, respectively.

These mains shall be referred to generally as 'CTS private mains' or specifically as either 'CTS private water main' or 'CTS private sewerage main'.

All CTS private mains are to be assessed and inspected by Council Plumbing Officers.

The CTS will own the CTS private water main from the property side of the Master Meter (off the Council reticulation main) up to the individual dwelling or CTS sub-meter connection point and any fire system facility on the main. The Master Meter will be of the magflow variety so that no restriction of the flow can occur and this meter can assist in Billing or Leakage issues.

The CTS will own the CTS private sewerage mains from the Council reticulation main connection point up to the individual dwelling or CTS facility connection point.

Each and every domestic or CTS facility connection off the CTS private water mains shall be provided with a water service of take and this water service shall be sub-metered, as appropriate and these sub-meters will be GCCC/ GCW assets, refer **Section 7.3.2.5** of these Guidelines.

Council will no longer accept the ownership of CTS water and sewerage common property utility infrastructure (CTS private mains) except for the water meters mentioned above, refer **Standard Plumbing and Drainage Regulation 2003** at **Part 5, Division 1, Sections 34 (4) and 35 (4)**.

Fire fighting facilities within the CTS private water main shall be provided from a tee on the main with a connection to a dual outlet pillar type fire hydrant that has a non-return valve on the riser with the hydrant located to the requirements of **AS2419.1**.

The hydraulic performance of the fire fighting pillar hydrants on the CTS private water main shall comply with **AS2419.1**, as appropriate.

All other individual parts of the CTS development shall be as follows:

- plumbing and drainage installations for the individual dwellings and Common property within the CTS that are connected to the CTS private main and the CTS main shall be subject to the **Plumbing and Drainage Act 2002**, and will be assessed and inspected by Council officers.
- any Class 2-9 building within a CTS shall design and install the developments or the buildings fire system to the requirements of the relevant Australian Standard.
- materials used shall comply with **Sections 30 and 31** of the **Standard Plumbing and Drainage Regulations 2003**. Guidance on the materials used and assembly formats for larger size installations is available within Council's **Standard Specification SS1 – Construction of Sewerage Mains and Associated Works** and **Standard Specification SS2 – Water Supply Mains and Associated Works**.

Easements are required over all Council owned infrastructure within Private property (as per Council's standard registered document for water reticulation and sewerage reticulation), sub-meters are not required to be provided with an easement.

## 7.3.4 Private Pump Station and Pressure Mains

### 7.3.4.1 General

Sewerage pumping stations serving more than one 'Titled' property shall meet the requirements of **Section 5.2.11** of these Guidelines. Subject to Council approval, where a gravity sewer connection is not directly available to a development, Council may approve a private sewerage pumping station, which will discharge to the existing gravity sewerage system via a private rising main.

It is the consultant's responsibility to ensure that the Private Sewerage Pumping Station complies with the following requirements:

- **Plumbing and Drainage Act 2002;**
- the **Water Act;**
- **AS/NZS3500.2 – Plumbing and Drainage Code of Australia;**
- the current **Environment Protection Regulation;**
- generally in accordance with the Water Resources Commission **Guidelines for Planning and Design of Sewerage Schemes;**
- Council's specific requirements as set out below.

### 7.3.4.2 Approved Connection Point

#### a) General

All costs associated with connection of a private pressure main to an existing gravity sewer system (system analysis, design and upgrades to provide capacity) shall be met by the Developer. Where the private pressure main is located within the road reserve, an Operational Works Application is required.

#### b) Connection to Existing Gravity Main

The approval connection point for a private rising main shall be a discharge manhole that is connected to an existing gravity sewer manhole. Discharge manholes shall conform to Council's **Standard Drawing N° 08-07-117**.

Council may require the provision of a non corrosive pipe installed for the length of sewer to the next downstream manhole and will require the provision of an inert lining to all internal surfaces of the pressure main discharge manhole.

#### c) Alternative Connection Points

Council may consider an alternative connection point. Where an alternative is proposed, the Developer shall request written approval from Gold Coast Water. The request shall outline the reasons for the alternative connection point and the connection methodology proposed.

**A private pressure main is not permitted to inject into another private pressure main.**

### 7.3.4.3 Private Pumps

#### Pump Flow

Council requires a minimum of two pumps that shall be sized after consideration of the following criteria:

- each pump has the ability to pump 5 times the design daily flow:

$$\text{Flow } Q = \frac{\text{Number of EP} \times 275\text{L/ EP/ day} \times 5 \text{ (peaking factor)}}{24 \times 3600} \text{ L/sec}$$

$$= \frac{\text{Number of EP}}{62.84} \text{ L/sec}$$

## Pump Head

The head required to be achieved by each pump at the above flow can be calculated as follows:

$$\text{Head (metres)} = h - y + f_{cp}$$

Where:

- h = Invert Level of connecting pipe at manhole; or  
= head in rising main
- y = floor level of pump well
- f<sub>cp</sub> = friction losses in pressure main and pump station

### 7.3.4.4 Pump Well Capacity and Operation

The capacity of the pump well for storage of sewage during pump malfunction should be as per **Table 7.3 – A**.

