

### *Our Vision*

Nambucca Valley ~ Living at its best

### *Our Mission Statement*

'The Nambucca Valley will value and protect its natural environment, maintain its assets and infrastructure and develop opportunities for its people.'

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## **1.0 Policy objective**

This policy is aimed at:

- Preventing damage to Council owned sewer pipes that may result from the increased load from a structure bearing on the pipe work. This load may cause the pipes to subside and/or fracture.
- Preventing damage to new or existing buildings and structures. Buildings and structures located on or near underground pipes can be subject to subsidence with consequent damage to the structure. Subsidence can occur when a pressurised pipeline breaks and the flow of water undermines the surrounding soils. When a hole occurs in an underground sewer, the surrounding soil can be drawn into the pipe leaving a void, which may then collapse. Any structure located over or near this collapsing ground may be damaged unless it is adequately supported by piers .
- Maintaining right of entry to access chambers, junctions and inspection shafts. This will allow staff to undertake regular maintenance to pipe work without having to remove structures. Sewers, in particular, are subject to blockages that need to be cleared quickly.
- Enabling efficient and economical access to pipe work for major repairs and/or replacement without damaging structures. Large earthmoving equipment may be required to repair pipelines and this equipment needs room to manoeuvre and operate. Structures that are too close to the pipeline will make access difficult and may also be at risk of being damaged.
- Reducing future maintenance costs to Council. It is unreasonable that Council, and subsequently our customers, should incur unnecessary costs when carrying out maintenance and/or repairs caused by having to remove and then replace structures that have been built over or too close to an underground pipeline.
- Providing a consistent approach to building over or near underground pipe work throughout the Council area. This will assist in maintaining the structural integrity of existing buildings that may be affected by new building proposals. Existing buildings may become at risk where a new building has been built without consideration for nearby pipelines

## **2.0 Related legislation**

Section 191A of the Local government Act affords Council the power to enter private property to construct and maintain its water, sewer and stormwater assets irrespective of whether or not there is an easement over the asset.

## **3.0 Definitions**

### **3.1 Access Chamber**

An access chamber is a circular concrete structure used to provide direct access to the sewers for maintenance and clearing blockages. They are located where sewers change direction or at a maximum interval of approximately 70m along a sewer pipeline. They are usually visible at the ground surface as a concrete lid and surround about 600 mm in diameter.

### **3.2 Junction**

A junction is the pipe fitting located at the point where the individual property plumbing connects to the Council sewer main.

### **3.3 Inspection Shafts**

An inspection shaft is a pipe rising to ground level just inside a property boundary and is considered to be the point where the responsibility for maintenance of the sewer pipes changes from Council to the property owner. It is usually a PVC pipe, either 100 mm or 150 mm in diameter and finished 100 mm at ground level with a concrete surround. The inspection shaft may be used to access either the property owner's pipes or the Council's main in the event of a blockage.

### **3.4 Easement**

An easement is a strip of land set aside for the purpose of allowing access to underground service pipelines such as sewers and water mains. Not all lots have easements and not all underground lines are located within easements. If a lot has an easement it will be shown on the title plan for the property.

### **3.5 Sewer Mains**

Sewer mains are Council owned pipelines designed to collect and transport the wastewater generated from dwellings, shops and industrial premises. The drains from kitchen sinks, laundry tubs, showers, baths, hand basins, toilets and the like are connected via private sewer pipes within the property to the sewer main.

### **3.6 Sewer Rising Mains**

Sewer rising mains are Council owned pressure pipelines that are used to transfer wastewater from sewer pumping stations to the wastewater treatment plant.

### **3.7 Water Mains**

Water mains are Council owned pressure pipelines that distribute treated drinking water throughout the urban area to dwellings, shops and industrial premises.

## **4.0 Policy Statement**

Council will not give approval for structures to be built over a sewer rising main, pressure sewer main or a water main or within any Council easement or, where an easement does not exist, within the distances from a Council pipeline specified in this policy.

