Central Coast Council

Building in Proximity to Water and Sewer Assets Procedure

Date Adopted: **20/05/2025**
Revision: **2**

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1. Procedure Objectives

1.1. The objectives of the Central Coast Council (CCC) 'Building in Proximity to Water and Sewer Assets Procedure' (the Procedure) are as follows:

a. To protect Council's water and sewer assets from loads imposed by other structures during and after construction
b. To allow current and future access to those water and sewer assets by various means for repairs, upgrade, or inspection in particular recognising technological innovation in trenchless technology to achieve such access and objectives
c. To ensure the stability and protection of structures over or near the sewer mains
d. To not unreasonably impede or restrict development

1.2. This procedure provides direction to Applicants to ensure that their proposed Development can be undertaken in accordance with the Policy. The current version of the Policy can be sourced from Council's website (centralcoast.nsw.gov.au) and should be reviewed in conjunction with this procedure.

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2. Procedure Scope

2.1. This Procedure covers personnel employed by Council; any person or organisation contracted to or acting on behalf of Council; and any person or organisation employed to work on Council premises or facilities and all activities of the Council. This Procedure covers all works in proximity to water and sewer mains whether they are undertaken by private developers, other Business Units of Council or other utilities.

2.3. This Procedure applies to the following four structure types:

a. Heavy or permanent structures
b. Light weight or semi-permanent structures
c. Miscellaneous structures (rainwater tanks, pavements, retaining walls etc.)
d. High-rise developments

2.4. This Procedure applies to any development, such as the above which is built in the vicinity of Council Water Supply and Sewerage assets.

2.5. It is the personal responsibility of all Council employees and its contractors thereof to have knowledge of, and to ensure compliance with this Procedure.

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3. Procedure Statement

3.1. The approach followed for the assessment of applications to build over or in close proximity to water supply and pressure sewerage assets is summarised below:Building over a Council water main or an easement containing a water main will not be permitted. Construction next to easements may be allowed

subject to conditions which may include the piering of proposed structures and further protection of the existing water main

b. Building over a Council sewer rising main (pressure), vacuum main or an easement containing Council assets will not be permitted. Construction next to easements may be allowed subject to conditions which may include the piering of proposed structures and further protection of the existing Council asset main

3.2. The hierarchy followed for the assessment of applications to build over or in close proximity to gravity sewerage assets is summarised below and described further in the following sections:Relocate proposed structure

b. Relocate CCC's affected gravity sewer assets

c. Provide protection measures for both CCC gravity sewer assets and proposed structure, prior to building over/adjacent to the CCC gravity sewer asset

3.3. This document summarises requirements on the basis of the following four structure types:Heavy or permanent structures

b. Light weight or semi-permanent structures

c. Miscellaneous structures (rainwater tanks, pavements, retaining walls etc.)

d. High-rise developments

4. Applicant Responsibilities

4.1. It is the Applicant's responsibility to investigate and document the below options, in consultation with Council as part of forming their development proposal.

a. Relocate proposed structure

b. Relocate Council's affected sewer assets

c. Provide protection measures for both Council sewer assets and proposed structure and build over/adjacent to asset

4.2. The Applicant shall consider an integrated approach and demonstrate that all associated risks can be managed with marginal costs if building over or adjacent to a sewer is to be considered and accepted by Council.The Applicant must confirm the exact location of water/sewer assets from onsite investigation. Indicative water/sewer locations can be obtained by submitting a 'Before You Dig' search. A sewer long section can be requested by submitting an "Application for Certificate" and nominating sewer long section. The Applicant shall provide full design details of any proposals that address the requirements of this Procedure to Council for assessment and acceptance. For building in proximity to water and sewer asset proposals, include the below within the Engineering design drawings:Site plan including boundaries, accurate location of sewer main, proposed structure, extent of the zone of influence, spacing of piers, minimum depth of piers, certification

b. Section showing sewer main, depth of sewer, natural ground level, edge of building, zone of influence, pier exclusion zone, trench width and certification

c. A Building in Proximity to Water and Sewer Pipelines Structural Design Checklist can be obtained from Council's website for further details on structural engineering drafting requirements

5. Relocation Considerations

5.1. Proposed Building

In all instances the first option considered should be the relocation of the proposed building away from the existing sewer assets. If this is not feasible due the position of the sewer main on the property adversely restricting the use of the land, relocation of the sewer main may be considered.

5.2. Council Assets

Council will only consider relocation of existing sewer assets if the Applicant can demonstrate that building away from the sewer adversely restricts the use of the land.

Any relocation works need to ensure all required design standards (cover, grade, position) are still met and that the capacity/functionality of the assets are not reduced in consideration of their required capacity/functionality.

All costs associated with the relocation of assets are to be funded by the Applicant. This includes survey, design, construction, and commissioning costs.

5.3. Gravity Mains

Where approval to relocate a sewer is granted, the Applicant will be required to submit design drawings prepared in accordance with The Sydney Water Edition of the Water Services Association of Australia (WSA) Sewerage Code of Australia Version 4 (WSA 02-2002-2.2.), Central Coast Council Supplements to the WSA codes and AS/NZS 3500:2021 (for private plumbing and drainage works) for the design and construction of gravity sewers.

Relocating the sewer following design approval is required before construction of the proposed building/structure can commence.

The Applicant will need to liaise with Council regarding the bypassing of live sewage flows.

5.4. Sewer Rising Mains

Where approval to relocate a rising main is granted, the Applicant will be required to submit plans in accordance with Water Services Association of Australia (WSA), including Pressure Sewerage Code of Australia Version 1.1 (WSA 07-2007-1.1.), Central Coast Council Supplements to the WSA codes and AS/NZS 3500:2021 (for private plumbing and drainage works) for the design and construction of pressure mains.

Following approval, the Applicant is required to relocate and ensure proper function of the rising main before construction of the building/structure can commence.

The applicant will need to liaise with Council regarding the bypassing of live sewage flows.

The applicant is responsible for any bypassing costs.

5.5. Water Mains

Where approval to relocate a water main is granted, the Applicant will be required to submit plans in accordance with Water Services Association of Australia (WSA), including Water Supply Code of Australia Edition 2014 (WSA 03 - 2011-3.1), Central Coast Council Supplements to the WSA codes and AS/NZS 3500:2021 (for private plumbing and drainage works) for the design and construction of pressure mains.

Following approval, the Applicant is required to relocate and ensure proper function of the water main before construction of the building/structure can commence.

The applicant will need to liaise with Council regarding maintaining the reticulated water supply to impacted customers during works. The applicant is responsible for any bypassing costs.