**Table 7.3 – A**

Control	Storage Depth
Inlet Invert	Alarm Level
	300 mm (min)
Standby Start	
	300 mm (min)
Duty Start	
	Storage Capacity m <sup>3</sup> = $\frac{0.9 \times \text{Flow Q (L/sec)}}{12 \text{ (starts per hour)}}$ (min)
Pump Stop	
	150 mm (min)
Floor Level	

Pumping stations shall be designed with sufficient in system storage (in the well, upstream sewers or a dedicated self draining high level storage) so that in the event of pump or power failure, no overflows occur for a minimum period of 4 hours with inflow at average dry weather flow. In system storage shall be measured from duty start level to the level of the lowest relief point.

Other than for storage capacity, the above depths are a general guide and Council may require the developer to provide details on detention times and proposed strategies to minimise the detention times.

The pumps are to be set up to operate automatically as Duty/Standby and should be of the submersible electric type.

An alarm shall be provided in the form of a prominently positioned flashing red light set to activate at the invert level of the incoming house drain.

### 7.3.4.5 Private Pressure Mains

Private pressure mains shall generally conform with the requirements of Council's **Standard Specification SS1 – Construction of Sewerage Mains and Associated Works** and shall be sized in accordance with **Section 5.2.12** of these Guidelines. Cream coloured medium density polyethylene pressure pipe Series 1 class PN16, SDR9, PE80B in accordance with **AS/NZS4130** is approved for use.

## 7.3.4.6 Specific Requirements

As the private sewerage pumping station is a component of the internal plumbing and drainage, Council's Plumbing and Drainage Services Section shall check the design drawings for compliance with current Acts and relevant standards.

Owners of private pumping stations are responsible for all costs and charges associated with the installation, operation and maintenance.

As constructed details detailing the location of the pressure main shall be submitted to Council.

## 7.3.5 On-Site Sewerage Facilities – Treatment and Disposal

Installation shall comply with the **Queensland Plumbing and Wastewater Code** and the on-site domestic wastewater management Standard **AS/NZS1547**.

Due to the increased loading of on-site sewerage facilities on the environment and legislative considerations, the consultant shall submit a report containing a detailed assessment of site and soil factors, an elevation of the site constraints and review of all relevant information available. The report shall consider all major constraints and opportunities relating to the management of wastewater in relation to the development. The report shall also include a cumulative impact on the effects to the existing ground water table, creeks and watercourses so that the development achieves environmental objectives of air, land and water resources.

The consultant shall refer to the **Code** and **AS/NZ1547** so that the most appropriate on-site sewerage facility can be chosen for the development and in particular, be of sufficient capacity to receive, treat and absorb all wastewater outputs from premises on a property, complete the treatment, uptake and absorption of the final effluent within the boundaries of the property and avoid likelihood of creating unpleasant odours, or the accumulation of offensive matter.

The minimum requirements for the wastewater disposal report:

- site plan showing dams, creeks, water courses and contours at 5.0m intervals;
- areas of each block with proposed Lot No's and property boundaries;
- proposed use of the land to be developed;
- soil survey, including permeability of soil by either a percolation test or textural classification of soil;
- depth of ground water, if any encountered during testing;
- estimated daily flows and site evaluation in accordance with **AS1547**;
- method of disposal, eg. DSTP, split septic system or other;
- calculations to justify nominated size of disposal area to suit system;
- assessment of any additional nutrient loadings of the area caused by on-site waste water disposal;
- **Plumbing and Drainage Act 2002**.

## 7.4 Off-Street Vehicle Parking Requirements

### 7.4.1 General

The goals as summarised in **Section 2.2.1 – General Requirements** shall be used to determine the optimum off-street vehicle parking design applicable to Developments.

Off-street vehicle parking requirements are to be determined primarily from:

- **AS2890.1 – Parking Facilities Part 1: Off-Street Car Parking;**
- **AS2890.2 – Off Street Parking Part 2: Commercial Vehicle Facilities;**
- **AS2890.3 – Parking Facilities Part 3: Bicycle Parking Facilities;**

and with reference to:

- Council's Planning Scheme

Where there is a combination of long term and short term parking within the parking area, the parking bay and aisle widths shall be designed to Class 3 of **AS2890.1**.