Council will not permit structures to be built over a gravity sewer, within an easement provided for gravity sewer or within the distances from a gravity main specified in this document (subject to exceptions as specified in this document).

Council may approve structures to be built adjacent to a gravity sewer, a sewer rising main, pressure sewer main or a water main providing precautions are taken with the design of the footings. Structural Engineers details of the proposed footings will be required prior to a final approval being granted..

## **4.1 Policy Requirements**

### **4.1.1 Application**

This policy applies to the construction of all buildings, dwellings, decks, carports, garages, sheds, swimming pools, pergolas, retaining walls and permanent structures within Council's jurisdiction that are to be built near water mains, sewers and sewer rising mains.

### **4.1.2 Coverage**

This policy covers regulations relating to building over or adjacent to the following Council owned pipelines:

- Sewers
- Sewer rising mains
- Pressure sewer mains
- Water mains

In newly constructed subdivisions the above pipelines shall be located in an easement. The easement provides a means for Council to gain access to the pipelines. If an easement has been designated, it will be shown on the deposited plan for the lot.

Where a formal easement does not exist, Council has a legal power of entry to obtain access to the pipes under Section 191A of the Local Government Act 1993.

### **4.1.3 New Development and /or Building Applications**

When an application is made to build a new structure or extend and/or alter an existing structure, an assessment is made of the effect the proposal may have on any nearby sewers, sewer rising mains or water mains. All development/building applications should show the position of any sewer or water mains in relation to the property and existing or proposed structures. Plans should be drawn at a scale of 1:200 or 1:100.

It is advisable to contact Council to ascertain the general location of any pipelines and whether special designs will be required for the proposed structure before submitting plans. If any part of the proposed structure is to be located over the underground pipeline, within the easement or, where an easement does not exist, within specified distances of the pipeline then the application may be refused. In this case the applicant will be requested to redesign the structure so that it does not encroach on the underground pipeline. (See section 4.1.5 for specified distances).

A structure that is to be built close to an easement may require a Structural Engineer's detail to ensure that it does not place a loading within the zone of influence of the sewer, sewer rising main or water main. Before plans are submitted, the applicant should have a surveyor locate the pipeline to ensure that footing designs will be adequate for the proposed structure. This may be required in some circumstances where Councils records cannot be confirmed.

#### 4.1.4 Building Near an Underground Water Main or Sewer Rising Main

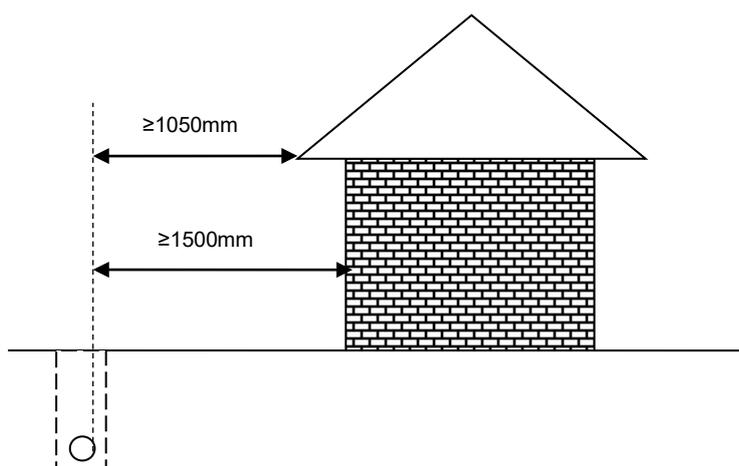
These pressure mains are usually located in footpaths or roadways and are sited well away from most structures. However, occasionally pressure mains are located through private property and in these cases special advice should be obtained from Council before commencing design work. A burst water main may quickly cause severe damage to an adjacent structure.