Hydrants and valves on existing asbestos cement (AC) and cast-iron cement lined (CICL) water mains reticulation mains shall be relocated outside of a proposed Vehicle Access Crossing (VAC), subject to Council review. During a hydrant or valve relocation outside of an existing VAC, consideration shall be given to replace the entire section of pipe (limited to AC or CICL) pipe underneath the vehicle access crossing with new pipe up to the next available collar either side of the proposed VAC.

5.6. Easements

The Applicant may be required to acquire/provide an easement in accordance with Council requirements (including payment of all associated fees and costs) over a relocated gravity and/or rising main. Typically, easements are only required for Council gravity mains exceeding 300mm in diameter and pressure mains (water + sewer). There may however be situations where easements are required for gravity mains 300mm and smaller in diameter.

Building Over and In Proximity to Gravity Sewer Mains Consideration.

Council will only consider a building/structure over the sewer main when the applicant can demonstrate that relocating the building/structure and/or relocation of the sewer is not feasible.

5.7. CCTV Inspection

Where a proposal to build over or within 0.5m clearance to the face of the sewer main the following will be required:

Thorough cleaning of the subject sewer

a. A CCTV inspection of the subject sewer, undertaken by a contractor qualified and with the necessary experience to do so consistent requirements within Water Services Association of Australia (WSA), Conduit

Inspection Reporting Code of Australia Version 2.2 (WSA 05-2008-2.2.) within Sections 2.4 to 2.9

b. The results of the CCTV inspection are to be submitted to Council prior to the preparation of any design required to comply with the Procedure. The CCTV inspection may also be used as a dilapidation survey, as the basis to determine any repair work required to rectify damage to the sewer caused by the development
c. A post works CCTV inspection of the subject sewer, undertaken by a contractor qualified and with the necessary experience to do so, with results submitted to Council prior to acceptance of the sewer main asset

5.8. Results of the CCTV Inspection

Depending on the results of the CCTV inspection Council may require the Applicant to:

a. Reconstruct the sewer main (and/or associated fixtures such as maintenance chambers) in its existing location using construction materials as specified by Council and in accordance with requirements set down within Council adopted Code of Practice for the design and construction for Development Works and approved plans
b. Engage Council to repair, reconstruct or reline the existing sewer main

5.9. Existing Asbestos Cement, Cast Iron and Vitreous Clay Pipes

Council will not allow construction within the zone of influence (see Zone of Influence) of existing Asbestos Cement (AC), Cast Iron (CI) and Vitreous Clay (VC) and corrodible pipe materials without their relining with a PVC or equivalent pipe material and the installation of relevant protection measures as outlined in this document.

This requirement is due to these pipe materials having a higher chance of disruptive failure modes (e.g. collapse of AC/CI pipe, vertical displacement of VC pipe segments) that preclude the ability to use trenchless relining techniques to rehabilitate at a later date.

a. AC pipe is a corrodible material and can collapse. If there is a building above it, or in close proximity to it, Council cannot dig it up to replace and a collapsed pipe cannot be relined utilising trenchless techniques (Council's standard renewal process)
b. VC pipes can be subject to vertical displacement of joints which also prevents trenchless rehabilitation and requires physical excavation of the pipe for replacement
c. Replacing/relining prior to buildings being constructed over (or in close proximity to) mitigates this risk and is partially funded by the applicant as outlined below
d. Council also acknowledges that if these material types are not being built over, and if sufficient clearance is available for future maintenance, the pipe should not require replacement/relining as a result of development and will

instead be replaced/relined at a later date as part of Council's overall asset management strategy for gravity sewer mains

e. The requirement to trigger the relining of an existing AC or VC main is based on the clearance between the existing sewer main and the proposed structure, as well as the total clear width available over the sewer main. The combination of these clearances determines whether the sewer main needs to be relined prior to the development occurring
f. Figure 1 and Table 1 below, illustrate the required clearances before relining is triggered as part of the development

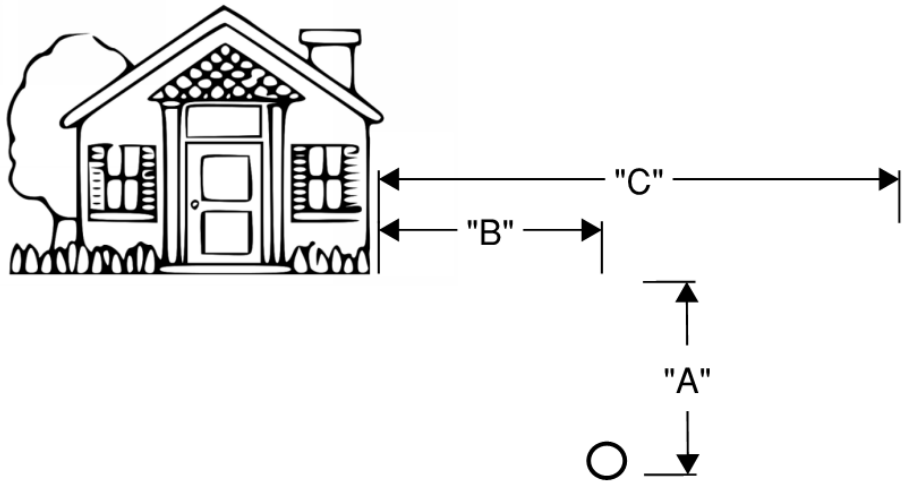

Figure 1: Required clearances and corridor to avoid replacement of AC/CI/VC gravity sewer mains at the time of development

Depth of sewer main (a)	Minimum offset required (b)	Minimum working corridor required (c)
0 – 1.5m	2m	3m
1.5 – 3m	3m	4.5m
>3	4m	6m

Table 1: Minimum clearance requirements (from Figure 1) before relining of AC/VC mains is triggered as part of development

g. If the above clearances cannot be achieved, then relining is required as part of the development. Greater clearances are required for deeper mains due to the requirement for larger plant, trench protection/shoring and potential dewatering requirements

Council will facilitate trenchless relining and provide a cost sharing arrangement where it is beneficial to Council to re-line a complete manhole to manhole length rather than the applicant just replacing a short section of pipe. This cost sharing arrangement applies to development on a single residential lot. Larger scale development will not generally be subject to a cost sharing arrangement but will be eligible to have Council facilitate relining via its existing period contract for those services to allow the applicant to benefit from the economies of scale offered by the Council contract. The typical timing for relining to occur from the payment of the relevant fees is eight weeks. Any required relining must be completed before permanent structures are placed over the sewer main (including pouring of a slab).