## 7.4.2 Aisle Design Requirements

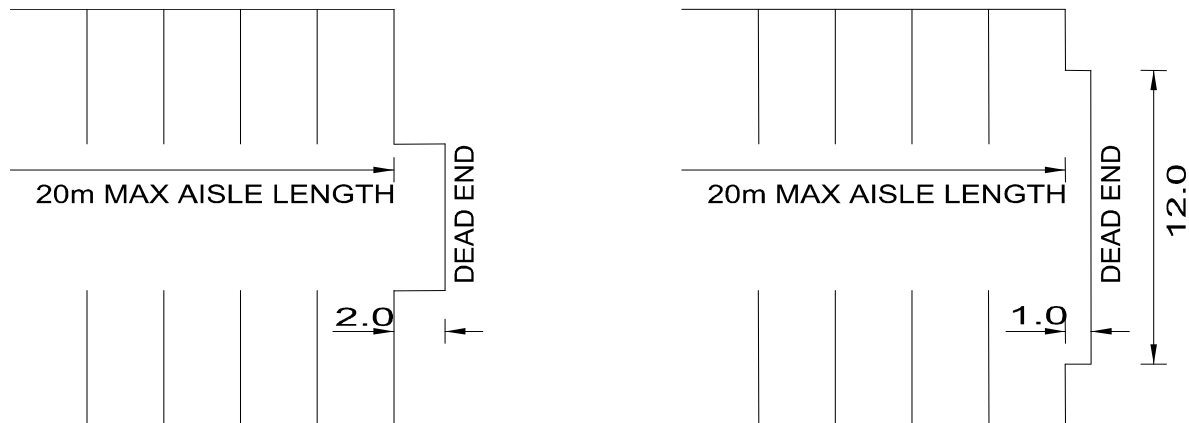
Parking and circulation aisles shall have a maximum length of 100 metres. Council may approve a greater distance where satisfied that adequate measures have been taken to control vehicle speeds.

Dead end aisles shall not exceed 20 metres in length. Council may relax this requirement where severe site constraints exist. Where permitted dead end aisles shall have aisle extensions in accordance with **Figure 7.4 – A**.

Designs shall not include cross intersections, unless otherwise approved by Council.

Parking aisles shall intersect circulation roads and aisles at right angles, unless otherwise approved by Council.

**Figure 7.4 – A**



ALTERNATIVE (A)

ALTERNATIVE (B)

## 7.4.3 Car Park Location

Car parking spaces shall be located and designed to encourage their use in preference to on-street parking, to the satisfaction of Council. In assessing compliance with this requirement Council will have regard to relative walking distances and visibility from the road.

Car parking spaces shall not be located in areas used for manoeuvring of heavy vehicles.

Car parks shall be designed to ensure that vehicles do not reverse across major pedestrian crossings.

## 7.4.4 Stacked or Tandem Parking

Stacked or tandem parking spaces shall have a minimum length of 10.0 metres.

## 7.4.5 Landscape Works

All Landscaping works are to be in accordance with the **Landscape Documentation Manual** (in accordance with **Section 3.4.30** of these Guidelines).

## 7.4.6 Signs and Line Marking

Signs indicating the location of the car park and the position of the access points shall be provided for all car parks used by the public where:

1. the car park is located at the rear of the site;
2. access to the car park is not located in the main frontage road;
3. there are a number of access points serving different parts of the site.

Signs shall incorporate the standard Service Sign Series 'P' sign, as detailed under **Guide Signs** in the **Manual of Uniform Traffic Control Devices, Queensland**.

Where a Development generates traffic at night consideration should be given to illuminated signs instead of retro-reflective signs.

Car parking bays, which are provided for a certain class of user, such as disabled drivers, motorcycles and special zones such as bus zones shall be clearly marked with the appropriate signage.

## 7.4.7 Speed Humps

The design of car parks should ensure that speed humps are not necessary. Where speed humps are to be provided they shall be designed in accordance with **AS2890.1**. Speed humps shall not be provided in entry or exit queuing areas.

## 7.4.8 Heavy Vehicles

Driveways which cater for heavy vehicles shall be designed in accordance with **AS2890 – Off-Street Parking, Part 2: Commercial Vehicle Facilities**. The widths set out in Council's **Standard Drawing N° 03-02-301** apply to combined or separate entry and exit driveways.

The tables in the above Standard Drawing do not imply that certain types of development are necessarily suitable for location on any particular frontage road class. In particular, access to arterial roads should be limited, where practical, and in some circumstances it may be preferable to allow left turn only movements in and out of the access driveway.

## 7.4.9 Bicycle Facilities

Bicycle facilities shall be provided in accordance with **AS2890.3 – Parking Facilities, Part 3: Bicycle Parking Facilities**.

## 7.5 Driveway Access

### 7.5.1 Driveway Design Criteria

Internal driveways, (ie. of Community Title Scheme) are to be in accordance with the relevant Planning Scheme and Australian Standards and shall be inspected and certified by a consulting engineer.

The geometric design of entry and exit driveways shall generally conform with Council's **Standard Drawing N° 03-02-301** and the following:

- a) The number of driveways to any site shall be minimised. Where possible, adjoining developments shall incorporate shared driveways.
- b) On some major routes, particularly arterial and sub-arterial roads, driveways may need to be provided in conjunction with deceleration lanes. The final determination for the need for deceleration lanes shall be to the satisfaction of Council and where appropriate the Queensland Department of Main Roads.
- c) Access driveways should be designed on the basis of the number of parking spaces effectively served.
- d) In car parks with multiple access points, each access should be considered based on the number of parking spaces effectively served by its catchment.
- e) Where separate entry and exit driveways are used the first driveway reached from the kerbside lane shall be clearly delineated and sign posted.

### 7.5.2 Garages and Other Enclosed Spaces

Except for dwelling houses and duplex dwellings, single garages and other single fully enclosed spaces shall be at least six metres in length and 3.2 metres in width. Double garages and other enclosed double spaces shall have a minimum length of six metres and a minimum internal width of 5.8 metres.