**Under no circumstances will approval be given for any structure to be built over a water main or sewer rising main or within their easements. In cases where an easement has not been provided a corridor at least 3 m wide and centred on the pipeline shall be used to determine the area in which a structure cannot be located.**

#### 4.1.5 Building Near an Underground Gravity Sewer

*i Where easements are not provided:*

Where an easement has not been provided then the offset distances shown in Figure 1 will apply.



**Figure 1 - Minimum Distances from the side of pipes**

The closest distance that the external edge of a structure can be located to the outside edge of a sewer or drainage line is:

- 1050 mm from the outside edge of an overhang such as an eave or gutter.
- 1500 mm from an external wall or footing.

*(The above distances allow a maximum eave overhang of 450 mm. For larger overhangs the distance of the wall to the side of pipeline would have to be greater than 1500 mm).*

**NOTE:** These distances are measured horizontally between the proposed structure and a line drawn vertically from the side of the pipeline as shown in Figure 1.

*ii Proposed structures of two or more storeys:*

An allowance may be made for 2 or more storey structures where the eave is well above the ground level (>3000mm) to allow further encroachment of an overhang. In these cases an individual assessment will be made. This assessment will consider the distance from the pipe to the external wall of the structure, the distance from the lowest point of the overhang to the ground level, the depth of the pipe and the difficulty of access for machinery.

*iii Where easements are provided:*

Easements of specified width are defined on the Deposited Plan for each lot. Where an easement **has been** provided the following conditions will apply:

- No external wall of a structure can be built within an easement.
- An overhang is permitted within an easement. Where a structure is to be built up to the easement the maximum eave overhang would be 450 mm.
- It cannot be assumed that the underground pipe will always be located in the centre of the easement. Where the pipe has been located to one side of an easement then it may be necessary for a structure to be located well outside the easement to maintain the minimum distances from the pipe. In these cases an individual assessment will be made to determine the minimum wall and eave setbacks required. This assessment will consider the distance from the pipe to the edge of the easement, the depth of the pipe and the difficulty of access for machinery.

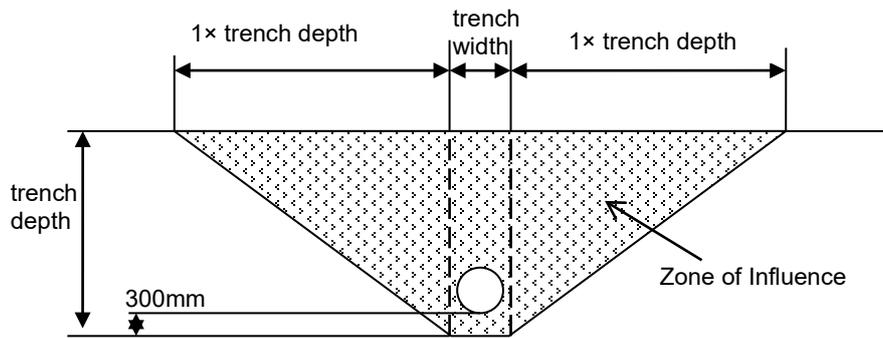
#### **4.1.6 Zone of Influence for Sewers and Other Pipes**

The “zone of influence” is an area surrounding a pipe such that if any part of a structure or its footing were to be located on or within it an additional load would be imposed on the pipe through the surrounding soil. The depth of the pipeline, the type of soil and the slope of the site determine the size of the zone.

All footings for structures located on the surface of the zone of influence shall be constructed to a depth that extends through the zone of influence.