6. Considerations Specific to Certain Structures

6.1. Category 1 – Heavy or Permanent Structures

These structures are typically constructed from masonry, brick, steel, timber and concrete and it is neither reasonable nor practical to remove or dismantle the structure for the purpose of carrying out sewer repairs or refurbishment.

Examples of structures in this category include:

a. Houses
b. Factories
c. Warehouses
d. Brick Garages/Workshops
e. Structures that are permanently habitable or used as a workplace.
f. In-Ground Swimming Pools
g. Masonry wall
h. Retaining walls ≥1m
i. If Category 1 structures are to be built in the vicinity of sewers, the requirements for protection of and access to (including clearances) the existing sewerage network outlined in the following sections must be followed.

Note that Swimming Pools and Retaining Walls are discussed later in this document.

6.2. Category 2 – Lightweight or Semi-Permanent Structures

These structures are typically of a type of construction that would make it easy to remove/dismantle without machinery and re-erect if access to the main, by excavation, was required.

Examples of structures in this category include:

a. Garden sheds
b. Above ground pools and certain semi in ground pools (restrictions apply)
c. Carports (Detached)
d. Timber/fibro/aluminium garages (conversion to secondary dwelling is not considered as an easily removable structure)
e. Barbecue facilities
f. Water Tanks (poly)
g. Retaining wall <1m

These structures must be readily removable, without machinery, in the case of work required to take place on Council sewerage assets. Required clearances to maintenance structures described later in this document must be maintained from these structure types.

Asset protection measures as outlined below, may still apply to certain structures within this category.

Any future costs arising from the requirement to remove and subsequently reassemble these structures, as directed by Council, will be at the full cost of the owner.

6.3. Category 3 – Miscellaneous

Structures in this category do not normally require protection of the sewer mains.

Examples of structures in this category include:

a. Fences (metal, timber, glass, wire, slat, palisade, etc)
b. Pavements, including vehicle access crossings (concrete, asphalt, pavers etc)
c. Tarmac areas

If minimum depth and clearance requirements for sewer mains have been met, typically no special protection measures for the sewer main would be required. The applicant is responsible for all costs associated with adjustments to surface fittings including maintenance chamber lids to ensure these remain accessible to Council staff. If uncertainty exists and proposed development is within 0.5m clearance of the edge of sewer main, advice shall be sought from Council.

Watermain fittings may require relocation out of new or adjusted vehicular access corridors at the partial or full cost of the proponent. Refer to Central Coast Council Document 'Treatment of water and sewer assets as part of

Vehicular Access Crossing (VAC), footpath or Kerb upgrades – Central Coast Council' for details.

Any special conditions applied to Category 3 structures would be on a case-by-case basis and would include in part a stipulation that any removal and reinstatement of the structures (involved with Council accessing the sewer main) would be at the cost of the owner.

Provisions required for access to (including clearances) the existing sewerage network still apply.

6.4. Category 4 – High-Rise Developments

The impact of redevelopment with typically high-rise buildings with basement car parks on Council's sewerage infrastructure presents numerous design, construction, and operational issues in the protection of Council interests.

Requirements specific to the assessment, design, construction, and operational phases to ensure Council's interests are satisfied for high-rise developments are discussed later in this document.

6.5. Considerations Specific to Certain Structures

Category 1, 2 and 4 structures will not be permitted to be built over and/or in close proximity to the following:

a. Water mains, sewer pressure (incl vacuum) mains, surcharge mains and critical gravity mains (generally all sewer mains of greater diameter than 300mm), as determined by Council including easements. In new development areas these assets are located within easements. However, there may be cases where these mains are not currently located within an easement, and the requirements of this document ensure their protection
b. Any gravity sewer that, in the opinion of the Council, is in a poor condition. Exposing of the sewer, and/or CCTV may be required prior to construction. This inspection may determine that repair/replacement may be required. Any subsequent repair/replacement work required to mitigate increased risks associated with development of the site will be at the Applicant's cost
c. Sewer manholes, lampholes, dead ends, maintenance points, property connection point and junctions where sufficient clearances cannot be achieved (described later in document)
d. No building within Council easements

Where construction of Category 3 structures or consequential loading will impose a load within an existing sewer/water assets zone of influence (see Figure 2), Council may request the Applicant to carry out any combination of the following protection measures:

a. Removable protective slab
b. Foundation treatments
c. Concrete encasement

6.6. Zone of Influence

The zone of influence is an area extending both horizontally and longitudinally along the alignment of an underground asset. This area is considered as that part of the ground where:

Settlement or disturbance of the ground surrounding the pipe (due to failure or future excavation of the pipe) may cause damage to buildings or structures on the surface above.

Loads from buildings or structures on the surface may have an impact on the buried pipe or the stability of future excavations required to access the pipe for maintenance.

The zone of influence shall be determined by extending a line at an angle of 2 (Horizontal): 1 (Vertical) to the surface, starting from a point 150mm below the invert of the sewer main and half of the trench width measured horizontally from the pipe's centreline (See figure below).

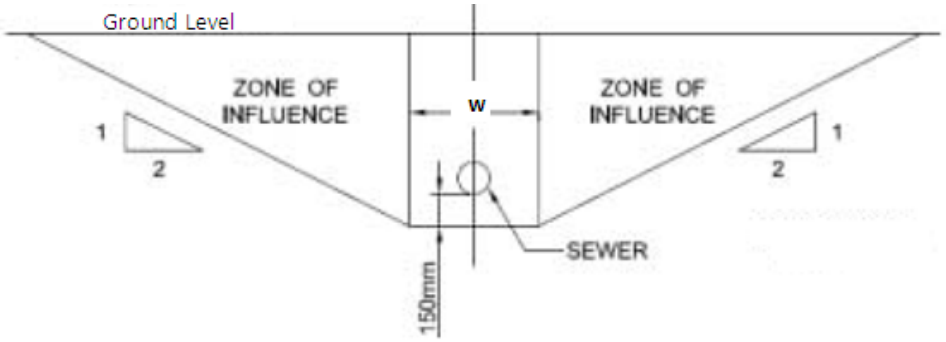

Figure 2: Zone of Influence Diagram

Pipe Diameter	Trench Width (w) for ZOI Calculation
≤300mm	900mm
>300mm - ≤450mm	Diameter + 700mm
> 450mm - ≤900mm	Diameter + 900mm

Table 2: Minimum clearance requirements (from Figure 1) before relining of AC/VC mains is triggered as part of development

It is Council's discretion whether to consider a steeper angle of repose (max 1H:1V) for stiff soils (clays etc). Geotechnical investigations and a report from a suitably qualified and experienced Geotechnical Engineer need to be provided by the applicant to support such requests.