### 7.5.3 Driveways (Queensland Development Code – Part 6.0)

#### 7.5.3.1 Purpose

To ensure safe and reasonable access from the property boundary to on-site vehicle accommodation or on-site vehicle standing area.

#### 7.5.3.2 Application

This standard applies to driveways and driveway access on sites containing Class 1 buildings and appurtenant Class 10 buildings for use by resident and visitor vehicles.

#### 7.5.3.3 Referral Agency

There is no referral agency.

## 7.5.3.4 Associated Requirements (Queensland Development Code)

- Part 5.0 – Excavation and Piling Near Sewers, Drains and Water Mains;
- Part 9.0 – Stormwater Drainage;
- Part 10.0 – Retaining Walls, Embankments and Cutting and Filling.

## 7.5.3.5 Referenced Standards

- AS1304 – 1991 – Welded Wire Reinforcing Fabric for Concrete;
- AS1379 – 1997 – Specification and Supply of Concrete;
- AS3600 – 1994 – Concrete Structures;
- AS3996 – 1992 – Metal Access Covers, Road Grates and Frames.

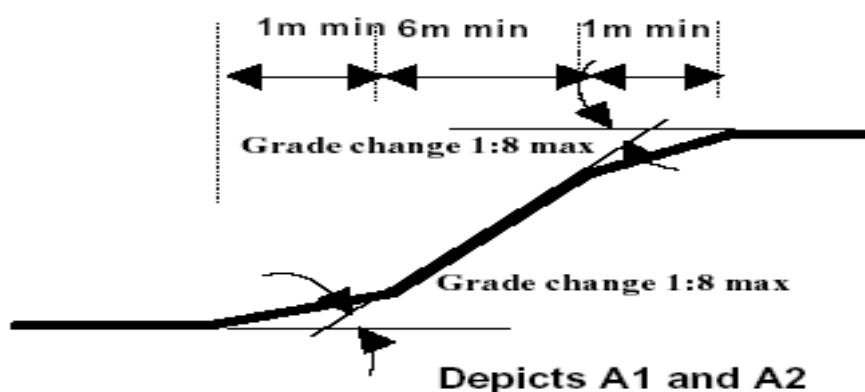
## 7.5.3.6 Definitions

<b>Competent Person</b>	As defined in the <b>Standard Building Regulation 1993</b> .
<b>Driveway Access</b>	The path of travel by which a vehicle gains access to a property. It can include temporary access for building purposes as well as unsealed driveways.
<b>Utility Infrastructure</b>	a) A sewerage system or stormwater drainage as defined in the <b>Standard Sewerage Law</b> ; or b) A water supply system or property main as defined in the <b>Standard Water Supply Law</b> .

Performance Criteria	Acceptable Solutions
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## 7.5.3.7 Gradients

<p>PC1</p> <p>A vehicle must be able to negotiate the gradient without difficulty and without potential harm to the vehicle's occupants, pedestrians and property.</p>	<p>AS1</p> <p>a) a driveway has a maximum gradient of 1 in 5; or b) a driveway has a maximum gradient of 1 in 4, provided the length of the driveway steeper than 1 in 5 does not exceed 6 metres, and there is a change in gradient not less than 1 metre in length and not greater than 1 in 8 at the ends of the 1:4 section of the driveway.</p>
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## 7.5.3.8 Change in Gradients

<p>PC2</p> <p>A vehicle must be able to travel the length of the driveway or driveway access without scratches, scrapes, dents or removal of the finished surface of the vehicle or the driveway surface.</p>	<p>AS2</p> <p>For all driveways, the rate of change in a driveway gradient is a maximum of 1 in 8 slope for a minimum length of 1 metre.</p>
<p>PC3</p> <p>A driveway must not cause a change in the level of a footpath.</p>	<p>AS3</p> <p>A driveway meets the road reserve at the level of the existing footpath or if there is no footpath, the level nominated by the local government.</p>