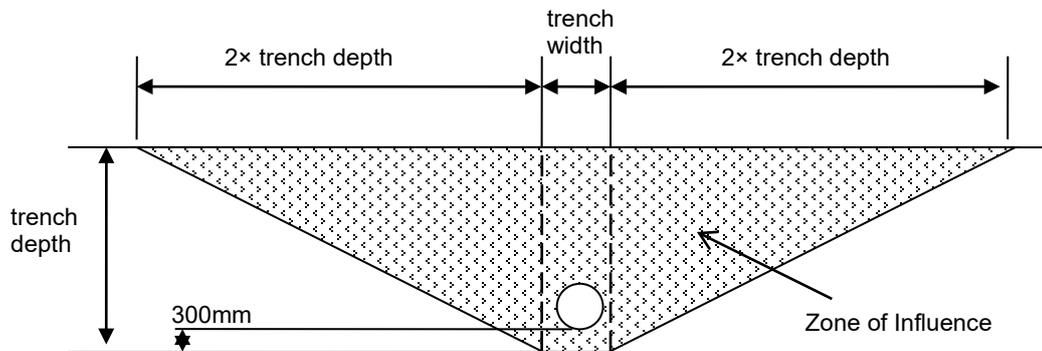
The zone of influence is calculated as described below:

- i* The pipeline depth and its position in relation to the proposed building site shall first be determined. (These details are taken from Council’s records or by inspection of the site).
- ii* The depth of the trench containing the pipe work is calculated by adding 300 mm to the pipe depth.
- iii* The width of the trench depends on the pipe diameter. As a guide, pipes up 225 mm diameter will have a trench width of 600 mm whilst pipes over 225 mm diameter will have a trench width of 1000 mm. In the case of large diameter pipes and/or deep trenches the trench width may be larger than the preceding values. In these cases an individual assessment will be made.
- iv* The zone is calculated using the depth of the trench and half the trench width. This calculation varies due to the type of soil present. Figures 3 and 4 indicate the zone of influence for clay soils and for sand, filled ground and loam respectively.



**Figure 2 - Zone of Influence for Clay Soils**

As Figure 2 indicates, the zone of influence extends out from the edge of the pipe trench the same distance as the depth of the trench (The ratio used is 1:1). For clay soils the zone will extend the same distance as the depth plus half the width of the trench. For example, for a pipeline of 150 mm diameter and a depth of 1500 mm, the trench depth is 1800 mm deep (i.e. 1500 + 300) therefore, the zone extends 2100 mm from the pipe centre line (i.e. 1800 + 300).