6.7. Asset Protection Measures

Where construction of any Category 1, 2 or 4 structures will impose a load within an existing sewer assets zone of influence (see Zone of Influence), Council may request the Applicant to carry out any combination of the following protection measures:

a. Removable protective slab
b. Foundation treatments
c. Concrete encasement

The protection measures may also be required due to other factors affecting the asset such as available cover.

6.8. Foundation Treatments

Construction of deeper pad footings or piering of the proposed structures foundations may be required to transfer loads outside an assets zone of influence.

A certified design prepared by a suitably qualified and experienced Engineer will be required to accompany foundation designs. The plan shall generally show the design of all footings, beams and piers and clearly note required clearances, ground levels, and nominated soil classifications used to determine the zone of influence. The construction of the foundations in accordance with the approved design will also need to be certified in line with Council's plan approval process.

The following general requirements apply to foundation treatments:

a. The building and its foundations are to be designed in such a way that no building loads are transmitted to the Council sewer main and where possible, the pipe can be repaired or replaced at any time without affecting the stability of the building
b. Foundations within an assets zone of influence are required to extend to a minimum depth of 150mm below the zone of influence of the affected asset or until solid rock is encountered
c. A minimum horizontal clearance of 900mm is required between any piers and the face of a sewer main. This clearance can be reduced to 600mm where pad and strip footing foundations are installed following mechanical excavation (not drilling/auger) utilising a spotter
d. A 50mm compressible membrane is required under any bridging/cantilever slabs that are located within the zone of influence of the sewer main

The use of displacement and percussion driven piles will require approval by Council and may require additional clearances (1.5m) to existing assets as directed.

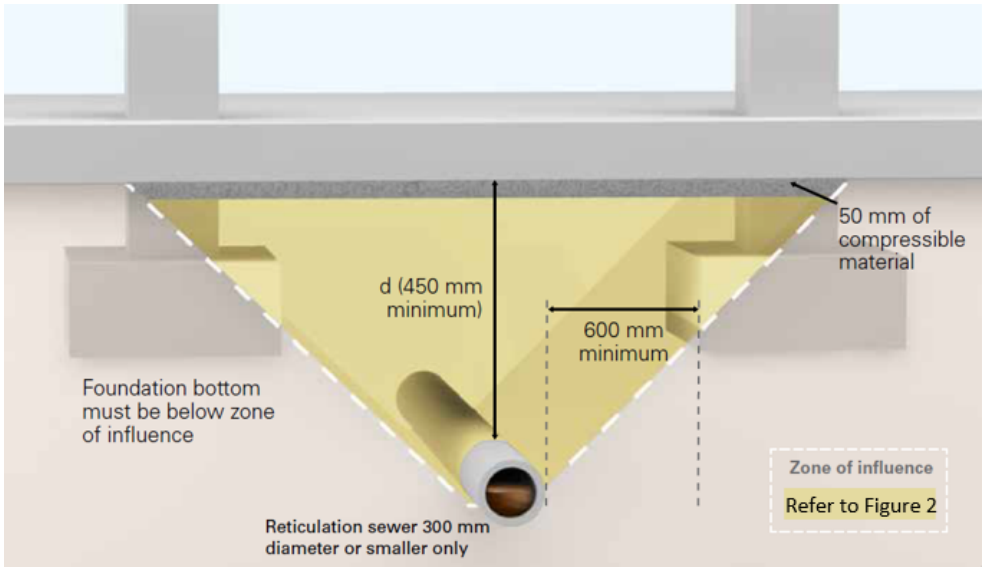

Figure 3: Clearance requirements for foundations in proximity to gravity sewer mains (courtesy of SWC). Note extent of Zone of Influence calculation provided in Figure 2

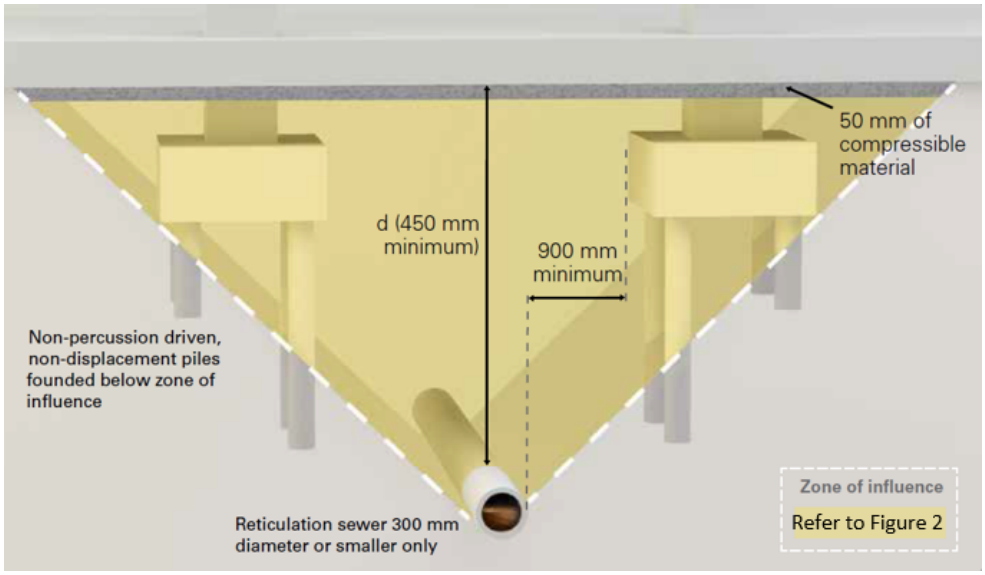

Figure 4: Clearance requirements for piled foundations in proximity to gravity sewer mains (courtesy of SWC). Note extent of Zone of Influence calculation provided in Figure 2

6.9. Concrete Encasement

Concrete encasement of the sewer main may be requested in limited circumstances for the protection of sewer mains due to additional loads imposed by the works. Concrete encasement may also be requested if Council minimum cover requirements cannot be met.

Concrete encasement will generally not be permitted where the encased pipe will be located below or within 1m of a Category 1 structure. Encasement may, however, be suitable where minimum cover requirements cannot be met, and/or where the encased pipe is not within 1m of any Category 1 structure.

Any concrete encasement is to comply with the provisions contained within Central Coast Council's Sewer Supplement document and WSA Sewer Code for gravity sewer main design and construction. Council's works inspectors must be present when encasement of any Council infrastructure is being carried out.