Performance Criteria	Acceptable Solutions
<b>7.5.3.9 Driveway Width</b>	
<p>PC4 A driveway must be of sufficient width to permit a vehicle to safely access the property.</p>	<p>AS4 The minimum width of a driveway is 2.4 m.</p>
<b>7.5.3.10 Loadings</b>	
<p>PC5 A driveway must withstand loadings from the vehicles.</p>	<p>AS5</p> <ul style="list-style-type: none"> <li>a) The driveway is constructed of concrete, asphalt, clay pavers or concrete pavers.</li> <li>b) For concrete driveways the following applies:                             <ul style="list-style-type: none"> <li>i) N20 strength in accordance with <b>AS1379</b> and <b>AS3600</b>.</li> <li>ii) reinforcement fabric to be in accordance with <b>AS1304</b> with 50mm cover (F62min).</li> <li>iii) expansion joints to be 10mm thick, full depth closed cell cross-linked polyethylene foam (85 – 150 kg/m<sup>3</sup>) or 10mm thick compressed granulated corkboard installed to manufacturer's specifications.</li> <li>iv) the slab is 100mm thick.</li> <li>v) surface is to be broom finished or exposed aggregate.</li> </ul> </li> <li>c) For asphalt surfaces, the following applies:                             <ul style="list-style-type: none"> <li>i) at least 80 mm thick compacted road base under asphalt cover.</li> <li>ii) asphalt cover is at least 25mm thick.</li> </ul> </li> <li>d) For clay or concrete pavers the following applies:                             <ul style="list-style-type: none"> <li>i) paving units are at least 40 mm thick.</li> <li>ii) at least 100mm thick compacted sub-base under pavers.</li> </ul> </li> </ul>
<b>7.5.3.11 Surface Water</b>	
<p>PC6 A driveway must not allow water to pond adjacent to any buildings or cause water to enter a building.</p>	<p>AS6 A driveway has a minimum cross fall of 1 in 100 away from any adjoining building.</p>
<b>7.5.3.12 Access to Services</b>	
<p>PC7 Construction of a driveway must not damage or interfere with the location, function of or access to any utility infrastructure.</p>	<p>AS7</p> <ul style="list-style-type: none"> <li>a) Underground services are protected by:                             <ul style="list-style-type: none"> <li>i) a driveway which maintains a cover of at least 600mm over all services; or</li> <li>ii) a cover of at least 100mm thick concrete reinforced as per <b>AS5 b)</b>.</li> </ul> </li> <li>b) A driveway is not constructed over service equipment such as an access point, water meters, hydrants, valves, telephone pits, etc. under the control of a regulatory authority.</li> <li>c) Where an access point is to be incorporated within the driveway, it is raised or lowered to match the surface level of the driveway. Access covers must comply with <b>AS3996</b>.</li> </ul>
<b>7.5.3.13 Driveway Location</b>	
<p>PC8 The location of a driveway must not be hazardous to persons or vehicles using the roadway.</p>	<p>AS8 For corner properties, a driveway is not less than 12 metres from the point of intersection of the two street boundaries measured at the kerb.</p>

## 7.5.3.14 Notes

1. Local government (or other service owner) approval must be obtained before interfering with any infrastructure.
2. The location of a driveway may be influenced by a plan of development approved by the local government or the location of existing infrastructure or existing vehicle crossovers.

## 7.6 Ocean Beaches

For all sites fronting an ocean beach (as indicated on the Foreshore Seawall Line Maps), before any development (or redevelopment) can commence, an approved foreshore rockwall is required to be constructed, by the property owner, to protect the property from erosion.

The foreshore seawall and dunal fencing shall be constructed in accordance with Council's **Standard Drawing N<sup>OS</sup> 03-04-001, 03-04-002 and 03-04-003, Standard Specification SS16 – Foreshore Seawall and Dune Fencing Construction, Planning Scheme Policy 7 – Foreshore Rockwall Design and Construction** and the requirements of the Gold Coast City Council Planning Scheme.

Subsequent development behind the foreshore boulder wall shall comply with the requirements of Council's Planning Scheme relating to:

1. Setback requirements.
2. Stormwater drainage.
3. Sand excavation.
4. Building footings.
5. Dedication of land seaward of the foreshore boulder wall.

## 7.7 Building Near or Over Council Water, Sewer and/or Stormwater Services

### 7.7.1 Purpose

To ensure adequate protection is provided against damage to Council's existing underground infrastructure prior to, during and after the completion of building works and to ensure adequate access is available for maintenance of the infrastructure.

### 7.7.2 Application

This guideline applies to:

1. All Classes of buildings and structures on sites containing Council's services of stormwater drainage or water or sewer or rising mains.
2. All Classes of buildings and structures where the substructure of the building/ structure is within 2 metres of existing stormwater drainage or water or sewer or rising mains that are located external to the site property boundaries.

Excavation and piling meeting the performance criteria of these guidelines may be assessed for compliance against the **Standard Building Regulation** as a part of a Development Application for Building Work.

This Policy applies irrespective of whether the sewer, rising main, stormwater drainage or water main is contained within an easement but does not override the stated easement conditions for the particular easement. Building over or within easements is not permitted.

With respect to either of Case 1 or 2 above, regardless of the proximity of Council services to the building/ structure, the Developer has a duty of care to review the proximity of all Council services and ascertain whether or not the building/ structural works can proceed on the reasonable expectation that the Council services will not be damaged as a result of those works.

The acceptable solutions contained herein do not preclude the Director of Planning Environment and Transport, Director of Gold Coast Water or such other Officer nominated by the Chief Executive Officer from imposing or considering alternative solutions where deemed necessary at the time of the application.