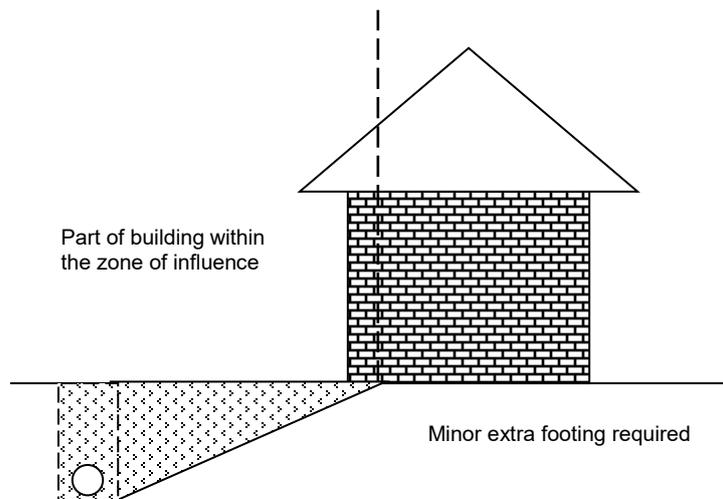


**Figure 3 - Zone of Influence for Sand, Filled Ground and Loam**

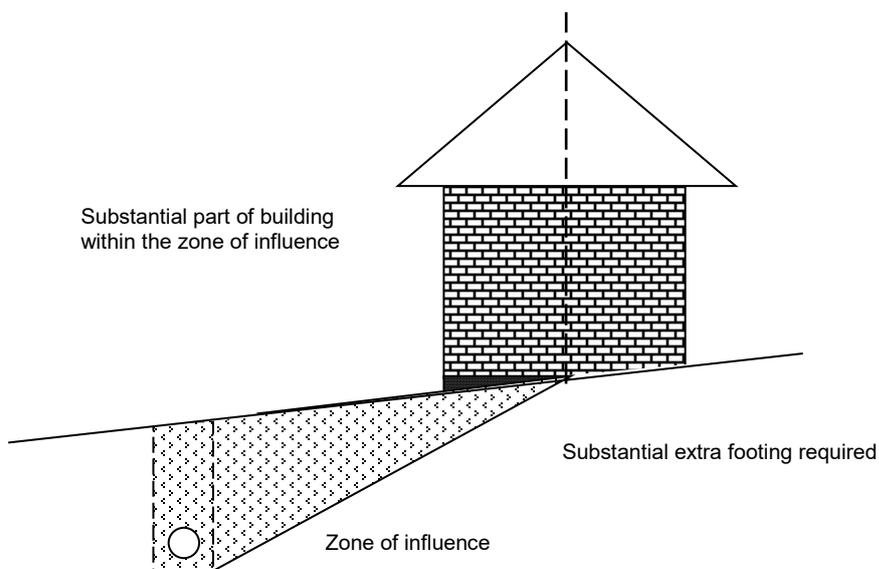
The zone of influence extends out from the edge of the pipe trench twice the distance as the depth of the trench. (The ratio used is 2:1). For sand, filled ground (including controlled fill), loam, etc. the zone will extend **twice** the depth of the trench plus half the width of the trench.

For example, for a pipe line of 375 mm diameter and a depth of 2500 mm, the trench depth is 2800 mm deep (i.e. 2500 + 300). Therefore, the zone extends 6100 mm from the pipe centre line (i.e. (2800 x 2) + 500). The zone of influence may be affected by the topography of the site. If the proposed building is to be located on a slope above the pipe then the zone may be substantially extended. Alternatively, if the proposed building is to be located on a slope below the pipe then the zone may be substantially reduced.

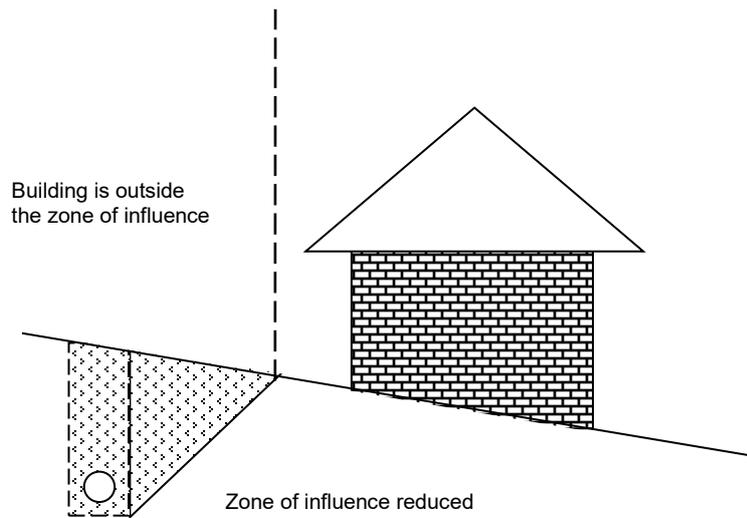
On steep blocks substantial footings may be required to overcome the effect of the zone of influence. Figures 4, 5 and 6 indicate the effect on the zone of influence in relation to topography.



**Figure 4 - Zone of Influence on Flat Ground**



**Figure 5 - Zone of Influence where pipe is located downhill from building**



**Figure 6 - Zone of Influence where pipe is located uphill from building**

#### **4.1.7 Minor Exceptions for Building Over Sewers**

Minor exceptions may be made to this policy to allow certain limited, light demountable structures to be built adjacent to or over sewers where it can be demonstrated that the operation and maintenance of Council's assets will not be hindered. Where an applicant feels that the underground mains will unreasonably limit their design then discussions should be held with Council staff to explore options before submitting a proposal.

Consideration may be given to approving a strictly limited range of light demountable structures located over an underground sewer if, and only if, it is not practical to build the structure elsewhere on the block. Any proposal seeking exclusion would be considered in the light of the options for locating the structure on other parts of the site and the type of structure proposed.