6.10. Clearances and Access Requirements

Council requires that all sewer access structures be accessible at all times in case of maintenance or emergency situations. These include maintenance chambers, lampholes/maintenance shafts, junctions, and sewer dead ends.

A minimum horizontal radial clearance of 1.5m is required from the centre of existing maintenance holes and chambers. A minimum horizontal radial clearance of 1.5m is required from the centre of existing sewer junction. The property connection point (location of private sewer inspection shaft), terminal maintenance shaft and lamphole shall have a minimum horizontal radial clearance of 1m. A property connection point (location of the private inspection

shaft) extends 1m within the lot to be served and is to be considered as such even if the pipe was constructed short of 1m. A minimum vertical clearance (headroom) of 3m is required for all maintenance structures. The horizontal setback for all structures shall increase to 2m if more than two sides of an access structure are built around. The fourth side must be open and accessible at all times.

Developments on properties with sewer manholes or lampholes must provide at least 900mm wide clear access to the sewer structures, i.e., along the boundary between fence and building. This is necessary to allow Council staff access with their "tools of trade" such as cleaning rods and lid lifting equipment.

Developments which locate sewer manholes or lampholes in security areas must make suitable arrangements for access by Council's operations staff for maintenance or emergency work.

Additional access and clearance requirements apply to Council owned low pressure sewer units. Details can be sought from Council.

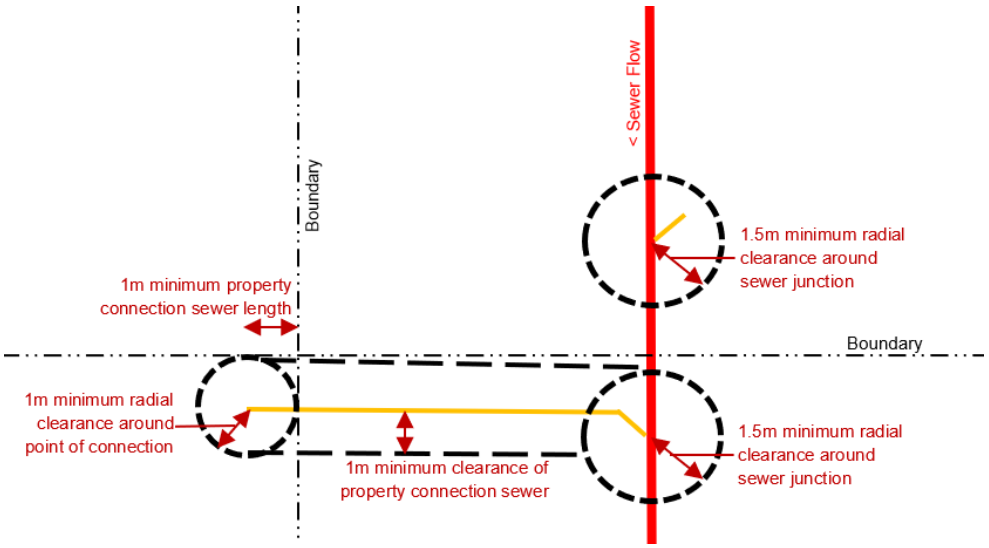

Figure 5: Clearance requirements around sewer junction, over property connection (projection) and the point of connection. Note the point of connection is considered minimum 1m into the lot even if the pipe was constructed short of 1m

Water Meters shall have unobstructed access for reads and maintenance. A 120cm vertical clearance is required above the meter, and 300m clearance is required around meter and pipework. Where front boundary walls and fence are proposed, these structures are to be articulated around water meters to allow free access from public roads/land.

6.11. Existing Encumbrances

Where structures have been built over Council water or sewerage assets without Water Management Act approval, Council may require that the structure be demolished, moved, or substantially modified so that it complies with the Procedure.

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

Where a structure has been supported previously by Council, to be built over a water/sewer main then no further extensions, additions or reconstructions will be allowed without further assessment. Council recognises that the existing structure presents a risk to both the building and Council's liability. Therefore, Council will assess each structure on its own merit to give permission for additions.

6.12. Swimming Pools

No pool shall be located closer than 1.5m to any sewer maintenance structure (manholes etc). The design of the swimming pool and/or adjustment to the height of any adjoining sewer maintenance structures (requires approval) needs to result in the height of the pool coping being at least 150mm above the lid level of the adjoining sewer maintenance structure.

6.13. Above Ground Swimming Pool

Above ground and semi in ground pools without floor decking around the pool, and not constructed of concrete or fibreglass, are considered to be semi-permanent structures that are able to be removed on request to enable access to the sewer.

Special sewer protection provisions are not required for these pools provided that they are placed on the existing natural ground levels and minimum cover requirements to the sewer are met. Clearances to sewer access structures described above still apply. The owner should be advised that all costs associated with removal and reinstatement of the pool for access to the sewer main will be at the owner's cost.

Above ground pools with permanent decking are considered to be permanent structures and are subject to the conditions outlined in Category 1 – Heavy or Permanent Structures.

6.14. In Ground Fibreglass Pool

The following requirements apply to fibreglass pools:

a. Minimum horizontal clearance from the pool coping to the face of sewer pipe of 0.6m
b. Fibreglass pools are unable to be partially supported on piers due to the risk of cracking the fibreglass. Concrete encasement may be required for sewer mains if the base of the pool is located within the zone of influence of the gravity sewer main. The encasement is to extend a minimum of 1m beyond the edge of the pool. AC, VC and corrodible pipe materials need to be relined prior to encasement

6.15. In Ground Concrete Pool

The following requirements apply to concrete pools:

a. Minimum horizontal clearance from the pool coping to the face of sewer pipe of 0.6m
b. If the concrete pool is within the zone of influence of a sewer main, then the foundations of the pool shall be founded below the zone of influence (e.g. piers) to ensure the pool is self-supporting

6.16. Retaining Walls

The construction of retaining walls (and associated footing systems) is subject to the following requirements:

a. The design of the retaining wall and its footings system is required to be designed such that the retaining wall is sufficiently deep to be self-supporting in the event the sewer is excavated to the zone of influence. This procedure address's axial loading from structures, however, retaining walls mostly experience lateral earth pressure loads. Minimum cover over the main is to be maintained or an engineer's assessment is required for protection of the main
b. The wall is to be set back at a minimum of 1.5 m from the centre of any sewer maintenance structures
c. A retaining wall less than 1.0m in height can be supported over or within the zone of influence without the requirement for an engineer's design provided that:
    i. The wall is at least 3.0m from an adjoining property or building/structure
    ii. The wall, if parallel to the gravity sewer main, achieves a clearance greater than 600mm from the face of the pipe to any element of the wall
    iii. The wall would not be subject to vehicle loadings
    iv. Any associated footings are required to achieve the required clearances described in the above asset protection measures sections
    v. Tiered/terraced retaining walls are not installed that achieve a height greater than 1m using a series of walls
d. Any retaining wall crossing a sewer main must be supported over the main with a reinforced concrete foundation designed in accordance with the above provisions relating to foundation design to ensure no loads from the wall are transferred to the sewer main i.e. bridging slab foundation.