### 7.7.3 Associated Requirements

- **Workplace Health & Safety Act 1995;**
- **Standard Building Regulation 1993;**
- **Local Law No 14 Water Supply;**
- **Water Act 2000;**
- **Plumbing and Drainage Act 2002;**
- **Local Government Act 1993;**
- GCCC Land Development Guidelines, including the relevant drawings and specifications;
- **Standard Plumbing and Drainage Regulation 2003.**

## 7.7.4 Definitions

<b>Access Cover</b>	A removable cover or grate to provide access for cleaning or inspection for sewers, stormwater drains and water mains.
<b>Associated Structure</b>	Sewer access cover, water meter.
<b>Bedding Material</b>	As defined in the relevant Standard Specification of the GCCC Land Development Guidelines.
<b>Building</b>	As defined in the <b>Building Act 1975</b> . See also 'Structure'.
<b>Competent Person</b>	Registered Professional Engineer of Queensland (RPEQ) Civil.
<b>Connection</b>	As defined in <b>Schedule 4</b> of the <b>Water Act 2000</b> .
<b>Compressible Material</b>	10mm foam lagging; flexible moisture resistant material or impermeable flexible plastic material as prescribed in various parts of <b>AS3500 – National Plumbing and Drainage Code</b> .
<b>Interfere With</b>	Includes dig up, expose and damage infrastructure.
<b>Invert Level</b>	The bottom, inside of the pipe, drain, etc.
<b>Minor Structure</b>	Carports, pergolas, garden sheds, retaining walls and any other similar minor structures as determined at the direction of the Officer nominated by the Chief Executive Officer.
<b>Rising Main</b>	Pressurised sewerage line.
<b>Sewer</b>	Includes both gravity sewerage lines and vacuum sewerage lines.
<b>Service</b>	For the purpose of this standard includes rising mains, sewers, stormwater drains and water mains.
<b>Structure</b>	For the purpose of this standard includes a masonry fence, deck, pergola, swimming and spa pool, satellite dish and water storage tank.
<b>Zone of Influence</b>	The area under the ground, which is deemed to be loaded by the footings of the building or structure and is taken as a line drawn at 45 degrees from the side of sewer to ground level.

## 7.7.5 Performance Criteria

Performance Criteria	Acceptable Solutions
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### 7.7.5.1 Performance Criteria 1

<p>PC1</p> <p>The carrying out of building work Class 1 to 9 near or over a rising main, sewer, stormwater drain or water main must not:</p> <ol style="list-style-type: none"> <li>a) Interfere with or adversely affect the function of the service; or</li> <li>b) Place any additional load on the service.</li> </ol>	<p>AS1.1.1</p> <p>Any footing of the building or structure is located at least 2m clear (see <b>Note 2</b>) of the 'as constructed' location of a rising main, sewer, stormwater drain or water main.</p> <p>OR</p> <p>AS1.1.2</p> <ol style="list-style-type: none"> <li>a) A rising main, sewer, stormwater drain or water main is relocated at least 2m clear of any building or structure (see <b>Note 2</b>); and</li> <li>b) Plans for the relocated asset pursuant to <b>AS1.1.2 a)</b> (see <b>Note 3</b>) are designed by a RPEQ (Civil) and submitted to Council for approval; and</li> <li>c) The relocation works being constructed by Council unless approved otherwise in writing by Council (see <b>Note 10</b>).</li> <li>d) The relocated services within private property are to be wholly contained with easements granted by the Developer. All costs associated with the creation of the easements are to be the Developer's responsibility.</li> </ol>
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Performance Criteria	Acceptable Solutions
	<p>OR</p> <p>Where it can be demonstrated to the satisfaction of Council the above solutions are not feasible then:</p> <p>AS1.2.1</p> <ul style="list-style-type: none"> <li>a) Any foundations (see <b>Note 4</b>) of the building or structure parallel to the zone of influence which are between 1m and 2m from the sewer or stormwater drain are to be extended at least 300mm below the zone of influence (refer <b>Figure 1</b>) and <b>AS1.2.2</b> below; and</li> <li>b) The Applicant shall lodge a Cash Bond or Unconditional Bank Guarantee to a value of 10% of the estimated replacement cost of the service as determined by Council or \$5000, whichever sum is the greater; and</li> <li>c) The Applicant shall agree in writing to pay the cost of repairs and/or replacement of the Council service (as determined by Council) if the Council service is damaged or adversely affected by the building/ structural works.</li> <li>d) The Applicant shall supply a 'pre-construction' and 'post-construction' (see <b>Note 9</b>) closed circuit television video (CCTV) survey and accompanying report (see <b>Note 5</b>). This survey and report will form the basis of Council's assessment of the affects of the works on Council's services and whether or not remedial action to the services is warranted.</li> </ul> <p>The Cash Bond or Bank Guarantee shall be returned or released (as appropriate) upon Council's confirmation that the service has not been damaged or alternatively that all remedial action has been completed and the costs of those repairs has been met by the Applicant (refer <b>Note 6</b>).</p> <p>OR</p> <p>AS1.2.2</p> <p>Where the structure is a minor structure and where approved by the Director of Gold Coast Water, the Applicant shall be permitted to construct the works over the sewer subject to the following:</p> <ul style="list-style-type: none"> <li>a) The existing sewer pipe under the structure shall be replaced with concrete encased class K12 ductile iron pipe internally lined with polyurethane with an outer zinc layer coated with bitumen ('ducpur' pipe or similar); and</li> <li>b) A minimum clearance of 300mm shall be maintained between the underside of any component of the structure and the top of the concrete encasing; and</li> <li>c) Within the zone of influence, a suitable layer of compressible material shall be laid on a minimum 75mm layer of compacted bedding material between the underside of the structural component and the top of the concrete encasing to provide for differential movement; and</li> <li>d) All costs associated with the replacement of the existing sewer shall be paid by the Applicant; and</li> <li>e) The relocation works shall be constructed by Council unless approved otherwise in writing by Council (see <b>Note 10</b>).</li> </ul>