The types of structures that may be considered are limited to light timber or metal carports, relocatable garden sheds, pergolas and awnings that are bolted together and can readily be removed, car parking areas, fences and gardens. Properly designed retaining walls that cross the easement at right angles to the pipeline may also be permitted. No other structures will be permitted. Any structures approved under this section of the policy cannot be altered (eg by enclosing carports with walls to make a garage) without Council approval.

If it is found necessary to demolish or relocate, or mains failure results in damage to any structure over Council's mains, Council will not be liable for any associated costs.

The types of structures that may be refused approval include (but is not limited to) carports, pergolas and awnings that have been permanently fixed (eg using nails, welds, etc.), garages, fixed garden sheds, aviaries, ferneries, glasshouses, pools and sporting facilities (eg tennis courts using artificial surfaces) etc.

Where this policy restricts the ability to develop in an appropriate manner for that area (eg commercial areas) then proposals will be investigated on an individual basis in line with the aims of this policy.

#### **4.1.8 Existing Structures**

Where structures have been built over an underground pipeline without Council approval then Council may require that the structure be demolished, moved or substantially modified so that it complies with this policy

Where it is necessary to access an underground line for maintenance or repair work Council will not be held liable for the cost of restoring any illegal structures and the property owner may be charged for extra work required due to the illegal structure.

Where Council has previously given permission for a structure to be built over a pipeline then no further extensions, additions or reconstructions will be allowed. Council recognises that the existing structure presents a risk to both the building and Council's liability. Therefore Council will not be prepared to increase this risk by approving further structures or additions and alterations.

#### **4.1.9 Earthworks**

Council approval is required where any development proposes to alter the cover over existing gravity sewers and pressure mains

Filling over sewer mains may cause pipe failure by crushing due to increased bearing loads and may result in access chambers being buried. The toes of batters may also become unstable if trenches are required to be excavated to maintain or replace sewer pipes.

On the other hand, excavation resulting in decreased cover over sewer mains may cause failure due to breakages from direct load on the pipe caused by vehicles or other mobile equipment.

Full details of any proposed modification to ground levels adjacent to or over sewer mains shall be provided to Council with the Development Application. The applicant shall be responsible for the cost of any access chamber modifications, pipe protection or upgrade work that is deemed to be required as a result of the modified finished surface levels.

#### **4.1.10 Application Requirements**

Where a structure is proposed to be built adjacent to a Council sewer, all Development and Construction Certificate Applications will be required to have footing details that show how the proposed structure will be designed to accommodate the zone of influence from these adjacent pipelines. These details must be designed and certified by a Structural Engineer. Plans should be drawn to an appropriate scale (i.e. 1:200 or 1:100).

### **5.0 History**

Two previous policies covered Building Over Sewer Mains (adopted by Council on 2 May 1996) and Building in the Vicinity of Sewers (adopted by Council on 13 September 2001).

The first Policy confirmed that Council generally prohibits the construction of buildings over sewerage mains, both dedicated and undedicated and where no alternative exists then each individual application to build over a sewer main be submitted to Council for consideration on its merits. *(Document 26080/2007)*

The second Policy was issued with an objective to ensure that a building (urban elected) will not exert any load onto a Council Sewer main and to ensure that Council has reasonable access to the main for servicing and/or replacement. *(Document 25826/2007)*

The Policies were last reviewed on the 20 October 2010. However as the Policy content is more extensive, it is recommended the former policies and procedures be deleted and be replaced by this current revised edition. (*Document 26055/2012*)

<b>Department:</b>	Engineering Services	<b>Last Reviewed</b>	<b>Resolution Number</b>
<b>Policy Category</b>	Organisation	March 2018	78/18 – Adopted 22/02/18
<b>Endorsed By:</b>	AGMES		
<b>Approval Authority</b>	General Manager		
<b>Policy Owner</b>	Manager Water & Sewerage		
<b>Contact Officer</b>	Manager Water & Sewerage		
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