6.17. Filling Over Sewer Mains

The allowable depth of fill that can be placed over sewerage mains depends on the material type and stiffness class of the existing pipe.

Site filling that adds over 1m of fill over an existing sewer main and/or increases the depth to the main above 3.5m will require Council approval.

Documentation to be provided to Council in support of filling over a sewer must include certification from a suitably experienced qualified civil, structural, or geotechnical engineer that:

a. The loading imposed will not adversely affect the underlying sewer
b. The remediation work proposed will prevent any adverse loading on the underlying sewer
c. The placing of fill to excessive depths over Council's main is not permitted (5m is a maximum depth for practical access) regardless of the structural capacity of the pipe

No fill is to be placed over sewer manholes. Manholes are to be raised in conjunction with any site filling following approval from Council.

Finished lid levels of maintenance structures, relative to finished surface level, will be advised by Council based on the land use and prevalence of flooding.

6.18. Excavations Over and Adjacent to Mains

Generally, excavations over or adjacent to a sewer main are not to reduce the earth cover over the main to less than the minimum limits as detailed in Central Coast Council's Sewer Supplement document and WSA Sewerage Code for Gravity Sewer Main Design and Construction. . Manholes may be required to be lowered in conjunction with any site lowering following approval from Council. The finished lid levels of maintenance structures, relative to finished surface level, will be advised by Council based on the land use, prevalence of flooding and consideration of sewer system hydraulics and potential overflow locations.

Any proposal to reduce cover over a sewer to less than the limits imposed in the Code of Practice will require specific Council approval.

Documentation to be provided to Council in support of reducing cover over a sewer main must include, amongst other things, certification from a suitably experienced qualified civil, structural, or geotechnical engineer certifying that:

a. The reduced cover is sufficient for potential surface loading to not adversely affect the underlying sewer
b. The remediation work (if any) proposed will prevent any expected loading over the sewer from having and adverse impact on the sewer

6.19. Earth Embarkments

On sloping sites there is potential that earthworks down slope of an existing sewer main could present a risk for land slip or erosion of soil providing cover and/or side support to an existing sewer main.

Any proposed regrading of land immediately down slope of an existing sewer main should be designed with a slope no steeper than 3 (horizontal) to 1 (vertical) to ensure future erosion and/or land slip does not reduce cover and/or support to the existing sewer main. Steeper embankments would be permitted where the embankment is certified by a suitably experienced qualified civil, structural or geotechnical engineer and approved by Council based on the certification.

Retaining walls may be required to provide support down slope of existing sewer mains if substantial regrading is proposed. Any proposed retaining walls

would need to meet the above requirements relating to retaining wall and foundation system design.

An initial guide to the minimum offset between the toe of excavations and existing gravity sewer mains is provided in the figures below.

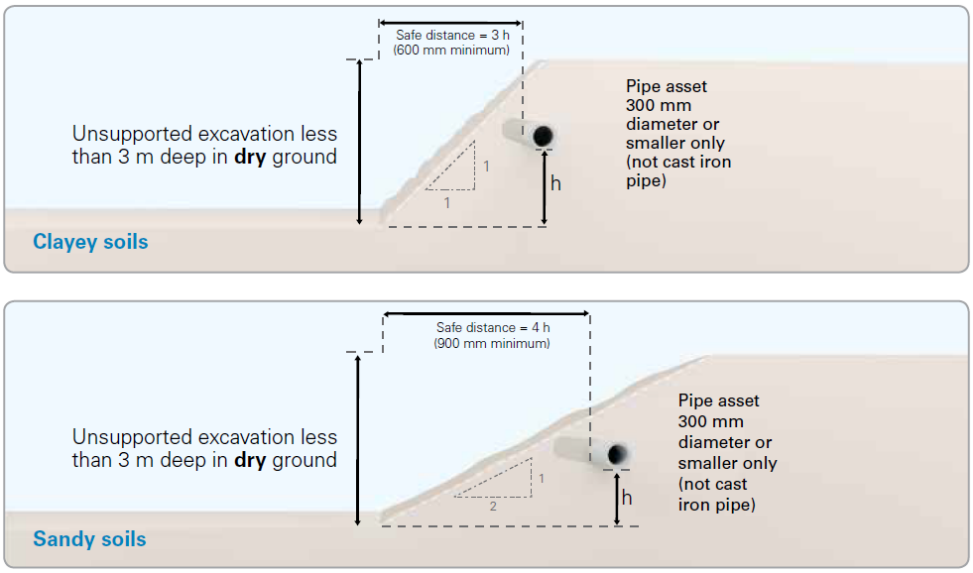

Figure 6: Requirements for small unsupported excavations (courtesy of SWC)

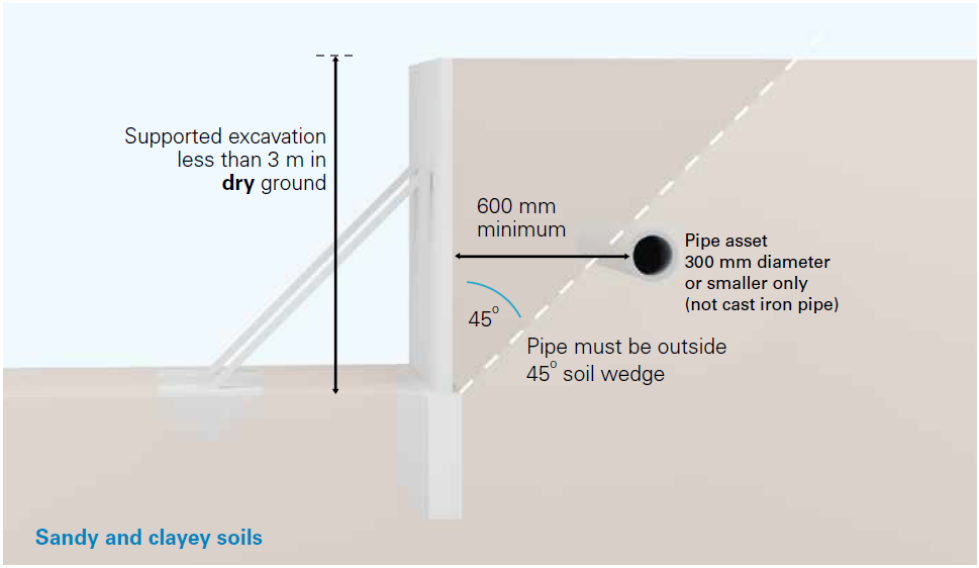

Figure 7: Requirements for small, supported excavations (courtesy of SWC)

6.20. High-Rise Development

High-rise development can present numerous challenges for the protection, ongoing operation, and maintenance of sewer mains. The Applicant must consider the following additional items as a minimum.