Performance Criteria	Acceptable Solutions
	<p>At the discretion of Council, the replacement of an existing sewer under a minor structure may not be required if the existing sewer is in sound condition and has a minimum 600mm separation in undisturbed ground from the substructure of the building/ structure to the top of the pipe:</p> <ul style="list-style-type: none"> <li>▪ A 'pre-construction' closed circuit television video (CCTV) survey and accompanying report shall be provided by the Developer together with a submission in writing seeking this discretionary approval;</li> <li>▪ If approval is granted, the Developer shall lodge a Cash Bond or Unconditional Bank Guarantee to a value of 10% of the estimated replacement cost of the service as determined by Council or \$5000, whichever sum is the greater; and the Applicant shall agree in writing to pay the cost of repairs and/or replacement of the Council service (as determined by Council) if the Council service is damaged or adversely affected by the building/ structural works;</li> <li>▪ The Cash Bond or Bank Guarantee shall be returned or released (as appropriate) upon Council's confirmation that the service has not been damaged or alternatively that all remedial action has been completed and the costs of those repairs has been met by the Applicant;</li> <li>▪ A 'post-construction' closed circuit television video (CCTV) survey with report shall be provided by the Developer together with a submission in writing seeking release of the said Cash Bond or Bank Guarantee (refer <b>Note 6</b>).</li> </ul>