6.21. Size Considerations

As a requirement, the location of the trunk mains of 375mm diameter and greater (in basements) will not be approved by Council. Where such conflict occurs, the Applicant will be required to fund and arrange relocation (diversion) of the affected main to avoid such conflicts.

For mains of sizes less than 375mm diameter (in basements), Council will examine each proposal on a case by case basis and reserves the right to decline approval requiring the Applicant to relocate (divert) the affected main.

If Council does however approve a particular proposal, Council may also set a range of conditions, as indicated in the following sections.

6.22. Access to Secured/Locked Complexes or Basement Car Parks

Should sewer mains be located within such areas, access by Council's staff must be available at all times. Details are to be provided that satisfy Council's access requirements.

The Council's access requirements are to be identified in the Strata Management Statement or similar.

6.23. Adequate Clearances and Locations for Maintenance Access

Where sewers are located in basement car parks, they are to be located to ensure that adequate and clear access is provided all around the sewer for all maintenance and replacement activities.

Adequate and safe clearances are to be provided for maintenance staff via the main access to and from basement car parks. This may require the widening of accesses and ramps, the provision of additional sight distance within access areas and/or the adjustment to proposed location and orientation of car spaces to ensure unimpeded access is available to the sewer at all times.

6.24. Protection

Should there be the likelihood of a vehicle impact to a sewer main, the main is to have adequate protection against such an impact. This may consider the use of alternative pipe materials and/or the use of protection measures such as bollards.

6.25. Design & Construction

Any adjustment to sewer mains may have greater implications than solely to the area of the proposed development and as a result, no sewer main invert levels shall be raised. The raising of sewer mains may have significant impacts on the servicing potential of upstream properties.

Minor horizontal and vertical deflections may be permitted within the structure of the basements (e.g. pipes supported from the roof of the basement etc), however will not be permitted under or embedded in the concrete of the structures. Approved deflections shall not exceed 22.5°.

The deflections or sweeping bends are to be provided with cleaning/flushing 'eyes'.

Where sewer mains are proposed to pass through (and out of) structures, the Applicant shall provide designs that allow for flexibility at joints and differential settlement. Such designs shall be subject to Council's approval.

Consideration shall be given where possible for the effects of any possible future development or redevelopment of adjoining properties.

Materials used for sewer mains within and adjacent to the structures (including those located within formwork) shall be ductile iron with appropriate linings/coatings for partial full flow of sewage unless otherwise approved. The work shall provide for joint types and locations so that such joints are easily accessed for replacement/maintenance works with the minimum disruption of the operation of the system.

All design and construction for Council sewer mains is to be in accordance with Central Coast Council's Sewer Supplement document and WSA Sewerage Code for Gravity Sewer Main Design and Construction.

Internal (Not Council Asset) sewer design and construction is to comply with the requirements of AS/NZS 3500 and the BCA as appropriate.

Existing manholes where practical are to be retained to provide greater flexibility for maintenance inspection and access. The lid level of existing and proposed manholes will need to be considered to ensure that these are higher than the surrounding manhole lid levels to eliminate any potential overflow point within the basement structure.

6.26. Health and Safety

All mains are to be clearly and frequently labelled for easy identification. Additional lighting in basement car parks may be required adjacent to the sewer mains for identification, maintenance and replacement.

6.27. Vacuum and Low Pressure Sewer Systems

Council operates a number of vacuum and low pressure sewerage schemes across the Central Coast. The accessible parts of these systems (valve pits, pump units etc) are treated in the same manner as other access/maintenance structures outlined in the above sections. Radial clearances of 1.5m will generally apply in this regard.

A brick or masonry fence erected over or within 1m of a vacuum/low-pressure sewer must have pier and beam foundations in line with the requirements for foundation treatments described above. Posts for timber or metal fences must be located no closer than 0.5m to a vacuum/low-pressure sewer main or valve pit.

6.28. Sewer Ventilation Shafts

Ventilation shafts (or vent shafts) are similar to an exhaust fan for the wastewater system. Vent shafts allow air to enter and exit the wastewater system, which is important to help the system work properly. Central Coast Council maintains and operates a number of vent shafts which are located in Council land, public reserves and in some cases, private property.

Vent shafts require vehicle access such as paved or turfed access ways for maintenance. Any structures proposed within the vicinity may be subject to

height restrictions. Requirements for new structures within the vicinity of an existing or new sewer vent stack are treated on a case by case basis and requires consultation with Council's Water and Sewer team.

6.29. Abandoned Mains

Pressure or gravity mains which have been abandoned due to relocation to suit a particular development may remain in the ground providing the abandoned mains are capped to prevent the movement of water. Council may require certain abandoned mains to be backfilled with grout depending on size, material type (e.g. Asbestos Cement) and proximity to other structures or roadways. Additional details can be obtained from Central Coast Council's Sewer Supplement document and WSA Sewerage Code for Gravity Sewer Main Design and Construction.

Alternatively, the abandoned mains are to be removed and the trench backfilled and compacted to at least 98% standard compaction. Note that Safe Work NSW requirements will govern the handling of any Asbestos Cement materials.

Where the abandoned mains are within a public road, the mains to be abandoned to the Road Authorities requirements.

6.30. Planting of Trees

Tree roots can penetrate into gravity sewer mains through joints or damaged sections of pipes, causing blockages and subsequent overflows. As a result, certain species are not recommended to be planted near sewer mains. A list of the highest risk species is provided in Appendix 1.

Council may be required to remove trees in the future that significantly impact the operation of the sewerage network. To minimise the risk of this occurring the following measures are recommended if planting trees in the vicinity of Council's sewerage mains.

a. Do not plant trees closer than half the mature tree canopy drip line radius to the pipe
b. Provide a tree root barrier if the pipe is under the future mature tree canopy. Install the barrier along the length of the pipe to the full extent of the canopy drip line

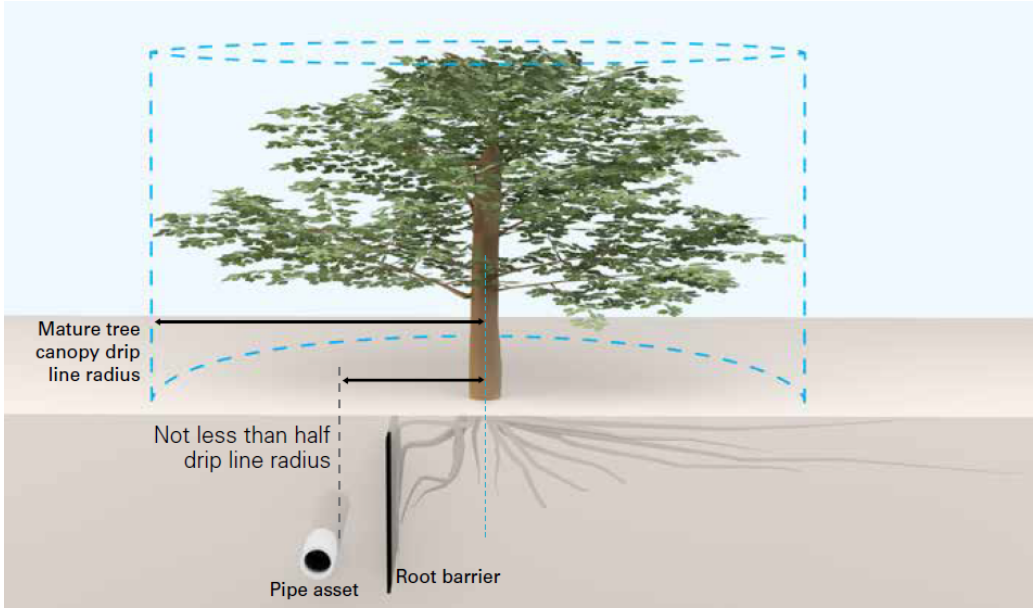

Figure 8: Recommended measures if planting trees in the vicinity of Council pipelines (courtesy of SWC)

6.31. Costs

The Applicant will be responsible for all costs associated with:

a. All investigation and design and obtaining Council acceptance of any proposal
b. If approval is granted, then any construction costs
c. Repairing any damage to a sewer main or associated sewer infrastructure caused by construction over or near an existing sewer

If Council decides to upsize a sewer main subject to relocation by an Applicant, then a cost sharing arrangement may be agreed to between both parties that reflects the extra costs associated with installing a larger diameter main at the time of relocation by the Applicant. Note this may not apply where the upsizing of the pipe is required due to the additional capacity required for the subject development.

The Applicant will have no claim on Council for any costs incurred in the event that approval is not granted.

6.32. Impact of Sewers on Private Property

Where it is not the construction authority, Council will not accept financial responsibility for compensation claimed by a developer, who is obliged to meet additional costs due to the presence of a sewer main and the requirements of Council's building approval.

Responsibilities

7.1. Compliance, monitoring and review

Suspected breaches or misuse of this Procedure are to be reported to the Chief Executive Officer. Alleged breaches of this Procedure shall be dealt with by the processes outlined for breaches of the Code of Conduct, as detailed in the Code

of Conduct and in the Procedures for the Administration of the Code of Conduct.

7.2. Records management

Staff must maintain all records relevant to administering this protocol in accordance with Council's Information and Records Management Policy.

Procedure Definitions

Applicant	The party who is proposing to undertake development activities that involve working in proximity to sewer mains. This includes private developers, all internal Units of Council and other utilities.
Council	Central Coast Council, being the organisation responsible for the administration of Council affairs and operations and the implementation of Council policy and strategies.

Procedure Administration

Business Group	Water and Sewer
Responsible Officer	Unit Manager Assets and Projects
Associated Procedure	D16810046
Procedure Review Date	Every four years or as required by legislative change or for other purposes
File Number / Document Number	D16810080
Relevant Legislation (reference specific sections)	Local Government Act 1993 (NSW) Water Management Act 2000 (NSW)
Link to Community Strategic Plan	Theme 4: Responsible **Goal I: Balanced and sustainable development** R-H4: Plan for adequate and sustainable infrastructure to meet future demand for transport, energy, telecommunications and a secure supply of drinking water.
Related Policies / Protocols / Procedures / Documents	Information and Records Management Policy Council's Code of Conduct Delegations Register

10. Procedure Authorisations

No.	Authorised Function	Authorised Business Unit / Role(s)
N/A	N/A	N/A

11. Procedure History

Revision	Date Approved / Authority	Description Of Changes
1	17/08/2020 Chief Executive Officer	New policy adopted D14133228
2	20/05/2025 Executive Leadership Team Min no. 1.1 (Endorsement)	Periodic Review Revised and amended, updated into new template

12. Appendices

Appendix 1: Plants to Avoid Near Sewer Mains

Botanical Name	Common Name	Damage Rating
Cinnamomum camphora	Camphor Laurel	Extreme
Ficus species	Fig Trees & Rubber Plants	Extreme
Populus species	Poplars	Extreme
Salix species	Willows	Extreme
Erythrina species	Coral Trees	Very High
Eucalyptus species	Large Gum Trees	Very High
Jacaranda mimosifolia	Jacaranda	Very High
Liquidambar styraciflua	Liquidambar	Very High
Araucaria species	Norfolk Island & Bunya Pines	Very High

Botanical Name	Common Name	Damage Rating
Brachychiton acerifolium	Illawarra Flame Tree	Very High
Casuarina species	Casuarinas	Very High
Melia azedarach	Australian White Cedar	Very High
Pinus species	Pine Trees	Very High
Platanus acerifolia	Plane Tree	Very High
Schinus molle	Pepper Tree	Very High
Ulmus species	Elms	Very High
Bougainvillea species	Bougainvilleas	High
Cortaderia selloana	Pampas Grass	High
Grevillea robusta	Silky Oak	High
Ilex species	Hollies	High
Lagunaria patersonii	Norfolk Island Hibiscus	High
Ligustrum species	Privets	High
Magnolia species	Magnolias	High
Nerium oleander	Oleander	High
Phoenix canariensis	Canary Island Date Palm	High
Phyllostachus species	Bamboos	High
Toxicodendron species	Rhus Trees	High
Lophostemon confetus	Brush Box, Tristania	High
Wisteria species	Wisteria	High