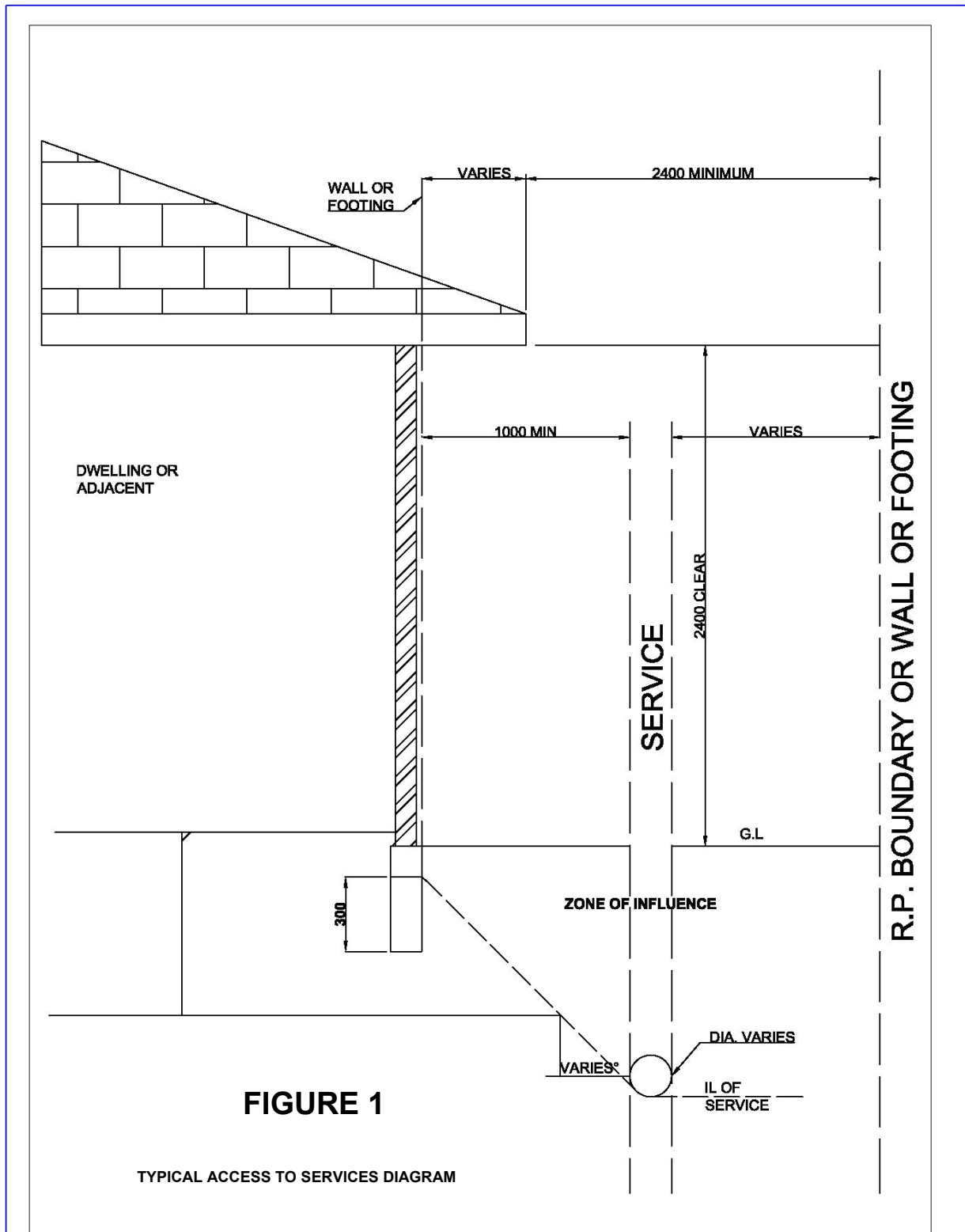
**7.7.5.2 Performance Criteria 2**

<p>PC2 Adequate access must be provided to the rising main or sewer or stormwater drain or water main for future maintenance (refer <b>Figure 1</b>).</p>	<p>AS2.1.1</p> <ol style="list-style-type: none"> <li>a) Any wall or footing of the building or structure is located at least 1000mm (see <b>Note 2</b>) from the outside face of the service; and</li> <li>b) The minimum access width between the property boundary and the building, foundation or structure is not less than 3.0m (refer <b>Figure 1</b>).</li> </ol> <p>OR</p> <p>AS2.1.2 The minimum access width between the buildings, foundations or structures at any point is not less than 3.0m (refer <b>Figure 1</b>) where the service is located between buildings or structures.</p> <p>OR</p> <p>AS2.1.3 Discretionary approval is granted pursuant to <b>AS1.2.2</b>.</p>
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Performance Criteria	Acceptable Solutions
<p><b>7.7.5.3 Performance Criteria 3</b></p>	
<p>PC3 Adequate access must be provided and maintained to any access covers, or valve pits associated with a rising main, sewer or stormwater or water main.</p>	<p>AS3</p> <ul style="list-style-type: none"> <li>a) An access cover or valve pit lid does not have fill placed over it; and</li> <li>b) There is a clear area of 2m x 2m maintained around an access cover or valve pit lid; and</li> <li>c) The manhole, pit or structure has a minimum horizontal clearance of 1.0m (refer <b>Note 2</b>) from any building or structure; and</li> <li>d) There is a minimum unobstructed vertical clearance of 2.4m.</li> </ul>
<p><b>7.7.5.4 Performance Criteria 4</b></p>	
<p>PC4 Adequate access must be provided and maintained to any sewer connection point at all times.</p>	<p>AS4</p> <ul style="list-style-type: none"> <li>a) There is a clear area of 2m x 2m maintained around a sewer connection point; and</li> <li>b) The sewer connection point has a minimum horizontal clearance of 1.0m from any building or structure; and</li> <li>c) There is a minimum unobstructed vertical clearance of 2.4m.</li> </ul>


### 7.7.6 Notes

1. This Planning Scheme Policy recognises that depending on the depth of the service and the nature of the ground material, buildings or structures located 2.0 metres from the service may still be within the zone of influence. The distance of 2.0 metres has been determined to allow reasonable development of land containing services while still allowing restricted access for asset maintenance and renewal purposes.
2. Clear of Council infrastructure or building/ structure means the distance measured horizontally from the outside face or outside diameter of the infrastructure to the building/ structural component affecting the particular asset.
3. All design and construction works shall comply with the relevant sections of the Land Development Guidelines.
4. Footing, pier and bridging details shall be designed and certified by a RPEQ (Civil) and submitted to Council for approval.
5. The CCTV survey and condition report shall be completed in accordance with the WSAA Sewer Inspection Reporting Code of Australia (SIRC) and only be undertaken by suitably qualified persons trained in conduit condition assessment.
6. Bonds/ Bank Guarantees will be refunded/ released 3 months after the issue of the certificate of classification, if Council is satisfied there is no damage to its services. Inspection fees are not refundable.
7. Where acceptable or alternate acceptable solutions are used, a report from a competent person verifying compliance with the applicable solution must be submitted with the development application.
8. Any structure built within two (2) metres of a service main will be recorded on Council's property system, which will serve to advise current and future owners.
9. Where the post-construction CCTV inspection indicates that damage has occurred to Council infrastructure, which is a result of the building works, all costs associated with the repair of such damage shall be borne by the owner.
10. Where Council approves the construction of relocation works by contractors engaged by the applicant/ owner then an 'Operational Works Application' and 'Geotechnical Report from a RPEQ (Civil)' shall be submitted to Council for approval prior to the commencement of works.
11. Within this Planning Scheme Policy, swimming pools are considered major structures and acceptable solutions for **Performance Criteria 1** shall apply.
12. Local government or other service provider approval is required before interfering with any service.
13. Building over stormwater mains is not permitted.
14. Pressure mains (water mains and sewerage rising mains) and stormwater mains are generally located in easements. Building over or within easements is not permitted.



**FIGURE 1**

**TYPICAL ACCESS TO SERVICES DIAGRAM**

Designed by M CARTER. GCW	Checked by	Approved by - date	Title <b>TYPICAL ACCESS TO SERVICES DIAGRAM.</b>				
						<b>DRAWING NUMBER.</b>	
	No. Amendment	Approved	Date	Issued	Scale NTS	Edition 2003	